

IFBC NO. 20-TA003443AJ
COQUINA BEACH DRAINAGE
IMPROVEMENTS PHASE II
6005723 & 6005719
913-27
August 10, 2020

Manatee County BCC
Procurement Division
1112 Manatee Avenue West Ste 803
Bradenton, FL 34205
purchasing@mymanatee.org



ADVERTISEMENT

**INVITATION FOR BID CONSTRUCTION, NO. 20-TA003443AJ
COQUINA BEACH DRAINAGE IMPROVEMENTS PHASE II**

Manatee County, a political subdivision of the State of Florida (hereinafter referred to as County), will receive sealed bids from individuals, corporations, partnerships, and other legal entities authorized to do business in the State of Florida, to provide Coquina Beach Drainage Improvements Phase II, as specified in this Invitation for Bid Construction to include drainage improvements to the access road and parking areas, construction of a sidewalk and ditch bottom inlets..

DATE, TIME AND PLACE DUE:

The Due Date and Time for submission of Bids in response to this IFBC is **September 10, 2020 at 3:00 P.M. ET**. Bids must be delivered to the following location: Manatee County Administration Building, 1112 Manatee Ave. W., Suite 803, Bradenton, FL 34205 prior to the Due Date and Time.

SOLICITATION INFORMATION CONFERENCE:

No Information Conference will be conducted for this solicitation.

DEADLINE FOR QUESTIONS AND CLARIFICATION REQUESTS:

The deadline to submit all questions, inquiries, or requests concerning interpretation, clarification or additional information pertaining to this Invitation for Bid Construction to the Manatee County Procurement Division is August 26, 2020. Questions and inquiries should be submitted via email to the Designated Procurement Contact shown below.

Important: A prohibition of lobbying is in place. Review Section A.13 carefully to avoid violation and possible sanctions.

DESIGNATED PROCUREMENT CONTACT: Abby Jenkins, Senior Procurement Agent
(941) 749-3062, Fax (941) 749-3034
Email: abigail.jenkins@mymanatee.org
Manatee County Financial Management Department
Procurement Division

AUTHORIZED FOR RELEASE: _____

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SECTION A, INFORMATION FOR BIDDERS

To receive consideration, entities who submit a response to this Invitation for Bid (Bidders) must meet the minimum qualification requirements and comply with the following instructions. Bid responses (Bids) will be accepted from single business entities, joint ventures, partnerships or corporations.

A.01 BID DUE DATE

The Due Date and Time for submission of Bids in response to this Invitation for Bid (IFBC) is **September 10, 2020 at 3:00 P.M. ET**. Bids must be delivered to the following location: Manatee County Administration Building, 1112 Manatee Ave. W., Suite 803, Bradenton, FL 34205 and time stamped by a Procurement representative prior to the Due Date and Time.

Bids received after the Due Date and Time will not be considered. It will be the sole responsibility of the Bidder to deliver its Bid to the Manatee County Procurement Division for receipt on or before the Due Date and Time. If a Bid is sent by U.S. Mail, courier or other delivery services, the Bidder will be responsible for its timely delivery to the Procurement Division. Bids delayed in delivery will not be considered, will not be opened at the public opening, and arrangements will be made for their return at the Bidder's request and expense.

A.02 SOLICITATION INFORMATION CONFERENCE:

No Information Conference will be conducted for this solicitation.

Attendance to mandatory information conferences and/or site visits are required to meet the minimum qualification requirements of the IFBC. Attendance to non-mandatory information conferences is not required, but is strongly encouraged.

A.03 PUBLIC OPENING OF BIDS

Bids will be opened immediately following the Due Date and Time at the Manatee County Administration Building, Suite 803 in the presence of County officials. Bidders or their representatives may attend the Bid opening.

Manatee County will make public at the opening the names of the business entities which submitted a Bid and the total bid price submitted. No review or analysis of the Bids will be conducted at the Bid opening.

A.04 SUBMISSION OF BIDS

The contents of the Bid sealed package must include:

- One (1) bound original clearly identifying Bidder and marked "ORIGINAL".
- Two (2) bound copies clearly identifying Bidder and marked "COPY" with all required information and identical to the original.
- One (1) electronic format copy clearly identifying Bidder.

Electronic format copy should be submitted on a Universal Serial Bus (USB) portable flash memory drive or compact disc (CD) in MicroSoft Office® or Adobe Acrobat® portable document format (PDF) in one continuous file. Do not password protect or otherwise encrypt electronic Bid copies. Electronic copies must be searchable and contain an identical Bid to the original.

Submit the Bid package in a sealed container with the following information clearly marked on the outside of the package: IFBC No. 20-TA003443AJ, Coquina Beach Drainage Improvements Phase II, Bidder's name, and Bidder's address. Bids must be delivered to the Manatee County Procurement Division prior to the Due Date and Time at the following address:

Manatee County Procurement Division
1112 Manatee Ave. West, Ste. 803
Bradenton, FL 34205

A.05 DISTRIBUTION OF SOLICITATION DOCUMENTS

All documents issued pursuant to this IFBC are distributed electronically and available for download at no charge at www.mymanatee.org > *Bids and Proposals*. Documents may be viewed and downloaded for printing using Adobe Reader® software.

At its sole discretion, the County may utilize third-party providers to distribute proposals. Visit the third-party's website for more information regarding this service. Participation in the third-party system is not a requirement for doing business with Manatee County.

Additionally, the IFBC and all related documents are available for public inspection at the Manatee County Procurement Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205. Call (941) 749-3014 to schedule an appointment. Documents are available between the hours of 8:00 A.M. and 5:00 P.M., Monday through Friday, with the exception of County holidays.

As a courtesy, Manatee County notifies the Manatee County Chamber of Commerce and the Manatee County Black Chamber of Commerce of all active solicitations, who then distributes the information to its members.

A.06 EXAMINATION OF BID DOCUMENTS AND SITE(S)

It is the responsibility of each bidder before submitting a bid, to (a) examine the IFBC documents thoroughly; (b) visit the Project Site(s) to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the Work; (c) consider federal, state, and local codes, laws, and regulations that may affect costs, progress, performance, or furnishing of the Work; (d) study and carefully correlate bidder's observations with the IFBC documents; and (e) notify County in writing of all conflicts, errors, or discrepancies in the IFBC documents.

Each bidder may, at bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies, and obtain any additional information and data which pertain to the physical conditions at or contiguous to the Project Site(s) or otherwise which may affect cost, progress, performance or furnishing of the Work and which bidder deems necessary to determine his bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the IFBC documents. County will provide each bidder access to the site(s) to conduct such explorations and tests.

Bidder shall fill all holes, clean up and restore the Project Site(s) to its former condition upon completion of such explorations. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and other lands designated for use by successful bidder in performing the Work are identified in the IFBC documents.

All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by successful bidder. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by County unless otherwise provided in the IFBC documents.

Inspection of the Project Site(s) is a requirement to be considered for award of this bid. Prior to submitting a bid, each bidder shall examine the Project Site(s) and all conditions thereon fully familiarizing themselves with the full scope of the Work. Failure to become familiar with Project Site conditions will in no way relieve the successful bidder from the necessity of furnishing any materials or performing any Work that is required to complete the Project in accordance with the Project Plans and Specifications. Bidder shall acknowledge inspection of the Project Site(s) on his/her signed, submitted Bid Form.

A.07 ADDENDA

Any interpretations, corrections or changes to this IFBC will be made by addenda. Addenda will be posted on the Procurement Division's web page of the County website at <http://www.mymanatee.org/purchasing> > *Bids and Proposals*. For those solicitations that are advertised on a third-party website, addenda will also be posted on the third-party's distribution system on the 'Planholders' link.

All addenda are a part of the IFBC and each Bidder will be bound by such addenda. It is the responsibility of each Bidder to read and comprehend all addenda issued. Failure of any Bidder to acknowledge an issued addendum in its Bid will not relieve the Bidder from any obligation contained therein.

A.08 BID FORMS

Bids must include the forms provided in this IFBC. If needed, additional pages may be attached to a form. Bidders must fully complete and execute all Bid Forms. Bid Forms must be executed by an authorized official of the company who has the legal authority to bind the company.

A.09 BID EXPENSES

All costs incurred by Bidder in responding to this IFBC will be the sole responsibility of the Bidder.

A.10 QUESTION AND CLARIFICATION PERIOD

Each Bidder shall examine all IFBC documents and will judge all matters relating to the adequacy and accuracy of such documents. Any questions or requests concerning interpretation, clarification or additional information pertaining to this IFBC, including the sample Agreement, shall be made in writing via email to the Manatee County Procurement Division to the Designated Procurement Contact or to purchasing@mymanatee.org. All questions received and responses given will be provided to potential bidders via an addendum to this IFBC.

Manatee County will not be responsible for oral interpretations given by other sources including County staff, representative, or others. The issuance of a written addendum by the Procurement Division is the only official method whereby interpretation, clarification or additional information will be given.

A.11 FALSE OR MISLEADING STATEMENTS

Bids which contain false or misleading statements, or which provide references which do not support an attribute or condition claimed by the Bidder, may be rejected. If, in the opinion of the County, such information was intended to mislead the County in its evaluation of the Bid, and the attribute, condition or capability is a requirement of this IFBC. Such Bidder will be disqualified from consideration for this IFBC and may be disqualified from submitting a response on future solicitation opportunities with the County.

A.12 CONFIDENTIALITY OF SECURITY RELATED RECORDS

- a. Pursuant to Florida Statutes § 119.071(3), the following records (hereinafter referred to collectively as “the Confidential Security Records”) are confidential and exempt from the disclosure requirements of Florida Statutes § 119.07(1):
 - i. A Security System Plan or portion thereof for any property owned by or leased to County or any privately owned or leased property held by County.
 - ii. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by County.
 - iii. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout or structural elements of an attractions and recreation facility, entertainment or resort complex, industrial complex, retail and service development, office development, or hotel or motel development in the possession of, submitted to County.
- b. Successful Bidder agrees that, as provided by Florida Statute, it shall not, as a result of a public records request, or for other reason disclose the contents of, or release or provide copies of the Confidential Security Records to any other party absent the express written authorization of County’s Property Management Director or to comply with a court order requiring such release or disclosure. To the extent successful Bidder receives a request for such records, it shall immediately contact the County’s designated Contract administrator who shall coordinate County’s response to the request.

A.13 LOBBYING

After the issuance of any IFBC, prospective bidders, bidders, or their agents, representatives or persons acting at the request of such bidder shall not contact, communicate with or discuss any matter relating to the IFBC with any officer, agent or employee of Manatee County other than the Procurement Official or the contact identified in this IFBC, pursuant to the Manatee County Code of Laws. This prohibition includes copying such persons on all written communication, including email correspondence. This requirement begins with the issuance of an IFBC and ends upon execution of the final Agreement or when the IFBC has been cancelled. Violators of this prohibition shall be subject to sanctions as provided in the Manatee County Code of Laws.

A.14 UNBALANCED BIDDING PROHIBITED

County recognizes that large and/or complex projects will often result in a variety of methods, sources, and prices. However, where in the opinion of the County such variation does not appear to be justified given bid requirements and industry and market conditions, the Bid will be presumed to be unbalanced. Examples of unbalanced Bids will include:

- a. Bids showing omissions, alterations of form, additions not specified, or required conditional or unauthorized alternate bids.
- b. Bids quoting prices that substantially deviate, either higher or lower, from those included in the Bids of competitive Bidders for the same line item unit costs.
- c. Bids where the unit costs offered are in excess of, or below reasonable cost analysis values.

In the event County determines that a Bid is presumed unbalanced, it will request the opportunity to and reserves the right to, review all source quotes, bids, price lists, letters of intent, and other supporting documentation which the Bidder obtained and upon which the Bidder relied upon to develop its Bid. County reserves the right to deem any presumptive unbalanced Bid where the Bidder is unable to demonstrate the validity and/or necessity of the unbalanced unit costs as non-responsive.

A.15 FRONT LOADING OF BID PRICING PROHIBITED

Prices offered for performance and/or acquisition activities which occur early in the Project Schedule, such as mobilization; clearing and grubbing; or maintenance of traffic; that are substantially higher than pricing of competitive bidders within the same portion of the Project Schedule, will be presumed to be front loaded. Front loaded bids could reasonably appear to be an attempt to obtain unjustified early payments creating a risk of insufficient incentive for the bidder to complete the Work or otherwise creating an appearance of an undercapitalized bidder.

In the event County determines that a bid is presumed to be front loaded, it will request the opportunity to, and reserves the right to, review all source quotes, bids, price lists, letters of intent, and other documents which the bidder obtained and upon which the bidder relied IFBC

upon to develop the pricing or acquisition timing for these bid items. County reserves the right to reject as nonresponsive any presumptive front-loaded bids where the bidder is unable to demonstrate the validity and/or necessity of the front-loaded costs.

A.16 WITHDRAWAL OR REVISION OF BIDS

Bidders may withdraw Bids under the following circumstances:

- a. If Bidder discovers a mistake(s) prior to the Due Date and Time. Bidder may withdraw its Bid by submitting a written notice to the Procurement Division. The notice must be received in the Procurement Division prior to the Due Date and Time for receiving Bids. A copy of the request shall be retained, and the unopened Bid returned to the Bidder; or
- b. After the Bids are opened but before a contract is signed, Bidder alleges a material mistake of fact if:
 - i. The mistake is clearly evident in the solicitation document; or
 - ii. Bidder submits evidence which clearly and convincingly demonstrates that a mistake was made in the Bid. Request to withdraw a Bid must be in writing and approved by the Procurement Official.

A.17 IRREVOCABLE OFFER

Any Bid may be withdrawn up until the Due Date and Time. Any Bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of ninety (90) days to provide the goods or services set forth in this IFBC or until one or more of the Bids have been duly accepted by County, whichever occurs first.

A.18 RESERVED RIGHTS

County reserves the right to accept or reject any and/or all bids, to waive irregularities and minor technicalities, and to request resubmission. Also, County reserves the right to accept all or any part of the bid and to increase or decrease quantities to meet additional or reduced requirements of County. Any sole response received by the first submission date may or may not be rejected by County depending on available competition and current needs of County. For all items combined, the bid of the lowest, responsive, responsible bidder will be accepted, unless all bids are rejected.

The lowest, responsible bidder shall mean that Bidder who makes the lowest Bid to sell goods and/or services of a quality which meets or exceeds the quality of goods and/or services set forth in the IFBC documents or otherwise required by County.

To be responsive, a Bidder shall submit a Bid which conforms in all material respects to the requirements set forth in the IFBC.

To be a responsible bidder, the bidder shall have the capability in all respects to perform fully the bid requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, equipment, and credit which will assure good faith performance.

Also, County reserves the right to make such investigation as it deems necessary to determine the ability of any bidder to furnish the service requested. Information County deems necessary to make this determination shall be provided by the bidder. Such information may include, but shall not be limited to current financial statements, verification of availability of equipment and personnel, and past performance records.

A.19 APPLICABLE LAWS

Bidder must be authorized to transact business in the State of Florida. All applicable laws and regulations of the State of Florida and ordinances and regulations of Manatee County will apply to any resulting Agreement. Any involvement with the Manatee County Procurement Division shall be in accordance with the Manatee County Procurement Ordinance as amended.

A.20 COLLUSION

By submitting a bid in response to this IFBC, Bidder certifies that it has not divulged, discussed or compared its bid with any other bidder, and has not colluded with any other bidder or parties to this bid whatsoever. Further, Bidder, and in the case of a joint bid each party thereto, certifies as to their own organization, that in connection with this IFBC that:

- a. All prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices and/or cost data, with any other bidder or with any competitor;
- b. All prices and/or cost data quoted for this bid have not been knowingly disclosed by the Bidder and will not knowingly be disclosed by the Bidder, prior to the scheduled opening, directly or indirectly to any other bidder or to any competitor;
- c. No attempt has been made, or will be made, by Bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition;
- d. The only person or persons interested in this bid is/are named in Bidder's Bid and that no person other than those identified has any interest in the Bid or in the resulting Agreement to be entered into.
- e. No person or agency has been employed or retained to solicit or secure the resulting Agreement upon an agreement or understanding or a commission, percentage, brokerage, or contingent fee except bona fide employees or established commercial agencies maintained by Bidder for purpose of doing business.

A.21 CODE OF ETHICS

With respect to this and any bid, if a Bidder violates, directly or indirectly, the ethics provisions of the Manatee County Procurement Code and/or Florida criminal or civil laws related to public procurement, including but not limited to Florida Statutes Chapter 112, Part II, Code of Ethics for Public Officers and Employees, such Bidder will be ineligible for award to perform the work described in this IFBC, and may be disqualified from submitting on any future quote or bid requests to supply goods or services to Manatee County. By submitting a bid, the Bidder represents to County that all statements made, and materials submitted are truthful, with no relevant facts withheld.

A.22 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime, as that term is defined in Section 287.133, Florida Statutes, may not submit a bid to provide any goods or services to a public entity; may not submit a bid with a public entity for the construction or repair of a public building or public work; may not submit bids on leases of real property to a public entity; may not be awarded or perform Work as a contractor, supplier, Subcontractor, or consultant under an agreement with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO for a period of thirty-six (36) months following the date of being placed on the convicted list.

In addition, the Manatee County Code of Laws prohibits the award of any bid to any person or entity who/which has, within the past five (5) years, been convicted of, or admitted to in court or sworn to under oath, a public entity crime or of any environmental law that, in the reasonable opinion of the Procurement Official, establishes reasonable grounds to believe the person or business entity will not conduct business in a responsible matter.

To ensure compliance with the foregoing, the Code requires all persons or entities desiring to do business with County to execute and file with the Purchasing Official an affidavit, executed under the pain and penalties of perjury, confirming that person, entity and any person(s) affiliated with the entity, does not have such a record and is therefore eligible to seek and be awarded business with County. In the case of a business entity other than a partnership or a corporation, such affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, such affidavit shall be executed by the general partner(s). A Public Contracting and Environmental Crimes Certification form is attached herein for this purpose.

A.23 SCRUTINIZED COMPANIES

Florida Statutes § 287.135, as amended from time to time, may contain limitations on the part of a company to conduct business with the County. Submission of a response to this solicitation shall be subject to all procedural requirements contained within that statute including the submission of any required certification of eligibility to contract with the County. It shall be the responsibility of the company responding to this solicitation to concurrently review the current version of the statute and ensure it is compliant. To the extent a certification is required, it shall be provided on the form located at Appendix F *Vendor Certification Regarding Scrutinized Companies Lists*.

A.24 AGREEMENT

The successful Bidder will be required to execute the Agreement, a sample of which is attached hereto and made a part hereof. The County will transmit the Agreement to the successful Bidder for execution. The successful Bidder agrees to deliver the required number of duly executed copies of the Agreement, with any other required documents, to the County within ten calendar days of receipt.

A.25 LEGAL NAME

Bidders shall clearly indicate the full legal name, including any d/b/a, address, email address, and telephone number on the Bid Form. Bid Forms shall be signed above the typed or printed name and title of the signer. The signer must be an official of the organization and have the authority to bind the bidder to the submitted bid.

When bidder is a partnership, the Bid Form shall be signed in the name of the firm and by all partners required under the terms of the partnership agreement. When a corporation is a bidder, the authorized corporate officers shall sign.

Bidders who are corporations or limited partnerships shall provide a certified copy of their permit to transact business in the State of Florida, preferably along with the Bid Form, or within forty-eight (48) hours after request by County.

When submitting a bid as a joint venture, it must have filed paper documents with the Division of Profession's Construction Industry Licensing Board prior to submitting a bid.

A.26 DISCOUNTS

All discounts must be incorporated in the prices contained in the bid and not shown separately. Unless otherwise specified in this IFBC, pricing must be all inclusive, including delivery costs. The prices indicated on the Pricing Form shall be the prices used in determining award.

A.27 TAXES

Manatee County is exempt from Federal Excise and State Sales Taxes. (F.E.T. Cert. No. 59-78-0089K; Florida Sales Tax Exempt Cert. No. 85-8012622206C-6). Therefore, the Bidder is prohibited from delineating a separate line item in its bid for any sales or service taxes.

The successful Bidder will be responsible for the payment of taxes of any kind, including but not limited to sales, consumer, use, and other similar taxes payable on account of the work performed and/or materials furnished under the award in accordance with all applicable laws and regulations.

A.28 QUALITY

Unless otherwise specifically provided in the IFBC documents, all goods provided shall be new, the latest make or model, of the best quality, of the highest grade of workmanship, and of the most suitable for the purpose intended.

Unless otherwise specifically provided in the IFBC documents, reference to any equipment, material, article or patented process, by trade name, brand name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition.

A.29 AUTHORIZED PRODUCT REPRESENTATION

Bidder, by virtue of submitting the name and specifications of a manufacturer's product, will be required to furnish the named manufacturer's product. Failure to do so may, in the County's sole discretion, be deemed a material breach of the resulting agreement and shall constitute grounds for County's immediate termination of the resulting agreement.

A.30 ROYALTIES AND PATENTS

The successful Bidder shall pay all royalties and license fees for equipment or processes in conjunction with the equipment and/or services being furnished. Successful Bidder shall defend all suits or claims for infringement of any patent, trademark or copyright, and shall save County harmless from loss on account thereof, including costs and attorney's fees.

A.31 AMERICANS WITH DISABILITIES ACT

Manatee County does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of County's functions including one's access to participation, employment, or treatment in its programs or activities. Anyone requiring reasonable accommodation for an information conference or bid opening should contact the person named on the cover page of this document at least twenty-four (24) hours in advance of either activity.

A.32 EQUAL EMPLOYMENT OPPORTUNITY

In accordance with Title VI of the Civil Rights Act of 1964, Title 15, Part 8 of the Code of Federal Regulations and the Civil Rights Act of 1992, Manatee County hereby notifies all Bidders that it will affirmatively ensure minority business enterprises are afforded full opportunity to participate in response to this IFBC and will not be discriminated against on the grounds of race, color, national origin, religion, sex, age, handicap, or marital status in consideration of award.

A.33 MINORITY AND/OR DISADVANTAGED BUSINESS ENTERPRISES

The State of Florida Office of Supplier Diversity provides the certification process and maintains the database of certified MBE/DBE firms. Additional information may be obtained at https://www.dms.myflorida.com/agency_administration/office_of_supplier_diversity_osd or by calling (850) 487-0915.

A.34 DELIVERY

Unless otherwise specified, all prices shall include all delivery cost (FOB Destination).

A.35 MATHEMATICAL ERRORS

- a. Bid pricing forms without imbedded mathematical formulas: In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s) the extension totals will prevail. In the event the dollar amount for contract contingency is omitted, it will be added to the total price of the Bid.
- b. Bid pricing forms with imbedded mathematical formulas: Interactive bid pricing forms that contain mathematical formulas may be provided to automate lengthy and complex bid forms. In the event bid pricing forms with imbedded formulas are used and a multiplication/extension error(s) is discovered in the formula, the unit price entered by the Bidder shall prevail.
- c. Bidder shall assume the responsibility and accuracy of the information input in the bid pricing form and therefore shall verify that the calculations are correct before submitting its Bid.
- d. Regardless of the type of bid pricing form used, all Bids shall be reviewed mathematically by the County using these standards.

A.36 SUBCONTRACTORS

The successful bidder will obtain prior written approval from the County for any subcontractor(s) and the work each will perform. A subcontractor is defined as any entity performing work within the scope of the project who is not an employee of the successful Bidder.

Bidders subcontracting any portion of the work shall include a list of subcontractors along with their bid. The list shall include: name and address of subcontractor, type of work to be performed and the percent of the contract amount to be subcontracted.

A.37 E-Verify

Prior to the employment of any person under this contract, the successful Bidder shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of (a) all persons employed during the contract term by the successful Bidder to perform employment duties within Florida and (b) all persons, including subcontractors, assigned by the successful Bidder to perform work pursuant to the contract with Manatee County. For more information on this process, please refer to United States Citizenship and Immigration Service site at: <http://www.uscis.gov/>.

Only those individuals determined eligible to work in the United States shall be employed under this contract.

By submission of a bid in response to this IFBC, the successful Bidder commits that all employees and subcontractors will undergo e-verification before placement on this contract.

The successful Bidder shall maintain sole responsibility for the actions of its employees and subcontractors. For the life of the contract, all employees and new employees brought in after contract award shall be verified under the same requirement stated above.

A.38 DISCLOSURE

Upon receipt, all inquiries and responses to inquiries related to this IFBC become "Public Records," and shall be subject to public disclosure consistent with Florida Statutes, Chapter 119.

Bids become subject to disclosure thirty (30) days after the opening or if a notice of intent to award decision is made earlier than this time as provided by Florida Statutes § 119.071(1)(b). No announcement or review of the bids shall be conducted at the public opening.

Based on the above, County will receive bids at the time and date stated and will make public at the opening the names of the business entities of all that submitted a bid.

If County rejects all bids and concurrently notices its intent to reissue the solicitation, the rejected bids are exempt from public disclosure until such time as County provides notice of an intended decision concerning the reissued solicitation or until County withdraws the reissued

solicitation. A bid is not exempt for longer than twelve (12) months after the initial notice rejecting all bids.

Pursuant to Florida Statutes 119.0701, to the extent successful Bidder is performing services on behalf of the County, successful Bidder must:

- a. Keep and maintain public records required by public agency to perform the service.
- b. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Florida Statutes, Chapter 119, or as otherwise provided by law.

- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the successful Bidder does not transfer the records to the public agency.
- d. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of contractor or keep and maintain public records required by the public agency to perform the service. If the successful Bidder transfers all public records to the public agency upon completion of the contract, the successful Bidder shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the successful Bidder keeps and maintains public records upon completion of the contract, the successful Bidder shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

IF THE SUCCESSFUL BIDDER HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE SUCCESSFUL BIDDER'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO ANY RESULTING CONTRACT, CONTACT COUNTY'S CUSTODIAN OF PUBLIC RECORDS AT:

Phone: (941) 742-5845

Email: debbie.scaccianoce@mymanatee.org

Mail: Manatee County BCC

Attn: Records Manager

1112 Manatee Ave W.

Bradenton, FL 34205.

A.39 LOCAL PREFERENCE

Local business is defined as a business legally authorized to engage in the sale of the goods and/or services, and which certifies within its Bid that for at least six (6) full months prior to the advertisement of this IFBC it has maintained a physical place of business in Manatee, Desoto, Hardee, Hillsborough, Pinellas or Sarasota County with at least one full-time employee at that location.

Local preference shall not apply to the following categories of agreements:

- a. Purchases or agreements which are funded, in whole or in part, by a governmental or other funding entity, where the terms and conditions governing the funds prohibit the preference.
- b. Any bid announcement which specifically provides that local preference, as set forth in this section, is suspended due to the unique nature of the goods or services sought, the existence of an emergency as found by either the County Commission or County Administrator, or where such suspension is, in the opinion of the County Attorney, required by law.
- c. For a competitive solicitation for construction services in which fifty percent (50%) or more of the cost will be paid from state.

- d. To qualify for local preference under this section, **a local business must certify to County** by completing an **“Affidavit as to Local Business Form,”** which is available for download at www.mymanatee.org/vendor. Click on “Affidavit for Local Business” to access and print the form. Complete, notarize, and mail the notarized original to the following address: Manatee County Procurement Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205.
- e. It is the responsibility of the bidder to ensure accuracy of the Affidavit as to Local Business and notify County of any changes affecting same.

A.40 VENDOR REGISTRATION

Registering your business will provide Manatee County a sourcing opportunity to identify suppliers of needed goods and services and identify local businesses. To register as a supplier with the County go to www.mymanatee.org/vendor. For assistance with supplier registration, call the Procurement Division main number at (941) 749-3014. Office hours are Monday – Friday, 8:00 A.M. to 5:00 P.M., excluding County holidays.

A link to Vendor Registration is listed on the Procurement Division’s web page at <http://www.mymanatee.org/home/government/departments/financial-management/purchasing.html>. Click on “Register as a Vendor”, then “Vendor Registration Form”. Registration is not mandatory to submit a Bid.

A.41 ENVIRONMENTAL SUSTAINABILITY

All bidders are encouraged to use as many environmentally preferable "green" products, materials, as supplies, as possible to promote a safe and healthy environment. Environmentally preferable are products or services that have a reduced adverse effect on the environment.

Bidder shall acknowledge in its Bid if Bidder has an environmental sustainability initiative. In addition, Bidder shall submit with its Bid a brief summary of Bidder’s environmental sustainability initiative. This information will be used as a determining factor in the award decision when all other factors, including local preference, are otherwise equal.

A.42 ePAYABLES

Manatee County Board of County Commissioners and the Manatee County Clerk of the Circuit Court have partnered to offer the ePayables program, which allows payments to be made to vendors via credit cards.

The Clerk of the Circuit Court will issue a unique credit card number to vendor after goods are delivered or services rendered, vendors submit invoices to the remit to address on the purchase order. When payments are authorized, an email notification is sent to the vendor. The email notification includes the invoice number(s), invoice date(s), and amount of payment. There is no cost for vendors to participate in this program; however, there may be a charge by the company that processes your credit card transactions.

If Bidder is interested in participating in this program, complete the ePayables Application attached herein and return the completed form via email to lori.bryan@manateeclerk.com.

A.43 BASIS OF AWARD

County will not make award to a Bidder who is delinquent in payment of any taxes, fees, fines, contractual debts, judgments, or any other debts due and owed to the County, or is in default on any contractual or regulatory obligation to the County. By submitting this solicitation response, Bidder attests that it is not delinquent in payment of any such debts due and owed to the County, nor is it in default on any contractual or regulatory obligation to the County. In the event the Bidder's statement is discovered to be false, bidder will be subject to suspension and/or debarment and the County may terminate any award it has with bidder.

Award shall be to the lowest, responsive, responsible bidder(s) meeting specifications which includes delivery time requirements, qualification requirements, and having the lowest total offer for requirements listed on the Bid Form for the Work as set forth in this IFBC. Bid prices shall include costs for furnishing all labor, equipment and/or materials for the completion of the Work to the County's satisfaction, in accordance with and in the manner set forth and described in the IFBC documents and within the prescribed time.

Multiple schedules for completion of Work shall be considered. Two bids shall be submitted and considered, Bid 'A' based on 360 calendar days completion time and Bid 'B' based on 390 calendar days completion time. County, at its sole discretion, shall select either Bid 'A' or Bid 'B', whichever is in the best interest of the County.

In evaluating Bids, County shall consider the qualifications of the Bidders; and if required, may also consider the qualifications of the subcontractors, suppliers, and other persons and organizations proposed. County may also consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work.

Whenever two or more responsive, responsible bids which are equal with respect to price and all other evaluation factors are received, the bid from the local business shall be given preference in award.

Whenever two or more responsive, responsible bids which are equal with respect to price are received, and both or neither of these bids are from a local business, the award shall be determined by a chance drawing, coin toss, or similar tie-breaking method conducted by the Procurement Division and open to the public.

Bidder acknowledges that County has, or may hire, others to perform work similar to or the same as that which is within the scope of work of this IFBC. In the event that the successful Bidder cannot meet the delivery time or availability requirements of materials, the County, at its sole discretion can obtain the goods and services from other sources.

A.44 SCOPE OF WORK

The successful Bidder shall furnish and install all materials, equipment and labor which is reasonably inferable and necessary for the proper completion of the Work specified in this IFBC, whether specifically indicated in the IFBC or not.

The successful Bidder shall furnish all shop drawings, work drawings, labor, materials, equipment, tools, services and incidentals necessary to complete all Work required by these Specifications.

The successful Bidder shall perform the Work complete, in place and ready for continuous service and shall include any repairs, replacements, and / or restoration required as a result of damages caused prior to acceptance by the County.

Phase II work consists of construction improvements to the dirt parking area to include, but not limited to, extending the parking area north from the southern cul-de-sac. An underdrain system has been designed to control groundwater and typical stormwater runoff. The underdrain material will be constructed under the parking area and discharge into an existing stormwater collection system under the entry access road.

A.45 COMPLETION OF WORK

The Work will be completed and ready for final inspection within the specified calendar days from the date the Contract Time commences to run. Completion time shall be based on Bid 'A' for 360 calendar days completion time or Bid 'B' based on 390 calendar days completion time at the County's sole discretion.

A.46 LIQUIDATED DAMAGES

If the successful Bidder fails to achieve substantial completion of the Work within the contract time and as otherwise required by the Agreement (to include not only the entire Work but any portion of the Work as set forth therein), the County shall be entitled to retain or recover from the successful Bidder, as liquidated damages and not as a penalty, the sum of \$2,876.00, per calendar day, commencing upon the first day following expiration of the contract time and continuing until the actual date of substantial completion.

Such liquidated damages are hereby agreed to be a reasonable estimate of damages the County will incur because of delayed completion of the Work. The County may deduct liquidated damages as described in this paragraph from any unpaid amounts then or thereafter due the successful bidder under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the successful bidder shall be payable to the County at the demand of the County, together with interest from the date of the demand at the maximum allowable rate.

A.47 CONTRACT CONTINGENCY WORK

Contract contingency is a monetary allowance used solely at County's discretion to handle unexpected conditions as required to satisfactorily complete the Work in accordance with the IFBC documents. A Field Directive must be issued by an authorized County representative to authorize use of contract contingency funds.

The percentage for contract contingency is listed on the Bid Form. Bidder shall enter the dollar amount for contract contingency based on the percentage of the total base bid. The total contract award will include contract contingency.

Appropriate uses of contract contingency include increases to existing bid item quantities that do not change the initial scope of Work, which may be directed by County staff; modification items not originally bid which were unforeseen yet necessary during the Work to provide a safe, complete Project and that do not change the initial scope of Work; and unanticipated conflicts and/or design changes required during construction which are necessary to provide a safe, complete Project and that do not change the initial Scope of Work.

Inappropriate uses of contract contingency include anything that changes the initial scope of Work, including the Contract Sum and Contract Time, and adding bid items not previously contemplated that change the initial scope of Work.

A.48 LICENSES AND PERMITS

The successful Bidder shall be solely responsible for obtaining all necessary license and permit fees, including, but not limited to, all license fees, permit fees, impact fees, or inspection fees, and responsible for the costs of such fees. Successful Bidder is solely responsible for ensuring all work complies with all Federal, State, local, and Manatee County ordinances, orders, codes, laws, rules, regulations, directives, and guidelines.

A.49 PROTEST

Any actual bidder, proposer, or contractor who is aggrieved in connection with the notice of intent to award of a contract with a value greater than \$250,000 where such grievance is asserted to be the result of a violation of the requirements of the Manatee County Procurement Code or any applicable provision of law by the officers, agents, or employees of the County, may file a protest to the Procurement Official.

Protest must be in writing and delivered via email at purchasing@mymanatee.org or by hand delivery to the Procurement Division at 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205 by 5:00 p.m. on the fifth business day following the date of posting of the Notice of Intent to Award on the County website. There is no stay of the procurement process during a protest. The Procurement Official shall have the authority to settle and resolve a protest concerning the intended award of a contract.

For additional information regarding the County protest process, visit the Procurement Division webpage on the County website.

A.50 ACCESSIBILITY

The County is committed to making its documents and information technologies accessible to individuals with disabilities by meeting the requirements of Section 504 of the Rehabilitation Act and best practices (w3C WCAG 2). **For assistance with accessibility regarding this solicitation, contact the Manatee County Procurement Division via email at purchasing@mymanatee.org or by phone at 941-748-4501 X3014.**

Successful Bidder shall ensure all its electronic information, documents, applications, reports, and deliverables required under this Agreement are in a format that meets the requirements of Section 504 of the Rehabilitation Act and best practices (w3C WCAG 2).

Where not fully compliant with these requirements and best practices, Successful Bidder shall provide clear points of contact for each document and information technology to direct users in how to obtain alternate formats. Further, successful Bidder shall develop accommodation strategies for those non-compliant resources and implement strategies to resolve the discrepancies.

A.51 SOLICITATION SCHEDULE

The following schedule has been established for this Solicitation process. Refer to the County’s website (www.mymanatee.org > Business > *Bids & Proposals*) for meeting locations and updated information pertaining to any revisions to this schedule.

Scheduled Item	Scheduled Date
Question and Clarification Deadline	August 26, 2020
Final Addendum Posted	September 3, 2020
Bid Response Due Date and Time	September 10, 2020, 3:00 PM, ET
Due Diligence Review Completed	September 2020
Projected Award	September 2020

NOTE: Any statements contained in the Scope of Work, Bid Summary, Construction Agreement, General Conditions of the Construction Agreement and/or Exhibits which vary from the information in Section A, Information for Bidders, shall have precedence over the Information for Bidders.

END OF SECTION A

SECTION B, BID FORMS

(To be completed and returned with Bid)

APPENDIX A, MINIMUM QUALIFICATIONS

APPENDIX A, MINIMUM QUALIFICATIONS

IFBC No. 20-TA003443AJ

Bidders must submit the information and documentation requested in this Attachment that confirms Bidder meets the following minimum qualification requirement(s):

- 2.01** Must have been registered with the State of Florida, Division of Corporations to do business in Florida.

No documentation is required. The County will verify registration.

- 2.02** Bidder, or its representative(s), has made an inspection of the construction site for work specified in this IFBC on or after the date of advertisement of this IFBC and prior to the Due Date and Time.

Bidder must submit a statement on company letterhead and signed by an authorized official of Bidder that Bidder, or its representative(s), has made an inspection of the construction site, listing the date of the inspection and the individuals, by name, who conducted the inspection.

- 2.03** Bidder, or its subcontractor, must be a Florida Department of Transportation (FDOT) Prequalified Contractor in the category of 'Drainage' for a period of at least three consecutive years since August 1, 2017. Pre-qualification must be current and valid through the Due Date for submission of bids for this IFBC.

Provide the name under which the Pre-qualified Contractor in Drainage designation is registered with the FDOT. The County will verify pre-qualification in the FDOT database.

- 2.04** Must have possessed a General Contractor's license issued by the Florida Department of Business and Professional Regulation for a period of at least three consecutive years since August 1, 2017. License must be current and valid through the Due Date for submission of bids for this IFBC.

Provide a copy of Bidder's General Contractor's license issued by the Florida Department of Business and Professional Regulation and documentation confirming Bidder has been licensed and/or certified for the period of August 1, 2017 through the date of submission of the Bid.

- 2.05** Bidder or its subcontractor has provided drainage and construction services for at least three clients since August 1, 2017 that included the following component: form and pour pervious concrete.

Provide the following information for the three qualifying projects.

- A. **Name of client**
- B. **Project name**
- C. **Location (City/State)**
- D. **Client contact name**
- E. **Contact phone**

- F. **Contact email**
- G. **Service dates (Start/End)**

2.06 Bidder's or its subcontractor noted in Item 2.04 above must have at least one employee who holds a current, valid Pervious Concrete Craftsman certification by the National Ready-Mix Concrete Association (NRMCA).

Provide the name of the qualifying employee, indicate if they are an employee of Bidder or Bidder's subcontractor, and a copy of the qualifying employee's Pervious Concrete Craftsman certificate issued by the NRMCA.

NOTE: If a subcontractor is used to meet the Pervious Concrete certification qualification requirement above, a different Pervious Concrete Subcontractor cannot be used without prior approval from the County.

2.07 Bidder, on the day the bid is submitted, has a certified or registered Qualifying Agent, as required by Section 489.119, Florida Statutes, and that Qualifying Agent has been the same Qualifying Agent of Bidder for a period of at least three consecutive years, since August 1, 2017.

Submit a copy of Bidder's Qualifying Agent's registration or certification along with supporting documentation confirming Qualifying Agent has been the Qualifying Agent for Bidder for three consecutive years, since August 1, 2017.

2.08 Bidder is not on the Florida Department of Management Services Suspended, Debarred, Convicted Vendor Lists.

No documentation is required. The County will verify

2.09 If Bidder is submitting as a joint venture must file the required documents with the Florida Department of Business and Professional Regulation as required by Florida Statute Section 489.119, prior to the Due Date and Time.

If Bidder is not a joint venture, provide a statement to that effect. If Bidder is a joint venture, provide a copy of Bidder's approved filing with the Florida Department of Business and Professional Regulation.

2.10 Bidder has no reported conflict of interests in relation to this IFBC.

Submit a fully completed copy of Appendix J. If applicable, on a separate page disclose the name of any officer, director or agent who is also an employee of the County. Disclose the name of any County employee who owns, directly or indirectly, any interest in the Bidder's firm or any of its branches. If no conflicts of interests are present, Bidder must submit a statement to that affect.

APPENDIX B, BIDDER'S QUESTIONNAIRE

Bidder must fully complete and return this form with its Bid. Bidder warrants the truth and accuracy of all statements and answers herein contained. (Attach additional pages if necessary.)

THIS QUESTIONNAIRE MUST BE COMPLETED AND SUBMITTED WITH YOUR BID

1. Contact Information:

FEIN #: _____
License #: _____
License Issued to: _____
Date License Issued (MM/DD/YR): _____
Company Name: _____
Physical Address: _____
City: _____ State of Incorporation: _____ Zip Code: _____
Phone Number: () _____ Fax Number: () _____
Email address: _____

2. Bidding as: an individual __; a partnership __; a corporation __; a joint venture __

3. If a partnership, list names and addresses of partners; if a corporation, list names of officers, directors, shareholders, and state of incorporation; if joint venture, list names and address of ventures' and the same if any venture are a corporation for each such corporation, partnership, or joint venture:

4. Bidder is authorized to do business in the State of Florida: Yes No

For how many years? _____

5. Your organization has been in business (under this firm's name) as a

Is this firm in bankruptcy? _____

6. Attach a list of projects where this specific type of Work was performed.

BIDDER: _____

7. Is this firm currently contemplating or in litigation? Provide summary details.

8. Have you ever been assessed liquidated damages under a contract during the past five (5) years? If so, state when, where (contact name, address and phone number) and why.

9. Have you ever failed to complete Work awarded to you? Or failed to complete projects within contract time? If so, state when, where (contact name, address, phone number) and why.

10. Have you ever been debarred or prohibited from providing a bid to a governmental entity? If yes, name the entity and describe the circumstances.

11. Will you subcontract any part of this Work? If so, describe which portion(s) and to whom.

12. If any part of work will be subcontracted, list MBE/DBE/WBE/VETERAN to be utilized. Include the estimated dollar amount of the portion of Work each will perform.

BIDDER: _____

13. What equipment do you own to accomplish this Work? (A listing may be attached)

14. What equipment will you purchase/rent for the Work? (Specify which)

15. If applicable to the Work for this IFBC, Drilling Supervisor Qualifications: Contractor shall provide a boring specialist who shall remain on the project site during the entirety of the directional boring operation. This includes, but is not limited to, drilling fluid preparation, seaming, boring and pulling. The boring specialist shall have a minimum of five (5) years' experience in supervising directional bores of similar nature, diameter, materials and lengths. (Reference: Specification Section 02619, Horizontal Directional Drilling).
Provide the contact information for a minimum of three (3) projects wherein the boring specialist has performed this type of work, diameter, materials and lengths.

Boring specialist's name: _____

Boring specialist's years of experience in supervising directional bores _____

Provide contact name, and contact number for projects:

16. If applicable to the Work for this IFBC, Pipe Fusion Qualifications: All boring and fusing equipment shall be certified for operation. The Contractor responsible for thermal butt fusing pipe and fittings shall have manufacturer certification for performing such work or a minimum of five (5) years of experience performing this type of work.

Thermal butt fusing pipe and fittings contractor or subcontractor's name: _____

Attach a copy of contractor's/subcontractor's manufacturer certification to this Questionnaire

OR

Provide contractor's/subcontractor's years of experience in thermal butt fusing pipe and fittings _____

If manufacturer certification is not provided, include contact name, and contact number for projects that confirms five years of experience:

BIDDER: _____

17. If applicable to the Work for this IFB, Pipe Bursting Qualifications: The Contractor shall be certified by the manufacturer of the pipe bursting system that they are fully trained licensed installer of the manufacturer's pipe bursting system. Contractor shall provide a letter to the County documenting this

requirement. (Reference: Specification Section 02619A, Pipe Bursting (PB) of Existing Mains).

18. List the following regarding the surety which is providing the bond(s):

Surety's Name: _____

Address: _____

Name, address, phone number and email of surety's resident agent for service of process in Florida:

Agent's Name: _____

Address: _____

Phone: _____

Email: _____

19. Is Bidder a local business as defined in Section A.38, Local Preference?

Yes

No

If yes, by signing below Bidder certifies that for at least six months prior to the advertisement date of this IFB it has maintained a physical place of business in Manatee, Desoto, Hardee, Hillsborough, Pinellas or Sarasota counties with at least one full-time employee at that location.

BIDDER: _____

BY: _____

PRINTED NAME: _____

TITLE/DATE: _____

PHYSICAL ADDRESS OF QUALIFYING LOCAL LOCATION: _____

NAME OF QUALIFYING EMPLOYEE AT LOCAL LOCATION: _____

20. Confirm if Bidder has an environmental sustainability initiative as defined in Section A.41.

Yes No

If yes, submit a brief summary (2-3 paragraphs) of the environmental sustainability initiative.

BIDDER: _____

APPENDIX C, ENVIRONMENTAL CRIMES CERTIFICATION

SWORN STATEMENT PURSUANT TO ARTICLE V, MANATEE COUNTY PROCUREMENT CODE

Bidder must fully complete and return this form with its Bid. This form must be signed and sworn to in the presence of a notary public or other official authorized to administer oaths.

This sworn statement is submitted to the Manatee County Board of County Commissioners by

_____ [Print individual's name and title]

for _____ [Print name of entity submitting sworn statement]

whose business address is _____

and (if applicable) its Federal Employer Identification Number (FEIN) is _____. If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement: _____.

I understand that no person or entity shall be awarded or receive an Owner’s Agreement for public improvements, procurement of goods or services (including professional services) or an Owner’s lease, franchise, concession or management agreement, or shall receive a grant of Owner’s monies unless such person or entity has submitted a written certification to Owner that it has not:

(1) been convicted of bribery or attempting to bribe a public officer or employee of Manatee County, the State of Florida, or any other public entity, including, but not limited to the Government of the United States, any state, or any local government authority in the United States, in that officer's or employee's official capacity; or

(2) been convicted of an agreement or collusion among bidders or prospective bidders in restraint of freedom of competition, by agreement to bid a fixed price, or otherwise; or

(3) been convicted of a violation of an environmental law that, in the sole opinion of Owner’s Purchasing Official, reflects negatively upon the ability of the person or entity to conduct business in a responsible manner; or

(4) made an admission of guilt of such conduct described in items (1), (2) or (3) above, which is a matter of record, but has not been prosecuted for such conduct, or has made an admission of guilt of such conduct, which is a matter of record, pursuant to formal prosecution. An admission of guilt shall be construed to include a plea of nolo contendere; or

(5) where an officer, official, agent or employee of a business entity has been convicted of or has admitted guilt to any of the crimes set forth above on behalf of such an entity and pursuant to the direction or authorization of an official thereof (including the person committing the offense, if he is an official of the business entity), the business shall be chargeable with the conduct herein above set forth. A business entity shall be chargeable with the conduct of an affiliated entity, whether wholly owned, partially owned, or one which has common ownership or a common Board of Directors. For purposes of this Form, business entities are affiliated if, directly or indirectly, one business entity controls or has the power to control another business entity, or if an individual or group of individuals controls or has the power to control both entities. Indicia of control shall include, without limitation, interlocking management or ownership, identity of interests among family members, shared organization of a business entity following the ineligibility of a business entity under this

Article, or using substantially the same management, ownership or principles as the ineligible entity.
(Continued)

Any person or entity who claims that this Article is inapplicable to him/her/it because a conviction or judgment has been reversed by a court of competent jurisdiction shall prove the same with documentation satisfactory to Owner's Purchasing Official. Upon presentation of such satisfactory proof, the person or entity shall be allowed to contract with Owner.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY AGREEMENT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR COUNTY ADMINISTRATOR DETERMINES THAT **SUCH** PERSON OR ENTITY HAS MADE FALSE CERTIFICATION.

[Signature]

STATE OF _____
COUNTY OF _____

Sworn to and subscribed before me this ____ day of _____, 20____ by _____

Who is personally known / has produced _____ as identification
[Type of identification]

My commission expires _____

Notary Public Signature

[Print, type or stamp Commissioned name of Notary Public]

Signatory Requirement - In the case of a business entity other than a partnership or a corporation, this affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, this affidavit shall be executed by the general partner(s). In the case of a corporation, this affidavit shall be executed by the corporate president.

APPENDIX D, FLORIDA TRENCH SAFETY ACT

Bidder must fully complete and return this form with its Bid. This form must be signed in the presence of a notary public or by an officer authorized to administer oaths.

1. This Sworn Statement is submitted with **IFBC No. 20-TA003443AJ**
2. This Sworn Statement is submitted by _____ whose business address is _____ and, if applicable, its Federal Employer Identification Number (FEIN) is _____. If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement _____.
3. Name of individual signing this Sworn Statement is: _____
Whose relationship to the above entity is: _____.
4. The Trench Safety Standards that will be in effect during the construction of this project shall include, but are not limited to: Laws of Florida, Chapters 90-96, TRENCH SAFETY ACT, and OSHA RULES AND REGULATIONS 29 CFR 1926.650 Subpart P, effective October 1, 1990.
5. The undersigned assures that the entity will comply with the applicable Trench Safety Standards and agrees to indemnify and hold harmless the County and Engineer of Record, and any of their agents or employees from any claims arising from the failure to comply with said standard.

6. The undersigned has appropriated the following costs for compliance with the applicable standards:

Trench Safety Measure (Description)	Units of MeasureUnit (LF, SY)	Quantity	Unit Cost	Extended Cost
a. _____	_____	_____	\$ _____	_____
b. _____	_____	_____	\$ _____	_____
c. _____	_____	_____	\$ _____	_____
d. _____	_____	_____	\$ _____	_____

7. The undersigned intends to comply with these standards by instituting the following procedures:

THE UNDERSIGNED, in submitting this bid, represents that they have reviewed and considered all available geotechnical information and made such other investigations and tests as they may deem necessary to adequately design the trench safety system(s) to be utilized on this project.

(Authorized signature / Title)

SWORN to and subscribed before me this _____ day of _____, 20____.
(Impress official seal)

Notary Public, State of Florida: _____

My commission expires: _____



Angelina M. Colonneso

CLERK OF THE CIRCUIT COURT AND COMPTROLLER OF MANATEE COUNTY

1115 Manatee Avenue West, Bradenton, Florida 34205 - Phone (941) 749-1800 Fax (941) 741-4082, P.O. Box 25400, Bradenton, Florida 34206 - www.manateeclerk.com

Bidder must fully complete and return this form with its Bid.

APPENDIX E: ePAYABLES APPLICATION

Company name _____

Contact person _____

Phone number _____

Email Address _____

FINANCE USE ONLY

Open orders: YES or NO

PEID _____

CREATE DATE _____

CONFIRMED WITH

Name and phone number

IFAS _____

BANK _____

INITIALS _____

Return completed form to:
Via email to: lori.bryan@manateeclerk.com
Via fax to: (941) 741-4011
Via mail:
PO Box 1000
Bradenton, FL 34206

Revised: September 30, 2015

“Pride in Service with a Vision to the Future”

Clerk of the Circuit Court – Clerk of Board of County Commissioners – County Comptroller – Auditor and Recorder

APPENDIX F, SCRUTINIZED COMPANY CERTIFICATION

This certification is required pursuant to Florida State Statute Section 287.135.

As of July 1, 2011, a company that, at the time of bidding or submitting a proposal for a new contract or renewal of an existing contract, is on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List is ineligible for, and may not bid on, submit a proposal for, or enter into or renew a contract with an agency or local governmental entity for goods or services of \$1 million or more.

Bidder must fully complete and return this form with its Bid.

Company _____ FID or EIN No. _____

Address _____

City _____ State _____ Zip _____

I, _____, as a representative of _____
certify and affirm that this company is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List.

Signature

Title

Printed Name

Date

APPENDIX G
MANATEE COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA
INDEMNITY AND HOLD HARMLESS
 IFBC No. 20-TA003443AJ

Bidder must fully complete and return this form with its Bid.

Bidder shall defend, indemnify and hold harmless the County and all of the County’s officers, agents, employees, and volunteers from and against all claims, liability, loss and expense, including reasonable costs, collection expenses, attorneys’ fees, and court costs which may arise because of the negligence (whether active or passive), misconduct, or other fault, in whole or in part (whether joint, concurrent, or contributing), of Respondent, its officers, employees, representatives and agents in performance or non-performance of its obligations under the Contract/Agreement. Bidder recognizes the broad nature of this indemnification and hold harmless clause, as well as the provision of a legal defense to the County when necessary, and voluntarily makes this covenant and expressly acknowledges the receipt of such good and valuable consideration provided by the County in support of these indemnification, legal defense and hold harmless contractual obligations in accordance with the laws of the State of Florida. This clause shall survive the termination of this Contract/Agreement. Compliance with any insurance requirements required elsewhere within this Contract/Agreement shall not relieve Bidder of its liability and obligation to defend, hold harmless and indemnify the County as set forth in this article of the Contract/Agreement.

Nothing herein shall be construed to extend the County’s liability beyond that provided in section 768.28, Florida Statutes.

PROJECT NUMBER AND/OR NAME	
INSURANCE AGENT	
RESPONDENT SIGNATURE	DATE

Acknowledgement:

STATE OF _____ COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20____ by _____ [FULL LEGAL NAME], who is personally known to me / has produced _____ as identification.

Notary Signature _____

Print Name _____

APPENDIX H, INSURANCE STATEMENT

Bidder must fully complete and return this form with its Bid.

THE UNDERSIGNED has read and understands the insurance requirements of this IFBC applicable to any contract resulting from this solicitation and shall provide the insurances required by this Appendix within ten (10) days from the date of Notice of Intent to Award.

Bidder Name: _____ Date: _____

Signature
(Authorized
Official): _____

Printed Name/Title: _____

Insurance Agency: _____

Agent Name: _____ Agent Phone: _____

APPENDIX I, ACKNOWLEDGMENT OF ADDENDA

The undersigned acknowledges receipt of the following addenda:

Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:
Addendum No. _____	Date Received:

Print or type Bidder's information below:

_____	_____
Name of Bidder	Telephone Number
_____	_____
Street Address	City/State/Zip
_____	_____
Email Address	
_____	_____
Print Name & Title of Authorized Officer	Signature of Authorized Official Date

APPENDIX J, AFFIDAVIT OF NO CONFLICT

COUNTY OF _____
STATE OF _____

BEFORE ME, the undersigned authority, this ____ day of _____, 20____ personally appeared, _____, a principal with full authority to bind _____ (hereinafter the "Affiant"), who being first duly sworn, deposes and says:

(a) is not currently engaged or will not become engaged in any obligations, undertakings or contracts that will require the Affiant to maintain an adversarial role against the County or that will impair or influence the advice, recommendations or quality of work provided to the County; and

(b) has provided full disclosure of all potentially conflicting contractual relationships and full disclosure of contractual relationships deemed to raise a question of conflict(s); and

(c) has provided full disclosure of prior work history and qualifications that may be deemed to raise possible question of conflict(s).

Affiant makes this affidavit for the purpose of inducing Manatee County, a political subdivision of the State of Florida, to enter into an Agreement for Conquina Beach Drainage Improvements Phase II.

If applicable, on a separate page Bidder shall disclose the name of any officer, director or agent of Bidder who is also an employee of the County and the name of any County employee who owns, directly or indirectly, any interest in the Bidder's firm or any of its branches. If no conflicts of interest are present, submit a statement to that affect.

Signature

Print Name

SUBSCRIBED to and sworn before me this ____ day of _____, 20__.

[Notary Seal]

Notary Public

My commission expires: _____

Notary Signature

Print Name

Personally known OR produced identification. Type of identification produced _____
_____.

APPENDIX K, BID PRICING FORM

IFBC No. 20-TA003443AJ, COQUINA BEACH DRAINAGE IMPROVEMENTS PHASE II

Total Bid Price/Offer for Bid "A": \$ _____ Complete. Based on a completion time of 360 calendar days.

Total Bid Price/Offer for Bid "B": \$ _____ Complete. Based on a completion time of 390 calendar days.

We, the undersigned, hereby declare that we have carefully reviewed the IFB Documents in their entirety and with full knowledge and understanding of the Bid information and all its requirements, submit this Bid, which is complete in meeting each specification, term, and condition contained therein.

As Bidder, we understand that the IFB documents, including but not limited to, all specifications, terms, and conditions shall be made a part of any resulting Agreement between County and the successful Bidder. Failure by successful Bidder to comply with such specifications, terms and conditions shall result in Agreement default, whereupon, the defaulting successful Bidder shall be required to pay for all re-procurement costs, damages, and attorney fees as incurred by County, and agrees to forfeit its bid bond.

Authorized Signature(s): _____

**Name and Title of Above
Signer(s):** _____

Date: _____

BID FORM A
IFBC No. 20-TA003443AJ
COQUINA BEACH DRAINAGE IMPROVEMENTS
BID "A" Based on Completion Time of 360 Calendar Days

COQUINA BEACH DRAINAGE IMPROVEMENTS PHASE 2						
LINE NO.	ITEM NO.	DESCRIPTION	EST. QTY	U/M	ENGINEER'S ESTIMATE UNIT PRICE	EXTENDED PRICE
PARKING LOT						
1.	101-1	MOBILIZATION	1	LS		
2.	102-1	MAINTENANCE OF TRAFFIC	1	LS		
3.	104-10-3	SEDIMENT BARRIER	4,881	LF		
4.	104-18	INLET PROTECTION SYSTEM	2	EA		
5.	110-2-1	CLEARING & GRUBBING	9	AC		
6.	120-6	EMBANKMENT	490	CY		
7.	GR-1	EMBEDDED RING INFILTRATION KIT (ERIK)	11	EA		
8.	GR-2	8" PERVIOUS CONCRETE	28,656	SY		
9.	GR-5	RECYCLED MATERIAL WHEEL STOP	713	EA		
10.	425-1-541	INLETS, DITCH BOTTOM, TYPE D, <10' (Relocate)	1	EA		
11.	425-2-041	MANHOLES, P-7, <10	1	EA		
12.	430-175-124	PIPE CULVERT, RCP, 24" STORM	23	LF		
13.	440-1-10	UNDERDRAIN TYPE II, 6", W BOLD AND GOLD MEDIA	5,034	LF		
14.	440-73-2	UNDERDRAIN SOLID ADS 6" PIPE	288	LF		
15.	520-2-05	CONCRETE CURB, 12" Wide Ribbon Curb (HEADER CURB), 8"	12,611	LF		
16.	522-1	SIDEWALK CONCRETE 4" MANATEE COUNTY (5' WIDE)	27	SY		
17.	527-2	DETECTABLE WARNINGS	20	SF		
18.	550-60-511	RELOCATE SWING GATES	2	EA		
19.	700-1-50	SINGLE POST SIGN, RELOCATE	16	EA		
20.	711-11-101	THERMOPLASTIC, STANDARD, WHITE, SOLID, 6"	13,121	LF		
21.	711-11-401	THERMOPLASTIC, STANDARD, BLUE, SOLID, 6"	148	LF		
22.	711-11-460	THERMOPLASTIC, STANDARD, BLUE, MESSAGE OR SYMBOL	4	EA		
23.	TR-1	TREE REMOVAL (87)	1	LS		
24.	TR-2	TREE PLANTING WITH IRRIGATION (87)	1	LS		
25.	PK-1	RELOCATE BOLLARDS	896	EA		
Subtotal						
TOTAL BASE BID "A" BASED ON A COMPLETION TIME OF 360 CALENDAR DAYS						
CONTRACT CONTINGENCY (10% OF TOTAL BASE BID (Used only with County Approval))					10%	
TOTAL OFFER (Bid "A") WITH 10% CONTRACT CONTINGENCY(Based On A Completion Time Of 360 Calendar Days)						

Bidder Name: _____

Authorized Signature: _____

BID FORM B
IFBC No. 20-TA003443AJ
COQUINA BEACH DRAINAGE IMPROVEMENTS
BID "B" Based on Completion Time of 390 Calendar Days

COQUINA BEACH DRAINAGE IMPROVEMENTS PHASE 2						
LINE NO.	ITEM NO.	DESCRIPTION	EST. QTY	U/M	ENGINEER'S ESTIMATE UNIT PRICE	EXTENDED PRICE
PARKING LOT						
1.	101-1	MOBILIZATION	1	LS		
2.	102-1	MAINTENANCE OF TRAFFIC	1	LS		
3.	104-10-3	SEDIMENT BARRIER	4,881	LF		
4.	104-18	INLET PROTECTION SYSTEM	2	EA		
5.	110-2-1	CLEARING & GRUBBING	9	AC		
6.	120-6	EMBANKMENT	490	CY		
7.	GR-1	EMBEDDED RING INFILTRATION KIT (ERIK)	11	EA		
8.	GR-2	8" PERVIOUS CONCRETE	28,656	SY		
9.	GR-5	RECYCLED MATERIAL WHEEL STOP	713	EA		
10.	425-1-541	INLETS, DITCH BOTTOM, TYPE D, <10' (Relocate)	1	EA		
11.	425-2-041	MANHOLES, P-7, <10	1	EA		
12.	430-175-124	PIPE CULVERT, RCP, 24" STORM	23	LF		
13.	440-1-10	UNDERDRAIN TYPE II, 6", W BOLD AND GOLD MEDIA	5,034	LF		
14.	440-73-2	UNDERDRAIN SOLID ADS 6" PIPE	288	LF		
15.	520-2-05	CONCRETE CURB, 12" Wide Ribbon Curb (HEADER CURB), 8"	12,611	LF		
16.	522-1	SIDEWALK CONCRETE 4" MANATEE COUNTY (5' WIDE)	27	SY		
17.	527-2	DETECTABLE WARNINGS	20	SF		
18.	550-60-511	RELOCATE SWING GATES	2	EA		
19.	700-1-50	SINGLE POST SIGN, RELOCATE	16	EA		
20.	711-11-101	THERMOPLASTIC, STANDARD, WHITE, SOLID, 6"	13,121	LF		
21.	711-11-401	THERMOPLASTIC, STANDARD, BLUE, SOLID, 6"	148	LF		
22.	711-11-460	THERMOPLASTIC, STANDARD, BLUE, MESSAGE OR SYMBOL	4	EA		
23.	TR-1	TREE REMOVAL (87)	1	LS		
24.	TR-2	TREE PLANTING WITH IRRIGATION (87)	1	LS		
25.	PK-1	RELOCATE BOLLARDS	896	EA		
Subtotal						\$ -
TOTAL BASE BID "B" BASED ON A COMPLETION TIME OF 390 CALENDAR DAYS						
CONTRACT CONTINGENCY (10% OF TOTAL BASE BID (Used only with County Approval))					10%	
TOTAL OFFER (Bid "B") WITH 10% CONTRACT CONTINGENCY (Based On A Completion Time Of 390 Calendar Days)						

Bidder Name: _____

Authorized Signature: _____

SECTION C, BID ATTACHMENTS

BID ATTACHMENT 1, INSURANCE AND BOND REQUIREMENTS

The CONTRACTOR will not commence work under the resulting Agreement until all insurance coverages indicated by an “X” herein have been obtained. The CONTRACTOR shall obtain and submit to the Procurement Division within ten (10) calendar days from the date of notice of intent to award, at its expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy): Work under this Agreement cannot commence until all insurance coverages indicated herein have been obtained on a standard ACORD form (inclusive of any amounts provided by an umbrella or excess policy):

Automobile Liability Insurance Required Limits

Coverage must be afforded under a per occurrence policy form including coverage for all owned, hired and non-owned vehicles for bodily injury and property damage of not less than:

- \$1,000,000 Combined Single Limit; OR
- \$ 500,000 Bodily Injury and \$500,000 Property Damage
- \$10,000 Personal Injury Protection (No Fault)
- \$500,000 Hired, Non-Owned Liability
- \$10,000 Medical Payments

This policy shall contain severability of interests’ provisions.

Commercial General Liability Insurance Required Limits (per Occurrence form only; claims-made form is not acceptable)

Coverage shall be afforded under a per occurrence policy form, policy shall be endorsed and name ‘Manatee County, a political subdivision of the State of Florida’ as an Additional Insured, and include limits not less than:

- \$1,000,000 Single Limit Per Occurrence
- \$2,000,000 Aggregate
- \$1,000,000 Products/Completed Operations Aggregate
- \$1,000,000 Personal and Advertising Injury Liability
- \$50,000 Fire Damage Liability
- \$10,000 Medical Expense, and
- \$1,000,000, Third Party Property Damage
- \$ Project Specific Aggregate (Required on projects valued at over \$10,000,000)

This policy shall contain severability of interests’ provisions.

Employer’s Liability Insurance

Coverage limits of not less than:

- \$100,000 Each Accident
- \$500,000 Disease Each Employee
- \$500,000 Disease Policy Limit

- Worker’s Compensation Insurance**
- US Longshoremen & Harbor Workers Act**
- Jones Act Coverage**

Coverage limits of not less than:

- Statutory workers’ compensation coverage shall apply for all employees in compliance with the laws and statutes of the State of Florida and the federal government.
- If any operations are to be undertaken on or about navigable waters, coverage must be included for the US Longshoremen & Harbor Workers Act and Jones Act.

Should ‘leased employees’ be retained for any part of the project or service, the employee leasing agency shall provide evidence of Workers’ Compensation coverage and Employer’s Liability coverage for all personnel on the worksite and in compliance with the above Workers’ Compensation requirements. NOTE: Workers’ Compensation coverage is a firm requirement. Elective exemptions are considered on a case-by-case basis and are approved in a very limited number of instances.

Aircraft Liability Insurance Required Limits

Coverage shall be afforded under a per occurrence policy form, policy shall be endorsed and name ‘Manatee County a political subdivision of the State of Florida’ as an Additional Insured, and include limits not less than:

- \$ Each Occurrence Property and Bodily Injury with no less than \$100,000 per passenger each occurrence or a ‘smooth’ limit.
- \$ General Aggregate.

Un-Manned Aircraft Liability Insurance (Drone)

Coverage shall be afforded under a per occurrence policy form, policy shall be endorsed and name ‘Manatee County a political subdivision of the State of Florida’ as an Additional Insured, and include limits not less than:

- \$ Each Occurrence Property and Bodily Injury; Coverage shall specifically include operation of Unmanned Aircraft Systems (UAS), including liability and property damage.
- \$ General Aggregate

Installation Floater Insurance

When the contract or agreement **does not** include construction of, or additions to, above ground building or structures, but does involve the installation of machinery or equipment, Installation Floater Insurance shall be afforded under a per occurrence policy form, policy shall be endorsed and name “Manatee County, a political subdivision of the State of Florida” as an Additional Insured, and include limits not less than:

- 100% of the completed value of such addition(s), building(s), or structure(s)

Professional Liability and/or Errors and Omissions (E&O) Liability Insurances

Coverage shall be afforded under either an occurrence policy form or a claims-made policy form. If the coverage form is on a claims-made basis, then coverage must be maintained for a minimum of three years from termination of date of the contract. Limits must not be less than:

- \$ 1,000,000 Bodily Injury and Property Damage Each Occurrence
- \$ 2,000,000 General Aggregate

Builder’s Risk Insurance

When the contract or agreement includes the construction of roadways and/or the addition of a permanent structure or building, including the installation of machinery and/or equipment, Builder’s Risk Insurance shall be afforded under a per occurrence policy form, policy shall be endorsed and name “Manatee County, a political subdivision of the State of Florida” as an Additional Insured, and include limits not less than:

- An amount equal to 100% of the completed value of the project, or the value of the equipment to be installed
- The policy shall not carry a self-insured retention/deductible greater than \$10,000

Coverage shall be for all risks and include, but not be limited to, storage and transport of materials, equipment, supplies of any kind whatsoever to be used on or incidental to the project, theft coverage, and Waiver of Occupancy Clause Endorsement, where applicable.

Cyber Liability Insurance

Coverage shall comply with Florida Statute 501.171, shall be afforded under a per occurrence policy form, policy shall be endorsed and name ‘Manatee County, a political subdivision of the State of Florida’ as an Additional Insured, and include limits not less than:

- \$ Security Breach Liability
- \$ Security Breach Expense Each Occurrence
- \$ Security Breach Expense Aggregate
- \$ Replacement or Restoration of Electronic Data
- \$ Extortion Threats
- \$ Business Income and Extra Expense
- \$ Public Relations Expense

NOTE: Policy must not carry a self-insured retention/deductible greater than \$25,000.

Hazardous Materials Insurance (As Noted Below)

Hazardous materials include all materials and substances that are currently designated or defined as hazardous by the law or rules of regulation by the State of Florida or federal government.

All coverage shall be afforded under either an occurrence policy form or a claims-made policy form, and the policy shall be endorsed and name ‘Manatee County, a political subdivision of the State of

Florida' as an Additional Insured. If the coverage form is on a claims-made basis, then coverage must be maintained for a minimum of three years from termination of date of the contract. Limits must not be less than:

Pollution Liability

Amount equal to the value of the contract, subject to a \$1,000,000 minimum, for Bodily Injury and Property Damage to include sudden and gradual release, each claim and aggregate.

Asbestos Liability (If handling within scope of Contract)

Amount equal to the value of the contract, subject to a \$1,000,000 minimum, for Bodily Injury and Property Damage to include sudden and gradual release, each claim and aggregate.

Disposal

When applicable, CONTRACTOR shall designate the disposal site and furnish a Certificate of Insurance from the disposal facility for Environmental Impairment Liability Insurance covering liability.

- Amount equal to the value of the contract, subject to a \$1,000,000 minimum, for Liability for Sudden and Accidental Occurrences, each claim and an aggregate.
- Amount equal to the value of the contract, subject to a \$1,000,000 minimum, for Liability for Non-Sudden and Accidental Occurrences, each claim and an aggregate.

Hazardous Waste Transportation Insurance

CONTRACTOR shall designate the hauler and have the hauler furnish a Certificate of Insurance for Automobile Liability insurance with Endorsement MCS-90 for liability arising out of the transportation of hazardous materials. EPA identification number shall be provided.

All coverage shall be afforded under either an occurrence policy form or a claims-made policy form and the policy shall be endorsed and name "Manatee County, a political subdivision of the State of Florida" as an Additional Insured. If the coverage form is on a claims-made basis, then coverage must be maintained for a minimum of three years from termination of date of the contract. Limits must not be less than:

- Amount equal to the value of the contract, subject to a \$1,000,000 minimum, per accident.

Liquor Liability Insurance

Coverage shall be afforded under a per occurrence policy form, policy shall be endorsed and name "Manatee County, a political subdivision of the State of Florida" as an Additional Insured, and include limits not less than:

- \$1,000,000 Each Occurrence and Aggregate

Garage Keeper's Liability Insurance

Coverage shall be required if the maintenance, servicing, cleaning or repairing of any County motor vehicles is inherent or implied within the provision of the contract.

Coverage shall be afforded under a per occurrence policy form, policy shall be endorsed and name “Manatee County, a political subdivision of the State of Florida” as an Additional Insured, and include limits not less than:

- Property and asset coverage in the full replacement value of the lot or garage.

Bailee’s Customer Liability Insurance

Coverage shall be required for damage and/or destruction when County property is temporarily under the care or custody of a person or organization, including property that is on, or in transit to and from the person or organization’s premises. Perils covered should include fire, lightning, theft, burglary, robbery, explosion, collision, flood, earthquake and damage or destruction during transportation by a carrier.

Coverage shall be afforded under a per occurrence policy form, policy shall be endorsed and name “Manatee County, a political subdivision of the State of Florida” as an Additional Insured, and include limits not less than:

- Property and asset coverage in the full replacement value of the County asset(s) in the CONTRACTOR’S care, custody and control.

Hull and Watercraft Liability Insurance

Coverage shall be afforded under a per occurrence policy form, policy shall be endorsed and name “Manatee County, a political subdivision of the State of Florida” as an Additional Insured, and include limits not less than:

- \$ Each Occurrence
- \$ General Aggregate
- \$ Fire Damage Liability
- \$10,000 Medical Expense, and
- \$ Third Party Property Damage
- \$ Project Specific Aggregate (Required on projects valued at over \$10,000,000)

Other [Specify]

BOND REQUIREMENTS

Bid Bond

A Bid Bond in the amount of 5% of the total offer. Bid bond shall be submitted with the sealed response and shall include project name, location, and / or address and project number. In lieu of the bond, the bidder may file an alternative form of security in the amount of 5% of the total offer. in the form of a money order, a certified check, a cashier’s check, or an irrevocable letter of credit issued to Manatee County. NOTE: A construction project over \$200,000 requires a Bid Bond in the amount of 5% of the total bid offer.

Payment and Performance Bond

A Payment and Performance Bond shall be submitted by Successful Bidder for 100% of the award amount and shall be presented to Manatee County within ten (10) calendar days of issuance of the notice of intent to award. NOTE: A construction project over \$200,000 requires a Payment and Performance Bond.

INSURANCE REQUIREMENTS

I. THE POLICIES BELOW ARE TO CONTAIN, OR BE ENDORSED TO CONTAIN, THE FOLLOWING PROVISIONS:

1. Commercial General Liability and Automobile Liability Coverages

- a. **“Manatee County, a Political Subdivision of the State of Florida,” is to be named as an Additional Insured in respect to:** Liability arising out of activities performed by or on behalf of the successful Bidder, his agents, representatives, and employees; products and completed operations of the successful Bidder; or automobiles owned, leased, hired or borrowed by the successful Bidder. The coverage shall contain no special limitation(s) on the scope of protection afforded to the County, its officials, employees or volunteers.

In addition to furnishing a Certificate of Insurance, the successful Bidder shall provide the endorsement that evidences Manatee County being listed as an Additional Insured. This can be done in one of two ways: (1) an endorsement can be issued that specifically lists “Manatee County, a Political Subdivision of the State of Florida,” as Additional Insured; or, (2) an endorsement can be issued that states that all Certificate Holders are Additional Insured with respect to the policy.

- b. The successful Bidder's insurance coverage shall be primary insurance with respect to the County, its officials, employees and volunteers. Any insurance or self-insurance maintained by the County, its officials, employees or volunteers shall be excess of successful Bidder's insurance and shall be non-contributory.
- c. The insurance policies must be on an occurrence form.

2. Workers' Compensation and Employers' Liability Coverages

The insurer shall agree to waive all rights of subrogation against the County, its officials, employees and volunteers for losses arising from work performed by the successful Bidder for the County.

II. GENERAL INSURANCE PROVISIONS APPLICABLE TO ALL POLICIES:

1. Prior to the execution of contract, or issuance of a Purchase Order, and then annually upon the anniversary date(s) of the insurance policy's renewal date(s) for as long as this contract remains in effect, successful Bidder shall furnish the County with a Certificate(s) of Insurance (using an industry accepted certificate form, signed by the Issuer, with applicable endorsements, and containing the solicitation or contract number, and title or description) evidencing the coverage set forth above and naming “Manatee County, a Political Subdivision of the State of Florida” as an Additional Insured on the applicable coverage(s) set forth above.
2. If the policy contains an aggregate limit, confirmation is needed in writing (letter, email, etc.) that the aggregate limit has not been eroded to procurement representative when supplying Certificate of Insurance.

In addition, when requested in writing from the County, successful Bidder will provide the County with a certified copy of all applicable policies. The address where such certificates and certified policies shall be sent or delivered is as follows:

Manatee County, a Political Subdivision of the State of Florida
Attn: Risk Management Division
1112 Manatee Avenue West, Suite 969
Bradenton, FL 34205

3. The project's solicitation number and title shall be listed on each certificate.
 4. successful Bidder shall provide thirty (30) days written notice to the Risk Manager of any cancellation, non-renewal, termination, material change, or reduction in coverage of any insurance policies to procurement representative including solicitation number and title with all notices.
 5. successful Bidder agrees that should at any time successful Bidder fail to meet or maintain the required insurance coverage(s) as set forth herein, the County may terminate this contract.
 6. The successful Bidder waives all subrogation rights against Manatee County, a Political Subdivision of the State of Florida, for all losses or damages which occur during the contract and for any events occurring during the contract period, whether the suit is brought during the contract period or not.
 7. The successful Bidder has sole responsibility for all insurance premiums and policy deductibles.
 8. It is the successful Bidder's responsibility to ensure that his agents, representatives and subcontractors comply with the insurance requirements set forth herein. successful Bidder shall include his agents, representatives, and subcontractors working on the project or at the worksite as insured under its policies, or successful Bidder shall furnish separate certificates and endorsements for each agent, representative, and subcontractor working on the project or at the worksite. All coverages for agents, representatives, and subcontractors shall be subject to all of the requirements set forth to the procurement representative.
 9. All required insurance policies must be written with a carrier having a minimum A.M. Best rating of A- FSC VII or better. In addition, the County has the right to review the successful Bidder's deductible or self-insured retention and to require that it be reduced or eliminated.
- III. Successful Bidder understands and agrees that the stipulated limits of coverage listed herein in this insurance section shall not be construed as a limitation of any potential liability to the County, or to others, and the County's failure to request evidence of this insurance coverage shall not be construed as a waiver of successful Bidder's obligation to provide and maintain the insurance coverage specified.
- IV. The enclosed Hold Harmless Agreement shall be signed by the successful Bidder and shall become a part of the contract.

- V.** Successful Bidder understands and agrees that the County does not waive its immunity, and nothing herein shall be interpreted as a waiver of the County's rights, including the limitation of waiver of immunity, as set forth in Florida Statutes 768.28, or any other statutes, and the County expressly reserves these rights to the full extent allowed by law.

- VI.** No award shall be made until the Procurement Division has received the Certificate of Insurance and Hold Harmless Agreement in accordance with this section.

[Remainder of page intentionally left blank]

BID ATTACHMENT 2, TECHNICAL SPECIFICATIONS

SPECIAL PROVISIONS
FOR
Coquina Beach Drainage Improvements

PROJECT # 6005719

July 2020

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Purchasing Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-4501

PREPARED BY:

Engineering Division
Manatee County Public Works Department
1022 26th Avenue East
Bradenton, Florida 34208
(941) 708-7450

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SPECIAL PROVISIONS

GENERAL

This Section amends, enhances or otherwise revises the Technical Specifications.

STANDARD SPECIFICATIONS

The standard Specifications to be used for this work shall be Division II and III of the Florida Department of Transportation (FDOT) *Standard Specifications for Road and Bridge Construction*, 2013 Edition and all Supplemental Specifications thereto, hereinafter referred to as the *Standard Specifications*, for roadway construction, except as amended under this Contract, or as noted on the construction plans meeting the Manatee County Highway, Traffic & Stormwater Standards (dated 2007).

The Contractor's work shall follow the Manatee County Public Works Utility Standards (dated May 2011) and Specifications (dated June 2018) for all utility work

These specifications cover the usual construction requirements for work specified by the County Public Works Department; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the *Standard Specifications*, such work shall be performed in accordance with the Special Provisions.

The apparent silence of the Specifications as to any detail or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used. Interpretation of these specifications shall be made upon that basis.

PRIORITY

In any instance where there is an apparent conflict between these technical specifications, special provisions and the corresponding terms of the "Standard Specifications", these special provisions followed by these technical specifications shall be controlling.

NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS

No separate payment will be made for the Contractor to execute Special Provisions. All expenses borne by the Contractor shall be included in the individual unit prices for the particular pay item.

MATERIALS

- a. **Delivery Tickets:** It will be necessary to submit a copy of all delivery tickets for materials used on the project, regardless of the basis of payment.

- b. **Job Mix Formula for Asphaltic Concrete:** Attention is directed to the requirement that job mix formulas for asphaltic concrete, of the type specified, be submitted at least 14 days before plant operations begin. The submitted formula should be derived, or approved, by the laboratory approved by the Owner and/or its agents. Costs for such job mix formulation will be paid by the Contractor directly to the assigned laboratory.
- c. **Job Mix Formula for Portland Cement Concrete:** Attention is directed to the requirement that job mix design formulas for all Portland Cement Concrete, of the type specified, be submitted at least 14 days prior to use on the project. The submitted formulas shall be derived or approved by the Owner and/or its agents. All concrete mix designs shall meet FDOT Concrete Class mix guidelines, except as follows: when approved, in writing by the Engineer, an Alternate Class I Concrete mix design formula, for concrete curb and gutter to be placed by automated curb machines, may show, as a substitution for #57 aggregate, an amount of #89 aggregate not to exceed 33 percent, by weight, of the #57 aggregate.

LABORATORY TESTING

Testing for the Work shall be performed at no expense to the Contractor. However, any test that fails or is not performed, as a result of the Contractor's action will, in turn, be back-charged to the Contractor, including the cost of all re-testing due to defective materials or construction. The testing laboratory shall be approved by the County.

The samples and tests used for determining the quality and acceptability of the materials and workmanship, which have been or are to be incorporated in the Work, shall conform to the requirements of the State of Florida Department of Transportation Materials Sampling, Testing and Reporting Guide, latest edition.

Testing shall also be in accordance with the applicable portions of the *FDOT Standard Specifications* and these specifications.

MEASUREMENT AND PAYMENT

- a. All work completed under the terms of this contract shall be measured according to United States Standard Measures.
- b. All measurements shall be taken horizontally or vertically unless specifically provided otherwise.
- c. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the Engineer.
- d. The Contractor shall accept compensation provided under the terms of this contract as full payment for furnishing all materials and for performing all work contemplated and

embraced under this contract. Such compensation shall also be for any and all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions encountered during the contract period until final acceptance by the Owner.

- e. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.
- f. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The Owner will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities.

No payment shall be made for contingency quantities or additional work unless otherwise directed and approved in writing by the Engineer.

- g. Bid Schedule Completion - the blank spaces in the bid schedule shall be filled in correctly where indicated for each and every item for which a description is given, as the bidder must state the unit prices for which he proposes to do each part of the work contemplated, and the total price for all the parts included in any or all of the combinations of the work. In case of a discrepancy, the written words for "unit price", where stated, shall be considered as being the unit price. If the bid schedule does not use the written words for the unit price, then the numerically correct "total price", shall be considered as being the total price.

RESTORATION

Payment for restoration shall be covered under the applicable restoration Pay Items as specified in the proposal. If a specific restoration Pay Item is not listed in the proposal, the cost of such work shall be included in the applicable Pay Item unless otherwise provided under separate restoration section or pay quantity of these Specifications.

COOPERATION WITH OTHERS

The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations, in order that these operations may progress in a reasonable manner and that service rendered by these parties will not be interrupted. The Owner shall not be responsible for costs associated with delays, disruptions and remobilizations attributed to utility agency scheduling.

SITE INVESTIGATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon

transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during prosecution of the work.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner. The Owner also assumes no responsibility for any understanding or representations made by its officers or agents during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the Engineer or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

PROJECT SCHEDULE

The Contractor shall submit a preliminary construction schedule after the bid. The preliminary schedule shall show major work items and any phases the Contractor proposes. The schedule will show duration of work items and phases.

The Contractor shall submit a detailed Critical Path Method (CPM) construction schedule within 15 days of the notification of award or its intent for the County to review. The submittal shall meet the following requirements:

- Schedule will be submitted on 11-inch by 17-inch paper.
- The time scale (horizontal) shall be in weeks. The activities shall be listed on the left hand side (vertical).
- Activities shall show most Work activities. The listing from top to bottom shall be in a logical sequence of how the Work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.

A copy of the CPM schedule, clearly showing progress made, shall be submitted on a monthly basis during the progress of the work at the monthly meeting. Review or acceptance will neither impose on the County responsibility for the progress or scheduling of the Work, nor relieve the Contractor from full responsibility therefore.

The Contractor shall provide a revised CPM schedule if, at any time, the County considers the completion date to be in jeopardy because of “activities behind schedule”. An activity that cannot be completed by its original or latest completion date shall be deemed to be behind schedule. The revised CPM schedule is designed to show how the Contractor intends to accomplish the Work to meet the contractual completion date. The form and method employed by the Contractor shall be the same as for the original CPM schedule. The cost to prepare and revise the schedule is considered incidental to the Work.

PROJECT IDENTIFICATION SIGNS

The Contractor shall be responsible for furnishing, installing and maintaining two (2) County project identification signs and removal of same upon completion of the construction. Project identification sign shall be constructed and maintained at the project site as directed by the Owner. The Contractor shall erect, maintain and relocate the sign as directed for the duration of the Project.

The Contractor shall mount the sign using 4-inch pressure treated lumber or as approved by the Engineer, and other supports as required, at a location mutually agreed by the Engineer and the Contractor.

The identification signs shall not be less than 32 square feet in area. The Contractor shall coordinate with the Owner for the sign verbiage before fabrication. The signs shall be painted with graphic content to include:

- Title of Project
- Name of Owner
- Names and Titles of authorities, as directed by Owner
- Prime Contractor
- Construction Cost

The signs shall be erected prior to commencement of work at a lighted location of high public visibility, adjacent to the main entrance at each end of the project, as approved by the Engineer and Owner.

The signs shall be a minimum of 8 feet wide and 4 feet high. The signs shall be constructed of high density ¾-inch exterior plywood without waves or buckles, mounted and braced with pressure treated lumber as necessary and maintained in a presentable condition for the duration of the project. Hardware shall be galvanized. The surface of the sign shall be of exterior softwood plywood with medium density overlay.

Painting shall be constructed with materials to resist weathering and fading during the construction period. Experienced professionals shall perform painting. Graphic design and style shall be in accordance with the following:

- The signs will be placed in accordance with Manatee County Development Code, Ordinance 90-01, Section 724, Signs and Section 713, Visibility Triangles.

Payment for installing and maintaining the project identification signs shall be included as part of the lump sum quantity under Pay Item Number 1 (101-1) for Mobilization. The sign will remain the property of the Owner upon completion of the Project unless otherwise directed.



COQUINA BEACH DRAINAGE IMPROVEMENT PROJECT

Board of County Commissioners

BETSY BENAC

CHAIRMAN

STEPHEN JONSSON

REGGIE BELLAMY

CAROL WHITMORE

VANESSA BAUGH

MISTY SERVIA

PRISCILLA TRACE

CONSTRUCTION COST

\$ (Enter Amount)

PRIME CONTRACTOR

(Enter Contractor Name)

SPECIAL TERMS AND CONDITIONS

SOIL EROSION AND SILTATION

The Contractor shall plan and control the Work to minimize all soil erosion and the siltation of drains and canals resulting from such erosion.

At the pre-construction meeting, the Contractor shall present his proposed plan and schedule, which shall specifically indicate the proposed usage of temporary erosion control features. The plan shall include:

- **Sediment barriers** designed, furnished and installed by the Contractor in accordance with the plans, and FDOT Specifications Section 104.
- **Inlet Protection System** furnished and installed by the Contractor as shown on the plans and/or required by conditions of the permits and as outlined in FDOT Specifications Section 104.

SHOP DRAWINGS

The Contractor shall submit to the Engineer for approval, all working drawings and shop drawings with descriptive specifications and engineering calculations necessary for the successful completion of the Work. The shop drawing shall be submitted in pdf format, along with a submittal log, and the number of the submittals should follow the number on the submittal log. Each shop drawing shall have a cover sheet and reference the submittal log number, following the sample format provided in the contact documents.

The working and shop drawings shall be certified by a Florida licensed Professional Engineer and state that the design is sufficient for the successful completion of the Work. The working drawings and shop drawings shall include, but not be limited to:

- Traffic Control Plan
- Erosion Control Plan
- Shop Drawings as required by FDOT Standard Specifications

The Contractor is responsible for maintaining a Submittal Activity Record (Logbook) on this project. The Contractor shall submit all shop drawings to the Roadway Engineer of Record for processing to the appropriate Area of Practice EOR for review. The Area of Practice EOR will complete the review and return the shop drawing to the Roadway Engineer of Record for logging and processing back to the Contractor and to the County Representative.

The logbook shall be updated each time when any Shop Drawing submittal activity occurs.

The following minimum data shall be entered in the logbook for each submittal:

County Project Number

Submittal Number
Description of Submittal
Number of Sheets in the Submittal
Number of Pages of Calculations, in Reports, in Manuals, etc.
Date Transmitted by Contractor to the Roadway Engineer of Record
Date Transmitted by Roadway EOR to the Area of Practice EOR
Date Roadway EOR Receives Shop Drawing Back From Area of Practice EOR
Date Roadway EOR Sends Shop Drawing Back to Contractor
Disposition as either "A" (Approved), "AN" (Approved as Noted), "R" (Resubmit) or "NA" (Not Approved).

The Logbook is a historical record of the activity devoted to an individual submittal as well as that for the project as a whole. It can serve as a verification of review time, to respond to inquiries of a particular submittal's status and as a record of manpower effort to aid in estimating and allocating future workload.

SUBSOIL EXCAVATION

The contractor shall detect and remove all unsuitable material, such as plastic/organic soil, rock, hard plane, debris and trash, within project limit, following FDOT Design Standard Index 500, latest version. Payment for subsoil excavation shall be included in the subsoil excavation pay items.

DEWATERING, SHEETING AND BRACING

The contractor shall determine the need of dewatering, sheeting and bracing to facilitate the construction, conforming to current SWFWMD/FDEP rule and OSHA safety criteria. Payment for dewatering, sheeting and bracing shall be included in the applicable item for earthwork, unless separate pay items are specified.

Approval of Dewatering Plan:

At least 10 days prior to the commencement of any dewatering activity, the Contractor shall obtain the approval from SWFMWD, or FDEP (if water needs to be discharged offsite into the state surface water), and submit the permit with a detailed description of the proposed dewatering system to the Project Manager. The dewatering plan shall include design computations, layout, type, and spacing of dewatering devices, number and size of pumps and other equipment, with a description of the installation and operating procedures.

EARTHWORK

Quantities included on cross-section sheets, if any, represent estimated in-place quantities and do not include shrinkage and expansion factors. The quantities were calculated by the method with average end areas between the station-to-station limits. Payment for Earthwork shall be made based on average end area method calculations. Contractor shall provide supporting survey data (before and after cross-sections) and calculations for payment purposes

TEMPORARY PAVEMENT

Temporary pavement shall consist of a minimum of Optional Base Group 4 and one (1) inch of Type SP structural course (Traffic C) over a firm, unyielding, well-compacted subgrade. The Contractor shall immediately repair all potholes that develop within the project limits and shall maintain a supply of cold mix on the project site to expedite these repairs.

The Temporary by-pass road shall provide adequate cover and protection of existing utilities. It is the Contractor's responsibility to coordinate with utility companies to repair any damages to the existing utilities during the construction at no additional cost to the County.

Payment for the temporary pavement and maintenance of this pavement shall be included under Maintenance of Traffic.

MAINTENANCE OF STORM DRAINAGE SYSTEM

The Contractor shall be responsible at all times to maintain the operation of existing stormwater facilities, or, when existing stormwater facilities are removed, to provide equivalent capacity alternate forms of stormwater removal adequate to prevent upstream flooding in excess of existing conditions. This responsibility shall include the installation of temporary connections, bypass pumping, or other temporary means necessary until the new drainage system is fully operational. Payment for these items shall be included under the applicable pay item for new storm systems.

POST-CONSTRUCTION STORM PIPE TESTING

The Contractor shall inspect and televise all newly constructed storm pipes on the project. The purpose is to assure the pipes are properly constructed and do not leak at the joints. Payment for this item shall be included under the pay item for Mobilization.

SIDEWALKS TO REMAIN OPEN

Existing sidewalks and proposed sidewalks completed during construction shall remain open at all times unless approved otherwise by the Engineer. Temporary sidewalk shall be constructed as shown in the plans or as required to maintain pedestrian movement. Payment for these items shall be included under the lump sum pay item for Maintenance of Traffic.

If the Contractor, in the process of performing his contract operations, breaks any of the existing sidewalk that is to remain in place, replacement of this sidewalk will be at the Contractor's expense.

DUST CONTROL

The Contractor shall control dust resulting from construction operations at all times. The locations and frequencies of applications shall be as directed by the Engineer. Dust control is required to be in accordance with the FDOT *Standard Specifications* Section 102-5. Payment for Dust Control shall be made under Mobilization unless separate pay item for Dust Control is specified.

UNDERGROUND UTILITY LOCATIONS

The Contractor shall field verify existing underground utility locations by means of subsurface locating or other approved method. All existing utilities shall remain unless otherwise noted on the plans. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures. The Contractor shall contact and coordinate with "Sunshine State One Call 811" as well as the individual utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor's construction schedule at no additional cost to the Owner.

The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included under the pay item for Mobilization. A Florida registered land surveyor shall perform all survey work.

UTILITY COORDINATION

The Contractor shall be responsible for coordination of the work with all affected utility owners. The Contractor must take into consideration the required utility adjustments and relocations in development of his schedule for completing the work including construction of temporary work to allow phased construction of the permanent facilities.

The Contractor shall coordinate and schedule utility relocations and/or adjustments with the utility owners along the project in order to avoid delays. The work includes remobilization if required after utility relocation is complete. The intent is to coordinate utility construction activities so the project construction continues and is not stopped or delayed at any time due to utility work being done. Once Notice to Proceed is issued, the Contractor shall contact the affected utilities to discuss the Contractor's anticipated means and methods so temporary and permanent relocation plans can be implemented as needed to meet OSHA safety requirements.

The Contractor shall hold a utility owners meeting every two weeks / or alternate time schedule agreed to by the Owner at 1022 26th Avenue East. The meeting shall review current and upcoming activities for the project. Written meeting minutes will be prepared by the Contractor and distributed to the meeting participants within 3 calendar days of the meeting.

UTILITY CONFLICTS

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The Owner will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

The contractor's equipment shall maintain a minimum clearance distance to the power line (10 feet for voltage up to 50kv, 15 feet for voltage over 50kv to 200kv, 20 feet for voltage over 200kv to 350kv, 25 feet for voltage over 350kv to 500kv, 35 feet for voltage over 500kv to 750kv, 45 feet

for voltage over 750kv to 1,000kv.), following new OSHA Rule (29 CFR Part 1926) and FDOT Roadway Design Bulletin 11-03 DCE Memorandum 02-11.

DAILY CLEAN-UP REQUIREMENTS

The Contractor shall clean up the job site at the end of each workday. Clean up will include the elimination of rubble and waste material on public and private property. Driveways shall remain accessible by residents. Each Friday, the Contractor shall prepare the road surface and barricades in an acceptable manner for weekend traffic use.

MAINTENANCE AND RESTORATION OF JOB SITE

The Contractor shall conduct his operations in such a manner as will result in a minimum of inconvenience to occupants of adjacent homes and business establishments and shall provide temporary access as directed or as may be required by the Project Manager. All final restoration must be performed to an equal or better condition than that which existed prior to construction.

Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Project Manager. Good housekeeping at the job site shall include: Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the Project Manager. Dust will be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

In the event that the timely clean up and restoration of the job site is not accomplished to the satisfaction of the Project Manager, the Project Manager shall make arrangements to affect the necessary clean up by others. The Contractor shall be charged for these costs through deductions in payment due the contractor. If such action becomes necessary on the part of and in the opinion of the Project Manager, the Owner shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

NOTICE AND SERVICE THEREOF

All notices, which shall include demands, instructions, requests, approvals, and claims shall be in writing. Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office as the Contractor may, from time to time, designate to the Owner in writing), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered, with charges prepaid, sent via fax transmission, or to any telegraph company for transmission, in each case addressed to such office.

All notices required to be hand delivered to the Owner, unless otherwise specified in writing to the Contractor, shall be delivered to the Project Manager, and any notice to or demand upon the Owner shall be sufficiently given as delivered to the office of the Project Manager, or if deposited in the United States mail in a sealed, postage prepaid envelope, sent via fax transmission, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Project Manager or to such other representative of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post or in the case of a fax transmission or telegram at the time of actual receipt, as the case may be.

REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference may be held by the Project Manager to be attended by the Contractor and representatives of the various utilities and others as required, for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project.

All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the Project Manager at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Project Manager without additional compensation. The Contractor will continuously control the work until completed.

USE OF PRIVATE PROPERTY

All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record or temporary construction easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the Project Manager prior to utilization of said private properties. The Owner assumes no responsibility for damage to private property in such instances. The Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the Owner's right-of-way. Pipe and other materials shall not be strung out along the right-of-way, but will be delivered in quantities adequate for one day's installation. The Owner will coordinate with the Contractor to identify possible storage sites.

CONSTRUCTION PHOTOGRAPHY

General

The Contractor shall employ a competent photographer to take construction record photographs and perform videotaping, including providing all labor, materials, equipment and incidentals necessary to obtain photographs and/or videotapes of all areas specified in the Contract specifications.

The word "Photograph" includes standard photographic methods involving negatives, prints and slides and it also includes digital photographic methods involving computer technology items such as diskettes and CD-ROMs.

Qualifications

A competent camera operator who is fully experienced and qualified with the specified equipment shall do all photography.

For the videotape recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

General

The Contractor shall employ a competent photographer to take construction record digital photos and perform video recording, including providing all labor, materials, equipment and incidentals necessary to obtain photos and/or video recordings of all areas within the project limits or as otherwise specified in the Contract specifications.

The word "Photo" includes standard photographic methods involving digital photography and production of hard copies for photos and saving photos as jpg files on diskettes and CD-ROMs.

Qualifications

A competent camera operator who is fully experienced and qualified with the specified equipment shall do all photography.

For the video recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

Project Photos for Construction Progress

Provide photos of the entire work area during construction for the purpose of records of completed work. Photos should be spaced at approximately 100-foot intervals. Three prints of each standard photograph shall be provided to the County. In addition to the CD_ROM media, one print of each digital photograph shall be provided to the County.

The Contractor shall pay all costs associated with the required photographs and prints. Any parties requiring additional photography or prints will pay the photographer directly.

Each print shall have clearly marked on the back the name of the project, the orientation of view, the date and time of exposure, name and address of photographer and the photographers numbered identification of exposure.

All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy, and all prints shall be 8 inches by 10 inches.

All project photos shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress. The Contractor shall consult with the County Representative at each period of photography for instructions concerning views required.

The Contractor shall deliver photos in conformance with the above requirements to the County Representative. No construction shall begin until pre-construction photo are completed and submitted to the County Representative.

Record Photos

The Contractor shall require that photographer maintain digital copies of photos for a period of two years from date of Substantial Completion of the Project.

Photographer shall agree to furnish additional prints to the County Representative at commercial rates applicable at the time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as expert witness.

Video Recording for Pre-Construction

Video recording shall be used in lieu of photos for pre-construction. It shall be of sufficient quality to fully illustrate details of conditions and construction, including special features

Video recording shall be accomplished along all routes that are scheduled for construction.

The video recording shall, when viewed, depict an image with ¼ of the image being the roadway fronting of property and ¾ of the image being of the property. The video recording shall be done so as to show the roadway and property in an oblique view (30 degrees).

A complete view, in sufficient detail, of all driveways, with audio description of the exact location shall be provided.

The Engineering plans shall be used as a reference for stationing in the audio portion of the video recording for easy location identifications. If visible, house numbers shall be mentioned on the audio.

Two complete sets of video recording shall be delivered to the Owner for the permanent and exclusive use of the Owner prior to the start of any construction on the project.

All video recording shall contain the name of the project, the date and time of the video recording the name and address of the photographer and any other identifying information required.

Payment for this item shall be included under the pay item for Mobilization.

CONTRACTOR TO EXECUTE NPDES “NOTICE OF INTENT”

Prior to proceeding with construction, the Contractor shall prepare and submit a “Notice of Intent to Use Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land” to the Florida Department of Environmental Protection (FDEP). The Contractor shall monitor the site at all times and take appropriate action to prevent erosion including the use of BMPs. No pumping of ground or surface water shall be performed without approval from the FDEP. Following completion of construction, Contractor shall prepare and submit a “Notice of Termination of Generic Permit Coverage” to FDEP. Payment for this item shall be included under the pay item for Mobilization.

WORKSITE TRAFFIC SUPERVISOR

- a. The Contractor shall have a Worksite Traffic Supervisor who will be responsible for initiating, installing and maintaining all traffic control devices as described in Section 102 of the FDOT *Standard Specifications for Road and Bridge Construction* and in the Plans. The Worksite Traffic Supervisor shall have at least one year of experience directly related to work site traffic control in a supervisory or responsible capacity and shall be certified by the American Traffic Safety Services Association Worksite Traffic Supervisor Certification Program or an equal approved by FDOT. Approved alternate Worksite Traffic Supervisors may be used when necessary.
- b. The Worksite Traffic Supervisor shall be available on a 24-hour per day basis and shall review the project on a day-to-day basis as well as being involved in all changes to traffic control. The Worksite Traffic Supervisor shall have access to all equipment and materials needed to maintain traffic control and handle traffic related situations. The Worksite Traffic Supervisor shall ensure that routine deficiencies are corrected within a 24-hour period.
- c. The Worksite Traffic Supervisor shall be available on the site within 45 minutes after notification of an emergency situation, prepared to positively respond to repair the work zone traffic control or to provide alternate traffic arrangements.
- d. Failure of the Worksite Traffic Supervisor to comply with the provisions of the Sub-article may be grounds for decertification or removal from the project or both. Failure to maintain a designated Worksite Traffic Supervisor or failure to comply with these provisions will result in temporary suspension of all activities except traffic and erosion control and such other activities deemed to be necessary for project maintenance.
- e. Payment for Worksite Traffic Supervisor shall be included under the pay item for Maintenance of Traffic.

CONTRACTOR’S SUPERVISION

- a. **Prosecution of Work:** The Contractor shall give the work the constant attention necessary to assure the scheduled progress. He shall cooperate fully with the Project Manager and with other Contractors at work in the vicinity.

- b. Contractor's Superintendent: The Contractor shall at all times have on the work site as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the Project Manager or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Project Manager and to supply promptly any materials, tools, equipment, labor and incidentals that may be required. Such superintendence shall be furnished regardless of the amount of work sublet.
- c. The Contractor's superintendent shall speak and understand English, and at least one responsible person who speaks and understands English shall be on the project during all working hours, and wherever work is being done by the contractor.
- d. Supervision for Emergencies: The Contractor shall have a responsible person available at or reasonably near the work site on a 24-hour basis, 7 days a week, in order that he may be contacted for emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that may arise. The Contractor's responsible person for supervision for emergencies shall speak and understand English. The Contractor shall submit, by certified mail, phone numbers and names of personnel designated to be contacted in cases of emergencies along with a description of the project location to the Florida Highway Patrol and all other local law enforcement agencies.

LIST OF EMERGENCY CONTACT NUMBERS & UTILITY SERVICE MAINTENANCE

The Contractor shall obtain and maintain a list of emergency contact phone numbers for all utilities during the course of the project. The Contractor shall maintain utility service during the project except for interruptions authorized by the utility owner. If interruptions are required, the Contractor shall notify the Owner 48 hours in advance.

PEDESTRIAN ACCESS

The Contractor shall provide access and make provisions to maintain school zones during construction. The Contractor is to facilitate pedestrian traffic whether for school or public transportation.

RECORD DRAWINGS AND PROJECT CERTIFICATION

The County will furnish the Contractor copies of the bid plans to be used for the record drawings. A Florida Registered Surveyor shall perform a field survey and any differences between the plan elevations or dimensions shall be marked through and the as-built elevation or dimension legibly entered. All elevations and dimensions that are correct shall have a check mark placed beside it.

The Contractor shall keep a complete set of surveyed "As-built" records. These records shall show all items of Work and existing features of utilities revealed by excavation work. The records shall be kept in a professional manner, in a form that shall be approved by the County prior to the Work. These results shall be available at all times during construction for reference by the Engineer and

shall be delivered to the Engineer upon completion of the Work. All completed “As-builts” must be certified by a Florida Licensed Surveyor or Engineer per Chapter 61 G 17-6, Florida Administrative Code, pursuant to Sec. 47207, Florida Statutes. All Record Drawings shall be in accordance with current Manatee County Standards.

The “Record Drawings” shall, at a minimum, include the following:

- A. Roadway centerline profile [100-foot maximum interval].
- B. Roadway cross sections [100-foot maximum interval].
- C. All underground piping with elevations and dimensions, changes to piping locations, horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements. Actual installed pipe material, class, etc. Dimensions at these locations shall indicate distance from the centerline of construction.
- D. Elevations on all drainage control structures, verifying all plan dimensions.
- E. Stormwater ponds with cross sections [25-foot maximum interval] (sufficient to calculate volumes).
- F. Flow line elevations on all ditch breaks (vertical and horizontal).
- G. Field changes of dimensions and details.
- H. Details not on original contract drawings.
- I. Equipment and piping relocations.
- J. The locations of all headwalls, pipes and any other structures shall be located by station and offset.
- K. Benchmarks and elevation datum shall be indicated.
- L. Additional elevations or dimensions as required by the Engineer
- M. Additional elevations or dimensions as required by the County Representative

Following completion of construction and prior to final payment, the Contractor shall submit a Certification by the Contractor and Manufacturer including test data that the materials (filter fabric, filter media, etc.) installed meet plan specifications and regulatory requirements.

Upon completion of the work, four (4) sets of draft “Record Drawings” shall be submitted to the Owner for review. Such drawings shall accurately show all approved field changes to the original Construction Drawings, including actual locations, dimensions and elevations and shall be subject to a field review in the presence of the Engineer or his designated representative. The drawings are to be prepared by competent personnel, neatly drafted and certified, signed and sealed by a Florida Registered Surveyor.

The Contractor shall incorporate any comments from the Owner and/or Engineer and shall submit two write-only CD-ROMs, one set of 11-inch by 17-inch Mylar record drawings and four sets of 11-inch by 17-inch certified prints with the Surveyor’s certification.

All Digital Drawings shall be identical to those submitted as hard copy. The Digital Drawing files shall be AutoCAD format (Release 2010 or later) and shall include all external reference drawings, text fonts, shape files and all other files necessary to make use of the drawings.

In addition, \$150,000 or five percent (whichever is smaller) of the Contract price shall be retained until the County Representative has approved the "Record Drawings". The County Representative will review and approve the "Record Drawings" within 30 days unless additional information is required. No final payment shall be made until such time as the "Record Drawings" have been approved and accepted by SWFWMD for Maintenance and Operation Phase Transfer. Unless there is a separate pay item for Record Drawings, payment shall be included as part of the lump sum quantity for Mobilization.

COMPLIANCE WITH THE FDEP COASTAL PERMIT REQUIREMENTS

FDEP Stormwater Management and Discharge permits or exemptions, if any, and/or a Department of Environmental Protection Coastal permit, if any, required for this project have been obtained by the County. The Contractor shall comply with the stipulations of the Permits or Exemptions as stated herein.

The Contractor shall allow periodic inspection of the work by authorized representatives of the Department of Environmental Protection, as well as other duly authorized law enforcement officers of the State.

CRUSHED CONCRETE BASE

Crushed Concrete Base shall follow FDOT Standard Specifications 2007 (rev 8-07) except that the Lime Rock Bearing Ratio (LBR) shall be minimum 150. The layer coefficient of 0.18 with LBR minimum 150 is allowed to calculate the base thickness.

Only FDOT certified piles are acceptable to this project. The producing process certified by FDOT without the actual pile certified is not considered solid enough for the acceptance of the material. The contract shall send the engineer the deliver tickets with FDOT certified pile number, pile location, project name and manufactory contact information shown.

Additional tests and pile inspections will be required for the quality control and the contractor will be responsible for the cost of the initial ten tests and any re-tests when needed. The material will be rejected by the County if the initial test fails. The rejected material shall be completely removed from the project site.

1) Regarding structural number on Crushed Concrete Base, Manatee County to approve SN 0.18 if following criteria is met and maintained:

- A) Limerock Bearing Ratio value of 150 or greater 10" compacted thickness in place.
- B) Gradation conforms to FDOT Specifications 2007 (rev 8-07).
- C) Deleterious materials conform to FDOT Specifications 2007 (rev 8-07).

D) Delivery ticket indicates FDOT approved source, actual lot allocated to a particular project.

E) Piles or lots to be inspected by Manatee County representative prior to acceptance.

2) Regarding Limerock Bearing Ratio value:

A) No Limerock Bearing Ratio value less than 150, with no under tolerance.

3) Regarding source approval:

A) FDOT approved source, allocated lot sufficient to serve projects need, delivery tickets stating FDOT approved source, project name, FDOT preapproved lot or pile number.

4) Regarding deleterious materials:

A) Deleterious material content in addition to the FDOT Specifications 2007 (rev 8-07) should state that no construction debris such as Styrofoam insulation, telephone wire, lumber, shingles, aluminum window or door frames etc., or household trash ie: bottles, cans, paper goods etc. is acceptable.

5) Material source inspection:

A) Prior to acceptance of base product, a representative of Manatee County will visit the Producer's location and obtain a sample of the proposed base for the specified project. In addition to sampling, the pile will be visually inspected for deleterious materials, substantial segregation, or any other undesirable characteristics. The pile shall have a traceable identification by pile number or lot number and an accurate quality assessment.

6) Import and placement of base product:

A) During import of base product, a county inspector or duly designated representative of the county will be onsite monitoring incoming loads, making visual assessments of the product and checking load tickets for verification of materials.

7) Import and placement of base product:

A) After spreading out, prior to compacting, samples of the base product will be obtained by Manatee County approved testing lab, every 500 LF staggering right, left, center of the roadway for Limerock Bearing Ratio, gradation and deleterious material testing.

8) Rejection of materials:

A) Material not meeting above requirements will subject to rejection and be removed from the project site. Any three (3) concurrent rejections will require immediate shut down of imported material and require review and remedies prior to restart.

9) Compaction of material:

A) In place material should be a minimum of 10" in compacted thickness and achieve 98% of AASHTO T-180 compaction.

CLARIFICATION OF SPECIFIC LINE ITEMS

Clarification of the County's expectations of work to be performed as it relates to specific line items and/or item No. listed on the Bid Form is included in the FDOT Basis of Estimate Manual version 2013. Where such item number is not available, the description shows herein will prevail.

Line item # 5, Clearing & Grubbing, incl. riprap, trees, pipes, structures, endwalls, sidewalk, etc. shall follow FDOT Specifications 2013.

Line Item # 31, relocate post and rope, shall meet County Park Specifications (post and rope).

DISCRETIONARY WORK (Contingency)

The discretionary work (Contingency) pay item shall cover the cost for various contingencies and contract amendments authorized by the Owner. Any amount of extra work and/or alterations to the proposed work charged to the allowance shall be fully documented and authorized by the Project Manager before the start of the work. No payment shall be made for work completed without written authorization from the Owner or Engineer.

Date: ___/___/___

Submittal No. _____

SHOP DRAWING SUBMITTAL COVER SHEET

(IFB) # [Insert IFB Number]

Project Name: [Insert Full Project Name]

Project File No.: [Insert Project Number]

Specification Title Number: [Insert Section No.] Specification No.: Part [Insert Part No.], [Insert Item No.]

Page(s): [Insert Page No.]

Submittal Description: [Insert Title, Description of Submittal and Use]

SHOP DRAWING REVIEW	
RESPONSE NOT REQUIRED	RESPONSE REQUIRED
<input type="checkbox"/> NO EXCEPTIONS TAKEN <input type="checkbox"/> NOTE MARKINGS	<input type="checkbox"/> NOTE MARKINGS, CONFIRM <input type="checkbox"/> NOTE MARKINGS, RESUBMIT <input type="checkbox"/> REJECTED, RESUBMIT
<p>Engineer's review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project drawings and specifications, nor departure therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.</p> <p style="text-align: center;">MANATEE COUNTY PUBLIC WORKS DEPARTMENT</p> <p>By: _____ Date: _____</p>	

Your Company Logo and/or information

[Contractor's Name]

[Contractor's Title]

[Company Name]

[Company Address]

[Office Number]

[Fax Number]

[email address]

[Approval Signature: _____]

[Approval Date: ___/___/___]

BID ATTACHMENT 3, PLAN SET / DRAWINGS

NOTE - This attachment is uploaded as a separate document on the Procurement page of the County website with the solicitation document and available for download.

BID ATTACHMENT 4, DEPARTMENT OF ENVIRONMENTAL PROTECTION ME-1287 PERMIT PACKAGE



STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Water Resource Management
2600 Blair Stone Road - Mail Station 3522
Tallahassee, Florida 32399-2400
(850) 245-8336

PERMIT NUMBER: ME-1287

PERMITTEE

Manatee County Public Works
Board of County Commissioners
c/o Sia Mollanzar
Deputy Director, Engineering Services
1022 26th avenue East
Bradenton, Florida 34208

NOTICE TO PROCEED AND PERMIT FOR CONSTRUCTION OR OTHER ACTIVITIES PURSUANT TO SECTION 161.053, FLORIDA STATUTES

FINDINGS OF FACT: An application for authorization to conduct the activities seaward of the coastal construction control line that are indicated in the project description, was filed by the applicant/permittee named herein on February 20, 2018, and was determined to be complete pursuant to rule on March 12, 2018.

CONCLUSIONS OF LAW: After considering the merits of the proposal and any written objections from affected persons, the Department finds that upon compliance with the permit conditions, the activities indicated in the project description of this permit are of such a nature that they will result in no significant adverse impacts to the beach/dune areas or to adjacent properties; that the work is not expected to adversely impact nesting sea turtles, their hatchlings, or their habitat; that the work is expendable in nature and/or is appropriately designed in accordance with Section 62B-33.005, Florida Administrative Code. Based on the foregoing considerations, the Department approves the application; authorizes construction and/or activities at the location indicated below in strict accordance with the project description, the approved plans (if any) and the General Permit Conditions which are attached and are by this reference incorporated herein, and any additional conditions shown below, pursuant to Section 161.053(4), Florida Statutes.

EXPIRATION DATE: May 25, 2019

LOCATION: Between approximately 0 feet and 900 feet south of the Department of Environmental Protection's reference monument R-39, in Manatee County. Project address: XXXX.

PROJECT DESCRIPTION:

The applicant/permittee is authorized to repair previous concrete pavements within shell parking areas and underdrain areas. The seawardmost perpendicular distance of the drainage area is 700 feet .

SPECIAL PERMIT CONDITIONS:

1. Prior to commencement of construction activity authorized by this permit, a preconstruction conference shall be held at the site among the contractor, the owner or authorized agent, and a staff representative of the Department to establish an understanding among the parties as to the items specified in the special and general conditions of the permit. The proposed locations of the structures shall be staked out for the conference. **Contact Brandon Miller at (813) 470-5742 to schedule a conference.**

2. Prior to commencement of construction activity authorized by this permit, a temporary construction fence shall be erected along the perimeter of the permitted activity. The fence shall remain in place until the construction authorized by this permit is complete. The optimum siting of the construction fence shall be determined during the preconstruction conference by the staff representative so as to provide maximum protection to the existing native vegetation and dune features located on the site.
3. All imported fill material shall be obtained from a source landward of the control line and shall consist of sand which is similar to that already on the site in both grain size and coloration. This fill material shall be free of construction debris, rocks, or other foreign matter. A sample of the sand shall be provided to the staff representative of the Department during the preconstruction conference.
4. All **rubble and debris** resulting from this construction shall be removed to a location landward of the coastal construction control line.
5. Pool lighting is authorized.
6. Permittee shall submit compliance reports as specified in Special and General Permit Conditions of this permit. General Permit Conditions 1(q), 1(r), and 1(s) pertain to written reports which must be submitted to the Department of Environmental Protection at specified times. The forms for the reports: 1(q) Periodic Progress Report (DEP Form 73-111), 1(r) Foundation Location Certification (DEP Form 73-114B), and 1(s) Final Certification (DEP Form 73-115B) are available at the website: <http://www.dep.state.fl.us/beaches/forms.htm#CCCL>. Each form may be submitted electronically. The periodic reports are due in the office monthly. No progress reports are required until construction activities have started.

GENERAL PERMIT CONDITIONS:

(1) The following general permit conditions shall apply, unless waived by the Department or modified by the permit:

(a) The permittee shall carry out the construction or activity for which the permit was granted in accordance with the plans and specifications that were approved by the Department as part of the permit. Deviations therefrom, without written approval from the Department, shall be grounds for suspension of the work and revocation of the permit pursuant to Section 120.60(7), F.S., and shall result in assessment of civil fines or issuance of an order to alter or remove the unauthorized work, or both. No other construction or activities shall be conducted. No modifications to project size, location, or structural design are authorized without prior written approval from the Department. A copy of the notice to proceed shall be conspicuously displayed at the project site. Approved plans shall be made available for inspection by a Department representative.

(b) The permittee shall conduct the construction or activity authorized under the permit using extreme care to prevent any adverse impacts to the beach and dune system, marine turtles, their nests and habitat, or adjacent property and structures.

(c) The permittee shall allow any duly identified and authorized member of the Department to enter upon the premises associated with the project authorized by the permit for the purpose of ascertaining compliance with the terms of the permit and with the rules of the Department until all construction or activities authorized or required in the permit have been completed and all project performance reports, certifications, or other documents are received by the Department and determined to be consistent with the permit and approved plans.

(d) The permittee shall hold and save the State of Florida, the Department, and its officers and employees harmless from any damage, no matter how occasioned and no matter what the amount, to persons or property that might result from the construction or activity authorized under the permit and from any and all claims and judgments resulting from such damage.

(e) The permittee shall allow the Department to use all records, notes, monitoring data, and other information relating to construction or any activity under the permit, which are submitted, for any purpose necessary except where such use is otherwise specifically forbidden by law.

(f) Construction traffic shall not occur and building materials shall not be stored on vegetated areas seaward of the control line unless specifically authorized by the permit. If the Department determines that this requirement is not being met, positive control measures, such as temporary fencing, designated access roads, adjustment of construction sequence, or other requirements, shall be provided by the permittee at the direction of the Department. Temporary construction fencing shall not be sited within marine turtle nesting habitats.

(g) The permittee shall not disturb existing beach and dune topography and vegetation except as expressly authorized in the permit. Before the project is considered complete, any disturbed topography or vegetation shall be restored as prescribed in the permit with suitable fill material or revegetated with appropriate beach and dune vegetation.

(h) All fill material placed seaward of the control line shall be sand which is similar to that already existing on the site in both coloration and grain size. All such fill material shall be free of construction debris, rocks, clay, or other foreign matter; shall be obtained from a source landward of the coastal construction control line; and shall be free of coarse gravel or cobbles.

(i) If surplus sand fill results from any approved excavation seaward of the control line, such material shall be distributed seaward of the control line on the site, as directed by the Department, unless otherwise specifically authorized by the permit.

(j) Any native salt-tolerant vegetation destroyed during construction shall be replaced with plants of the same species or, by authorization of the Department, with other native salt-tolerant vegetation suitable for beach and dune stabilization. Unless otherwise specifically authorized by the Department, all plants installed in beach and coastal areas – whether to replace vegetation displaced, damaged, or destroyed during construction or otherwise – shall be of species indigenous to Florida beaches and dunes, such as sea oats, sea grape, saw palmetto, panic grass, saltmeadow hay cordgrass, seashore saltgrass, and railroad vine, and grown from stock indigenous to the region in which the project is located.

(k) All topographic restoration and revegetation work is subject to approval by the Department, and the status of restoration shall be reported as part of the final certification of the actual work performed.

(l) If not specifically authorized elsewhere in the permit, no operation, transportation, or storage of equipment or materials is authorized seaward of the dune crest or rigid coastal structure during the marine turtle nesting season. The marine turtle nesting season is May 1 through October 31 in all counties except Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward counties where leatherback turtle nesting occurs during the period of March 1 through October 31.

(m) If not specifically authorized elsewhere in the permit, no temporary lighting of the construction area is authorized at any time during the marine turtle nesting season and no additional permanent exterior lighting is authorized.

(n) All windows and glass doors visible from any point on the beach must be tinted to a transmittance value (light transmission from inside to outside) of 45% or less through the use of tinted glass or window film.

(o) The permit has been issued to a specified property owner and is not valid for any other person unless formally transferred. An applicant requesting transfer of the permit shall sign two copies of the permit transfer agreement form, agreeing to comply with all terms and conditions of the permit, and return both copies to the Department. The transfer request shall be provided on the form entitled "Permit Transfer Agreement" – DEP Form 73-103 (Revised 1/04), which is hereby adopted and incorporated by reference. No work shall proceed under the permit until the new owner has received a copy of the transfer agreement approved by the Department. A copy of the transfer agreement shall be displayed on the construction site along with the permit. An expired permit shall not be transferred.

(p) The permittee shall immediately inform the Department of any change of mailing address of the permittee and any authorized agent until all requirements of the permit are met.

(q) For permits involving major structures or activities, the permittee shall submit to the Department periodic progress reports on a monthly basis beginning at the start of construction and continuing until all work has been completed. If a permit involves either new armoring or major reconstruction of existing armoring, the reports shall be certified by an engineer licensed in the State of Florida. The permittee or engineer, as appropriate, shall certify that as of the date of each report all construction has been performed in compliance with the plans and project description approved as a part of the permit and with all conditions of the permit, or shall specify any deviation from the plans, project description, or conditions of the permit. The report shall also state the percent of completion of the project and each major individual component. The reports shall be provided to the Department using the form entitled "Periodic Progress Report" – DEP Form 73-111 (Revised 6/04), which is hereby adopted and incorporated by reference. Permits for minor structures or activities do not require submittal of periodic reports unless required by special permit condition.

(r) For permits involving habitable major structures, all construction on the permitted structure shall stop when the foundation pilings have been installed. At that time the foundation location form shall be submitted to and accepted by the Department prior to proceeding with further vertical construction above the foundation. The form shall be signed by a professional surveyor, licensed pursuant to Chapter 472, F.S., and shall be based upon such surveys performed in accordance with Chapter 472, F.S., as are necessary to determine the actual configuration and dimensioned relationship of the installed pilings to the control line. The information shall be provided to the Department using the form entitled "Foundation Location Certification" – DEP Form 73-114B (Revised 9/05), which is hereby adopted and incorporated by reference. Phasing of foundation certifications is acceptable. The Department shall notify the permittee of approval or rejection of the form within seven (7) working days after staff receipt of the form. All survey information upon which the form is based shall be made available to the Department upon request. Permits for repairs or additions to existing structures with nonconforming foundations are exempt from this condition.

(s) For permits involving major structures, the permittee shall provide the Department with a report by an engineer or architect licensed in the State of Florida within thirty (30) days following completion of the work. The report shall state that all locations specified by the permit have been verified and that other construction and activities authorized by the permit have been performed in compliance with the plans and project description approved as a part of the permit and all conditions of the permit; or shall describe any deviations from the approved plans, project description, or permit conditions, and any work not performed. Such report shall not relieve the permittee of the provisions of paragraph 62B-33.0155(1)(a), F.A.C. If none of the permitted work is performed, the permittee shall inform the Department in writing no later than 30 days following expiration of the permit. The report shall be provided on the form entitled "Final Certification" DEP Form 73-115B (Revised 9/05), which is hereby adopted and incorporated by reference.

(t) Authorization for construction of armoring or other rigid coastal structures is based on an engineering review and assessment of the design and anticipated performance and impact of the structure as a complete unit. Construction of any less than the complete structure as approved by the Department is not authorized and shall result in the assessment of an administrative fine and the issuance of an order to remove the partially constructed structure. Modifications to the project size, location, or structural design shall be authorized by the Department in accordance with Rule 62B-33.013, F.A.C.

(2) The permittee shall not commence any excavation, construction, or other physical activity on or encroaching on the sovereignty land of Florida seaward of the mean high water line or, if established, the erosion control line until the permittee has received from the Board of Trustees of the Internal Improvement Trust Fund the required lease, license, easement, or other form of consent authorizing the proposed use.

(3) The permittee shall obtain any applicable licenses or permits required by Federal, state, county, or municipal law.

(4) This permit does not authorize trespass onto other property.

(5) In the event of a conflict between a general permit condition and a special permit condition, the special permit condition shall prevail.

(6) Copies of any forms referenced above can be obtained by writing to the Department of Environmental Protection, 2600 Blair Stone Road, MS 3522, Tallahassee, Florida 32399-2400, or by telephoning (850)245-8336.

Approved plans are incorporated into this permit by reference.

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until further order of the Department. Because the administrative hearing process is designed to formulate final agency action, the hearing process may result in a modification of the agency action or even denial of the application.

Petition for Administrative Hearing

A person whose substantial interests are affected by the Department's action may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. Pursuant to Rules 28-106.201 and 28-106.301, F.A.C., a petition for an administrative hearing must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address, and telephone number of the petitioner; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
- (c) A statement of when and how the petitioner received notice of the agency decision;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
- (f) A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and

- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

The petition must be filed (received by the Clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us. Also, a copy of the petition shall be mailed to the applicant at the address indicated above at the time of filing.

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant and persons entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

Under Rule 62-110.106(4), F.A.C., a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or via electronic correspondence at Agency_Clerk@dep.state.fl.us, before the deadline for filing a petition for an administrative hearing. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

Mediation

Mediation is not available in this proceeding.

The applicant, or any party within the meaning of Section 373.114(1)(a) or 373.4275, F.S., may also seek appellate review of this order before the Land and Water Adjudicatory Commission under Section 373.114(1) or 373.4275, F.S. Requests for review before the Land and Water Adjudicatory Commission must be filed with the Secretary of the Commission and served on the Department within 20 days from the date when this order is filed with the Clerk of the Department.

Judicial Review

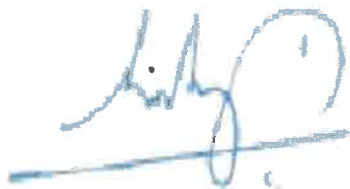
Once this decision becomes final, any party to this action has the right to seek judicial review pursuant to Section 120.68, F.S., by filing a Notice of Appeal pursuant to Florida Rules of Appellate Procedure 9.110 and 9.190 with the Clerk of the Department in the Office of General Counsel (Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000) and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice must be filed within 30 days from the date this action is filed with the Clerk of the Department.

PERMITTEE: Manatee County Public Works
PERMIT NUMBER: ME-1287
PAGE 7

EXECUTION AND CLERKING

Executed in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



S. Muthuswamy, Ph.D., Engineer
Coastal Construction Control Line Program
Division of Water Resource Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this document and all attachments were sent on the filing date below to the following listed persons:

John.pari@mymanatee.org

Siamollanazar@mymanatee.org

Michael.Lynch@dep.state.fl.us

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52, F. S., with the designated Department Clerk, receipt of which is hereby acknowledged.



Clerk

05/25/2018
Date

BID ATTACHMENT 5, GEOTECHNICAL ENGINEERING REPORT

Geotechnical Engineering Report

Coquina Beach Drainage Improvements

Bradenton Beach, Florida

July 16, 2018

Dunkelberger Project No. HC155032

Prepared for:

Manatee County Construction Services Division

Bradenton, Florida

Prepared by:

Dunkelberger Engineering & Testing, a Terracon Company

Sarasota, Florida

DUNKELBERGER
engineering & testing, inc.

A **Terracon** COMPANY



Geotechnical



Environmental



Construction Materials



Facilities

July 16, 2018

Manatee County Construction Services Division
1112 Manatee Avenue, Suite 868C
Bradenton, FL 34205

Attn: Mr. Michael Sturm, P.E.
Project Manager

Re: Geotechnical Engineering Report
Coquina Beach Drainage Improvements
Bradenton Beach, Manatee County, Florida
DUNKELBERGER Project Number: HC155032

Dear Mr. Sturm:

Dunkelberger Engineering & Testing, a Terracon Company (DUNKELBERGER) has completed the geotechnical engineering services for the above referenced project. This study was performed in general accordance with Manatee County, Florida Work Assignment No. W1600014, dated October 20, 2015.

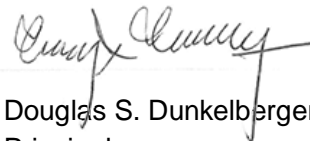
This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of pervious pavements and groundwater control for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,

Dunkelberger Engineering & Testing, a Terracon Company

James M. Jackson, P.E.
Project Engineer
FL License No.: 77733



7/16/18

Douglas S. Dunkelberger, P.E.
Principal
FL License No.: 33317

Enclosures

cc: 1 – Client (PDF)
1 – File



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EXECUTIVE SUMMARY

A geotechnical study has been completed for the proposed Coquina Beach Drainage Improvements project which will be located on the west side of Gulf Drive South at Coquina Beach in Bradenton Beach, Manatee County, Florida. Thirty (30) Standard Penetration Test (SPT) borings, designated B-1 through B-30, were spaced at approximately 200-foot centers across the site. The borings were drilled to a maximum depth of 25 feet below the existing ground surface (bgs). Additionally, four (4) borehole permeability (BHP) tests and four (4) double ring infiltration (DRI) tests were run at locations spaced evenly across the site.

Based on the information obtained from our geotechnical exploration, it appears that the site can be developed for the proposed project. The following geotechnical considerations were identified:

- n Organic fine sand was found in Borings B-16, B-17, and B-20 at depths ranging from about 4 to 8 feet bgs. The organic material represents risk of more than normal settlement, particularly differential settlement, beneath the planned rigid pavement section. For that reason, we recommend that the buried organic layer be removed from the pavement areas and replaced with engineered fill.
- n Other than the organic layer, the borings generally found fine sands with varying amounts of silt and shell fragments from the existing ground surface to the maximum borehole termination depth of 25 feet.
- n Based upon the test boring results, the shallow soils appear to have the required strength, stiffness, and permeability for support of typical pervious pavement sections.
- n Field-measured horizontal permeability values ranged from 0.8 to 11.3 feet per day within the depth interval of 2 to 25 feet bgs. The measured permeability rates are considered relatively slow to moderate.
- n Field-measured vertical infiltration values ranged from 6.5 to 15.1 inches per hour at a depth ranging from about 1 to 2 feet bgs. The measured infiltration rates at this depth are considered moderate to relatively high.
- n The position of the Seasonal High Groundwater Level (SHGWL) was estimated at about +1 ½ feet-NAVD88 on the southern half of the site and +2 feet-NAVD88 on the northern half of the site.
- n Close monitoring of the construction operations discussed herein will be critical in achieving the design objectives for earthwork, pavements and sub-structure aspects of the project. We therefore recommend that DUNKELBERGER be retained to monitor this portion of the work.

Geotechnical Engineering Draft Report

Coquina Beach Drainage Improvements ■ Bradenton Beach, Florida

July 16, 2018 ■ DUNKELBERGER Project No. HC155032

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This summary should be used in conjunction with the entire report for design purposes. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **GENERAL COMMENTS** should be read for an understanding of the report limitations.

**GEOTECHNICAL ENGINEERING REPORT
COQUINA BEACH DRAINAGE IMPROVEMENTS
BRADENTON BEACH, MANATEE COUNTY, FLORIDA**

DUNKELBERGER Project No. HC155032

July 16, 2018

1.0 INTRODUCTION

A geotechnical study has been completed for the proposed Coquina Beach Drainage Improvements project which will be located on the west side of Gulf Drive South at Coquina Beach in Bradenton Beach, Manatee County, Florida. Thirty (30) Standard Penetration Test (SPT) borings, designated B-1 through B-30, were spaced at approximately 200-foot centers across the site. The borings were drilled to a maximum depth of 25 feet below the existing ground surface (bgs). Additionally, four (4) borehole permeability (BHP) tests and four (4) double ring infiltration (DRI) tests were run at locations spaced evenly across the site. Logs of the borings along with a boring location plan are included in Appendix A of this report.

The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- n subsurface soil conditions
- n groundwater conditions
- n earthwork
- n pervious pavement design and construction
- n drainage and groundwater control design

2.0 PROJECT INFORMATION

2.1 Project Description

Item	Description
Site layout	See Appendix A, Exhibit A-4: Boring Location Plan
Grading	Assumed to be minimal (i.e. less than 1 foot)
Pavements	Approximately 173,728 square feet (sf) of 8-inch thick pervious concrete pavement and 97,705 sf of 10-inch thick pervious concrete pavement; the pervious concrete is to be directly underlain by either 4inches of "Bold & Gold Media" or Select Fill
Groundwater Control	An underdrain system (FDOT Type II Underdrain) is planned for groundwater control

If project conditions are different than the assumptions given above, then we should be advised to allow for re-evaluation of the recommendations and conclusions presented in this report.

2.2 Site Location and Description

Item	Description
Location	The project is to be located on the west side of Gulf Drive South at Coquina Beach in Bradenton Beach, Florida
Existing improvements	Shell-stabilized parking and drive areas cover the majority of the site; an asphalt paved bus loop exists near the midpoint of the site
Current ground cover	Sand-shell soil mixture
Existing topography	Based information obtained from ZNS Engineering, the site appears to slope upward from the south to the north from an elevation of about +3 to +6 feet-NAVD88

3.0 SUBSURFACE CONDITIONS

3.1 Site Geologic Conditions

The Florida Geological Survey Bulletin No. 68, issued in 2008, was reviewed to describe the general geological and hydrogeological conditions for the area. The Florida Geological Survey shows that the area is comprised of the Tampa Member of the Arcadia Formation. In general, the uppermost 20 feet of the land surface is mapped with Holocene sediments, which include quartz, sands, carbonate sands and muds, and organics. Holocene sediments occur near the present coastline at elevations generally less than 5 feet. The surficial aquifer system consists primarily of undifferentiated sands, shell material, silts, and clayey sands.

3.2 Soil Survey

The Soil Survey of Manatee County, Florida (i.e. Soil Survey), issued December 1984 and published by the Soil Conservation Service (U.S. Department of Agriculture), was reviewed to determine the surficial soil map units at this site. The soil survey map, which is shown on Exhibit A-2 in *Appendix A* indicates that the southern third of the site is mapped with Soil Unit 8, *Canaveral fine sand*, and the northern two-thirds of the site is mapped with Soil Unit 10, *Canaveral fine sand, organic substratum* and Soil Unit 9, *Canaveral fine sand, filled*.

Unit 8, *Canaveral fine sand*, consists of fine sands with shell fragments to a depth of 65 inches. The Seasonal High Groundwater Table (SHGWT) is at a depth of 10 to 40 inches for 2 to 6 months out of the year. Unit 9, *Canaveral fine sand, fill*, and Unit 10, *Canaveral fine sand, organic substratum* consist of fill material made up of fine sand and shell fragments. However, a layer of **muck** is present in Unit 10 from a depth of about 45 to 70 inches and in a few small areas of Unit 9 at a depth of 80

inches or more. The SHGWT is dependent on the thickness of the fill material for these two soil units, but, is reported to lie at a depth of 30 to 60 inches bgs. Permeability in these sand and fill materials is very rapid and is moderately rapid in the organic (i.e. muck) layer. Detailed descriptions of the soils mapping units can be found on Exhibit A-3 in *Appendix A*.

It should be noted that the Soil Survey is not intended as a substitute for site-specific geotechnical exploration; rather it is a useful tool in planning a project scope in that it provides information on soil types likely to be encountered.

3.3 Typical Profile

Based on the results of the borings, subsurface conditions on the project site can be generalized as follows:

Stratum	Approximate Depth to Bottom of Stratum (feet)	Material Description	Consistency/ Density
1, 2	1 - 25	Fine SAND (SP, SP-SM) with trace to slight amounts of silt, occasionally with trace to some shell fragments	Very Loose to Very Dense
3 ¹	6 - 8	Organic fine SAND (PT, SM), sometimes with tree debris	Very Loose to Loose
4	17 ½	Silty fine SAND (SM)	Very Loose to Loose

1. Only found in Borings B-16, B-17, and B-20.

Conditions encountered at each boring location and results of laboratory testing are indicated on the individual boring logs. Stratification boundaries on the boring logs represent the approximate location of changes in soil types; in-situ, the transition between materials may be gradual. Details for each of the borings can be found on the boring logs in Appendix A of this report. Descriptions of our field exploration are included as Exhibit A-5 in Appendix A. Descriptions of our laboratory testing procedures are included as Exhibit B-1.

3.4 Groundwater

Groundwater levels were measured on November 12 to 17, 2015 at 24 hours after the completion of drilling and are shown in the table below.

Geotechnical Engineering Draft Report

Coquina Beach Drainage Improvements ■ Bradenton Beach, Florida

July 16, 2018 ■ DUNKELBERGER Project No. HC155032

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Boring No.	GSE ¹ (feet-NAVD)	Measured Groundwater Depth (feet-bgs)	Measured Groundwater Elevation (feet-NAVD)	Estimated SHGWL based on SCS (feet-bgs)	Estimated SHGWL (feet-NAVD)
B-2	+3.5	3.0	+0.5	0.8 – 3.3	+1 ½
B-4	+3.4	2.7	+0.7	0.8 – 3.3	+1 ½
B-6	+2.8	2.3	+0.5	0.8 – 3.3	+1 ½
B-8	+3.2	2.6	+0.6	0.8 – 3.3	+1 ½
B-10	+3.7	3.2	+0.5	0.8 – 3.3	+1 ½
B-12	+3.6	2.9	+0.7	0.8 – 3.3	+1 ½
B-14	+4.1	3.5	+0.6	0.8 – 3.3	+1 ½
B-16	+3.7	3.1	+0.6	0.8 – 3.3	+1 ½
B-18	+5.2	4.3	+0.9	2.5 – 5	+2
B-20	+5.4	4.4	+1.0	2.5 – 5	+2
B-22	+5.5	4.5	+1.0	2.5 – 5	+2
B-24	+5.6	4.7	+0.9	2.5 – 5	+2
B-26	+4.3	3.3	+1.0	2.5 – 5	+2
B-28	+4.7	3.9	+0.8	2.5 – 5	+2
B-30	+4.7	3.7	+1.1	2.5 – 5	+2

1. GSE = Ground Surface Elevation provided by ZNS Engineering.

The groundwater level was not measured in the 10-foot deep SPT borings due to the boreholes being collapsed at 24 hours after the completion of drilling. Therefore, only the groundwater data from the 25-foot deep SPT borings were considered for our SHGWL estimates.

As seen in the table above, the groundwater measurements ranged from about +½ feet-NAVD88 (2 ½ to 3 ½ feet bgs) on the southern half of the site to about +1 foot-NAVD88 (3 to 4 ½ feet bgs) on the northern half of the site. The groundwater levels are likely to closely mimic average water levels in the nearby Gulf of Mexico and Sarasota Bay. Groundwater levels are probably also influenced, to a lesser degree, by ground surface elevation change across the site and seasonal variations in rainfall.

As presented herein, the SHGWL is considered to be the highest sustained groundwater elevation during a typical (normal or average rainfall amount) wet season, coupled with high tide conditions, and not the peak groundwater elevation immediately following a major storm event. Therefore, the SHGWL referred to in this report is an average, high value and not necessarily a peak (upper bound) value.

Based on review of tide tables for the site area, the average tide level in the Gulf of Mexico was about +0.1 feet-NAVD for 2015. Additionally, the SCS soil survey indicates that our measured

groundwater levels are near the lower end of the estimated SHGWL which can be attributed to the seasonally dry conditions. Accordingly, we made a 1 foot upward (seasonal) adjustment to our measured groundwater levels. On that basis, we estimate the SHGWL will at about +1 ½ feet-NAVD88 in the southern half of the site and about +2 feet-NAVD in the northern half of the site which is consistent with the mid-range of the predicted SCS values. A groundwater contour map is provided on Exhibit A-40 in Appendix A.

3.5 Double Ring Infiltration Test and Borehole Permeability Test

The results of the field double ring infiltration (DRI) tests are summarized in the table below.

Location	Depth (feet)	USCS Classification	Infiltration (in/hr)
DRI-1	1	SP-SM	9.3
DRI-2	1.5	SP-SM	15.1
DRI-3	2	SP-SM	15.1
DRI-4	1	SP-SM	6.5

The results of the field borehole permeability (BHP) tests are summarized in the table below.

Location	Screened Interval (ft)	Horizontal Permeability, K _h (ft/day)	Vertical Permeability, K _v (ft/day)
BHP-1	2 - 25	11.3	5.7
BHP-2	2 - 25	5.8	2.9
BHP-3	2 - 25	0.8	0.4
BHP-4	2 - 25	2.1	1.1

The horizontal permeability values were calculated using an equation for a “single packer” test set-up. The field data was input into an equation developed by the U. S. Bureau of Reclamation, and presented by Harry Cedergrén in his text “Seepage, Drainage and Flow Nets”, published in 1977, which is as follows:

$$k_h = \frac{q}{2p Lh} \log_e \frac{L}{R} \quad \text{For } L \text{ greater than or } = 10r$$

k_h = Permeability, feet/sec; q = flow, cfs

L = Screen length, feet; h = head, feet

r = Borehole radius, feet

The vertical permeability values were assumed to be half of the calculated horizontal permeability values.

4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

4.1 Geotechnical Considerations

Organic sand, with organic contents ranging from about 7 to 16 percent, was encountered in Borings B-16, B-17, and B-20 at depths ranging from about 4 to 8 feet bgs. Based on the 2015 version of Florida Department of Transportation (FDOT) Standard Index No. 500, organic soils should be removed from the planned pavement areas when the average organic content exceeds 5 percent or an individual organic content test exceeds 7 percent. Therefore, on this basis, the organic material encountered in the borings is considered unsuitable for construction of the proposed pavement and should be removed from the pavement areas and replaced with engineered fill. Recommendations for demucking can be found in **Section 4.2** of this report.

We recommend additional field exploration, via hand augured borings, at and around the three test borings that contained organic material (i.e. muck). The additional data will allow for more specific parameters (lateral and vertical extent) related to removal of unsuitable deposits. The soil survey shows that much of the site is mapped with Soil Units 9 and 10 which contain an organic substratum. Therefore, it is likely the additional borings may find a more widespread organic soil condition.

Other than the organic material, the borings found fine sands with varying amounts of silt and shell fragments to the maximum borehole termination depth of 25 feet bgs. According to information provided on the National Ready Mixed Concrete Associations (NRMCA's) internet website, these materials, following improvement of relative density at shallow depths, should meet the required stiffness, strength, and drainage characteristics to provide adequate subgrade support for the pervious pavement sections. We recommend that 4 inches of Select Fill meeting the material requirements specified in **Section 4.3.2** be placed beneath the bottom of the pervious pavement.

Design and construction recommendations for pervious pavement sections and the underdrain system are outlined below.

4.2 Demucking/ Removal and Replacement

1. The organic materials (i.e. organic fine sand and tree debris) should be removed in their entirety from the planned pavement areas in accordance with the guidelines of FDOT

Standard Index No. 500. The excavated organic material should be disposed of off-site. The sand soils, overlying the organic layer, could be stockpiled on site and re-used as excavation backfill provided that they meet the material requirements presented below in **Section 4.3.2**.

2. Removal of the organic fill soils will require dewatering to facilitate the excavation work and permit the visual inspection of the excavation bottom.
3. The bottom of the de-mucked excavation should be visually inspected by a DUNKELBERGER engineer to verify satisfactory removal of the organic fill soils.
4. The resulting excavation should be backfilled, in the dry, with well-compacted granular soil as further described in the following recommendations.

4.3 Earthwork

4.3.1 Site Preparation

Following the recommended demucking, earthwork operations should continue with the removal of the existing shell-stabilized parking and drive areas, and stripping of any remaining surficial organic soil (topsoil) from the planned pavement areas. Topsoil should be removed from the construction areas. The shell-stabilized sand material can be stockpiled for re-use as backfill in the demucking excavations and as general fill. Wet or dry material should either be removed or moisture conditioned and re-compacted. After demolition, stripping, and grubbing, the exposed surface should be proof-rolled to aid in locating loose or soft areas. Proof-rolling should be performed with a fully-loaded, tandem-axle dump truck or front-end loader. The roller should make a minimum of eight overlapping passes over all areas of the site, the latter four passes at right angles to previous passes. The soils should be compacted sufficiently to obtain a minimum compaction as defined in **Section 4.3.3**. Unstable soil (pumping) should be removed or moisture conditioned and compacted in place prior to placing fill.

4.3.2 Material Requirements

Engineered fill should meet the following material property requirements:

Fill Type	USCS Classification	Acceptable Location for Placement
Select	SW, SP, GW, GP (fines content < 5 percent, maximum particle size < 1 inch, organic content < 2 percent)	Between the bottom of pavement and top of subgrade/general fill; at least 4 inches thick
General ¹	SP, SP-SM (fines content < 12 percent, maximum particle size < 2 inches, organic content < 3 percent)	At all locations and elevations beneath the Select Fill

1. Strata 1 and 2 soils at this site appear to meet this criterion. Soils with fines content > 12 percent may retain moisture and be difficult to compact and achieve specified density and stability. These soils may need to be maintained dry of optimum to properly compact.

4.3.3 Compaction Requirements-Mass Fill Areas

Item	Description
Fill Lift Thickness	12 inches or less in loose thickness when heavy vibratory compaction equipment is used. Maximum particle size should not exceed 2 inches in a 12-inch lift. 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used. Maximum particle size should not exceed 1 inch in a 4- to 6-inch lift.
Minimum Compaction Requirements	Greater than one foot below pavement subgrade elevation should be compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D-1557). The upper one foot of pavement subgrades should be compacted to between 92 and 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D-1557).
Moisture Content ¹	Within ± 2 percent of optimum moisture content as determined by the Modified Proctor test, at the time of placement and compaction
Minimum Testing Frequency	One field density test per 5,000 square feet.

- 1 We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate compaction limits have not been met, the area represented by the test should be reworked and retested as required until achieving the compaction requirements..

4.3.4 Utility Trench Backfill

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction.

4.4 Pervious Pavements

4.4.1 Subgrade Preparation

Site grading is typically accomplished relatively early in the construction phase. Fills are placed and compacted in a uniform manner. However, as construction proceeds, excavations are made into these areas, rainfall and surface water saturates some areas, heavy traffic from concrete trucks and other delivery vehicles disturbs the subgrade and many surface irregularities are filled in with loose soils to temporarily improve ride comfort. As a result, the pavement subgrades, initially prepared early in the project, should be carefully evaluated as the time for pavement construction approaches.

We recommend the moisture content and density of the top 12 inches of the subgrade be evaluated and the pavement subgrades be proof rolled and tested within two days prior to commencement of actual paving operations. Compaction tests should be performed at a frequency of 1 test per 10,000 square feet or fraction thereof. Areas not in compliance with the required ranges of moisture or density should be moisture conditioned and re-compacted. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled

trenches are located. Areas where unsuitable conditions are found should be repaired by removing and replacing the materials with properly compacted fills.

After proof-rolling and repairing deep subgrade deficiencies, the entire subgrade should be scarified and prepared as recommended in **Section 4.3** of the **Earthwork** section this report to provide a uniform subgrade for pavement construction. Areas that appear severely desiccated following site stripping may require further undercutting and moisture conditioning. If a significant precipitation event occurs after the evaluation or if the surface becomes disturbed, the subgrade should be reviewed by qualified personnel immediately prior to paving. The subgrade should be in its finished form at the time of the final review.

4.4.2 Underdrain Design

Based on the results of the groundwater modeling completed by Andreyev Engineering, Inc., we recommend a FDOT Type II underdrain be installed at approximate intervals of 60 feet throughout the pervious pavement area or beneath the centerline of the drive lane along the east end of the project. Underdrains should be designed to have positive outfall. Cleanout points should be designed and installed to allow periodic maintenance of the underdrain system. The underdrain should be consistent with the *Underdrain Detail* provided on Sheet 12 of the Conceptual Plan by the Manatee County Public Works department, dated August 2015. We recommend that the coarse aggregate consist of FDOT No. 57 stone or equivalent wrapped in a FDOT Type D-3 filter fabric. A report summarizing the groundwater modeling analysis is included in Appendix D of this report.

4.5 Temporary Dewatering

Dewatering will be needed to facilitate earthwork, specifically demucking, and underground utility installation operations for this project. Actual dewatering means and methods should be left up to a contractor experienced in installation and operation of dewatering systems. The contractor should provide a dewatering plan for review and approval by the engineer prior to the installation of the dewatering systems.

4.6 30-Year Erosion Protection Line

Taylor Engineering, Inc. completed a historical beach recession analysis and estimate of the position of the Mean High Water (MHW) line 30 years from the present for the site. The entire Taylor Engineering report is included in Appendix E of this report.

5.0 ADDITIONAL CONSIDERATIONS

Geotechnical Engineering Draft Report

Coquina Beach Drainage Improvements ■ Bradenton Beach, Florida

July 16, 2018 ■ DUNKELBERGER Project No. HC155032

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We recommend that additional exploratory borings be drilled within the proposed pavement areas, during the design process, to better characterize the depth, thickness, and lateral extent of the organic sands. To do that, we recommend 10 to 12-foot deep auger borings be drilled in a grid-like pattern around the Borings B-16, B-17, and B-20.

6.0 GENERAL COMMENTS

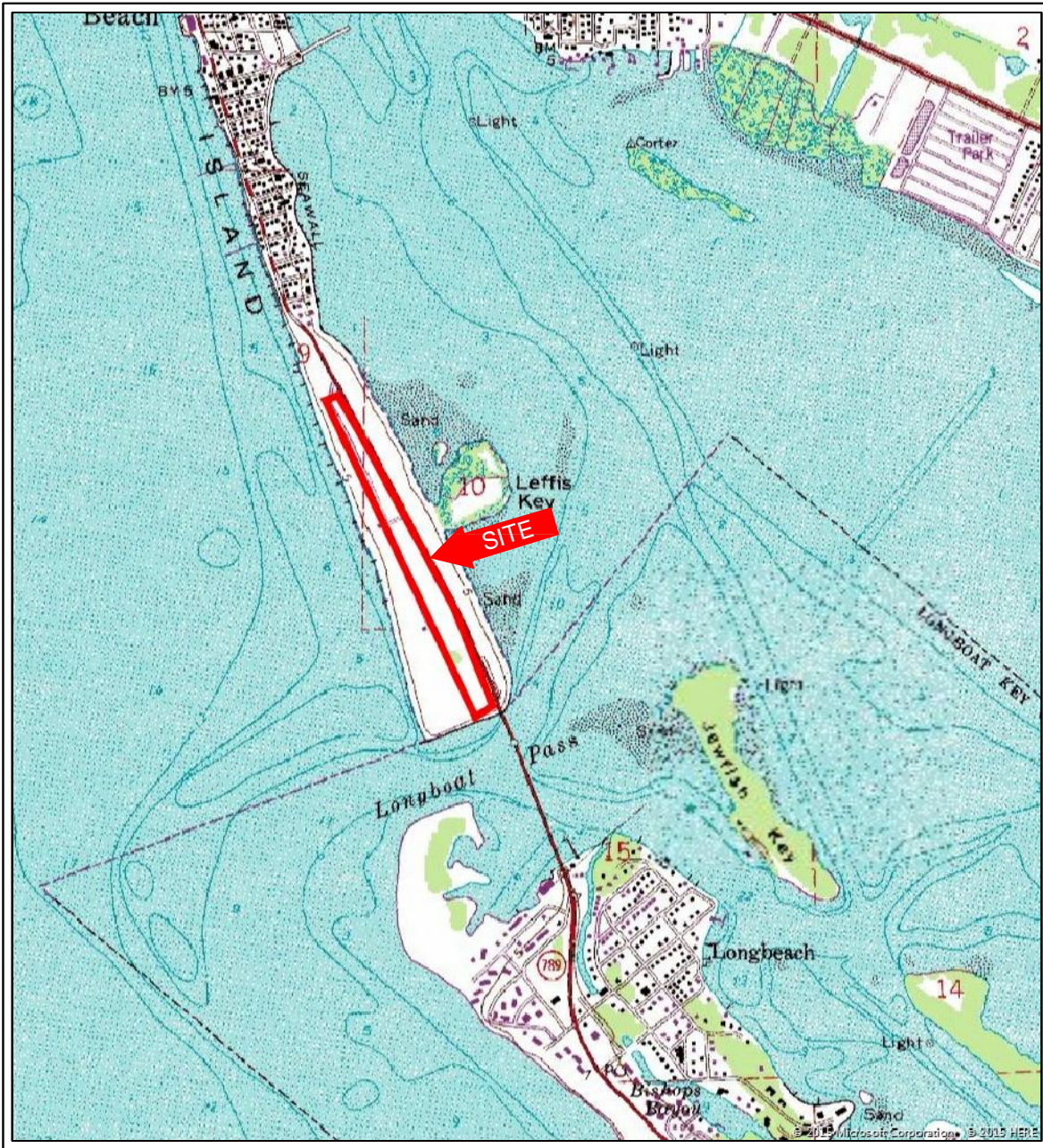
DUNKELBERGER should be retained to review the final design plans and specifications, prior to contractor bidding, so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. DUNKELBERGER also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project is complete.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

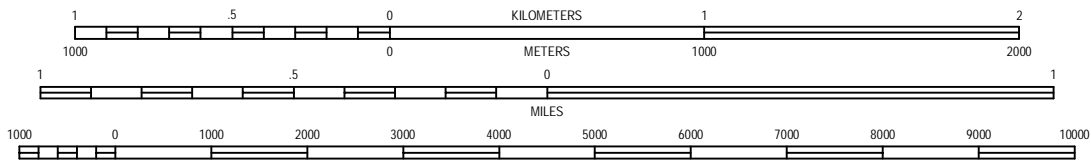
The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, and bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless DUNKELBERGER reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX A
FIELD EXPLORATION



SCALE 1:24 000



CONTOUR INTERVAL: 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

BRADENTON BEACH, FL
1987
7.5 MINUTE SERIES (TOPOGRAPHIC)



Project Mngr:	JMJ	Project No.	HC155032
Drawn By:	DCV	Scale:	AS-SHOWN
Checked By:	JMJ	File No.	HC155032-1
Approved By:	DSD	Date:	1-21-16

Terracon
Consulting Engineers and Scientists

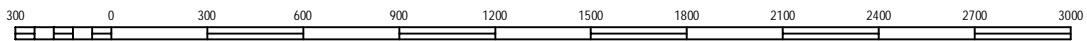
8260 VICO COURT, UNIT B SARASOTA, FL 34240
PH. (941) 379-0621 FAX. (941) 379-5061

TOPOGRAPHIC VICINITY MAP
GEOTECHNICAL ENGINEERING REPORT
COQUINA BEACH DRAINAGE IMPROVEMENTS
2651 GULF DRIVE
BRADENTON BEACH, MANATEE COUNTY, FLORIDA

EXHIBIT
A-1



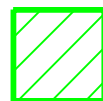
SCALE 1" = 600'



U.S.D.A. SOIL SURVEY FOR MANATEE COUNTY, FLORIDA
ISSUED: APRIL 1983

SOIL LEGEND

- 8 CANAVERAL FINE SAND
- 9 CANAVERAL SAND, FILLED
- 10 CANAVERAL SAND, ORGANIC SUBSTRATUM



POSSIBLE PRESENCE OF
ORGANIC MATERIAL



Project Mngr:	JMJ	Project No.	HC155032
Drawn By:	DCV	Scale:	AS-SHOWN
Checked By:	JMJ	File No.	HC155032-1
Approved By:	DSD	Date:	1-21-16

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SOILS MAP

GEOTECHNICAL ENGINEERING REPORT
COQUINA BEACH DRAINAGE IMPROVEMENTS
2651 GULF DRIVE
BRADENTON BEACH, MANATEE COUNTY, FLORIDA

EXHIBIT

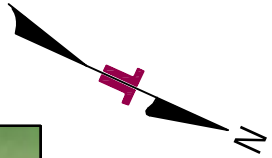
A-2

Soil Survey Descriptions

Unit 8, *Canaveral fine sand*, is comprised of nearly level to gently sloping, moderately well drained to somewhat poorly drained soil on narrow to broad dunelike ridges on the larger islands and keys and in some places on the mainland. Permeability is very rapid and the available water capacity is low. The typical soil profile consists of fine sand and fine sand with shell fragments to a depth of 65 inches. Under natural (pre-development) conditions, the Seasonal High Groundwater Table (SHGWT) is reported to lie at a depth of 10 to 40 inches for 2 to 6 months of the year.

Unit 9, *Canaveral sand, filled*, is comprised of nearly level, moderately well drained to somewhat poorly drained soil that consists of sand and shells that have been dredged or excavated from water areas and then leveled and smoothed, mainly for urban use. Permeability is very rapid and the available water capacity is low. The fill material varies within short distances and ranges from about 20 to 80 inches in thickness. The typical soil profile consists of fine to coarse sand with shell and may contain balls of clayey or loamy material in some places. The Seasonal High Groundwater Table (SHGWT) is reported to lie at a depth of 40 to 60 inches and is dependent on the thickness of the fill material.

Unit 10, *Canaveral sand, organic substratum*, is comprised of nearly level, moderately well drained to somewhat poorly drained soil consisting of sand and shells overlying organic material. Permeability is very rapid and the available water capacity is low in the fill material and the permeability is moderately rapid and the available water capacity is very high in the organic layer. The sand and shells have been dredged or excavated from water areas and deposited on tidal swamps or marshes. The fill material ranges from about 40 to 70 inches in thickness and is about 10 to 80 percent shells. The sand is fine to coarse with some lenses of clayey or loamy material. A layer of **muck** is generally found beneath the fill material from a depth of about 45 to 70 inches. In most areas, this soil group is artificially drained with a Seasonal High Groundwater Table (SHGWT) at a depth of about 30 to 60 inches. The SHGWT is dependent on the thickness of the fill material.



SOURCE: MANATEE COUNTY PUBLIC WORKS DEPARTMENT

LEGEND



**B-1/
BHP-1** APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING AND BOREHOLE PERMEABILITY TEST



DRI-1 APPROXIMATE LOCATION OF DOUBLE RING INFILTRATION TEST



Project Mngr:	JMJ	Project No.	HC155032
Drawn By:	DCV	Scale:	AS-SHOWN
Checked By:	JMJ	File No.	HC155032-4
Approved By:	DSD	Date:	1-21-16

Terracon
Consulting Engineers and Scientists

8260 VICO COURT, UNIT B SARASOTA, FL 34240
PH. (941) 379-0621 FAX. (941) 379-5061

BORING LOCATION PLAN
GEOTECHNICAL ENGINEERING REPORT
COQUINA BEACH DRAINAGE IMPROVEMENTS
2651 GULF DRIVE
BRADENTON BEACH, MANATEE COUNTY, FLORIDA

EXHIBIT

A-4

Field Exploration Description

The boring locations were determined prior to visiting the site by a DUNKELBERGER engineer using the provided site plan. The boring locations were then staked at the project site by a DUNKELBERGER engineer using a hand-held GPS unit and existing site features as reference points.

The SPT soil borings were drilled with a rubber track mounted, rotary drilling rig equipped with a safety hammer. The boreholes were advanced with a cutting head and stabilized with the use of bentonite (drillers' mud). Soil samples were obtained by the split spoon sampling procedure in general accordance with the Standard Penetration Test (SPT) procedure. In the split spoon sampling procedure, the number of blows required to advance the sampling spoon the last 12 inches of an 18-inch penetration or the middle 12 inches of a 24-inch penetration by means of a 140-pound hammer with a free fall of 30 inches, is the standard penetration resistance value (N). This value is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils. The sampling depths and penetration distance, plus the standard penetration resistance values, are shown on the boring logs.

Portions of the samples from the borings were sealed in jars to reduce moisture loss, and then the jars were taken to our laboratory for further observation and classification. Upon completion, the boreholes were sealed from bottom to top with cement grout. Borings drilled in the asphalt pavement were capped with cold-mix asphalt patch.

Field logs of each boring were prepared by the drill crew. These logs included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. The boring logs included with this report represent an interpretation of the field logs and include modifications based on laboratory observation of the samples.

The double ring infiltration (DRI) test was run to aid in the design of the stormwater management area. The DRI test procedure consisted of installing a 12-inch diameter aluminum ring and a 24-inch diameter aluminum ring concentrically into the ground. Water was then added to the desired head level of approximately 14 inches in both casings and held constant. The amount of infiltration observed in the inner ring versus time was then recorded. This procedure was repeated for a total of 4 hours or until a stabilized infiltration rate was achieved.

The borehole permeability (BHP) test was completed by installing 23 feet of 2-inch diameter machine slotted PVC pipe (0.10-inch slot width) that was flush joint coupled to 2 feet of solid riser pipe of similar composition. A filter sand pack of 20/30 silica sand was placed around the well screen interval followed by about 1 foot of 60/30 fine sand and capped with about 1 foot of bentonite chips (to provide a low permeability seal) that extended to the ground surface. The completed pipe installations were pumped until the development water was free of sediment.

Geotechnical Engineering Draft Report

Coquina Beach Drainage Improvements ■ Bradenton Beach, Florida
January 21, 2016 ■ DUNKELBERGER Project No. HC155032

DUNKELBERGER
engineering & testing, inc.

A Terracon COMPANY

Field permeability tests were completed by filling the pipe with water at the measured volumetric rate required to maintain a constant head in the pipe.

BORING LOG NO. B-1

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44501° Longitude: -82.68918° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light brown to light gray, medium dense to very dense</p>	<p>10.0</p>	<p>5</p> <p style="text-align: center;">▽</p>	<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>	<p>7-9-9-9 N=18</p> <p>7-11-15-15 N=26</p> <p>3-8-16-23 N=24</p> <p>10-20-25-28 N=45</p> <p>9-22-31-40 N=53</p>			
	<p>Boring Terminated at 10 Feet</p>	<p>10</p>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: JM

Project No.: HC155032

Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-2

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44534° Longitude: -82.68874° Surface Elev.: +3.5 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to gray, medium dense to dense			X	5-7-8-8 N=15			
				X	8-8-13-14 N=21			
		5	▽	X	3-12-16-14 N=28			
				X	4-11-13-20 N=24			
				X	13-23-26-28 N=49			
				X	13-15-16 N=31			
				X	8-15-19 N=34			
				X	12-22-24 N=46			
	25.0	-21.5						
Boring Terminated at 25 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-3

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44556° Longitude: -82.68918° Surface Elev.: +2.8 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
DEPTH								
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown to gray, medium dense to very dense	5	▽	X	5-5-6-9 N=11			
				X	13-19-17-23 N=36			
				X	6-12-20-26 N=32			
				X	13-27-25-26 N=52			
				X	5-16-19 N=35			
10.0	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: JM

Project No.: HC155032

Exhibit: A-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-4

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44548° Longitude: -82.68954° Surface Elev.: +3.4 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light brown to gray, medium dense to dense			X	5-7-6-8 N=13			
				X	6-13-17-20 N=30			
		5	▽	X	3-11-13-20 N=24			
				X	4-11-18-27 N=29			
		10		X	5-21-28-34 N=49		22	9
				X	8-9-5 N=14			
		15		X	7-15-26 N=41			
				X	8-15-25 N=40			
		20		X				
				X				
		25		X				
	Boring Terminated at 25 Feet	-21.5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed
at a depth of 5 feet bgs



Notes:	
Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-5

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44605° Longitude: -82.68955° Surface Elev.: +3.1 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	<p>SLIGHTLY SILTY SAND (SP-SM), trace shell fragments, fine grained, light gray to gray, medium dense to dense</p>	<p>10.0</p>	<p>5</p>	<p>▽</p>	<p>6-6-9-11 N=15</p> <p>10-18-22-19 N=40</p> <p>5-11-15-20 N=26</p> <p>9-19-30-26 N=49</p> <p>10-20-23-28 N=43</p>			
<p>Boring Terminated at 10 Feet</p>		<p>10</p>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS
<p>▽ Groundwater initially observed at a depth of 5 feet bgs</p>



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-10

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-6

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44651° Longitude: -82.68934° Surface Elev.: +2.5 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown and light gray to gray, loose to dense	25.0	▽	X	4-5-5-9 N=10			
				X	8-10-15-20 N=25			
		5	▽	X	3-7-16-19 N=23			
				X	8-18-22-22 N=40			
		10		X	6-14-16-20 N=30			
				X	8-12-14 N=26			
		15		X	13-15-15 N=30			
				X	10-18-23 N=41			
		20		X				
		25		X				
Boring Terminated at 25 Feet		-22						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: JM

Project No.: HC155032

Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-7

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44705° Longitude: -82.68951° Surface Elev.: +3.1 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to light brown, medium dense to dense</p>	<p>5</p> <p>10</p>	<p>▽</p>	<p>×</p> <p>×</p> <p>×</p> <p>×</p> <p>×</p>	<p>4-6-8-11 N=14</p> <p>6-12-15-17 N=27</p> <p>2-3-9-5 N=12</p> <p>8-16-17-16 N=33</p> <p>18-7-6-9 N=13</p>			
	<p>10.0</p> <p>Boring Terminated at 10 Feet</p>	<p>-7</p> <p>10</p>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-8

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44645° Longitude: -82.69001° Surface Elev.: +3.2 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to gray, loose to dense			X	3-7-7-14 N=14			
				X	10-15-20-22 N=35			
		5	▽	X	4-14-19-21 N=33			
				X	9-11-14-18 N=25			
				X	7-17-19-22 N=36			
				X	5-4-6 N=10			
				X	7-11-19 N=30			
				X	9-20-21 N=41			
	25.0	-22						
Boring Terminated at 25 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-9

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.4471° Longitude: -82.69044° Surface Elev.: +3.4 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	DEPTH ELEVATION (Ft.)							
	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, dark gray, medium dense	2.0		X	6-12-12-17 N=24			
	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray, medium dense to very dense	1.5		X	12-25-27-33 N=52			
			▽	X	6-11-17-19 N=28			
				X	6-14-19-20 N=33			
				X	9-16-20-20 N=36			
	Boring Terminated at 10 Feet	10.0						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-14

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-10

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44759° Longitude: -82.68973° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
25.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown to dark gray and gray, loose to medium dense	-21.5	▽	X	5-6-6-8 N=12			
				X	6-4-3-4 N=7			
			▽	X	6-6-11-16 N=17			
				X	6-3-2-8 N=5			
				X	4-15-15-17 N=30			
				X	2-3-6 N=9			
				X	5-7-9 N=16			
				X	2-7-8 N=15			
	Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-15

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-11

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44807° Longitude: -82.69001° Surface Elev.: +4.6 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
10.0	SLIGHTLY SILTY SAND (SP-SM) , some shell fragments, fine grained, light brown to light gray and gray, loose to medium dense	5	▽	X	7-8-9-8 N=17			
				X	8-7-6-5 N=13			
				X	2-1-4-12 N=5			
				X	9-14-15-15 N=29			
				X	6-7-9-12 N=16			
10.0	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ <i>Groundwater initially observed at a depth of 5 feet bgs</i>



Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-16

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-12

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44764° Longitude: -82.69065° Surface Elev.: +3.6 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
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	DEPTH SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown to light gray, medium dense to dense	25.0			13-14-10-12 N=24		22	8
				5	9-20-26-21 N=46			
				7-9-11-12 N=20				
				4-4-13-18 N=17				
			▽	15-12-19-20 N=31				
				11-8-2 N=10				
				12-5-8 N=13				
				5-6-8 N=14				
	Boring Terminated at 25 Feet	-21.5		25				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 8 feet bgs



Boring Started: 11/11/2015	Boring Completed: 11/11/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-17

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/17/15

BORING LOG NO. B-13

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/17/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44815° Longitude: -82.69089° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
2.0	SLIGHTLY SILTY SAND (SP-SM) , some shell fragments, fine grained, brown, medium dense	1.5		X	11-14-14-10 N=28			
4.0	SLIGHTLY SILTY SAND (SP-SM) , some tree debris, fine grained, gray, medium dense	-0.5		X	8-8-12-13 N=20			
10.0	SLIGHTLY SILTY SAND (SP-SM) , fine grained, light gray to gray, loose to medium dense	5	▽	X	7-10-12-12 N=22			
10.0	Boring Terminated at 10 Feet	-6.5		X	6-6-7-9 N=13			
10.0		10		X	5-3-4-10 N=7			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-18

BORING LOG NO. B-14

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44837° Longitude: -82.69053° Surface Elev.: +4.1 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
	DEPTH							
	1.0	3		X	6-5-8-11 N=13	1.2	13	
	2.0	2		X	8-8-9-7 N=17			
			▽	X	6-8-9-10 N=17			
				X	7-6-8-10 N=14			
				X	3-7-6-4 N=13			
				X	5-8-14 N=22		23	6
				X	7-9-12 N=21			
				X	11-10-15 N=25			
	25.0	-21						
Boring Terminated at 25 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.
WATER LEVEL OBSERVATIONS	
▽ Groundwater initially observed at a depth of 5 feet bgs	

8260 Vico Court, Unit B
Sarasota, Florida

Notes:	
Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-19

BORING LOG NO. B-15

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44906° Longitude: -82.69061° Surface Elev.: +4.9 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; position: absolute; left: -40px; top: 50%; white-space: nowrap;">THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ.TERRACON2015.GDT.12/4/15</div>	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, brown to light gray and gray, loose to medium dense</p>	5	▽	X	7-11-14-16 N=25			
		10.0		X	9-11-10-9 N=21			
				X	4-5-7-3 N=12			
				X	2-2-6-9 N=8			
				X	3-9-12-15 N=21			
	<p>Boring Terminated at 10 Feet</p>	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
<p>▽ Groundwater initially observed at a depth of 5 feet bgs</p>



Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-20

BORING LOG NO. B-16

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/14/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44868° Longitude: -82.69117° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, brown to light gray and light brown, medium dense	4.0			5-7-15-20 N=22			
	ORGANIC SAND (SM, PT) , fine grained, gray and black, loose	6.0	▽		11-9-10-5 N=19			
	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to gray, medium dense to dense	25.0			1-3-4-14 N=7	7.2	47	
					10-15-18-17 N=33			
					8-13-21-21 N=34			
					9-9-17 N=26			
					5-7-10 N=17			
					13-12-16 N=28			
	Boring Terminated at 25 Feet	25.0						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).	Notes:
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.	
WATER LEVEL OBSERVATIONS		
▽ Groundwater initially observed at a depth of 5 feet bgs		

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-21

BORING LOG NO. B-17

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/14/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44915° Longitude: -82.69139° Surface Elev.: +6.2 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH	ELEVATION (Ft.)							
0	0							
4.0	2				6-8-16-20 N=24			
6.0	0	5	▽		16-17-14-7 N=31			
10.0	-4	10			3-1-2-1 N=3	7.5	58	
					7-8-12-15 N=20			
					14-9-7-6 N=16			
Boring Terminated at 10 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-22

BORING LOG NO. B-18

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/14/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44955° Longitude: -82.69091° Surface Elev.: +5.2 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
4.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray and light brown to dark brown and dark gray, medium dense to dense	1		X	11-12-14-17 N=26			
6.0	SAND (SP) , fine grained, light gray, medium dense	-1	▽	X	15-14-17-18 N=31			
6.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray and light brown to dark brown and dark gray, loose to dense	-1		X	6-10-9-6 N=19		23	2
10.0		10		X	2-1-7-12 N=8			
15.0		15		X	5-14-17-13 N=31			
20.0		20		X	7-17-17 N=34			
25.0		25		X	8-9-11 N=20			
25.0	Boring Terminated at 25 Feet	-20		X	9-9-7 N=16			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-23

BORING LOG NO. B-19

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45003° Longitude: -82.69121° Surface Elev.: +5.1 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; position: absolute; left: -40px; top: 50%; white-space: nowrap;">THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15</div>	<p>SLIGHTLY SILTY SAND (SP-SM), trace shell fragments, fine grained, light brown and light gray to gray and brown, medium dense to dense</p>	5	▽	X	19-18-15-21 N=33			
		10.0		X	15-12-15-15 N=27			
				X	6-7-8-6 N=15			
				X	4-3-8-14 N=11			
				X	9-12-11-15 N=23			
	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-24

BORING LOG NO. B-20

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/14/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45051° Longitude: -82.6915° Surface Elev.: +5.4 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
2.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, orange and brown	3.5						
6.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, light gray to gray, medium dense	5.0	▽		6-6-8-6 N=14			
8.0	ORGANIC SAND (SM, PT) , fine grained, black to gray, very loose	-0.5			3-1-1-4 N=2	15.9	106	
25.0	SLIGHTLY SILTY SAND (SP-SM) , fine grained, light gray to dark gray, loose to medium dense	-2.5			10-13-11-10 N=24			
		10						
		15			5-5-4 N=9			
		20			3-4-8 N=12			
		25			4-5-5 N=10			
Boring Terminated at 25 Feet		25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.
WATER LEVEL OBSERVATIONS	
▽ Groundwater initially observed at a depth of 4 feet bgs	

8260 Vico Court, Unit B
Sarasota, Florida

Notes:	
Boring Started: 11/11/2015	Boring Completed: 11/11/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-25

BORING LOG NO. B-21

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.451° Longitude: -82.6918° Surface Elev.: +5.4 feet-NAVD DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
2.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, orange and brown, dense	3.5		X	13-17-18-20 N=35			
2.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to gray, medium dense to dense	3.5		X	21-19-22-21 N=41			
5.0		5.0	▽	X	5-5-11-11 N=16			
7.5		7.5		X	12-13-13-20 N=26			
10.0		10.0		X	5-5-8-3 N=13			
Boring Terminated at 10 Feet		10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ <i>Groundwater initially observed at a depth of 5 feet bgs</i>



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-26

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-22

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45148° Longitude: -82.6921° Surface Elev.: +5.5 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to brown, medium dense to dense	5	▽	X	8-12-15-13 N=27		7	9
				X	13-14-18-20 N=32			
				X	8-16-11-20 N=27			
				X	7-9-6-6 N=15			
				X	8-12-14-18 N=26			
	12.5	-7		X	1-2-1 N=3			
	SILTY SAND (SM) , fine grained, dark gray, very loose			X	1-2-5 N=7			
	17.5	-12		X	4-10-9 N=19			
	SLIGHTLY SILTY SAND (SP-SM) , fine grained, gray to dark gray, loose to medium dense			X				
	25.0	-19.5						
	Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.
WATER LEVEL OBSERVATIONS	
▽ Groundwater initially observed at a depth of 5 feet bgs	

8260 Vico Court, Unit B
Sarasota, Florida

Notes:	
Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-27

BORING LOG NO. B-23

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45198° Longitude: -82.69239° Surface Elev.: +5.9 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; position: absolute; left: -40px; top: 50%; white-space: nowrap;">THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15</div>	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to gray and brown, loose to dense</p>	5	▽	X	12-18-19-22 N=37			
		5		X	12-13-18-32 N=31			
		5	▽	X	16-19-13-18 N=32			
		5		X	5-13-5-12 N=18			
		5		X	4-2-6-3 N=8			
	<p>Boring Terminated at 10 Feet</p>	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
<p>▽ Groundwater initially observed at a depth of 5 feet bgs</p>

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-28

BORING LOG NO. B-24

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45247° Longitude: -82.6927° Surface Elev.: +5.6 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES	
DEPTH	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to gray and brown, medium dense to very dense	25.0	-19.5	<div style="text-align: center;">▽</div>	<div style="text-align: center;">X</div>	6-15-15-16 N=30			
				<div style="text-align: center;">X</div>	12-9-50/4"				
			<div style="text-align: center;">▽</div>	<div style="text-align: center;">X</div>	20-18-13-18 N=31				
				<div style="text-align: center;">X</div>	11-10-5-4 N=15				
				<div style="text-align: center;">X</div>	4-11-12-12 N=23				
				<div style="text-align: center;">X</div>	11-11-16 N=27				
				<div style="text-align: center;">X</div>	4-3-3 N=6				
				<div style="text-align: center;">X</div>	4-9-8 N=17				
	Boring Terminated at 25 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Notes:	
Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-29

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-25

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45295° Longitude: -82.69299° Surface Elev.: +5.2 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
10.0	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to dark gray, loose to dense</p>	5	▽	X	15-13-14-20 N=27			
				X	16-18-18-17 N=36			
				X	4-4-9-12 N=13			
				X	5-4-3-1 N=7			
				X	4-7-15-15 N=22			
	10.0	-5						
Boring Terminated at 10 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ <i>Groundwater initially observed at a depth of 5 feet bgs</i>



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-30

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-26

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45285° Longitude: -82.69326° Surface Elev.: +4.3 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
4.0	SLIGHTLY SILTY SAND (SP-SM) , fine grained, light gray to brown, medium dense	0.5		X	9-10-12-13 N=22			
6.0	SLIGHTLY SILTY SAND (SP-SM) , large tree debris, fine grained, gray and brown, medium dense	-1.5	▽	X	18-13-12-7 N=25			
6.0	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to dark brown, very loose to dense	-1.5		X	3-3-10-19 N=13			
10.0		-10.0		X	3-11-17-25 N=28			
15.0		-15.0		X	7-14-19-17 N=33			
15.0		-15.0		X	1-1-1 N=2			
20.0		-20.0		X	3-9-11 N=20			
25.0		-25.0		X	3-4-4 N=8			
Boring Terminated at 25 Feet		25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/13/2015
Drill Rig: BR2500
Project No.: HC155032

Boring Completed: 11/13/2015
Driller: MF
Exhibit: A-31

BORING LOG NO. B-27

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45332° Longitude: -82.69341° Surface Elev.: +4.5 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; position: absolute; left: -40px; top: 50%; white-space: nowrap;">THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15</div>	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray and light brown to gray, medium dense to dense</p>	<p>10.0</p> <p style="text-align: right;">-5.5</p> <p>10</p>	<p style="text-align: center;">▽</p>	<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>	<p>7-5-12-16 N=17</p> <p>11-14-13-18 N=27</p> <p>17-14-16-20 N=30</p> <p>7-5-5-10 N=10</p> <p>8-17-20-25 N=37</p>			
<p>Boring Terminated at 10 Feet</p>								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-32

BORING LOG NO. B-28

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.4538° Longitude: -82.69366° Surface Elev.: +4.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown and light gray to gray, loose to medium dense	5	▽	X	3-4-5-10 N=9			
				X	11-14-11-11 N=25			
				X	2-8-6-8 N=14			
				X	3-6-8-10 N=14			
				X	3-4-7-6 N=11			
	12.5	-8		X	1-1-2 N=3			
	SILTY SAND (SM) , fine grained, dark gray, very loose			X	9-11-9 N=20			
	17.5	-13		X	11-16-21 N=37			
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, brown to gray, medium dense to dense			X				
	25.0	-20.5						
	Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-33

BORING LOG NO. B-29

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45434° Longitude: -82.69393° Surface Elev.: +4.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; position: absolute; left: -40px; top: 50%; white-space: nowrap;">THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15</div>	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to gray, very loose to very dense</p>	<p>10.0</p> <p style="text-align: right;">-5.5</p> <p>10</p>	<p>5</p> <p style="text-align: center;">▽</p>	<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>	<p>5-5-8-23 N=13</p> <p>15-22-16-20 N=38</p> <p>7-7-6-13 N=13</p> <p>6-5-3-7 N=8</p> <p>6-3-1-1 N=4</p>			
<p>Boring Terminated at 10 Feet</p>								
<p>Stratification lines are approximate. In-situ, the transition may be gradual.</p>					<p>Hammer Type: Rope and Cathead</p>			

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.
WATER LEVEL OBSERVATIONS	
▽ Groundwater initially observed at a depth of 5 feet bgs	

8260 Vico Court, Unit B
Sarasota, Florida

Notes:	
Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-34

BORING LOG NO. B-30

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45485° Longitude: -82.6943° Surface Elev.: +4.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
4.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown to gray, dense	0.5			12-15-21-26 N=36			
6.0	SLIGHTLY SILTY SAND (SP-SM) , organic staquined, fine grained, gray and black, loose	-1.5	▽		7-2-3-2 N=5			
12.5	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to gray, loose to medium dense	-8			7-1-4-9 N=5 8-12-13-20 N=25			
17.5	SILTY SAND (SM) , trace shell fragments, fine grained, gray, loose	-13			2-3-2 N=5		24	13
25.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, gray to dark gray, medium dense	-20.5			8-10-10 N=20 8-12-13 N=25			
Boring Terminated at 25 Feet		25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).	Notes:
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.	
WATER LEVEL OBSERVATIONS		
▽ Groundwater initially observed at a depth of 5 feet bgs		

8260 Vico Court, Unit B
Sarasota, Florida

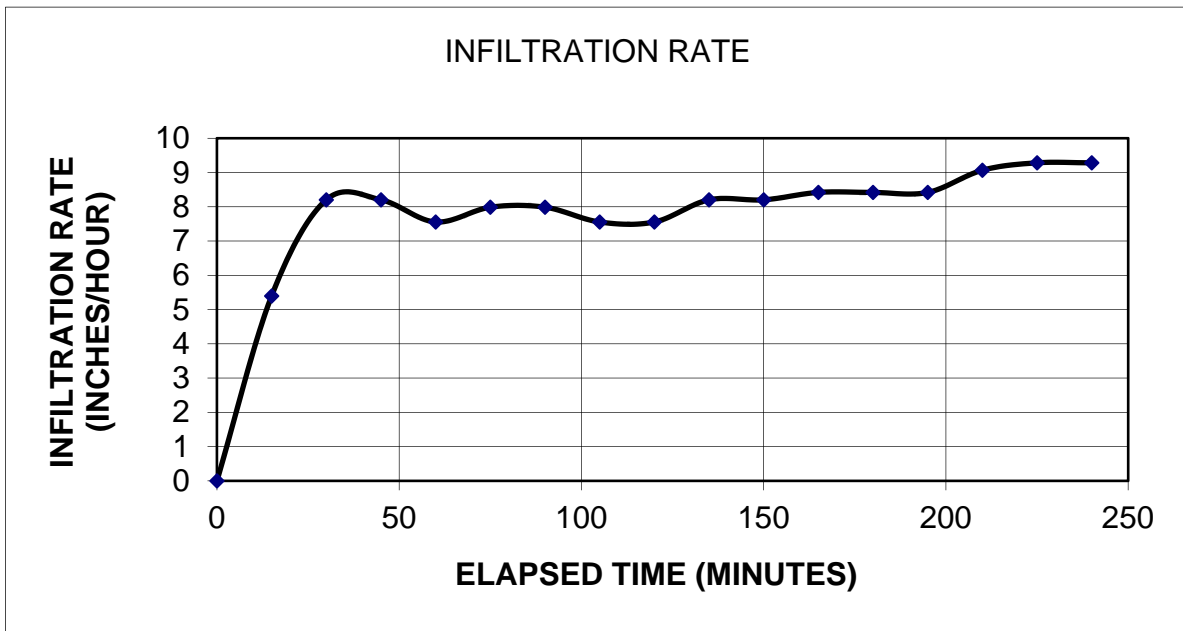
Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-35

DRI-1

DOUBLE RING INFILTRATION TEST RESULTS
 PROJECT NAME: Coquina Beach Drainage Improvements
 PROJECT No.: HC155032
 TEST LOCATION: DRI-1

TIME	TIME INCREMENT (MINUTES)	ELAPSED TIME (MINUTES)	AMOUNT OF WATER ADDED TO INNER RING (ml)	INFILTRATION RATE (INCHES/HOUR)
8:30	15	0	0	0
8:45	15	15	2500	5.40
9:00	15	30	3800	8.20
9:15	15	45	3800	8.20
9:30	15	60	3500	7.56
9:45	15	75	3700	7.99
10:00	15	90	3700	7.99
10:15	15	105	3500	7.56
10:30	15	120	3500	7.56
10:45	15	135	3800	8.20
11:00	15	150	3800	8.20
11:15	15	165	3900	8.42
11:30	15	180	3900	8.42
11:45	15	195	3900	8.42
12:00	15	210	4200	9.07
12:15	15	225	4300	9.28
12:30	15	240	4300	9.28

DIAMETER OF INNER RING = 12 INCHES
 DIAMETER OF OUTER RING = 24 INCHES



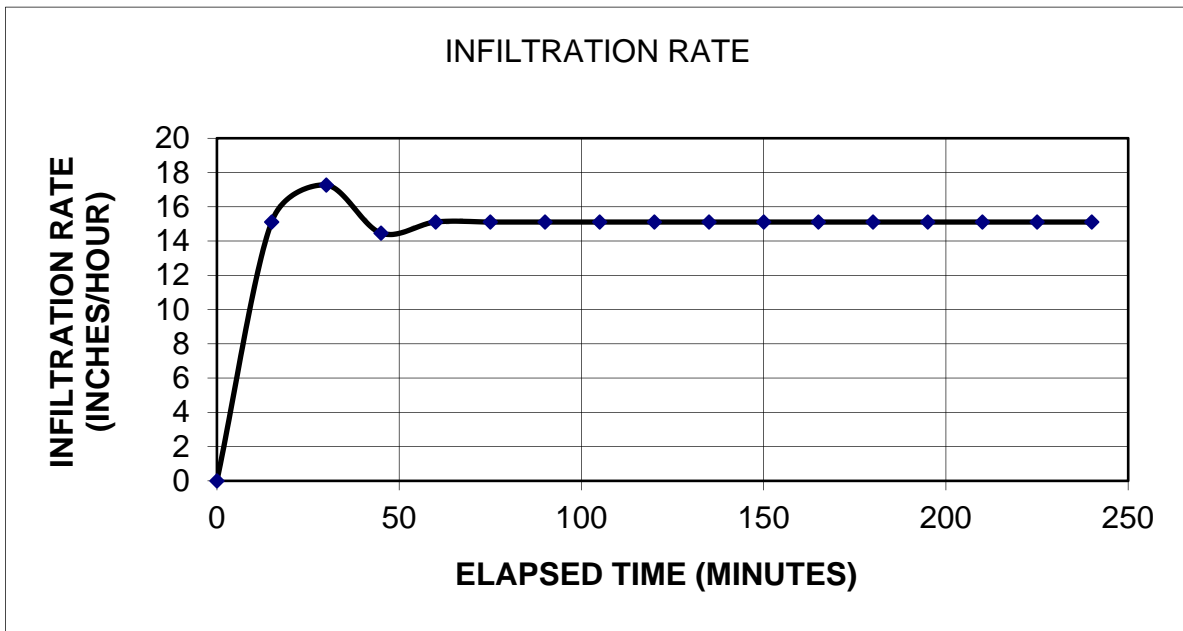
DEPTH OF TEST = 12 inches
 MATERIAL DESCRIPTION = White fine SAND (SP)

DRI-2

DOUBLE RING INFILTRATION TEST RESULTS
 PROJECT NAME: Coquina Beach Drainage Improvements
 PROJECT No.: HC155032
 TEST LOCATION: DRI-2

TIME	TIME INCREMENT (MINUTES)	ELAPSED TIME (MINUTES)	AMOUNT OF WATER ADDED TO INNER RING (ml)	INFILTRATION RATE (INCHES/HOUR)
7:30	15	0	0	0
7:45	15	15	7000	15.11
8:00	15	30	8000	17.27
8:15	15	45	6700	14.46
8:30	15	60	7000	15.11
8:45	15	75	7000	15.11
9:00	15	90	7000	15.11
9:15	15	105	7000	15.11
9:30	15	120	7000	15.11
9:45	15	135	7000	15.11
10:00	15	150	7000	15.11
10:15	15	165	7000	15.11
10:30	15	180	7000	15.11
10:45	15	195	7000	15.11
11:00	15	210	7000	15.11
11:15	15	225	7000	15.11
11:30	15	240	7000	15.11

DIAMETER OF INNER RING = 12 INCHES
 DIAMETER OF OUTER RING = 24 INCHES



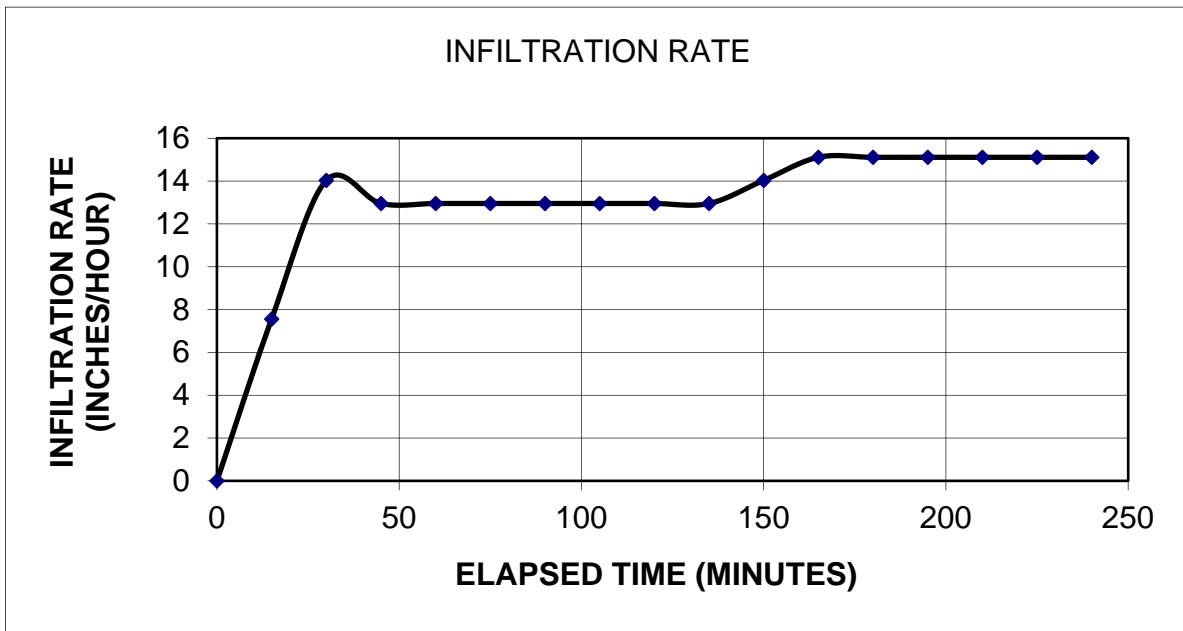
DEPTH OF TEST = 20 inches
 MATERIAL DESCRIPTION = White fine SAND (SP)

DRI-3

DOUBLE RING INFILTRATION TEST RESULTS
 PROJECT NAME: Coquina Beach Drainage Improvements
 PROJECT No.: HC155032
 TEST LOCATION: DRI-3

TIME	TIME INCREMENT (MINUTES)	ELAPSED TIME (MINUTES)	AMOUNT OF WATER ADDED TO INNER RING (ml)	INFILTRATION RATE (INCHES/HOUR)
11:30	15	0	0	0
11:45	15	15	3500	7.56
12:00	15	30	6500	14.03
12:15	15	45	6000	12.95
12:30	15	60	6000	12.95
12:45	15	75	6000	12.95
13:00	15	90	6000	12.95
13:15	15	105	6000	12.95
13:30	15	120	6000	12.95
13:45	15	135	6000	12.95
14:00	15	150	6500	14.03
14:15	15	165	7000	15.11
14:30	15	180	7000	15.11
14:45	15	195	7000	15.11
15:00	15	210	7000	15.11
15:15	15	225	7000	15.11
15:30	15	240	7000	15.11

DIAMETER OF INNER RING = 12 INCHES
 DIAMETER OF OUTER RING = 24 INCHES



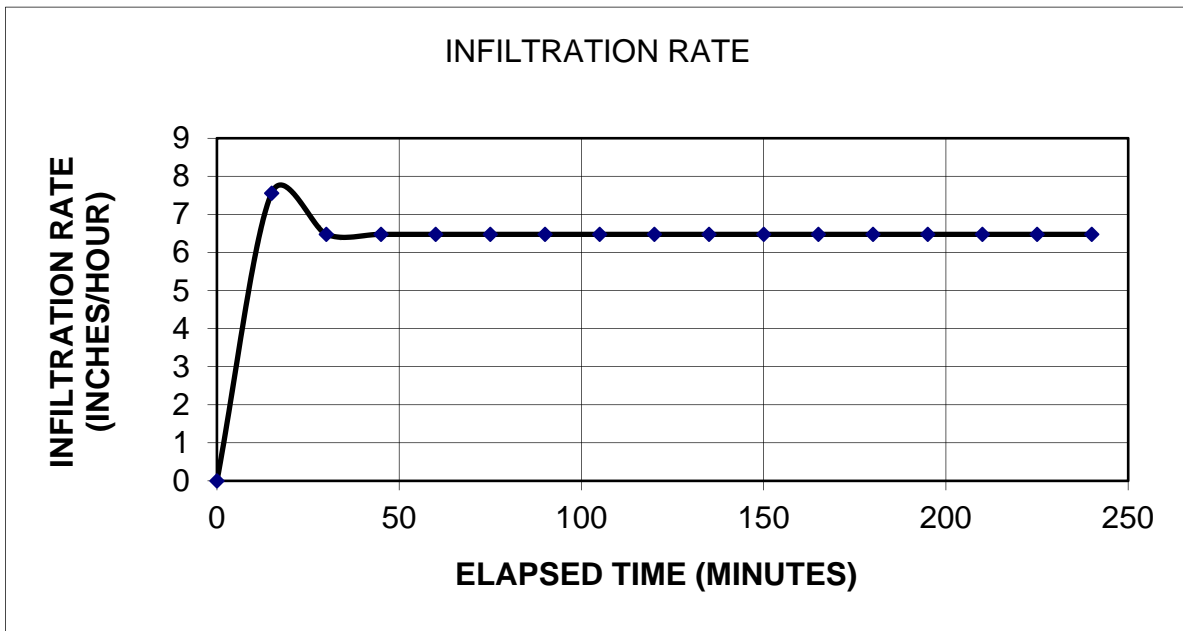
DEPTH OF TEST = 25 inches
 MATERIAL DESCRIPTION = White fine SAND (SP)

DRI-4

DOUBLE RING INFILTRATION TEST RESULTS
 PROJECT NAME: Coquina Beach Drainage Improvements
 PROJECT No.: HC155032
 TEST LOCATION: DRI-4

TIME	TIME INCREMENT (MINUTES)	ELAPSED TIME (MINUTES)	AMOUNT OF WATER ADDED TO INNER RING (ml)	INFILTRATION RATE (INCHES/HOUR)
7:30	15	0	0	0
7:45	15	15	3500	7.56
8:00	15	30	3000	6.48
8:15	15	45	3000	6.48
8:30	15	60	3000	6.48
8:45	15	75	3000	6.48
9:00	15	90	3000	6.48
9:15	15	105	3000	6.48
9:30	15	120	3000	6.48
9:45	15	135	3000	6.48
10:00	15	150	3000	6.48
10:15	15	165	3000	6.48
10:30	15	180	3000	6.48
10:45	15	195	3000	6.48
11:00	15	210	3000	6.48
11:15	15	225	3000	6.48
11:30	15	240	3000	6.48

DIAMETER OF INNER RING = 12 INCHES
 DIAMETER OF OUTER RING = 24 INCHES



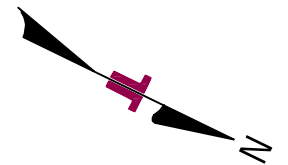
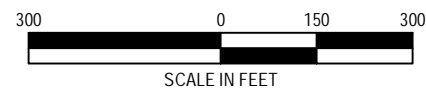
DEPTH OF TEST = 12 inches
 MATERIAL DESCRIPTION = White fine SAND (SP)



SOURCE: GOOGLE EARTH PRO

NOTES:

- 1) GROUNDWATER ELEVATIONS SHOWN IN FEET-NAVD 88.
- 2) GROUNDWATER ELEVATIONS SHOWN ARE BASED ON FIELD MEASURED GROUNDWATER LEVELS RECORDED DURING A RELATIVELY DRY TIME OF YEAR. WE ANTICIPATE SHGWLS TO BE ABOUT 1 FOOT HIGHER THAN THE LEVELS SHOWN ON THIS MAP.



Project Mngr:	JMJ	Project No.	HC155032
Drawn By:	DCV	Scale:	AS-SHOWN
Checked By:	JMJ	File No.	HC155032-40
Approved By:	DSD	Date:	1-21-16

Terracon
Consulting Engineers and Scientists
8260 VICO COURT, UNIT B SARASOTA, FL 34240
PH. (941) 379-0621 FAX. (941) 379-5061

GROUNDWATER CONTOUR MAP
GEOTECHNICAL ENGINEERING REPORT
COQUINA BEACH DRAINAGE IMPROVEMENTS
2651 GULF DRIVE
BRADENTON BEACH, MANATEE COUNTY, FLORIDA

EXHIBIT
A-40

APPENDIX B
LABORATORY TESTING

Geotechnical Engineering Draft Report

Coquina Beach Drainage Improvements ■ Bradenton Beach, Florida
January 21, 2016 ■ DUNKELBERGER Project No. HC155032

DUNKELBERGER
engineering & testing, inc.

A Terracon COMPANY

Laboratory Testing Procedures

During the field exploration, a portion of each recovered sample was sealed in a jar and transported to our laboratory for further visual observation and laboratory testing. The soil samples were classified in general accordance with the appended General Notes and the Unified Soil Classification System based on the material's texture and plasticity. The estimated group symbol for the Unified Soil Classification System is shown on the boring logs and a brief description of the Unified Soil Classification System is included in Appendix C.










Laboratory tests conducted for this project included moisture content, organic content, and determination of the amount passing a U.S. No. 200 sieve. The results of the laboratory testing are summarized in the table below and shown on the boring logs in Appendix A.

Boring No.	USCS Classification	Depth (ft)	Moisture Content (%)	Fines Content (%)	Organic Content
B-4	SP-SM	8	21.6	8.6	-
B-12	SP-SM	0	21.5	8.1	-
B-14	SP-SM	0	13.0	-	1.2
B-14	SP-SM	13.5	22.6	5.5	-
B-16	SP-SM, PT	4	46.6	-	7.2
B-17	SP-SM, PT	4	58.1	-	7.5
B-18	SP	4	23.0	2.1	-
B-20	SP-SM, PT	6	106.2	-	15.9
B-22	SP-SM	0	7.4	9.2	-
B-30	SM	0	24.3	12.8	-

APPENDIX C
SUPPORTING DOCUMENTS

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING	 Auger Cuttings  Grab Sample  Shelby Tube	 Rock Core  No Recovery  Standard Penetration Test	WATER LEVEL	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	FIELD TESTS	(HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer
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DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS	RELATIVE DENSITY OF COARSE-GRAINED SOILS <small>(More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance</small>		CONSISTENCY OF FINE-GRAINED SOILS <small>(50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance</small>		
	Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (psf)	Standard Penetration or N-Value Blows/Ft.
	Very Loose	0 - 3	Very Soft	less than 500	0 - 1
	Loose	4 - 9	Soft	500 to 1,000	2 - 4
	Medium Dense	10 - 29	Medium Stiff	1,000 to 2,000	4 - 8
	Dense	30 - 50	Stiff	2,000 to 4,000	8 - 15
	Very Dense	> 50	Very Stiff	4,000 to 8,000	15 - 30
			Hard	> 8,000	> 30

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification	
				Group Symbol	Group Name ^B
Coarse Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GP	Poorly graded gravel ^F
			Fines classify as CL or CH	GM	Silty gravel ^{F,G,H}
		Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	GC
	Sands with Fines: More than 12% fines ^D		Fines classify as ML or MH	SW	Well-graded sand ^I
			Fines classify as CL or CH	SP	Poorly graded sand ^I
	Silts and Clays: Liquid limit less than 50		Inorganic:	$PI > 7$ and plots on or above "A" line ^J	SM
		Organic:	Liquid limit - oven dried < 0.75	SC	Clayey sand ^{G,H,I}
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit 50 or more	Inorganic:	$PI < 4$ or plots below "A" line ^J	CL	Lean clay ^{K,L,M}
		Organic:	Liquid limit - not dried < 0.75	ML	Silt ^{K,L,M}
			PI plots on or above "A" line	OL	Organic clay ^{K,L,M,N}
		Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots below "A" line	OH
	Organic:		Liquid limit - oven dried < 0.75	CH	Fat clay ^{K,L,M}
			Liquid limit - not dried < 0.75	MH	Elastic Silt ^{K,L,M}
	Highly organic soils:				OH
				PT	Organic silt ^{K,L,M,Q}
		PT		Peat	

^A Based on the material passing the 3-inch (75-mm) sieve

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

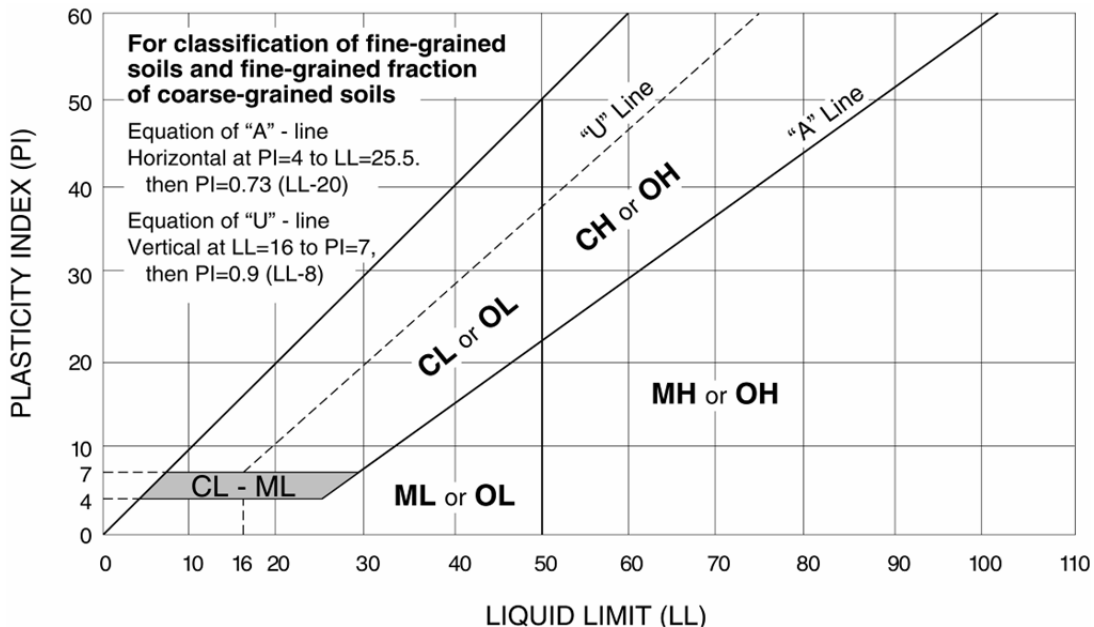
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



APPENDIX D
ANDREYEV ENGINEERING GROUNDWATER MODELING
REPORTS



Revised: January 18, 2016
AEI Project No.: APGT-15-0122

TO: **Mr. James Jackson**
Dunkelberger Engineering and Testing
8260 Vico Court, Suite B
Sarasota, Florida 34240

SUBJECT: Groundwater Modeling of Proposed Underdrain System, Coquina Beach
Improvements, Manatee County, Florida

Dear Mr. Jackson:

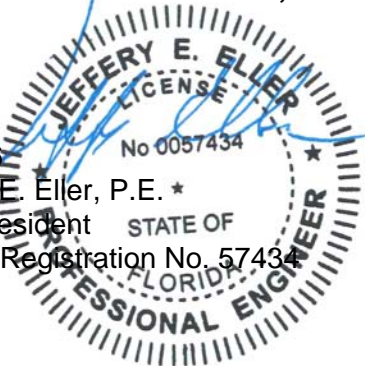
Andreyev Engineering, Inc. (AEI) has completed groundwater modeling for the proposed underdrain system. The results of our groundwater modeling efforts with recommendations for underdrain construction are included herein.

AEI appreciates the opportunity to participate in this project, and we trust that the information herein is sufficient for your design. If you have any questions or comments concerning the contents of this report, please do not hesitate to contact our office.

Sincerely,

ANDREYEV ENGINEERING, INC.

1-18-16
Jeffery E. Eller, P.E. ★
Vice President
Florida Registration No. 57434



Project Description and Approach

Based on the plans provided for our review, we understand that the proposed project consists of the design and construction of an underdrain system to control the shallow groundwater below proposed pervious concrete pavement. The purpose of the groundwater modeling was to evaluate the groundwater conditions prior to and following the installation of the system. The scope of our study consisted of the following:

1. Reviewed project plans, published information on local geology and hydrogeology and results of geotechnical studies and permeability testing.
2. Performed groundwater modeling using MODFLOW. The model was calibrated to existing conditions.
3. Prepared a hydrogeologic report summarizing our modeling results.

Subsurface Soil and Groundwater Conditions

The soil and aquifer conditions over the project area were investigated by Dunkelberger Engineering and Testing (Dunkelberger) in November of 2015. A total of thirty (30) SPT borings were conducted to depths of 10 to 25 feet below land surface (bls). The SPT borings generally encountered fine sands and slightly silty fine sands with traces of shell to the termination depths of 10 and 25 feet bls. Several of the borings encountered shallow layers of organic sands. The shallow groundwater table was encountered at elevations of +0.5 to +1.0 feet in the SPT borings conducted by Dunkelberger.

In order to determine the hydraulic conductivity of the shallow soils Dunkelberger conducted four open borehole permeability tests and four double rings infiltrometer (DRI) tests over the project area. Based on the results of the field testing the saturated horizontal hydraulic conductivity ranged from 0.8 to 11.3 feet per day. The vertical infiltration rate, measured at the DRI locations, ranged from 13 to 30 feet per day. The results of the soil borings and permeability testing completed by Dunkelberger are included in **Appendix A**.

Groundwater Modeling

For this modeling effort, the MODFLOW Vistas groundwater flow model was utilized. The conceptual model was characterized by utilizing the site specific soil borings and groundwater level data as well as the available regional hydrogeologic data. A two layer model was set up for this project, with Layer 1 representing the sandy, unsaturated surficial aquifer system and Layer 2 representing the sandy, saturated portion of the surficial aquifer system.

The permeability of Layers 1 and 2 were initially estimated from the field investigation and testing and then adjusted through the model calibration process to reproduce the field measured groundwater levels within an acceptable level of accuracy.

The model domain was established to encompass the project area plus a perimeter of at least 400 feet. Model dimensions were 3,000 by 5,000, divided into 150,000 cells per layer and each cell having a dimension of 10 feet by 10 feet. The grid size was selected based on the configuration of the project area. The project area was placed in the approximate center of the model grid.

For model calibration, the average aquifer parameters were utilized, as estimated from the geotechnical studies. The lower-bound hydraulic conductivity for Layer 1 (effective aquifer thickness of 5 feet) was estimated at 12 feet per day from the field test data and the hydraulic conductivity for Layer 2 (effective aquifer thickness of 40 feet) was estimated at 8 feet per day based on the field testing. The vertical permeability between Layer 1 and Layer 2 was estimated at 0.5 feet per day. The aquifer parameters were then adjusted by trial and error until the modeled levels closely matched the levels measured during the geotechnical investigation completed by Dunkelberger.

The calibration utilized three stress periods with recharge corresponding to average conditions over a ten year period, wet season and dry season. The net recharge for stress period 1 (average conditions) was 10 inches. In stress periods 2 (wet season) and 3 (dry season) the corresponding recharge was 8 and 2 inches, respectively. Table 1 contains the calibrated model parameters.

Table 1: Model Aquifer Parameters

Aquifer Parameter	Layer 1	Layer 2
Storage Coefficient	0.25	0.001
Porosity	0.30	0.30
Hydraulic Conductivity (ft/day)	12	8
Vertical Permeability between L1 to L2 (ft/day)	0.5	--
Elevation of Bottom of Aquifer (ft)	0	-40
Elevation of Top of Aquifer (ft)	10	0

Modeled groundwater contours for the three calibration stress periods are included in **Figures 1, 2 and 3**.

Following calibration the proposed underdrain system was added to the model in order to simulate the expected drawdown in the surficial aquifer created by the underdrain system. The sizes and locations of the system components were taken from the project plans supplied by Dunkelberger. The project plans did not include a control elevation for the underdrain system so models were created for assumed control elevations of 0.5 feet and 1.0 feet.

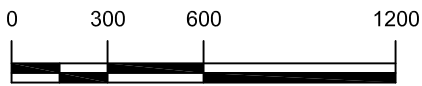
Modeled drawdown contours using a 0.5 foot control elevation, for wet and dry season conditions, are shown in **Figures 4 and 5**. Modeled drawdown contours using a 1.0 foot control elevation, for wet and dry season conditions, are shown in **Figures 6 and 7**. For a control elevation of 0.5 feet the modeling indicates that during an average wet season the groundwater drawdown created by the underdrain system is about 0.8 to 1.2 feet at the location of the underdrains. For a control elevation of 1.0 feet the modeling indicates that during an average wet season the groundwater drawdown created by the underdrain system is about 0.2 to 0.8 feet at the location of the underdrains.

FIGURES



LEGEND:

2.0 GROUNDWATER CONTOUR (FEET)



GRAPHIC SCALE: 1"=600'



**Andreyev
Engineering,
Inc.**

APPROXIMATE SCALE:

1"=600'

DATE: 12/22/15

ENGINEER: JE

PN: APCI-15-0122

DRAWN BY: DLS

GROUNDWATER MODELING
FOR PAVEMENT UNDERDRAIN SYSTEM

COQUINA BEACH

MANATEE COUNTY, FL

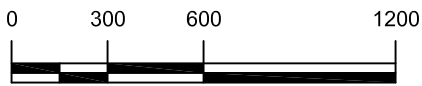
MODEL CALIBRATION
10 YEAR AVERAGE CONDITIONS

FIGURE 1



LEGEND:

2.0 GROUNDWATER CONTOUR (FEET)



GRAPHIC SCALE: 1"=600'



**Andreyev
Engineering,
Inc.**

APPROXIMATE SCALE:

1"=600'

DATE: 12/22/15

ENGINEER: JE

PN: APGW-15-0122

DRAWN BY: DLS

GROUNDWATER MODELING
FOR PAVEMENT UNDERDRAIN SYSTEM

COQUINA BEACH

MANATEE COUNTY, FL

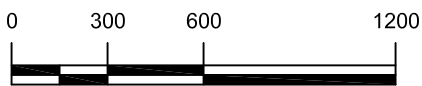
MODEL CALIBRATION
WET SEASON CONDITIONS

FIGURE 2



LEGEND:

2.0 GROUNDWATER CONTOUR (FEET)



GRAPHIC SCALE: 1"=600'



**Andreyev
Engineering,
Inc.**

APPROXIMATE SCALE:

1"=600'

DATE: 12/22/15

ENGINEER: JE

PN: APGW-15-0122

DRAWN BY: DLS

GROUNDWATER MODELING
FOR PAVEMENT UNDERDRAIN SYSTEM

COQUINA BEACH

MANATEE COUNTY, FL

MODEL CALIBRATION
DRY SEASON CONDITIONS

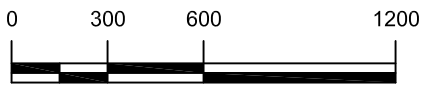
FIGURE 3



CONTROL ELEVATION SET TO 0.5 FEET

LEGEND:

2.0 GROUNDWATER CONTOUR (FEET)



GRAPHIC SCALE: 1"=600'



**Andreyev
Engineering,
Inc.**

GROUNDWATER MODELING
FOR PAVEMENT UNDERDRAIN SYSTEM

COQUINA BEACH

MANATEE COUNTY, FL

DRAWDOWN CONTOURS FOR
WET SEASON CONDITIONS

APPROXIMATE SCALE:

1"=600'

DATE: 12/23/15

ENGINEER: JE

PN: APCI-15-0122

DRAWN BY: DLS

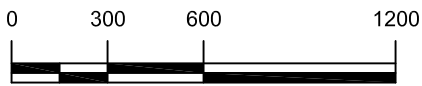
FIGURE 4



CONTROL ELEVATION SET TO 0.5 FEET

LEGEND:

2.0 GROUNDWATER CONTOUR (FEET)



GRAPHIC SCALE: 1"=600'



**Andreyev
Engineering,
Inc.**

GROUNDWATER MODELING
FOR PAVEMENT UNDERDRAIN SYSTEM

COQUINA BEACH

MANATEE COUNTY, FL

DRAWDOWN CONTOURS FOR
DRY SEASON CONDITIONS

APPROXIMATE SCALE:

1"=600'

DATE: 12/23/15

ENGINEER: JE

PN: APGW-15-0122

DRAWN BY: DLS

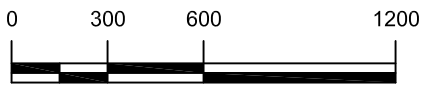
FIGURE 5



CONTROL ELEVATION SET TO 1.0 FEET

LEGEND:

— 0.2 — GROUNDWATER CONTOUR (FEET)



GRAPHIC SCALE: 1"=600'



**Andreyev
Engineering,
Inc.**

GROUNDWATER MODELING
FOR PAVEMENT UNDERDRAIN SYSTEM

COQUINA BEACH

MANATEE COUNTY, FL

DRAWDOWN CONTOURS FOR
WET SEASON CONDITIONS

APPROXIMATE SCALE:

1"=600'

DATE: 12/23/15

ENGINEER: JE

PN: APGW-15-0122

DRAWN BY: DLS

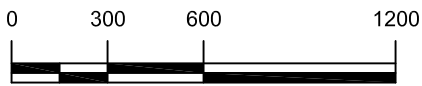
FIGURE 6



CONTROL ELEVATION SET TO 1.0 FEET

LEGEND:

2.0 GROUNDWATER CONTOUR (FEET)



GRAPHIC SCALE: 1"=600'



**Andreyev
Engineering,
Inc.**

GROUNDWATER MODELING
FOR PAVEMENT UNDERDRAIN SYSTEM

COQUINA BEACH

MANATEE COUNTY, FL

DRAWDOWN CONTOURS FOR
DRY SEASON CONDITIONS

APPROXIMATE SCALE:

1"=600'

DATE: 12/23/15

ENGINEER: JE

PN: APGW-15-0122

DRAWN BY: DLS

FIGURE 7

APPENDIX A

**DUNKELBERGER SOIL BORINGS & PERMEABILITY TESTING
RESULTS**



EL 0'

EL +0.5'

EL +1'

EL +1'

+0.7'

+0.6'

+0.7'

+0.6'

+0.6'

+0.8'

+1.1'

+0.5'

+0.5'

+0.5'

+0.9'

+1.0'

+1.0'

+1.0'

+1.0'

B-1

B-2

B-3

B-4/BHP-1

B-5

B-6

B-7

B-8

B-9

B-10

B-11

B-12

B-13

B-14

B-15

B-16

B-17

B-18

B-19

B-20

B-21

DRI-1

DRI-2

DRI-3

DRI-4

B-22

B-23

B-24

B-25

B-26

B-27

B-28

B-29

B-30

789



BORING LOG NO. B-1

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44501° Longitude: -82.68918° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light brown to light gray, medium dense to very dense</p>	<p>10.0</p>	<p style="text-align: center;">▽</p>	<p style="text-align: center;">X</p>	<p>7-9-9-9 N=18</p> <p>7-11-15-15 N=26</p> <p>3-8-16-23 N=24</p> <p>10-20-25-28 N=45</p> <p>9-22-31-40 N=53</p>			
<p>Boring Terminated at 10 Feet</p>		<p>-6.5</p>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-2

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44534° Longitude: -82.68874° Surface Elev.: +3.5 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
25.0	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to gray, medium dense to dense	-21.5	▽	X	5-7-8-8 N=15			
				X	8-8-13-14 N=21			
			▽	X	3-12-16-14 N=28			
				X	4-11-13-20 N=24			
				X	13-23-26-28 N=49			
				X	13-15-16 N=31			
				X	8-15-19 N=34			
				X	12-22-24 N=46			
	Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: JM

Project No.: HC155032

Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-3

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44556° Longitude: -82.68918° Surface Elev.: +2.8 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
10.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown to gray, medium dense to very dense	-7	5	▽	5-5-6-9 N=11			
					13-19-17-23 N=36			
					6-12-20-26 N=32			
					13-27-25-26 N=52			
					5-16-19 N=35			
	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-4

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44548° Longitude: -82.68954° Surface Elev.: +3.4 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light brown to gray, medium dense to dense			X	5-7-6-8 N=13			
				X	6-13-17-20 N=30			
		5	▽	X	3-11-13-20 N=24			
				X	4-11-18-27 N=29			
		10		X	5-21-28-34 N=49		22	9
				X	8-9-5 N=14			
		15		X	7-15-26 N=41			
				X	8-15-25 N=40			
		20		X				
				X				
		25		X				
	Boring Terminated at 25 Feet	-21.5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: JM

Project No.: HC155032

Exhibit: A-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-5

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44605° Longitude: -82.68955° Surface Elev.: +3.1 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	<p>SLIGHTLY SILTY SAND (SP-SM), trace shell fragments, fine grained, light gray to gray, medium dense to dense</p>	<p>10.0</p>	<p>5</p> <p style="text-align: center;">▽</p>	<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>	<p>6-6-9-11 N=15</p> <p>10-18-22-19 N=40</p> <p>5-11-15-20 N=26</p> <p>9-19-30-26 N=49</p> <p>10-20-23-28 N=43</p>			
<p>Boring Terminated at 10 Feet</p>		<p>10</p>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-10

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-6

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44651° Longitude: -82.68934° Surface Elev.: +2.5 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown and light gray to gray, loose to dense	5	▽	X	4-5-5-9 N=10			
				X	8-10-15-20 N=25			
				X	3-7-16-19 N=23			
				X	8-18-22-22 N=40			
				X	6-14-16-20 N=30			
				X	8-12-14 N=26			
				X	13-15-15 N=30			
				X	10-18-23 N=41			
	Boring Terminated at 25 Feet	25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: JM

Project No.: HC155032

Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-7

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44705° Longitude: -82.68951° Surface Elev.: +3.1 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to light brown, medium dense to dense</p>	<p>10.0</p>	<p>5</p>	<p>▽</p>	<p>4-6-8-11 N=14</p> <p>6-12-15-17 N=27</p> <p>2-3-9-5 N=12</p> <p>8-16-17-16 N=33</p> <p>18-7-6-9 N=13</p>			
<p>Boring Terminated at 10 Feet</p>		<p>10</p>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-8

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44645° Longitude: -82.69001° Surface Elev.: +3.2 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
25.0	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to gray, loose to dense	-22	▽	X	3-7-7-14 N=14			
		5		X	10-15-20-22 N=35			
		5	▽	X	4-14-19-21 N=33			
		10		X	9-11-14-18 N=25			
		10		X	7-17-19-22 N=36			
		15		X	5-4-6 N=10			
		20		X	7-11-19 N=30			
		25		X	9-20-21 N=41			
	Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Notes:

Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-9

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.4471° Longitude: -82.69044° Surface Elev.: +3.4 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	DEPTH	ELEVATION (Ft.)						
2.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, dark gray, medium dense	1.5		X	6-12-12-17 N=24			
10.0	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray, medium dense to very dense	-6.5	▽	X	12-25-27-33 N=52			
10.0		-6.5		X	6-11-17-19 N=28			
10.0		-6.5		X	6-14-19-20 N=33			
10.0		-6.5		X	9-16-20-20 N=36			
10.0	Boring Terminated at 10 Feet	-6.5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: JM

Project No.: HC155032

Exhibit: A-14

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-10

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44759° Longitude: -82.68973° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES	
DEPTH									
	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light brown to dark gray and gray, loose to medium dense</p>			X	5-6-6-8 N=12				
				X	6-4-3-4 N=7				
			5	▽	X	6-6-11-16 N=17			
					X	6-3-2-8 N=5			
					X	4-15-15-17 N=30			
					X	2-3-6 N=9			
					X	5-7-9 N=16			
					X	2-7-8 N=15			
	25.0	-21.5							
Boring Terminated at 25 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Notes:	
Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-15

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-11

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44807° Longitude: -82.69001° Surface Elev.: +4.6 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
10.0	SLIGHTLY SILTY SAND (SP-SM) , some shell fragments, fine grained, light brown to light gray and gray, loose to medium dense	5	▽	X	7-8-9-8 N=17			
				X	8-7-6-5 N=13			
				X	2-1-4-12 N=5			
				X	9-14-15-15 N=29			
				X	6-7-9-12 N=16			
10.0	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Notes:	
Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-16

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-12

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44764° Longitude: -82.69065° Surface Elev.: +3.6 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
25.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown to light gray, medium dense to dense	-21.5	▽	X	13-14-10-12 N=24		22	24
		5		X	9-20-26-21 N=46			
		7-9-11-12 N=20		X	4-4-13-18 N=17			
		10		X	15-12-19-20 N=31			
		15		X	11-8-2 N=10			
		20		X	12-5-8 N=13			
		25		X	5-6-8 N=14			
Boring Terminated at 25 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 8 feet bgs



Boring Started: 11/11/2015	Boring Completed: 11/11/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-17

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-13

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44815° Longitude: -82.69089° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
2.0	SLIGHTLY SILTY SAND (SP-SM) , some shell fragments, fine grained, brown, medium dense	1.5		X	11-14-14-10 N=28			
4.0	SLIGHTLY SILTY SAND (SP-SM) , large tree debris, fine grained, gray, medium dense	-0.5		X	8-8-12-13 N=20			
10.0	SLIGHTLY SILTY SAND (SP-SM) , fine grained, light gray to gray, loose to medium dense	5	▽	X	7-10-12-12 N=22			
10.0	Boring Terminated at 10 Feet	-6.5		X	6-6-7-9 N=13			
10.0		10		X	5-3-4-10 N=7			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-18

BORING LOG NO. B-14

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44837° Longitude: -82.69053° Surface Elev.: +4.1 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	DEPTH							
	1.0 SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, brown, medium dense	3		X	6-5-8-11 N=13	1.2	13	
	2.0 SLIGHTLY SILTY SAND (SP-SM) , organic stained, fine grained, black, medium dense	2		X	8-8-9-7 N=17			
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to gray, medium dense		▽	X	6-8-9-10 N=17			
				X	7-6-8-10 N=14			
				X	3-7-6-4 N=13			
				X	5-8-14 N=22		23	6
				X	7-9-12 N=21			
				X	11-10-15 N=25			
	25.0 Boring Terminated at 25 Feet	-21						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-19

BORING LOG NO. B-15

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44906° Longitude: -82.69061° Surface Elev.: +4.9 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
10.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, brown to light gray and gray, loose to medium dense	5	▽	X	7-11-14-16 N=25			
				X	9-11-10-9 N=21			
				X	4-5-7-3 N=12			
				X	2-2-6-9 N=8			
				X	3-9-12-15 N=21			
	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ *Groundwater initially observed at a depth of 5 feet bgs*



Notes:

Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-20

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-16

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44868° Longitude: -82.69117° Surface Elev.: +3.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, brown to light gray and light brown, medium dense	4.0		X	5-7-15-20 N=22			
		-0.5		X	11-9-10-5 N=19			
	ORGANIC SAND (SP-SM, PT) , fine grained, gray and black, loose	6.0	▽	X	1-3-4-14 N=7	7.2	47	
		-2.5		X	10-15-18-17 N=33			
	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to gray, medium dense to dense			X	8-13-21-21 N=34			
				X	9-9-17 N=26			
				X	5-7-10 N=17			
				X	13-12-16 N=28			
	Boring Terminated at 25 Feet	25.0		X				
		-21.5						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.
WATER LEVEL OBSERVATIONS	
▽ Groundwater initially observed at a depth of 5 feet bgs	

8260 Vico Court, Unit B
Sarasota, Florida

Notes:	
Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-21

BORING LOG NO. B-17

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44915° Longitude: -82.69139° Surface Elev.: +6.2 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
1.0	ORGANIC SAND (SP-SM, PT) , fine grained, dark gray, medium dense to dense	5		X	6-8-16-20 N=24			
	SLIGHTLY SILTY SAND (SP-SM) , fine grained, light gray, medium dense			X				
4.0	ORGANIC SAND (SP-SM, PT) , tree debris, fine grained, dark brown to dark gray, very loose	2		X	16-17-14-7 N=31			
6.0	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray, medium dense	0	▽	X	3-1-2-1 N=3	7.5	58	
				X	7-8-12-15 N=20			
10.0		-4		X	14-9-7-6 N=16			
Boring Terminated at 10 Feet		10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: JM
Project No.: HC155032	Exhibit: A-22

BORING LOG NO. B-18

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.44955° Longitude: -82.69091° Surface Elev.: +5.2 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
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DEPTH	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray and light brown to dark brown and dark gray, medium dense to dense	5	▽	X	11-12-14-17 N=26			
				X	15-14-17-18 N=31			
		5	▽	X	6-10-9-6 N=19		23	2
				X	2-1-7-12 N=8			
		10		X	5-14-17-13 N=31			
				X	7-17-17 N=34			
		15		X	8-9-11 N=20			
				X	9-9-7 N=16			
		20		X				
		25		X				

Boring Terminated at 25 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/16/2015

Boring Completed: 11/16/2015

Drill Rig: BR2500

Driller: MF

Project No.: HC155032

Exhibit: A-23

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-19

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45003° Longitude: -82.69121° Surface Elev.: +5.1 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
10.0	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light brown and light gray to gray and brown, medium dense to dense	5	▽	X	19-18-15-21 N=33			
				X	15-12-15-15 N=27			
				X	6-7-8-6 N=15			
				X	4-3-8-14 N=11			
				X	9-12-11-15 N=23			
	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Notes:	
Boring Started: 11/16/2015	Boring Completed: 11/16/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-24

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-20

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45051° Longitude: -82.6915° Surface Elev.: +5.4 feet-NAVD	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	ELEVATION (Ft.)							
2.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, orange and brown	3.5						
6.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, light gray to gray, medium dense	6.0	▽		6-6-8-6 N=14			
8.0	ORGANIC SAND (SP-SM, PT) , fine grained, black to gray, very loose	8.0			3-1-1-4 N=2	15.9	106	
8.0	SLIGHTLY SILTY SAND (SP-SM) , fine grained, light gray to dark gray, loose to medium dense	8.0			10-13-11-10 N=24			
15.0		15.0			5-5-4 N=9			
20.0		20.0			3-4-8 N=12			
25.0		25.0			4-5-5 N=10			
Boring Terminated at 25 Feet		25.0						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.
WATER LEVEL OBSERVATIONS	
▽ Groundwater initially observed at a depth of 4 feet bgs	

8260 Vico Court, Unit B
Sarasota, Florida

Notes:	
Boring Started: 11/11/2015	Boring Completed: 11/11/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-25

BORING LOG NO. B-21

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.451° Longitude: -82.6918° Surface Elev.: +5.4 feet-NAVD DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
2.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, orange and brown, dense	3.5		X	13-17-18-20 N=35			
3.5	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to gray, medium dense to dense	5.0	▽	X	21-19-22-21 N=41			
5.0		5.5		X	5-5-11-11 N=16			
6.5		7.0		X	12-13-13-20 N=26			
8.0		8.5		X	5-5-8-3 N=13			
10.0	Boring Terminated at 10 Feet	10.0						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-26

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-22

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45148° Longitude: -82.6921° Surface Elev.: +5.5 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to brown, medium dense to dense	5	▽	X	8-12-15-13 N=27		7	9
				X	13-14-18-20 N=32			
				X	8-16-11-20 N=27			
				X	7-9-6-6 N=15			
				X	8-12-14-18 N=26			
	12.5	-7		X	1-2-1 N=3			
	SILTY SAND (SM) , fine grained, dark gray, very loose			X	1-2-5 N=7			
	17.5	-12		X	4-10-9 N=19			
	SLIGHTLY SILTY SAND (SP-SM) , fine grained, gray to dark gray, loose to medium dense			X				
	25.0	-19.5						
	Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-27

BORING LOG NO. B-23

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45198° Longitude: -82.69239° Surface Elev.: +5.9 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
10.0	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to gray and brown, loose to dense</p>	5	▽	X	12-18-19-22 N=37			
				X	12-13-18-32 N=31			
				X	16-19-13-18 N=32			
				X	5-13-5-12 N=18			
				X	4-2-6-3 N=8			
	<p>Boring Terminated at 10 Feet</p>	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Notes:

Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-28

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-24

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45247° Longitude: -82.6927° Surface Elev.: +5.6 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
25.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to gray and brown, medium dense to very dense	-19.5	▽	X	6-15-15-16 N=30			
				X	12-9-50/4"			
		5	▽	X	20-18-13-18 N=31			
				X	11-10-5-4 N=15			
		10		X	4-11-12-12 N=23			
				X	11-11-16 N=27			
		15		X	4-3-3 N=6			
				X	4-9-8 N=17			
		20		X				
		25		X				
Boring Terminated at 25 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-29

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-25

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45295° Longitude: -82.69299° Surface Elev.: +5.2 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; position: absolute; left: -40px; top: 50%; white-space: nowrap;">THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15</div>	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to dark gray, loose to dense</p>	5	▽	X	15-13-14-20 N=27			
		10.0		X	16-18-18-17 N=36			
				X	4-4-9-12 N=13			
				X	5-4-3-1 N=7			
				X	4-7-15-15 N=22			
	Boring Terminated at 10 Feet	10						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-30

BORING LOG NO. B-26

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45285° Longitude: -82.69326° Surface Elev.: +4.3 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
4.0	SLIGHTLY SILTY SAND (SP-SM) , fine grained, light gray to brown, medium dense	0.5		X	9-10-12-13 N=22			
6.0	SLIGHTLY SILTY SAND (SP-SM) , large tree debris, fine grained, gray and brown, medium dense	-1.5	▽	X	18-13-12-7 N=25			
6.0	SLIGHTLY SILTY SAND (SP-SM) , trace shell fragments, fine grained, light gray to dark brown, very loose to dense	-1.5		X	3-3-10-19 N=13			
10.0		-10.0		X	3-11-17-25 N=28			
15.0		-15.0		X	7-14-19-17 N=33			
15.0		-15.0		X	1-1-1 N=2			
20.0		-20.0		X	3-9-11 N=20			
25.0		-25.0		X	3-4-4 N=8			
Boring Terminated at 25 Feet		25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS
▽ Groundwater initially observed at a depth of 5 feet bgs

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-31

BORING LOG NO. B-27

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45332° Longitude: -82.69341° Surface Elev.: +4.5 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
<div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 8px; position: absolute; left: -40px; top: 50%; white-space: nowrap;">THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15</div>	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray and light brown to gray, medium dense to dense</p>	<p>10.0</p> <p style="text-align: right;">-5.5</p> <p>10</p>	<p style="text-align: center;">▽</p>	<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>	<p>7-5-12-16 N=17</p> <p>11-14-13-18 N=27</p> <p>17-14-16-20 N=30</p> <p>7-5-5-10 N=10</p> <p>8-17-20-25 N=37</p>			
<p>Boring Terminated at 10 Feet</p>								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).
See Appendix C for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Groundwater initially observed at a depth of 5 feet bgs*



Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-32

BORING LOG NO. B-28

PROJECT: Coquina Beach Drainage Improvements

CLIENT: Manatee County Construction Services Division
Bradenton, Florida

SITE: 2651 Gulf Drive
Bradenton Beach, Florida

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.4538° Longitude: -82.69366° Surface Elev.: +4.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown and light gray to gray, loose to medium dense	5	▽	X	3-4-5-10 N=9			
				X	11-14-11-11 N=25			
				X	2-8-6-8 N=14			
				X	3-6-8-10 N=14			
				X	3-4-7-6 N=11			
		10						
		12.5						
	SILTY SAND (SM) , fine grained, dark gray, very loose	-8		X	1-1-2 N=3			
		15						
		17.5						
	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, brown to gray, medium dense to dense	-13		X	9-11-9 N=20			
		20						
		25.0			11-16-21 N=37			
	Boring Terminated at 25 Feet	-20.5						
		25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ Groundwater initially observed
at a depth of 5 feet bgs



Boring Started: 11/13/2015

Boring Completed: 11/13/2015

Drill Rig: BR2500

Driller: MF

Project No.: HC155032

Exhibit: A-33

BORING LOG NO. B-29

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45434° Longitude: -82.69393° Surface Elev.: +4.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
	<p>SLIGHTLY SILTY SAND (SP-SM), trace to some shell fragments, fine grained, light gray to gray, very loose to very dense</p>	<p>10.0</p> <p style="text-align: right;">-5.5</p> <p>10</p>	<p>5</p> <p style="text-align: center;">▽</p>	<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>	<p>5-5-8-23 N=13</p> <p>15-22-16-20 N=38</p> <p>7-7-6-13 N=13</p> <p>6-5-3-7 N=8</p> <p>6-3-1-1 N=4</p>			
<p>Boring Terminated at 10 Feet</p>								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures
See Appendix B for description of laboratory procedures and additional data (if any).

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

▽ *Groundwater initially observed at a depth of 5 feet bgs*



Notes:

Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-34

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL. HC155032.COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

BORING LOG NO. B-30

PROJECT: Coquina Beach Drainage Improvements

**CLIENT: Manatee County Construction Services Division
Bradenton, Florida**

**SITE: 2651 Gulf Drive
Bradenton Beach, Florida**

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL - HC155032 COQUINABEACHDRAINAGEIMPROVEMENTS.GPJ TERRACON2015.GDT 12/4/15

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 27.45485° Longitude: -82.6943° Surface Elev.: +4.7 feet-NAVD ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	ORGANIC CONTENT (%)	WATER CONTENT (%)	PERCENT FINES
DEPTH								
4.0	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light brown to gray, dense	0.5			12-15-21-26 N=36			
6.0	SLIGHTLY SILTY SAND (SP-SM) , organic staquined, fine grained, gray and black, loose	-1.5	▽		7-2-3-2 N=5			
12.5	SLIGHTLY SILTY SAND (SP-SM) , trace to some shell fragments, fine grained, light gray to gray, loose to medium dense	-8			7-1-4-9 N=5 8-12-13-20 N=25			
17.5	SILTY SAND (SM) , trace shell fragments, fine grained, gray, loose	-13			2-3-2 N=5		24	13
25.0	SLIGHTLY SILTY SAND (SP-SM) , with shell fragments, fine grained, gray to dark gray, medium dense	-20.5			8-10-10 N=20 8-12-13 N=25			
Boring Terminated at 25 Feet		25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

Advancement Method: Mud Rotary	See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any).	Notes:
Abandonment Method: Borings backfilled with soil cuttings upon completion.	See Appendix C for explanation of symbols and abbreviations.	
WATER LEVEL OBSERVATIONS		
▽ Groundwater initially observed at a depth of 5 feet bgs		

8260 Vico Court, Unit B
Sarasota, Florida

Boring Started: 11/13/2015	Boring Completed: 11/13/2015
Drill Rig: BR2500	Driller: MF
Project No.: HC155032	Exhibit: A-35

Table 2 - Hydraulic Conductivity and Infiltration Rate Test Results			
Location	Horizontal Hydraulic Conductivity (ft/day)	Vertical Hydraulic Conductivity (ft/day)	Vertical Infiltration Rate (in/hr)
BHP-1	11.3	5.7	-
BHP-2	5.8	2.9	-
BHP-3	0.8	0.4	-
BHP-4	2.1	1.1	-
DRI-1	-	-	9.3
DRI-2	-	-	15.1
DRI-3	-	-	15.1
DRI-4	-	-	6.5



January 13, 2016
AEI Project No.: APGT-15-0122

TO: **Dunkelberger Engineering and Testing**
8260 Vico Court, Suite B
Sarasota, Florida 34240

Attention: Mr. James Jackson

SUBJECT: Spacing Recommendations for Proposed Underdrain System, Coquina Beach Improvements, Manatee County, Florida

Dear Mr. Jackson:

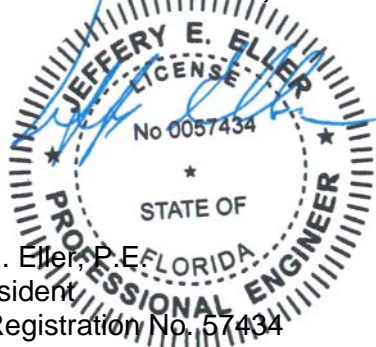
Andreyev Engineering, Inc. (AEI) has completed an evaluation in order to determine the adequate spacing for the proposed underdrain system. A spreadsheet was created to calculate the required spacing given the measured soil and aquifer parameters and the design information supplied by the client. The design spreadsheet is attached with this letter. Based on our calculations the underdrains should be spaced on 60 foot centers throughout the proposed pavement areas. These recommendations should be incorporated into the general recommendations provided in our original report.

AEI appreciates the opportunity to participate in this project, and we trust that the information herein is sufficient for your design. If you have any questions or comments concerning the contents of this report, please do not hesitate to contact our office.

Sincerely,

ANDREYEV ENGINEERING, INC.

1-13-16
Jeffery E. Eller, P.E.
Vice President
Florida Registration No. 57434



Attachment: Underdrain Calculations

UNDERDRAIN CALCULATIONS

UNDERDRAIN CALCULATIONS

Coquina Beach Pervious Concrete - 1" Rain, 72 hr Recovery, factor of safety of 2

Project: Coquina Beach Pervious Concrete 1" Storm Recovery

Project No:

Location:

ASSUMPTIONS: Largest area of pervious concrete 180 ft x 180 ft. 1" or rain to recover from top of concrete down to 1 foot below bottom of concrete slab in 36 hrs (72 hr/2 FS)

Depth of Treatment Volume in Pond =	0.083	ft		
Pond Freeboard =	0	ft		
Pipe Diameter =	6	inches	=	0.500 ft
Gravel Envelope on each side of pipes =	9	inches	=	0.750 ft
Minimum distance between Pond Bottom and top gravel envelope =	1.17	feet (m + r)		
Depth from natural ground to impermeable layer =	20	feet		
Area of Pond (from top of treatment volume) =	32400.00	ft ²		
Max top dimension of pond perpendicular to pipes =	180	feet		
K (soil permeability rate) =	3	in/hr	=	0.250 ft/hr = 6 ft/day
Slope of Pipes =	0.002	ft/ft	=	0.20 %
n =	0.2			
Safety Factor =	2			

"T" shaped drainage network.

*DESIGN UNDERDRAIN TO LOWER WATER LEVEL TO A LEVEL 1' BELOW POND BOTTOM WITHIN 72 HOURS

1) Calculate the required drain spacing.

d = Depth of Treatment Volume + Depth of Freeboard + Depth of Soil Between Pond Bottom/Envelope + Depth of Gravel Envelope + Drain Radius

$$d = 0.08333333 \text{ ft} + 0 \text{ ft} + 1.16666667 \text{ ft} + 0.750 \text{ ft} + 0.250 \text{ ft}$$

$$d = 2.250 \text{ ft}$$

Determine the height of the drain above the impermeable layer:

$$a = D - d = 20 \text{ ft} - 2.250 \text{ ft} = 17.750 \text{ ft}$$

Depth of Water Table after drawdown (c) = treatment volume depth + freeboard depth + (r) = (r = 6")

$$c = 0.08333333 \text{ ft} + 0 \text{ ft} + 0.500 \text{ ft} = 0.58333333 \text{ ft}$$

$$m = d - c = 2.250 \text{ ft} - 0.58333333 \text{ ft} = 1.667 \text{ ft} \quad m^2 = 2.778 \text{ ft}^2$$

Determine the drainage coefficient (q) with t = 36hrs to incorporate a safety factor of 2.

$$q = c / t = 0.58333333 \text{ ft} / 36 \text{ hr} = 0.0162037 \text{ ft/hr} = 0.19444444 \text{ in/hr}$$

Determine the Spacing (S)

$$S = [(4 * K * (m^2 + 2 * a * m)) / q]^{0.5} = \boxed{62 \text{ ft}}$$

Determine the number of laterals (N)

$$N > D_{PER} / S = \boxed{3}$$

2) Calculate the length of the Laterals.

$$D_{PAR} = A_{TL} / D_{PER} = 32400.00 \text{ ft}^2 / 180 \text{ ft} = 180.0 \text{ ft}$$

Find the length of each lateral (L)

$$L = 180 \text{ ft} - 62 \text{ ft} = \boxed{118 \text{ ft}}$$

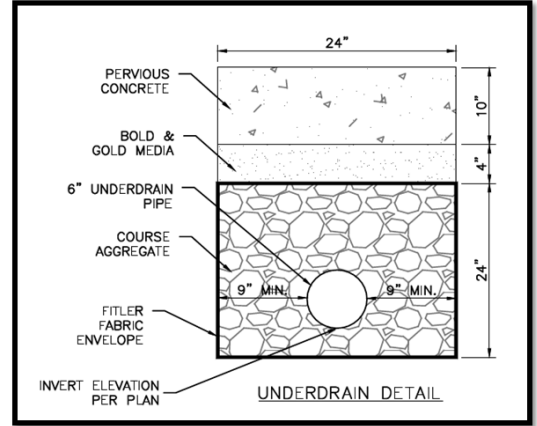
3) Size the drainage laterals.

$$Q_r = [q * S * (L + S/2) / (C * F)] = 0.041 \text{ cfs} \quad (Q_{r,pipe}) = 0.1 \text{ cfs}$$

4) Size the main and outlet pipe.

$$\text{Flow in outlet} = 0.072 \text{ cfs/lateral} * 62 \text{ laterals} = 4.5 \text{ cfs}$$

$$\boxed{(Q_{1,5pipe}) = 3.42 \text{ cfs}}$$



APPENDIX E
TAYLOR ENGINEERING 30 YEAR EROSION PROJECTION
LINE REPORT



December 17, 2015

Mr. James M. Jackson, P.E.
Dunkelberger Engineering and Testing
8260 Vico Ct., Unit B
Sarasota, FL 34240

Re: Coquina Beach, Manatee County, Florida
30-year Erosion Projection

Dear Mr. Jackson:

This letter report details the methods and results of a historical beach recession analysis and estimate of the position of the Mean High Water (MHW) line 30 years from the present for an unprotected portion of Coquina Beach in Manatee County, Florida.

Specifically, this report provides a site overview, tidal characteristics of the study area, procedures of the beach recession analysis, and a 30-year projection of the MHW shoreline. The 30-year shoreline projection follows the methodology defined by Rule 62B-33.024, *Florida Administrative Code (F.A.C.)*. The report attachment contains all referenced figures.

1.0 Site Overview

Coquina Beach lies on the Gulf of Mexico along the southern end of Anna Maria Island. At the southern end of Coquina Beach, Longboat Pass connects the Gulf of Mexico to the northern extent of Sarasota Bay. The Florida Department of Environmental Protection (FDEP) classifies the entire gulf shore of Anna Maria Island, including the study area, as a critically eroded shoreline. Figures 1 and 2 illustrate the project location and the study area.

The study area specifically encompasses the 0.9-mile stretch of beach between FDEP Manatee County Reference Monuments R-36 – R-41 (Figure 2). As required by Rule 62B-33.024, *F.A.C.*, 30-year Erosion Projection Procedures, Taylor Engineering analyzed shoreline changes at the monuments within the study area and at three adjacent monuments north of the study area (R-33 – R-35). Table 1.1 lists the 2001 FDEP tabulated monument locations and profile azimuths associated with the historical shoreline surveys and analysis. Figure 2 shows the monument locations.

2.0 Tidal Characteristics

To assess tidal characteristics at the site, Taylor Engineering reviewed National Oceanic and Atmospheric Administration (NOAA) tide station datums along the Gulf of Mexico nearest to the project site. NOAA Station 872643 (Anna Maria Outside) lies 3.6 miles north of the project site and Station 8725916 (Casey Key) lies 21.1 miles south of the project site. Additionally, Taylor Engineering reviewed the datum from NOAA Station 872628 (Anna Maria City Pier), which lies within Tampa Bay approximately 6.5 miles north of the project site. Table 2.1 lists the tide datums of these stations.

Table 1.1 Manatee County Reference Monument Locations

FDEP Monument		Easting¹ (ft)	Northing¹ (ft)	Azimuth² (°N)
Adjacent Monuments	R-33	429,715.8	1,138,740.1	260
	R-34	429,987.1	1,137,821.8	260
	R-35	430,302.4	1,136,852.4	250
Project Area	R-36	430,565.5	1,135,966.7	250
	R-37	430,927.0	1,135,004.8	250
	R-38	431,367.4	1,134,225.9	252
	R-39	431,732.6	1,133,368.8	250
	R-40	431,999.3	1,132,501.4	250
	R-41	432,317.7	1,131,701.5	258

¹State Plane, Florida West Zone, North American Datum of 1983 (NAD83)

²Degrees clockwise from north

Table 2.1 Tide Datums near Project Site

Tide Datum	ANNA MARIA CITY PIER	ANNA MARIA OUTSIDE	CASEY KEY
	NOAA Station 8726282 (ft-NAVD88)	NOAA Station 8726243 (ft-NAVD88)	NOAA Station 8725916 (ft-NAVD88)
Mean Higher High Water (MHHW)	0.54	0.64	0.5
Mean High Water (MHW)	0.29	0.34	0.2
Mean Tide Level (MTL)	-0.48	-0.45	-0.43
Mean Low Water (MLW)	-1.25	-1.24	-1.07
Mean Lower Low Water (MLLW)	-1.62	-1.62	-1.34
Mean Tide Range	1.54	1.58	1.27

This study adopted a MHW elevation of 0.34 ft-NAVD for the Coquina Beach study area based on NOAA Station 872643 (Anna Maria Outside). This station lies closest the project site and, with a slightly higher MHW, provides a more conservative MHW elevation compared to the other NOAA stations. Notably, MHW varies by less than two inches between all three tide stations.

3.0 FDEP 30-Year Erosion Analysis Procedure

Taylor Engineering analyzed FDEP historical shoreline data, vetted the data for historic changes with morphological impact (e.g., beach nourishments and jetty construction), and derived shoreline change rates for each monument within the study area.

Taylor Engineering analyzed 33 FDEP historical MHW shoreline positions dating from 1883–2011. For quality assurance, Taylor Engineering plotted the positions over an aerial of the study area and processed historic surveys from the FDEP database to evaluate the accuracy of elevation and positions of

the historic MHW shoreline data. The survey data to shoreline data comparison revealed slight discrepancies in MHW position of approximately 1–2 feet. Table 3.1 lists the survey dates and respective ranges for each monument as provided by FDEP historic shoreline data. Figures 3–5 illustrate the August 1974, December 1992, February 2000, and February 2011 MHW shoreline positions with straight lines connecting shoreline positions at each monument.

Throughout the 128-year analysis period, construction of the Longboat Pass jetties and beach nourishment affected the natural morphology of the study area. As illustrated in Figure 2, the northern jetty of Longboat Pass lies approximately 350 feet south of monument R-41. With littoral drift predominantly south to north along the gulf coast, the 1957 construction of the Longboat Pass jetties (Dabees and Moore, 2011) significantly altered the morphological processes in the study area by introducing an up-drift littoral barrier (the jetty). Further, the 1960s construction of the Cortez Beach groins approximately 200 feet north of the study area (R-36), likely also influenced the local morphological processes at the northern end of the study area. Given that these activities significantly altered the local morphology, Taylor Engineering excluded surveys prior to 1964 from this analysis to ensure the present study only considered morphological processes relevant to the present study.

The entire 7.5-mile gulf shoreline of Anna Maria Island, including the study area, lies within the federal Anna Maria Island Shore Protection Project (SPP). The federal government originally authorized the SPP in 1965, and has currently authorized it until 2043 (FDEP, 2015). Through the SPP authorization, the U.S. Army Corps of Engineers (USACE) conducted large-scale beach nourishments along the central portion of Anna Maria Island (R-7 to R-36) in 1992/93 and 2002 which terminated at the northern limit of the study area (R-36). In 2005, USACE conducted a smaller storm repair project within the central portion of the island. The proximity of these nourishments, along with analysis of the shoreline positions, indicates influence to the project area via longshore dispersal of the beach fill. More significantly, the 2011 Coquina Beach nourishment placed approximately 235,000 cubic yards (cy) within the study area, between monuments R-36 and R-41 (Hunsicker, et. al. 2013). Therefore, Taylor Engineering excluded the May 2011 survey from this analysis as it appears to describe the post-construction survey of the 2011 nourishment and does not represent background changes. Further, research indicated that in 2014, an additional non-federal nourishment placed approximately 260,000 cy between R-33 and R-40.5 (FDEP, 2015). Analysis of data prior to the initial 1992 nourishment did not suggest clear historic trends in shoreline change and, because the current authorization of the SPP suggests perpetual nourishments within this area until 2043, Taylor Engineering primarily relied on survey data following the initial nourishment (i.e., during the 19-year period of December 1992–February 2011) to develop trends in shoreline change.

To determine the historic shoreline change rate at each monument, Taylor Engineering applied both shoreline rate change averaging between surveys and conducted a linear regression analysis of the shoreline positions at each monument, striving to exclude outlying and inconsistent data points. Comparison of the shoreline change rates produced by the two analysis methods revealed that linear regression of the shoreline ranges provided the more reliable shoreline change rate estimates at each monument.

4.0 FDEP 30-year Erosion Projection Results

Throughout the study area, Taylor Engineering found relatively uniform erosive shoreline change rates ranging between -1.8 and -2.8 feet/year. Within the project area, the resultant shoreline change rates compared conservatively to shoreline changes extrapolated by Absalonsen and Dean (2010) for survey years 1974–2008. Table 4.1 lists the shoreline change rates and the resultant 30-year erosion projections.

Table 3.1 Historic Monument Locations

Survey Date	Range from Monument (ft)								
	Adjacent Monuments			Project Area					
	R-33	R-34	R-35	R-36	R-37	R-38	R-39	R-40	R-41
1883	540	630	681	765	892	945	958	918	971
1925-1926	294	274	294	305	506	509	475	369	382
1942-1944	107	146	139	250	301	348	270	196	45
1952	183	78	110	61	148	182	130	12	33
1962-1964	159	74	143	111	231	285	301	315	456
August 1974	150	148	137	69	173	233	258	204	378
1977-1979	148	298	245	242	298	355	318	220	367
September 1986	177	210	203	196	271	372	392	323	333
December 1992	170	221	155	110	209	274	356	302	344
August 1993	365	344	207	122	217	270	365	262	364
October 1993	366	359	240	135	236	288	373	254	371
February 1994	361	377	246	120	201	262	353	239	313
May 1994	358	369	257	122	212	263	371	288	289
February 1995	343	330	250	164	188	242	321	220	340
June 1995	-	-	-	-	-	264	307	224	323
August 1996	-	-	-	-	-	245	318	233	302
August 1997	289	387	282	191	288	359	328	246	348
February 1998	283	312	260	174	216	268	370	286	328
March 1998	283	299	263	165	210	267	352	278	339
February 1999	294	302	244	166	223	281	335	341	315
February 2000	285	313	240	143	227	279	351	270	356
January 2002	-	-	-	-	223	267	368	288	300
May 2002	336	320	259	140	233	274	375	290	313
April 2003	314	319	227	137	214	257	344	250	298
September 2004	-	-	-	124	204	246	310	214	286
July 2005	300	327	228	161	216	256	309	253	331
May 2006	305	327	221	137	234	232	327	234	308
January 2008	288	317	215	128	214	232	293	231	349
December 2008	307	330	211	124	226	236	278	232	344
October 2009	276	298	221	134	209	245	296	238	337
February 2011	295	320	218	150	208	232	310	230	369
May 2011	298	336	228	209	258	300	465	372	405

Table 4.1 Shoreline Change Rates and Projections

FDEP Monument		Average Shoreline Change Rate	30-year Erosion Projection
		(ft/yr)	(ft from existing)
Adjacent Monuments	R-33	-1.8	-53.1
	R-34	-2.0	-61.2
	R-35	-2.4	-71.6
Project Area	R-36	-2.0	-59.1
	R-37	-2.2	-65.8
	R-38	-1.9	-57.4
	R-39	-2.8	-83.2
	R-40	-2.3	-68.4
	R-41	-2.1	-63.6

Taylor Engineering applied these rates to the February 2011 survey to project the 30-year erosion line. This survey provided the most recent available information prior to the 2011 Coquina Beach nourishment. For a conservative analysis, Taylor Engineering first projected erosion to present day (December 2015), and subsequently developed the 30-year projection from the theoretical December 2015 condition. Table 4.2 lists the 30-year (2045) projected shoreline positions in State Plane Coordinates of the Florida West Zone, North American Datum of 1983 (NAD83). Figures 3–5 illustrate the projected shoreline over a 2013 aerial photograph.

Table 4.2 30-year Erosion Projected Shoreline Positions

FDEP Monument		Easting ¹ (ft)	Northing ¹ (ft)
Project Area	R-36	430,516.7	1,135,948.7
	R-37	430,892.7	1,134,999.9
	R-38	431,208.6	1,134,173.8
	R-39	431,531.8	1,133,295.2
	R-40	431,857.1	1,132,449.7
	R-41	432,028.5	1,131,639.4

¹State Plane, Florida West Zone, North American Datum of 1983 (NAD83)

²Degrees clockwise from north

5.0 Conclusion

This letter report describes the 30-year erosion projection in accordance with Rule 62B-33.024, F.A.C., for Coquina Beach in Manatee County, Florida. Taylor Engineering performed an investigation of historic FDEP shoreline data and applied a linear regression analysis to determine shoreline change rates during an approximate 20-year duration with similar littoral processes to the existing conditions. Taylor

Mr. James M. Jackson, P.E.

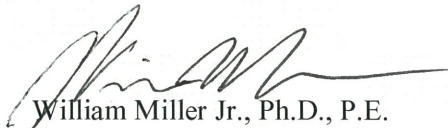
December 17, 2015

Page 6 of 7

Engineering then projected these yearly shoreline change rates on to the February 2011 shoreline through 2045 to obtain project an erosion line 30 years out from 2015.

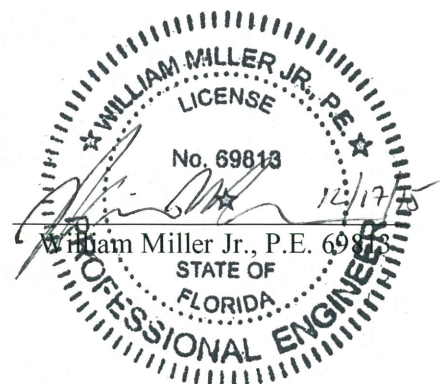
Should you have any questions or comments regarding this report, please contact me at (904) 731-7040.

Sincerely,



William Miller Jr., Ph.D., P.E.
Senior Coastal Engineer

/wm
Attachment



References

- Dabees, M.A. and B.D. Moore. 2011. *Inlet Evolution Modeling of Multiple Inlet Systems in Southwest and Central Florida*, Journal of Coastal Research: Special Issue 59: pp. 130 – 137.
- Hunsicker, C.; R. Spadoni; T. Pierro; and L. Floyd. 2013. Manatee County, Florida Board of County Commissioners Beach Renourishment Workshop Presentation.
- Florida Department of Environmental Protection (FDEP). 2015. *Strategic Beach Management Plan Southwest Gulf Coast Region*. Tallahassee, FL.
- Absalonsen, L. and R.G. Dean. 2010. *Characteristics of Shoreline Change along the Sandy Beaches of the State of Florida: An Atlas*. Department of Civil and Coastal Engineering, University of Florida, Gainesville, FL.

ATTACHMENT

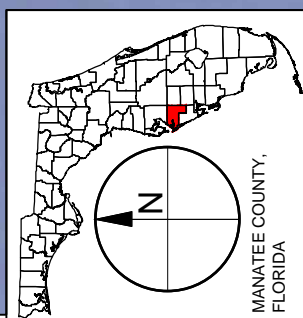
Figures



PROJECT AREA

PROJECT	C2015-062
DRAWN BY	DG
SHEET	1 of 5
DATE	DEC 2015

FIGURE 1
LOCATION MAP
COQUINA BEACH 30-YEAR EROSION PROJECTION
MANATEE COUNTY, FL

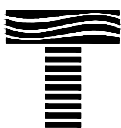
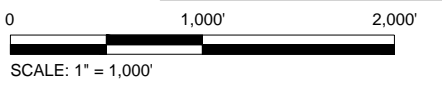
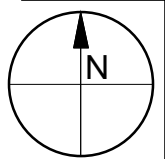


MANATEE COUNTY,
 FLORIDA
 SCALE: 1" = 2 MILES

0 2 MILES 4 MILES

TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD.
 BLDG. 300, SUITE 300
 JACKSONVILLE, FL 32256
 CERTIFICATE OF AUTHORIZATION # 4815

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TAYLOR ENGINEERING INC.

10151 DEERWOOD PARK BLVD.
 BLDG. 300, SUITE 300
 JACKSONVILLE, FL 32256
 CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 2
 SITE OVERVIEW
 COQUINA BEACH 30-YEAR EROSION PROJECTION
 MANATEE COUNTY, FL

PROJECT	C2015-062
DRAWN BY	DG
SHEET	2 of 5
DATE	DEC 2015

MEAN HIGH WATER POSITION

- AUGUST 1974
- DECEMBER 1992
- FEBRUARY 2000
- FEBRUARY 2011
- - - 30-YR (2045) EROSION PROJECTION

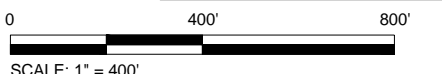
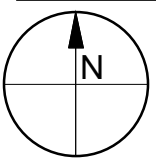
MATCHLINE

⊗ R-38

⊗ R-39

⊗ R-40

⊗ R-41



SCALE: 1" = 400'

TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD.
 BLDG. 300, SUITE 300
 JACKSONVILLE, FL 32256
 CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 3
 HISTORIC SHORELINE POSITIONS
 COQUINA BEACH 30-YEAR EROSION PROJECTION
 MANATEE COUNTY, FL

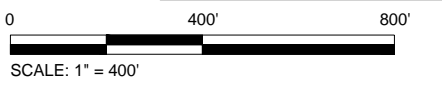
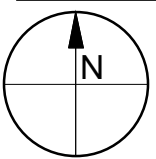
PROJECT	C2015-062
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SHEET	3 of 5
DATE	DEC 2015

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MEAN HIGH WATER POSITION	
—	AUGUST 1974
—	DECEMBER 1992
—	FEBRUARY 2000
—	FEBRUARY 2011
- - -	30-YR (2045) EROSION PROJECTION

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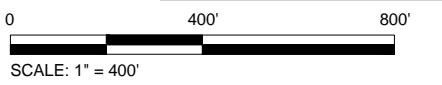
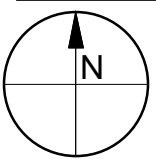
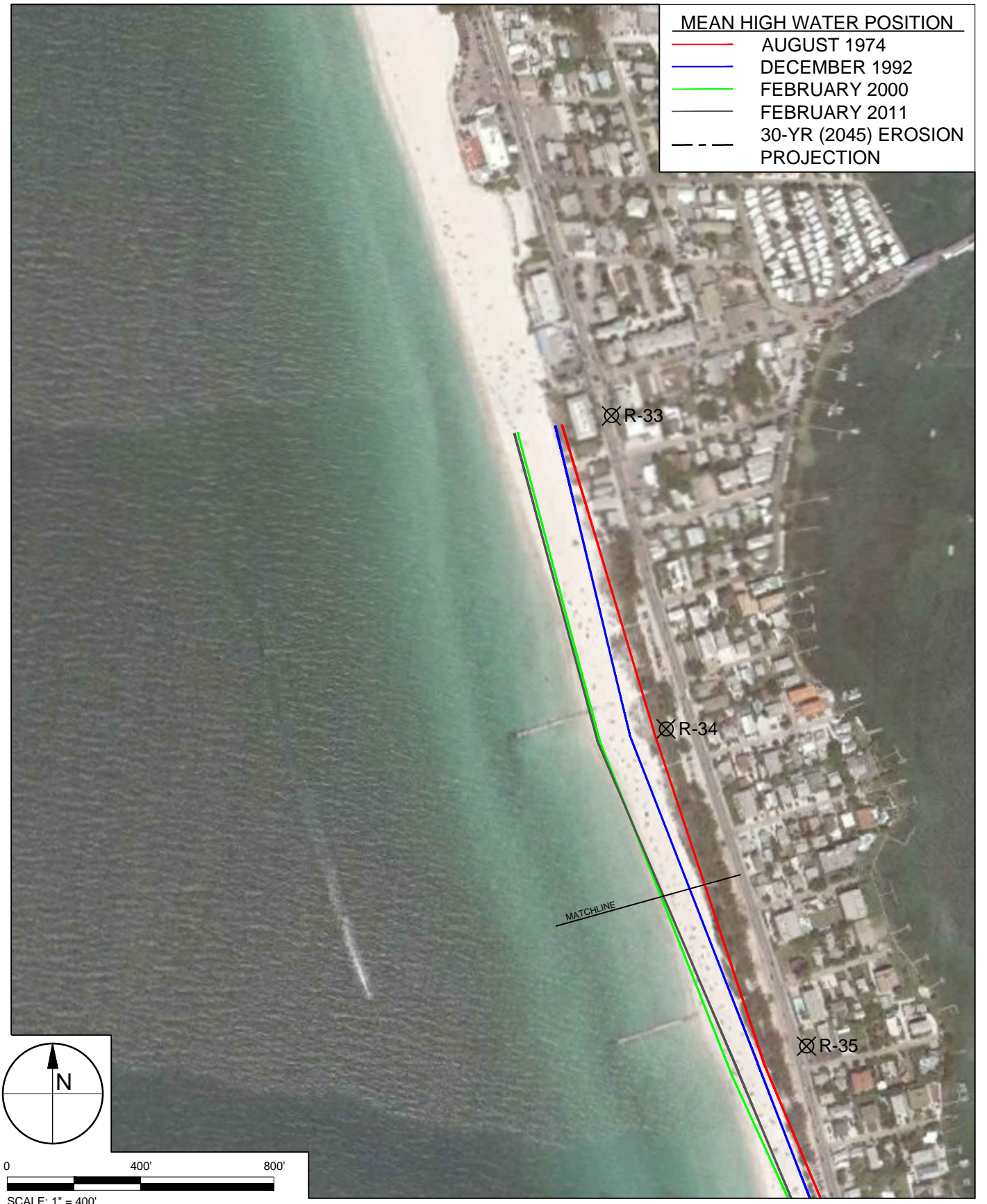
TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD.
 BLDG. 300, SUITE 300
 JACKSONVILLE, FL 32256
 CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 4
 HISTORIC SHORELINE POSITIONS
 COQUINA BEACH 30-YEAR EROSION PROJECTION
 MANATEE COUNTY, FL

PROJECT	C2015-062
DRAWN BY	DG
SHEET	4 of 5
DATE	DEC 2015

MEAN HIGH WATER POSITION

- AUGUST 1974
- DECEMBER 1992
- FEBRUARY 2000
- FEBRUARY 2011
- - - 30-YR (2045) EROSION PROJECTION



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TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD.
 BLDG. 300, SUITE 300
 JACKSONVILLE, FL 32256
 CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 5
 HISTORIC SHORELINE POSITIONS
 COQUINA BEACH 30-YEAR EROSION PROJECTION
 MANATEE COUNTY, FL

PROJECT	C2015-062
DRAWN BY	DG
SHEET	5 of 5
DATE	DEC 2015

SECTION D, SAMPLE CONSTRUCTION AGREEMENT WITH GENERAL CONDITIONS OF THE CONSTRUCTION AGREEMENT AND AGREEMENT EXHIBITS

CONSTRUCTION AGREEMENT

for

STIPULATED SUM

between

MANATEE COUNTY (AS OWNER)

and

<CONTRACTOR NAME> (AS CONTRACTOR)

CONSTRUCTION AGREEMENT FOR STIPULATED SUM

[Project Name]

THIS AGREEMENT (“Agreement”) is made and entered into by and between Manatee County, a political subdivision of the State of Florida, referred to herein as “Owner”, and the firm of _____, incorporated in the State of _____ and registered and licensed to do business in the State of Florida (license # _____), referred to herein as “Contractor.”

WHEREAS, the Owner intends to construct [PROJECT DESCRIPTION], the aforementioned improvements being hereinafter referred to and defined as the “Project”; and

WHEREAS, in response to Owner’s Invitation for Bid No. _____ (the “IFB”), Contractor has submitted its Bid (the “Contractor’s Bid”) to provide the aforementioned construction services.

NOW THEREFORE, the Owner and the Contractor, in consideration of the mutual covenants hereinafter set forth, the sufficiency of which is hereby acknowledged, agree as follows:

1. Contract Documents

The Contract Documents consist of this Agreement and attached Exhibits, the attached General Conditions of the Construction Agreement, Supplementary Conditions (if any), Special Conditions (if any), Drawings (the titles of which are attached hereto as Exhibit A), Specifications (the titles of which are attached hereto as Exhibit B), Addenda issued prior to execution of this Agreement, the Invitation for Bid (including any Instructions to Bidders, Scope of Work, Bid Summary, Supplements, and Technical Specifications), any interpretations issued pursuant to the Invitation for Bid, the Contractor’s Bid, permits, notice of intent to award, Notice to Proceed, purchase order(s), any other documents listed in this Agreement, and Modifications [to include written Amendment(s), Change Order(s), Work Directive Change(s) and Field Directive(s)] issued after execution of this Agreement. These form the Agreement, and are as fully a part of the Agreement as if attached or repeated herein. This Agreement represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. No other documents shall be considered Contract Documents.

2. Work

The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

3. Date of Commencement and Substantial Completion.

- A. Date of Commencement. The date of commencement of the Work shall be the date fixed in a Notice to Proceed issued by the Owner.
- B. Contract Time. The Contract Time shall be measured from the date of commencement.
- C. Substantial Completion. The Contractor shall achieve Substantial Completion of the entire Work not later than _____ days from the date of commencement, or as follows:

Portion of Work	Substantial Completion Date
------------------------	------------------------------------

subject to adjustments of this Contract Time as provided in the Contract Documents.

Time is of the essence in the Contract Documents and all obligations thereunder. If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time and as otherwise required by the Contract Documents (to include not only the entire Work but any portion of the Work as set forth above), the Owner shall be entitled to retain or recover from the Contractor, as liquidated damages and not as a penalty, the sum of \$_____ per calendar day, commencing upon the first day following expiration of the Contract Time and continuing until the actual date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable estimate of damages the Owner will incur because of delayed completion of the Work. The Owner may deduct liquidated damages as described in this paragraph from any unpaid amounts then or thereafter due the Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the Contractor shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at the maximum allowable rate.

4. Contract Sum

- A. Payment. The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be _____ Dollars and _____ Cents (\$_____), subject to additions and deductions as provided in the Contract Documents.
- B. Alternates. The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner.

(State the numbers or other identification of accepted alternates. If decisions on other alternates are to be made by the Owner subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

- C. Unit Prices. Unit prices, if any, are reflected in the Contractor's Bid.

5. Payments

A. Progress Payments

- (1) Based upon Applications for Payment submitted to the Architect/Engineer by the Contractor and Certificates for Payment issued by the Architect/Engineer, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.
- (2) The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.
- (3) Payments shall be made by Owner in accordance with the requirements of Section 218.735, Florida Statutes.
- (4) Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect/Engineer may require. This schedule, unless objected to by the Owner or Architect/Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.
- (5) Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.
- (6) Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:
 - i. Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10.00%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 3.3.B. of the General Conditions;
 - ii. Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), supported by paid receipts, less retainage of ten percent (10.00%);
 - iii. Subtract the aggregate of previous payments made by the Owner; and
 - iv. Subtract amounts, if any, for which the Architect/Engineer has withheld or nullified an Application for Payment, in whole or in part as provided in Section 3.3.C. of the General Conditions.

(7) The progress payment amount determined in accordance with Section 5.A(6) shall be further modified under the following circumstances:

- i. Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect/Engineer shall determine for incomplete Work, retainage applicable to such work and unsettled claims.
- ii. Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 3.2.B. of the General Conditions.

(8) Reduction or limitation of retainage, if any, shall be as follows:

Notwithstanding the foregoing, upon completion of at least 50% of the Work, as determined by the Architect/Engineer and Owner, the Owner shall reduce to five percent (5%) the amount of retainage withheld from each subsequent progress payment.

(9) Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

B. Final Payment. Final Payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when:

- (1) The Contractor has fully performed the Work except for the Contractor's responsibility to correct Work as provided in Section 2.4.C. of the General Conditions, and to satisfy other requirements, if any, which extend beyond final payment; and
- (2) A final Application for Payment has been approved by the Architect/Engineer.

6. Termination or Suspension.

- A. Termination. The Agreement may be terminated by the Owner or the Contractor as provided in Article XIV of the General Conditions.
- B. Suspension by Owner. The Work may be suspended by the Owner as provided in Article XIV of the General Conditions.

7. Other Provisions.

- A. Substantial Completion Defined. Substantial Completion shall be defined as provided in Article I of the General Conditions. In the event a temporary certificate of occupancy or completion is issued establishing Substantial Completion, the Contractor shall diligently pursue the issuance of a permanent certificate of occupancy or completion.

- B. Project Meetings. There shall be a project meeting, at the jobsite or other location acceptable to the parties, on a regularly scheduled basis. The meeting will be attended by a representative of the Contractor, Architect/Engineer and Owner. These representatives shall be authorized to make decisions that are not otherwise contrary to the requirements of this Agreement.
- C. Weather. Any rainfall, temperatures below 32 degrees Fahrenheit or winds greater than 25 m.p.h. which actually prevents Work on a given day, shall be considered lost time and an additional day added to the Contract Time, provided no work could be done on site, and provided written notice has been submitted to the Owner by the Contractor documenting same.
- D. Shop Drawings; Critical Submittals. In consideration of the impact of timely review of submittals and shop drawings on the overall progress of the Work, it is hereby agreed that the Owner shall cause his agents and design professionals to accomplish the review of any particular "critical" submittals and/or shop drawings and return same to the Contractor within fourteen (14) days.
- E. Applications for Payment. Applications for Payment shall be submitted once monthly at regular intervals and shall include detailed documentation of all costs incurred.
- F. Punch List. Within 30 days after obtainment of Substantial Completion, the Owner shall generate a "punch list" of all work items requiring remedial attention by the Contractor. Within 5 days thereafter the Architect/Engineer shall assign a fair value to the punch list items, which sum shall be deducted from the next scheduled progress payment to the Contractor. Upon satisfactory completion of the punch list items, as certified by the Architect/Engineer, the previously deducted sum shall be paid to the Contractor.
- G. Closeout documentation. Within 30 days after obtainment of Substantial Completion and before final payment, Contractor shall gather and deliver to Owner all warranty documentation, all manufacturer's product and warranty literature, all manuals (including parts and technical manuals), all schematics and handbooks, and all as-built drawings.
- H. Governing Provisions; Conflicts. In the event of a conflict between this Agreement and the Specifications or as between the General Conditions and the Specifications, the Specifications shall govern.
- I. E-Verify. The Contractor's employment of unauthorized aliens is a violation of Section 274(e) of the Federal Immigration and Employment Act. The Contractor shall utilize the U.S. Department of Homeland Security E-Verify system to verify the employment eligibility of all new employees hired during the term of this Agreement, and shall require the same verification procedure of all Subcontractors.

8. Insurance and Bonding

If and to the extent required by the Invitation for Bid documents, the Contractor shall furnish insurance coverage for (but not necessarily limited to) workers' compensation, commercial general liability, auto liability, excess liability, and builder's risk. The Contractor shall furnish to the Owner all appropriate policies and Certificate(s) of Insurance. The Contractor shall also post a Payment and Performance Bond for the Contract Sum, within ten (10) days following notification of intent to award, and otherwise in accordance with the Invitation for Bid documents.

9. Independent Contractor

The Contractor acknowledges that it is functioning as an independent contractor in performing under the terms of this Agreement, and it is not acting as an employee of the Owner.

10. Entire Agreement

This Agreement (inclusive of the Contract Documents incorporated herein by reference) represents the full agreement of the parties.

11. Amendments; Waivers; Assignment

- A. Amendments. This Agreement may be amended only pursuant to an instrument in writing that has been jointly executed by authorized representatives of the parties hereto.
- B. Waivers. Neither this Agreement nor any portion of it may be modified or waived orally. However, each party (through its governing body or properly authorized officer) shall have the right, but not the obligation, to waive, on a case-by-case basis, any right or condition herein reserved or intended for the benefit or protection of such party without being deemed or considered to have waived such right or condition for any other case, situation, or circumstance and without being deemed or considered to have waived any other right or condition. No such waiver shall be effective unless made in writing with an express and specific statement of the intent of such governing body or officer to provide such waiver.
- C. Assignment. The rights and obligations of either party to this Agreement may be assigned to a third party only pursuant to a written amendment hereto.

12. Validity

Each of the Owner and Contractor represents and warrants to the other its respective authority to enter into this Agreement.

13. Covenant To Defend

Neither the validity of this Agreement nor the validity of any portion hereof may be challenged by any party hereto, and each party hereto hereby waives any right to initiate any such challenge. Furthermore, if this Agreement or any portion hereof is challenged by a third party in any judicial, administrative, or appellate proceeding (each

party hereby covenanting with the other party not to initiate, encourage, foster, promote, cooperate with, or acquiesce to such challenge), the parties hereto collectively and individually agree, at their individual sole cost and expense, to defend in good faith its validity through a final judicial determination or other resolution, unless all parties mutually agree in writing not to defend such challenge or not to appeal any decision invalidating this Agreement or any portion thereof.

14. Disclaimer of Third-Party Beneficiaries; Successors and Assigns

This Agreement is solely for the benefit of the parties hereto, and no right, privilege, or cause of action shall by reason hereof accrue upon, to, or for the benefit of any third party. Nothing in this Agreement is intended or shall be construed to confer upon or give any person, corporation, partnership, trust, private entity, agency, or other governmental entity any right, privilege, remedy, or claim under or by reason of this Agreement or any provisions or conditions hereof. This Agreement shall be binding upon, and its benefits and advantages shall inure to, the successors and assigns of the parties hereto.

15. Construction

- A. Headings and Captions. The headings and captions of articles, sections, and paragraphs used in this Agreement are for convenience of reference only and are not intended to define or limit their contents, nor are they to affect the construction of or be taken into consideration in interpreting this Agreement.
- B. Legal References. All references to statutory sections or chapters shall be construed to include subsequent amendments to such provisions, and to refer to the successor provision of any such provision. References to “applicable law” and “general law” shall be construed to include provisions of local, state and federal law, whether established by legislative action, administrative rule or regulation, or judicial decision.

16. Severability

The provisions of this Agreement are declared by the parties hereto to be severable. In the event any term or provision of this Agreement shall be held invalid by a court of competent jurisdiction, such invalid term or provision should not affect the validity of any other term or provision hereof; and all such terms and provisions hereof shall be enforceable to the fullest extent permitted by law as if such invalid term or provision had never been part of this Agreement; provided, however, if any term or provision of this Agreement is held to be invalid due to the scope or extent thereof, then, to the extent permitted by law, such term or provision shall be automatically deemed modified in order that it may be enforced to the maximum scope and extent permitted by law.

17. Governing Law; Venue

This Agreement shall be governed by the laws of the State of Florida. Venue for any petition for writ of certiorari or other court action allowed by this Agreement shall be in the Circuit Court of the Twelfth Judicial Circuit in and for Manatee County, Florida.

18. Attorney's Fees and Costs

In any claim dispute procedure or litigation arising from this Agreement, each party hereto shall be solely responsible for paying its attorney's fees and costs.

19. Notices

All notices, comments, consents, objections, approvals, waivers, and elections under this Agreement shall be in writing and shall be given only by hand delivery for which a receipt is obtained, or certified mail, prepaid with confirmation of delivery requested, or by electronic mail with delivery confirmation. All such communications shall be addressed to the applicable addressees set forth below or as any party may otherwise designate in the manner prescribed herein.

To the Owner:

Manatee County,
Attn:
Address
City/State/Zip
Email:

To the Contractor:

Name.
Attn:
Address
City/State/Zip
Email:

Notices, comments, consents, objections, approvals, waivers, and elections shall be deemed given when received by the party for whom such communication is intended at such party's address herein specified, or such other physical address or email address as such party may have substituted by notice to the other.

20. Public Records Law

The Contractor shall comply with the Florida Public Records Act (Chapter 119, Florida Statutes), and shall:

- A. Keep and maintain public records required by the Owner to perform the services called for in this Agreement.
- B. Upon request from the Owner's custodian of public records, provide the Owner with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes or as otherwise provided by law.
- C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of this Agreement and following completion of this Agreement if the Contractor does not transfer the records to the Owner.

D. Upon completion of this Agreement, transfer, at no cost, to the Owner all public records in possession of the Contractor or keep and maintain such public records. If the Contractor transfers all public records to the Owner upon completion of the Agreement, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the Agreement, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the Owner, upon request from the Owner's custodian of public records, in a format that is compatible with the information technology systems of the Owner.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE OWNER'S CUSTODIAN OF PUBLIC RECORDS AT 941-748-4501, EXT. 5845; DEBBIE.SCACCIANOCE@MYMANATEE.ORG; POST OFFICE BOX 1000, BRADENTON, FLORIDA 34206.

21. Exhibits. Exhibits to this Agreement are as follows:

Exhibit A—Title(s) of Drawings

Exhibit B—Title(s) of Specifications

Exhibit C—Affidavit of No Conflict

Exhibit D—Certificate(s) of Insurance

Exhibit E—Payment and Performance Bond

Exhibit F—Standard Forms

1. Application for Payment
2. Certificate of Substantial Completion
3. Final Reconciliation / Warranty / Affidavit
4. Change Order

WHEREFORE, the parties hereto have executed this Agreement as of the date last executed below.

NAME OF CONTRACTOR

By: _____

Printed Name: _____

Title: _____

Date: _____

MANATEE COUNTY, a political subdivision
of the State of Florida

By: _____

Printed Name:

Title:

Date: _____

SAMPLE

GENERAL CONDITIONS
of the
CONSTRUCTION AGREEMENT

SAMPLE

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GENERAL CONDITIONS
ARTICLE I
DEFINITIONS

1.1 Definitions. For purposes of the Contract Documents, the following terms shall have the following meanings.

A. Acceptance: The acceptance of the Project into the Owner's operating public infrastructure.

B. Application for Payment: The form approved and accepted by the Owner, which is to be used by Contractor in requesting progress payments or final payment and which is to include such supporting documentation as is required by the Contract Documents.

C. Architect/Engineer: _____, a _____ corporation or limited liability company, registered and licensed to do business in the State of Florida, OR _____, an employee of Owner.

D. Change Order: A written order signed by the Owner, the Architect/Engineer and the Contractor authorizing a change in the Project Plans and/or Specifications and, if necessary, a corresponding adjustment in the Contract Sum and/or Contract Time, pursuant to Article V.

E. Construction Services: The Construction Services to be provided by Contractor pursuant to Section 2.4, in accordance with the terms and provisions of the Contract Documents.

F. Construction Team: The working team established pursuant to Section 2.1.1.B.

G. Contract Sum: The total compensation to be paid to the Contractor for Construction Services rendered pursuant to the Contract Documents, as set forth in Contractor's Bid (or Guaranteed Maximum Price Addendum), unless adjusted in accordance with the terms of the Contract Documents

H. Contract Time: The time period during which all Construction Services are to be completed pursuant to the Contract Documents, to be set forth in the Project Schedule.

I. Contractor's Personnel: The Contractor's key personnel designated by Contractor.

J. Days: Calendar days except when specified differently. When time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or legal holiday, such day will be omitted from the computation.

K. Defective: When modifying the term “Work”, referring to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or that does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or that has been damaged prior to Owner’s approval of final payment (unless responsibility for the protection thereof has been assumed by Owner).

L. Field Directive: A written order issued by Owner which orders minor changes in the Work not involving a change in Contract Time, to be paid from the Owner’s contingency funds.

M. Final Completion Date: The date upon which the Project is fully constructed and all Work required on the Project and Project Site is fully performed as verified in writing by the Owner.

N. Float Time: The time available in the Project Schedule during which an unexpected activity can be completed without delaying Substantial Completion of the Work.

O. Force Majeure: Those conditions constituting excuse from performance as described in and subject to the conditions described in Article XII.

P. Notice to Proceed: Written notice by Owner (after execution of Contract) to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform the Work.

Q. Owner: Manatee County, a political subdivision of the State of Florida.

R. Owner’s Project Representative: The individual designated by Owner to perform those functions set forth in Section 7.8.

S. Payment and Performance Bond: The Payment and Performance Bond security posted pursuant to Section 2.4.Y to guarantee payment and performance by the Contractor of its obligations hereunder.

T. Permitting Authority: Any applicable governmental authority acting in its governmental and regulatory capacity which is required to issue or grant any permit, certificate, license or other approval which is required as a condition precedent to the commencement or approved of the Work, or any part thereof, including the building permit.

U. Procurement Ordinance: The Manatee County Procurement Code, Chapter 2-26 of the Manatee County Code of Laws, as amended from time to time.

V. Progress Report: A report to Owner that includes all information required pursuant to the Contract Documents and submitted in accordance with Section 2.4.EE, hereof.

W. Project: The total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by Owner and by separate contractors. For the purposes of the Contract Documents, the term Project shall

include all areas of proposed improvements and all areas which may reasonably be judged to have an impact on the Project.

X. Project Costs: The costs incurred by the Contractor to plan, construct and equip the Project and included within, and paid as a component of, the Contract Sum.

Y. Project Manager: Subject to the prior written consent of Owner, the individual designated to receive notices on behalf of the Contractor, or such other individual designated by the Contractor, from time to time, pursuant to written notice in accordance with the Contract Documents.

Z. Project Plans and Specifications: The one hundred percent (100%) construction drawings and specifications prepared by the Architect/Engineer, and any changes, supplements, amendments or additions thereto approved by the Owner, which shall also include any construction drawings and final specifications required for the repair or construction of the Project, as provided herein.

AA. Project Schedule: The schedule and sequence of events for the commencement, progression and completion of the Project, developed pursuant to Section 2.3., as such schedule may be amended as provided herein.

BB. Project Site: The site depicted in the Project Plans and Specifications, inclusive of all rights of way, temporary construction easements or licensed or leased sovereign lands.

CC. Subcontractor: Any individual (other than a direct employee of the Contractor) or organization retained by Contractor to plan, construct or equip the Project pursuant to Article IV.

DD. Substantial Completion and Substantially Complete: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Owner has received all certificates of occupancy or completion and other permits, approvals, licenses, and other documents from any governmental authority which are necessary for the beneficial occupancy of the Project or any designated portion thereof.

EE. Substantial Completion Date: The date on which the Project or designated portion thereof is deemed to be Substantially Complete, as evidenced by receipt of (i) the Architect/Engineer's certificate of Substantial Completion, (ii) written Acceptance of the Project by the Owner, and (iii) approvals of any other authority as may be necessary or otherwise required.

FF. Substitute: Materials or equipment offered by the Contractor as an alternative to that set forth in the Project Plans and Specifications, where (i) the Project Plans and Specifications do not authorize an "approved equal", or (ii) the Owner, in its reasonable discretion, determines that a pre-authorized "approved equal" will result in a substantial change to the Work because of cost, quality or other difference in comparison to the materials or equipment specified.

GG. Unit Price Work: Work to be paid for on the basis of unit prices.

HH. Work: The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

II. Work Directive Change: A written directive to Contractor, issued on or after the effective date of the Agreement pursuant to Section 5.8 and signed by Owner’s Project Representative, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or responding to emergencies.

ARTICLE II RELATIONSHIP AND RESPONSIBILITIES

2.1 Relationship between Contractor and Owner. The Contractor accepts the relationship of trust and confidence established with Owner pursuant to the Contract Documents. The Contractor shall furnish its best skill and judgment and cooperate with Owner and Owner’s Project Representative in furthering the interests of the Owner. The Contractor agrees to provide the professional services required to complete the Project consistent with the Owner’s direction and the terms of the Contract Documents. All services provided hereunder by Contractor, either directly or through Subcontractors, shall be provided in accordance with sound construction practices and applicable professional construction standards.

A. Purpose. The purpose of the Contract Documents is to provide for the provision of construction services for the Project on the Project Site by the Contractor, and construction of the Project by the Contractor in accordance with the Project Plans and Specifications. The further purpose of the Contract Documents is to define and delineate the responsibilities and obligations of the parties to the Contract Documents and to express the desire of all such parties to cooperate to accomplish the purposes and expectations of the Contract Documents.

B. Construction Team. The Contractor, Owner and Architect/Engineer shall be called the “Construction Team” and shall work together as a team commencing upon full execution of the Contract Documents through Substantial Completion. As provided in Section 2.2, the Contractor and Architect/Engineer shall work jointly through completion and shall be available thereafter should additional services be required. The Contractor shall provide leadership to the Construction Team on all matters relating to construction. The Contractor understands, acknowledges and agrees that the Architect/Engineer shall provide leadership to the Construction Team on all matters relating to design.

C. Owner’s Reliance on Bid (or Guaranteed Maximum Price Addendum). The Contractor acknowledges that the representations, statements, information and pricing contained in its Bid (or Guaranteed Maximum Price Addendum) have been relied upon by the Owner and have resulted in the award of this Project to the Contractor.

2.2 General Contractor Responsibilities. In addition to the other responsibilities set forth herein, the Contractor shall have the following responsibilities pursuant to the Contract Documents:

A. Personnel. The Contractor represents that it has secured, or shall secure, all personnel necessary to perform the Work, none of whom shall be employees of the Owner. Primary liaison between the Contractor and the Owner shall be through the Owner's Project Representative and Contractor's Project Manager. All of the services required herein shall be performed by the Contractor or under the Contractor's supervision, and all personnel engaged in the Work shall be fully qualified and shall be authorized or permitted under law to perform such services.

B. Cooperation with Architect/Engineer. The Contractor's services shall be provided in conjunction with the services of the Architect/Engineer. In the performance of professional services, the Contractor acknowledges that time is critical for Project delivery. The Contractor acknowledges that timely construction utilizing the services of an Architect/Engineer and a Contractor requires maximum cooperation between all parties.

C. Timely Performance. The Contractor shall perform all services as expeditiously as is consistent with professional skill and care and the orderly progress of the Work, in accordance with the Project Schedule. Verification of estimated Project Schedule goals will be made as requested by the Owner.

D. Duty to Defend Work. In the event of any dispute between the Owner and any Permitting Authority that relates to the quality, completeness or professional workmanship of the Contractor's services or Work, the Contractor shall, at its sole cost and expense, cooperate with the Owner to defend the quality and workmanship of the Contractor's services and Work.

E. Trade and Industry Terminology. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or at the time of execution of the Guaranteed Maximum Price Addendum), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of Owner or Contractor, or any of their agents or employees from those set forth in the Contract Documents. Computed dimensions shall govern over scaled dimensions.

2.3 Project Schedule. The Contractor, within ten (10) days after being awarded the Agreement, shall prepare and submit for the Owner's and Architect/Engineer's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the

extent required by the Contract Documents, and shall provide for expeditious and practicable execution of Work.

- A. The Project Schedule shall show a breakdown of all tasks to be performed, and their relationship in achieving the completion of each phase of Work, subject to review of Owner and Architect/Engineer and approval or rejection by Owner. The Project Schedule shall show, at a minimum, the approximate dates on which each segment of the Work is expected to be started and finished, the proposed traffic flows during each month, the anticipated earnings by the Contractor for each month and the approximate number of crews and equipment to be used. The Project Schedule shall include all phases of procurement, approval of shop drawings, proposed Change Orders in progress, schedules for Change Orders, and performance testing requirements. The Project Schedule shall include a construction commencement date and Project Substantial Completion Date, which dates shall accommodate known or reasonably anticipated geographic, atmospheric and weather conditions.
- B. The Project Schedule shall serve as the framework for the subsequent development of all detailed schedules. The Project Schedule shall be used to verify Contractor performance and to allow the Owner's Project Representative to monitor the Contractor's efforts.
- C. The Project Schedule may be adjusted by the Contractor pursuant to Article V. The Owner shall have the right to reschedule Work provided such rescheduling is in accord with the remainder of terms of the Contract Documents.
- D. The Contractor shall prepare a submittal schedule, promptly after being awarded the Agreement and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect/Engineer's approval. The Architect/Engineer's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect/Engineer reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.
- E. The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect/Engineer.

2.4 Construction Services. The Contractor shall provide the following Construction Services:

- A. Construction of Project. The Contractor shall work from the receipt of a Notice to Proceed through the Substantial Completion of the Project in accordance with the terms of the Contract Documents to manage the construction of the Project. The Construction Services provided by the Contractor to construct the Project shall include without limitation (1) all services

necessary and commensurate with established construction standards, and (2) all services described in the Invitation for Bid (or Request for Proposal) and the Bid (or Guaranteed Maximum Price Addendum).

B. Notice to Proceed. A Notice to Proceed may be given at any time within thirty (30) days after the effective date of the Agreement. Contractor shall start to perform the Work on the date specified in the Notice to Proceed, but no Work shall be done at the site prior to the issuance of the Notice to Proceed.

C. Quality of Work. If at any time the labor used or to be used appears to the Owner as insufficient or improper for securing the quality of Work required or the required rate of progress, the Owner may order the Contractor to increase its efficiency or to improve the character of its Work, and the Contractor shall conform to such an order. Any such order shall not entitle Contractor to any additional compensation or any increase in Contract Time. The failure of the Owner to demand any increase of such efficiency or any improvement shall not release the Contractor from its obligation to secure the quality of Work or the rate of progress necessary to complete the Work within the limits imposed by the Contract Documents. The Owner may require the Contractor to remove such personnel as the Owner deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Project is deemed to be contrary to the Owner's interest. The Contractor shall provide good quality workmanship and shall promptly correct construction defects without additional compensation. Acceptance of the Work by the Owner shall not relieve the Contractor of the responsibility for subsequent correction of any construction defects.

D. Materials. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by Architect/Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable supplier except as otherwise provided in the Contract Documents.

E. Accountability for Work. The Contractor shall be solely accountable for its Work, including plans review and complete submittals. The Contractor shall be solely responsible for means, methods, techniques, sequences and procedures of construction. If a specific means, method, technique, sequence or procedure of construction is required by the Contract Documents, the Contractor may utilize an alternative means, method, technique, sequence or procedure acceptable to the Architect/Engineer if the Contractor submits sufficient information to allow the Architect/Engineer to determine that the alternative is equivalent to that required by the Contract Documents.

F. Contract Sum. The Contractor shall construct the Project so that the Project can be built for a cost not to exceed the Contract Sum.

G. Governing Specifications. The Project shall be constructed in accordance with applicable Owner design standards and guidelines. In the absence of specified Owner design standards or guidelines, the Architect/Engineer shall use, and the Contractor shall comply with, the most recent version of the applicable FDOT or AASHTO design standards. In general, the Project shall be constructed by the Contractor in accordance with applicable industry standards. The Contractor shall be responsible for utilizing and maintaining current knowledge of any laws,

ordinances, codes, rules, regulations, standards, guidelines, special conditions, specifications or other mandates relevant to the Project or the services to be performed.

H. Adherence to Project Schedule. The development and equipping of the Project shall be undertaken and completed in accordance with the Project Schedule, and within the Contract Time described therein.

I. Superintendent. The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project Site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

(1) The Contractor, as soon as practicable after award of the Agreement, shall furnish in writing to the Owner through the Architect/Engineer the name and qualifications of the proposed superintendent. The Architect/Engineer may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect/Engineer has reasonable objection to the proposed superintendent or (2) that the Architect/Engineer requires additional time to review. Failure of the Architect/Engineer to reply within 14 days shall constitute notice of no reasonable objection.

(2) The Contractor shall not employ a proposed superintendent to whom the Owner or Architect/Engineer has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not be unreasonably withheld or delayed.

J. Work Hours. Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and Contractor shall not permit overtime work or the performance of Work on a Saturday, Sunday or legal holiday without Owner's written consent given after prior notice to Architect/Engineer (at least seventy-two (72) hours in advance).

K. Overtime-Related Costs. Contractor shall pay for all additional Architect/Engineer charges, inspection costs and Owner staff time for any overtime work which may be authorized. Such additional charges shall be an obligation of Contractor and no extra payment shall be made by Owner because such overtime work. At Owner's option, such overtime costs may be deducted from Contractor's monthly payment request or Contractor's retainage prior to release of final payment. Contractor's obligation to pay all overtime-related costs shall not apply if Contractor is directed by Owner to work overtime solely for Owner's convenience.

L. Insurance, Overhead and Utilities. Unless otherwise specified, Contractor shall furnish and assume full responsibility for all bonds, insurance, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

M. Cleanliness. The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project Site. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents. If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from Contractor.

N. Loading. Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

O. Safety and Protection. Contractor shall comply with all applicable federal, state and local safety regulations. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to:

- (1) All employees on the Work and other persons and organizations who may be affected thereby;
- (2) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Project Site; and
- (3) Other property at the Project Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement during construction.

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss, and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for the protection required by public authority or local conditions. Contractor shall provide reasonable maintenance of traffic for the public and preservation of the Owner's business, taking into full consideration all local conditions. Contractor's duties and responsibilities for safety and protection with regard to the Work shall continue until such time as all the Work is completed.

P. Emergencies. In emergencies affecting the safety or protection of persons or the Work or property at the Project Site or adjacent thereto, Contractor, without special instruction or authorization from Architect/Engineer or Owner, shall act to prevent threatened damage, injury or loss. Contractor shall give Owner prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Owner determines that a change in the Project is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variation.

Q. Substitutes. For Substitutes not included with the Bid (or Guaranteed Maximum Price Addendum), but submitted after the effective date of the Agreement (or

Guaranteed Maximum Price Addendum), Contractor shall make written application to Architect/Engineer for acceptance thereof, certifying that the proposed Substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will also contain an itemized estimate of all costs and delays or schedule impacts that will result directly or indirectly from review, acceptance and provision of such Substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by the Architect/Engineer in evaluating the proposed Substitute. Architect/Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed Substitute. In rendering a decision, Owner, Architect/Engineer and Contractor shall have access to any available Float Time in the Project Schedule. If Substitute materials or equipment not included as part of the Bid (or Guaranteed Maximum Price Addendum), but proposed after the effective date of the Agreement, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the Owner and an appropriate Change Order executed to adjust the Contract Sum.

- (1) Architect/Engineer will be allowed a reasonable time within which to evaluate each proposed Substitute. Architect/Engineer will be the sole judge of acceptability and no Substitute will be ordered, installed or utilized without Architect/Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved shop drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any Substitute.
- (2) Contractor shall reimburse Owner for the charges of Architect/Engineer and Architect/Engineer's Consultants for evaluating each proposed Substitute submitted after the effective date of the Agreement and all costs resulting from any delays in the Work while the Substitute was undergoing review.

R. Surveys and Stakes. The Contractor shall furnish, free of charge, all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the Work. Where rights-of-way, easements, property lines or any other conditions which make the lay-out of the Project or parts of the Project critical are involved, the Contractor shall employ a competent surveyor who is registered in the State of Florida for lay-out and staking. These stakes and marks shall constitute the field control by and in accord with which the Contractor shall govern and execute the Work. The Contractor shall be held responsible for the preservation of all stakes and marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they shall be immediately and accurately replaced by the Contractor.

S. Suitability of Project Site. The Contractor has, by careful examination, satisfied itself as to the nature and location of the Work and all other matters which can in any way affect the Work, including, but not limited to details pertaining to borings, as shown on the drawings. Such boring information is not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the Project Site, approximately at the locations indicated. The Contractor has examined boring data, where available, made its own interpretation of the subsurface conditions and other preliminary data, and has based its Bid (or Guaranteed Maximum Price Addendum) on its own opinion of the conditions likely to be

encountered. Except as specifically provided in Sections 2.4.U., 5.4 and 5.5, no extra compensation or extension of time will be considered for any Project Site conditions that existed at the time of bidding (or at the time of execution of the Guaranteed Maximum Price Addendum). No verbal agreement or conversation with any officer, agent or employee of the Owner, before or after the execution of the Agreement, shall affect or modify any of the terms or obligations herein contained.

T. Project Specification Errors. If the Contractor, during the Work, finds that the drawings, specifications or other Contract Documents cannot be followed, the Contractor shall immediately inform the Owner in writing, and the Owner shall promptly check the accuracy of the information. Any Work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's sole risk of non-payment and delay.

U. Remediation of Contamination. Owner and Contractor recognize that remediation of subsurface conditions may be necessary due to potential hazardous materials contamination. Because the presence or extent of any contamination is not known, Contractor shall include no cost in the Contract Sum, and no time in the Project Schedule, for cost or delays that might result from any necessary remediation. The Project Schedule will provide a period of time between demolition activities and the start of the next activity to commence any remediation if needed. Contractor shall use all reasonable efforts in scheduling the Project to minimize the likelihood that remediation delays construction. Any hazardous materials remediation Work which Contractor agrees to perform shall be done pursuant to a Change Order or amendment consistent with the following:

- (1) The dates of Substantial Completion shall be equitably adjusted based on delays, if any, incurred in connection with remediation efforts.
- (2) Contractor, and any Subcontractors which have mobilized on the Project Site, shall be paid for demonstrated costs of overhead operations at the Project Site during any period of delay of more than seven (7) days, except to the extent that Work proceeds concurrently with remediation. The categories of costs to be reimbursed are limited to those reasonably incurred at the jobsite during the delay period (such as trailers or offices, telephones, faxes, and the like); equipment dedicated to the Project and located at the Project Site; salaries and associated costs of personnel dedicated to the Project to the extent that they do not perform work on other projects; and other jobsite costs that are reasonable and which are incurred during the delay period. Subcontractors and suppliers which have not mobilized are limited to the costs set forth in Section 2.4.U(3).
- (3) Contractor and any Subcontractor or supplier on the Project who is eligible for compensation shall be paid any demonstrated costs of escalation in materials or labor, and reasonable costs of off-site storage of materials identified to the Project, arising because of any delay of more than seven (7) days. Such Contractor, Subcontractors and suppliers are obligated to take all reasonable steps to mitigate escalation costs, such as through early purchase of materials.

- (4) Contractor, for itself and all Subcontractors and suppliers on the Project, hereby agrees that the extension of time for delays under Section 2.4.U(1), and payment of the costs identified in Sections 2.4.U(2) and/or Section 2.4.U(3), are the sole remedies for costs and delays described in this Section, and waives all claims and demands for extended home office overhead (including, but not limited to, "Eichleay" claims), lost profit or lost opportunities, and any special, indirect, or consequential damages arising as a result of delays described in this Section. The Contract Sum shall be adjusted to reflect payment of allowable costs.
- (5) If any delay described in this section causes the time or cost for the Project to exceed the Contract Time or the Contact Sum, then the Owner may terminate the Agreement pursuant to Section 14.2.
- (6) Contractor and any Subcontractor or supplier seeking additional costs under this Section 2.4.U. shall promptly submit estimates or any costs as requested by Owner, and detailed back-up for all costs when payment is sought or whenever reasonably requested by Owner. All costs are auditable, at Owner's discretion. Bid, estimate and pricing information reasonably related to any request for additional compensation will be provided promptly upon request.
- (7) Contractor shall include provisions in its subcontracts and purchase orders consistent with this Section.

V. Interfacing.

- (1) The Contractor shall take such measures as are necessary to ensure proper construction and delivery of the Project, including but not limited to providing that all procurement of long-lead items, the separate construction Subcontractors, and the general conditions items are performed without duplication or overlap to maintain completion of all Work on schedule. Particular attention shall be given to provide that each Subcontractor bid package clearly identifies the Work included in that particular separate subcontract, its scheduling for start and completion, and its relationship to other separate contractors.
- (2) Without assuming any design responsibilities of the Architect/Engineer, the Contractor shall include in the Progress Reports required under this Section 2.4 comments on overlap with any other separate subcontracts, omissions, lack of correlation between drawings, and any other deficiencies noted, in order that the Architect/Engineer may arrange for necessary corrections.

W. Job Site Facilities. The Contractor shall arrange for all job site facilities required and necessary to enable the Contractor and Architect/Engineer to perform their respective duties and to accommodate any representatives of the Owner which the Owner may choose to have present on the Project Site.

X. Weather Protection. The Contractor shall provide temporary enclosures of building areas to assure orderly progress of the Work during periods when extreme weather conditions are likely to be experienced. The Contractor shall also be responsible for providing weather protection for Work in progress and for materials stored on the Project Site. A contingency plan shall be prepared upon request of the Owner for weather conditions that may affect the construction.

Y. Payment and Performance Bond. Prior to the construction commencement date, the Contractor shall obtain, for the benefit of and directed to the Owner, a Payment and Performance Bond satisfying the requirements of Section 255.05, Florida Statutes, covering the faithful performance by the Contractor of its obligations under the Contract Documents, including but not limited to the construction of the Project on the Project Site and the payment of all obligations arising thereunder, including all payments to Subcontractors, laborers, and materialmen. The surety selected by the Contractor to provide the Payment and Performance Bond shall be approved by the Owner prior to the issuance of such Bond, which approval shall not be unreasonably withheld or delayed provided that the surety is rated A or better by Best's Key Guide, latest edition. For Changes in the Work that result in an increase in the Contract Sum, Owner reserves the right to require the Contractor to secure and deliver additive riders to the Payment and Performance Bond.

Z. Construction Phase; Building Permit; Code Inspections. Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work.

- (1) Building Permit. The Owner and Architect/Engineer shall provide such information to any Permitting Authority as is necessary to obtain approval from the Permitting Authority to commence construction prior to beginning construction. The Contractor shall pull any required building permit, and shall be responsible for delivering and posting the building permit at the Project Site prior to the commencement of construction. The cost of the building permit is included in the Contract Sum. The Owner and Architect/Engineer shall fully cooperate with the Contractor when and where necessary.
- (2) Code Inspections. The Project requires detailed code compliance inspection during construction in disciplines determined by any Permitting Authority. These disciplines normally include, but are not necessarily limited to, structural, mechanical, electrical, plumbing, general building and fire. The Contractor shall notify the appropriate inspector(s) and the Architect/Engineer, no less than 24 hours in advance, when the Work is ready for inspection and before the Work is covered up. All inspections shall be made for conformance with the applicable ordinances and building codes. Costs for all re-inspections of Work found defective and subsequently repaired shall not be included as Project Costs and shall be borne by the Contractor or as provided in the contract between Contractor and Subcontractor.

- (3) Contractor's Personnel. The Contractor shall maintain sufficient off-site support staff and competent full-time staff at the Project Site authorized to act on behalf of the Contractor to coordinate, inspect, and provide general direction of the Work and progress of the Subcontractors. At all times during the performance of the Work, the Owner shall have the right to demand replacement of Contractor Personnel to whom the Owner has reasonable objection, without liability to the Contractor.
- (4) Lines of Authority. To provide general direction of the Work, the Contractor shall establish and maintain lines of authority for its personnel and shall provide this information to the Owner and all other affected parties, such as the code inspectors of any Permitting Authority, the Subcontractors, and the Architect/Engineer. The Owner and Architect/Engineer may attend meetings between the Contractor and his Subcontractors; however, such attendance is optional and shall not diminish either the authority or responsibility of the Contractor to administer the subcontracts.

AA. Quality Control. The Contractor shall develop and maintain a program, acceptable to the Owner and Architect/Engineer, to assure quality control of the construction. The Contractor shall be responsible for and supervise the Work of all Subcontractors, providing instructions to each when their Work does not conform to the requirements of the Project Plans and Specifications, and the Contractor shall continue to coordinate the Work of each Subcontractor to ensure that corrections are made in a timely manner so as to not affect the efficient progress of the Work. Should a disagreement occur between the Contractor and the Architect/Engineer over the acceptability of the Work, the Owner, at its sole discretion and in addition to any other remedies provided herein, shall have the right to determine the acceptability, provided that such determination is consistent with standards for construction projects of this type and generally accepted industry standards for workmanship in the State of Florida.

BB. Management of Subcontractors. All Subcontractors shall be compensated in accordance with Article IV. The Contractor shall solely control the Subcontractors. The Contractor shall negotiate all Change Orders and Field Orders with all affected Subcontractors and shall review the costs and advise the Owner and Architect/Engineer of their validity and reasonableness, acting in the Owner's best interest. When there is an imminent threat to health and safety, and Owner's Project Representative concurrence is impractical, the Contractor shall act immediately to remove the threats to health and safety and shall subsequently fully inform Owner of all such action taken. The Contractor shall also carefully review all shop drawings and then forward the same to the Architect/Engineer for review and actions. The Architect/Engineer will transmit them back to the Contractor, who will then issue the shop drawings to the affected Subcontractor for fabrication or revision. The Contractor shall maintain a suspense control system to promote expeditious handling. The Contractor shall request the Architect/Engineer to make interpretations of the drawings or specifications requested of him by the Subcontractors and shall maintain a business system to promote timely response. The Contractor shall inform the Architect/Engineer which shop drawings or requests for clarification have the greatest urgency, to enable the Architect/Engineer to prioritize requests coming from the Contractor. The Contractor shall advise the Owner and Architect/Engineer when timely response is not occurring on any of the above.

CC. Job Requirements.

- (1) The Contractor shall provide each of the following as a part of its services hereunder:
- (a) Maintain a log of daily activities, including manpower records, equipment on site, weather, delays, major decisions, etc;
 - (b) Maintain a roster of companies on the Project with names and telephone numbers of key personnel;
 - (c) Establish and enforce job rules governing parking, clean-up, use of facilities, and worker discipline;
 - (d) Provide labor relations management and equal opportunity employment for a harmonious, productive Project;
 - (e) Provide and administer a safety program for the Project and monitor for subcontractor compliance without relieving them of responsibilities to perform Work in accordance with best acceptable practice;
 - (f) Provide a quality control program as provided under Section 2.4.C above;
 - (g) Provide miscellaneous office supplies that support the construction efforts which are consumed by its own forces;
 - (h) Provide for travel to and from its home office to the Project Site and to those other places within Manatee County as required by the Project;
 - (i) Verify that tests, equipment, and system start-ups and operating and maintenance instructions are conducted as required and in the presence of the required personnel and provide adequate records of same to the Architect/Engineer;
 - (j) Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and sample submissions, reproductions of original Contract Documents including all addenda, change orders, field orders, additional drawings issued after execution of the Agreement, Owner/Architect/Engineer's clarifications and interpretations of the Contract Documents, Progress Reports, as-built drawings, and other project related documents;
 - (k) Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions; list of visiting officials and representatives or manufacturers, fabricators,

suppliers and distributors; daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures, and provide copies of same to Owner/Architect/Engineer;

- (l) Record names, addresses and telephone numbers of all Contractors, Subcontractors and major suppliers of materials and equipment;
 - (m) Furnish Owner/Architect/Engineer periodic reports, as required, of progress of the Work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions;
 - (n) Consult with Owner/Architect/Engineer in advance of scheduling major tests, inspections or start of important phases of the Work;
 - (o) Verify, during the course of the Work, that certificates, maintenance and operations manuals and other data required to be assembled and furnished are applicable to the items actually installed, and deliver same to Owner/Architect/Engineer for review prior to final Acceptance of the Work; and
 - (p) Cooperate with Owner in the administration of grants.
- (2) The Contractor shall provide personnel and equipment, or shall arrange for separate Subcontractors to provide each of the following as a Project Cost:
- (a) Services of independent testing laboratories, and provide the necessary testing of materials to ensure conformance to contract requirements; and
 - (b) Printing and distribution of all required bidding documents and shop drawings, including the sets required by Permitting Authority inspectors.

DD. As-Built Drawings. The Contractor shall continuously review as-built drawings and mark up progress prints to provide as much accuracy as possible. Prior to, and as a requirement for authorizing final payment to the Contractor due hereunder, the Contractor shall provide to the Owner an original set of marked-up, as-built Project Plans and Specifications and an electronic format of those records showing the location and dimensions of the Project as constructed, which documents shall be certified as being correct by the Contractor and the Architect/Engineer. Final as-built drawings shall be signed and sealed by a registered Florida surveyor.

EE. Progress Reports. The Contractor shall forward to the Owner, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the Work, to include those parts of the Work in fabrication and in the field, stating the existing status, estimated time of completion and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Owner's review

and approval. In addition, more detailed schedules may be required by the Owner for daily traffic control.

FF. Contractor's Warranty. The Contractor warrants to the Owner and Architect/Engineer that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements will be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect/Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

- (1) Contractor shall use its best efforts and due diligence to ensure that during the warranty period, those entities or individuals who have provided direct warranties to the Owner as required by the Contract Documents perform all required warranty Work in a timely manner and at the sole cost and expense of such warranty providers. Any such cost or expense not paid by the warranty providers shall be paid by the Contractor, to include any costs and attorney's fees incurred in warranty-related litigation between Contractor and any Subcontractors.
- (2) The Contractor shall secure guarantees and warranties of Subcontractors, equipment suppliers and materialmen, and assemble and deliver same to the Owner in a manner that will facilitate their maximum enforcement and assure their meaningful implementation. The Contractor shall collect and deliver to the Owner any specific written guaranties or warranties given by others as required by subcontracts.
- (3) At the Owner's request, the Contractor shall conduct, jointly with the Owner and the Architect/Engineer, no more than two (2) warranty inspections within three (3) years after the Substantial Completion Date.

GG. Apprentices. If Contractor employs apprentices, their performance of Work shall be governed by and shall comply with the provisions of Chapter 446, Florida Statutes.

HH. Schedule of Values. Unit prices shall be established for this Agreement by the submission of a schedule of values within ten (10) days of receipt of the Notice to Proceed. The schedule shall include quantities and prices of items equaling the Contract Sum and will subdivide the Work into components in sufficient detail to serve as the basis for progress payments during construction. Such prices shall include an appropriate amount of overhead and profit applicable to each item of Work. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

II. Other Contracts. The Owner reserves the right to let other contracts in connection with this Work. The Contractor shall afford other contractors reasonable

opportunity for the introduction and storage of their materials and execution of their work, and promptly connect and coordinate the Work with theirs.

ARTICLE III COMPENSATION

3.1 Compensation. The Contract Sum constitutes the total compensation (subject to authorized adjustments) payable to Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change in the Contract Sum.

A. Adjustments. The Contract Sum may only be changed by Change Order or by a written amendment. Any claim for an increase or decrease in the Contract Sum shall be based on written notice delivered by the party making the claim to the other party. Notice of the amount of the claim with supporting data shall be delivered within fifteen (15) days from the beginning of such occurrence and shall be accompanied by claimant's written statement that the amount claimed covers all amounts to which the claimant is entitled as a result of the occurrence of said event. Failure to deliver a claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

B. Valuation. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Sum shall be determined in one of the following ways (at Owner's discretion):

- (1) In the case of Unit Price Work, in accordance with Section 3.1.C, below; or
- (2) By mutual acceptance of a lump sum; or
- (3) On the basis of the cost of the Work, plus a negotiated Contractor's fee for overhead and profit. Contractor shall submit an itemized cost breakdown together with supporting data.

C. Unit Price Work. The unit price of an item of Unit Price Work shall be subject to re-evaluation and adjustment pursuant to a requested Change Order under the following conditions:

- (1) If the total cost of a particular item of Unit Price Work amounts to 5% or more of the Contract Sum and the variation in the quantity of the particular item of Unit Price Work performed by Contractor differs by more than 15% from the estimated quantity of such item indicated in the Agreement; and
- (2) If there is no corresponding adjustment with respect to any other item of Work; and
 - (i) If Contractor believes that it has incurred additional expense as a result thereof; or
 - (ii) If Owner believes that the quantity variation entitles it to an

adjustment in the unit price; or

- (iii) If the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

3.2 Schedule of Compensation. All payments for services and material under the Contract Documents shall be made in accordance with the following provisions.

A. Periodic Payments for Services. The Contractor shall be entitled to receive payment for Construction Services rendered pursuant to Section 2.4 in periodic payments which shall reflect a fair apportionment of cost and schedule of values of services furnished prior to payment, subject to the provisions of this Section.

B. Payment for Materials and Equipment. In addition to the periodic payments authorized hereunder, payments may be made for material and equipment not incorporated in the Work but delivered and suitably stored at the Project Site, or another location, subject to prior approval and acceptance by the Owner on each occasion.

C. Credit toward Contract Sum. All payments for Construction Services made hereunder shall be credited toward the payment of the Contract Sum as Contractor's sole compensation for the construction of the Project.

3.3 Invoice and Payment. All payments for services and materials under the Contract Documents shall be invoiced and paid in accordance with the following provisions.

A. Invoices. The Contractor shall submit to the Owner periodic invoices for payment, in a form acceptable to the Owner, which shall include a sworn statement certifying that, to the best of the Contractor's knowledge, information and belief, the construction has progressed to the point indicated, the quality and the Work covered by the invoice is in accord with the Project Plans and Specifications, and the Contractor is entitled to payment in the amount requested, along with the cost reports required pursuant to Article II, showing in detail all monies paid out, Project Costs accumulated, or Project Cost incurred during the previous period. This data shall be attached to the invoice.

B. Additional Information; Processing of Invoices. Should an invoiced amount appear to exceed the Work effort believed to be completed, the Owner may, prior to processing of the invoice for payment, require the Contractor to submit satisfactory evidence to support the invoice. All Progress Reports and invoices shall be delivered to the attention of the Owner's Project Representative. Invoices not properly prepared (mathematical errors, billing not reflecting actual Work done, no signature, etc.) shall be returned to the Contractor for correction.

C. Architect/Engineer's Approval. Payment for Work completed shall be subject to the Architect/Engineer approving the payment requested by the Contractor and certifying the amount thereof that has been properly incurred and is then due and payable to the Contractor, and identifying with specificity any amount that has not been properly incurred and that should not be paid.

D. Warrants of Contractor with Respect to Payments. The Contractor warrants that (1) upon payment of any retainage, materials and equipment covered by a partial payment request will pass to Owner either by incorporation in construction or upon receipt of payment by the Contractor, whichever occurs first; (2) Work, materials and equipment covered by previous partial payment requests shall be free and clear of liens, claims, security interests, or encumbrances; and (3) no Work, materials or equipment covered by a partial payment request which has been acquired by the Contractor or any other person performing Work at the Project Site, or furnishing materials or equipment for the Project, shall be subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or any other person.

E. All Compensation Included. Contractor's compensation includes full payment for services set forth in the Contract Documents, including but not limited to overhead, profit, salaries or other compensation of Contractor's officers, partners and/or employees, general operating expenses incurred by Contractor and relating to this Project, including the cost of management, supervision and data processing staff, job office equipment and supplies, and other similar items.

ARTICLE IV SUBCONTRACTORS

4.1 Subcontracts. At the Owner's request, the Contractor shall provide Owner's Project Representative with copies of all proposed and final subcontracts, including the general and supplementary conditions thereof.

A. Subcontracts Generally. All subcontracts shall: (1) require each Subcontractor to be bound to Contractor to the same extent Contractor is bound to Owner by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor, (2) provide for the assignment of the subcontracts from Contractor to Owner at the election of Owner, upon termination of Contractor, (3) provide that Owner will be an additional indemnified party of the subcontract, (4) provide that Owner will be an additional insured on all insurance policies required to be provided by the Subcontractor, except workers' compensation, (5) assign all warranties directly to Owner, and (6) identify Owner as an intended third-party beneficiary of the subcontract.

(1) A Subcontractor is a person or entity who has a direct contract with Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

(2) A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

B. No Damages for Delay. Except when otherwise expressly agreed to by Owner in writing, all subcontracts shall provide:

“LIMITATION OF REMEDIES – NO DAMAGES FOR DELAY. The Subcontractor's exclusive remedy for delays in the performance of the contract caused by events beyond its control, including delays claimed to be caused by the Owner or Architect/Engineer or attributable to the Owner or Architect/Engineer and including claims based on breach of contract or negligence, shall be an extension of its contract time and shall in no way involve any monetary claim.”

Each subcontract shall require that any claims by the Subcontractor for delay must be submitted to the Contractor within the time and in the manner in which the Contractor must submit such claims to the Owner, and that failure to comply with the conditions for giving notice and submitting claims shall result in the waiver of such claims.

C. Subcontractual Relations. The Contractor shall require each Subcontractor to assume all the obligations and responsibilities which the Contractor owes the Owner pursuant to the Contract Documents, by the parties to the extent of the Work to be performed by the Subcontractor. Said obligations shall be made in writing and shall preserve and protect the rights of the Owner and Architect/Engineer, with respect to the Work to be performed by the Subcontractor, so that the subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with its sub-subcontractors.

D. Insurance; Acts and Omissions. Insurance requirements for Subcontractors shall be no more stringent than those requirements imposed on the Contractor by the Owner. The Contractor shall be responsible to the Owner for the acts and omissions of its employees, agents, Subcontractors, their agents and employees, and all other persons performing any of the Work or supplying materials under a contract to the Contractor.

4.2 Relationship and Responsibilities. Except as specifically set forth herein with respect to direct materials acquisitions by Owner, nothing contained in the Contract Documents or in any Contract Document does or shall create any contractual relation between the Owner or Architect/Engineer and any Subcontractor. Specifically, the Contractor is not acting as an agent of the Owner with respect to any Subcontractor. The utilization of any Subcontractor shall not relieve Contractor from any liability or responsibility to Owner, or obligate Owner to the payment of any compensation to the Subcontractor or additional compensation to the Contractor.

4.3 Payments to Subcontractors; Monthly Statements. The Contractor shall be responsible for paying all Subcontractors from the payments made by the Owner to Contractor pursuant to Article III, subject to the following provisions:

A. Payment. The Contractor shall, no later than ten (10) days after receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's Work, pay to each Subcontractor the amount to which the Subcontractor is entitled in accordance with the terms of the Contractor's contract with such Subcontractor. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make

payments to sub-Subcontractors in a similar manner. After receipt of payment from Owner, if the need should arise to withhold payments to Subcontractors for any reason, as solely determined by Contractor, the Contractor shall promptly restore such monies to the Owner, adjusting subsequent pay requests and Project bookkeeping as required.

B. Final Payment of Subcontractors. The final payment of retainage to Subcontractors shall not be made until the Project has been inspected by the Architect/Engineer or other person designated by the Owner for that purpose, and until both the Architect/Engineer and the Contractor have issued a written certificate that the Project has been constructed in accordance with the Project Plans and Specifications and approved Change Orders. Before issuance of final payment to any Subcontractor without any retainage, the Subcontractor shall submit satisfactory evidence that all payrolls, material bills, and other indebtedness connected with the Project have been paid or otherwise satisfied, warranty information is complete, as-built markups have been submitted, and instruction for the Owner's operating and maintenance personnel is complete. Final payment may be made to certain select Subcontractors whose Work is satisfactorily completed prior to the completion of the Project, but only upon approval of the Owner's Project Representative.

4.4 Responsibility for Subcontractors. As provided in Section 2.4.BB, Contractor shall be fully responsible to Owner for all acts and omissions of the Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect Contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions.

4.5 Contingent Assignment of Subcontracts. Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that:

- (1) assignment is effective only after termination of the Contract by the Owner for cause pursuant to Article XIV and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- (2) assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Agreement.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract. Upon such assignment, if the Work has been suspended for more than thirty (30) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension. Upon such assignment to the Owner, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE V CHANGES IN WORK

5.1 General. Changes in the Work may be accomplished after execution of the Agreement, and without invalidating the Agreement, by Change Order, Work Directive Change

or order for a minor change in the Work, subject to the limitations stated in this Article V and elsewhere in the Contract Documents. A Change Order shall be based upon agreement among the Owner, Contractor and Architect/Engineer; a Work Directive Change requires agreement by the Owner and Architect/Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect/Engineer alone. Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Work Directive Change or order for a minor change in the Work.

5.2 Minor Changes in the Work. The Owner or Architect/Engineer shall have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such change will be effected by written order signed by the Architect/Engineer and shall be binding on the Owner and Contractor. The Contractor shall abide by and perform such minor changes. Such changes shall be effected by a Field Directive or a Work Directive Change. Documentation of changes shall be determined by the Construction Team, and displayed monthly in the Progress Reports. Because such changes shall not affect the Contract Sum to be paid to the Contractor, they shall not require a Change Order pursuant to Section 5.6.

5.3 Emergencies. In any emergency affecting the safety of persons or property, the Contractor shall act at its discretion to prevent threatened damage, injury, or loss. Any increase in the Contract Sum or extension of time claimed by the Contractor because of emergency Work shall be determined as provided in Section 5.6. However, whenever practicable, the Contractor shall obtain verbal concurrence of the Owner's Project Representative and Architect/Engineer where the act will or may affect the Contract Sum or Contract Time.

5.4 Concealed Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect/Engineer before conditions are disturbed and in no event later than ten (10) days after first observance of the conditions. The Architect/Engineer will promptly investigate such conditions and, if the Architect/Engineer determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect/Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect/Engineer shall promptly notify the Owner and Contractor in writing, stating the reasons. If the Contractor disputes the Architect/Engineer's determination or recommendation, the Contractor may proceed as provided in Article VIII. If the Owner disputes the Architect/Engineer's determination or recommendation, the Owner may appeal directly to the Purchasing Official and shall thereafter follow the process set forth in Section 8.5.

5.5 Hazardous Materials. In the event the Contractor encounters on the Project Site material reasonably believed to be hazardous, petroleum or petroleum related products, or other hazardous or toxic substances, except as provided in Section 2.4.U, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and the

Architect/Engineer in writing. The Work in the affected area shall not thereafter be resumed except by Change Order or written amendment, if in fact the material or substance has not been rendered harmless. The Work in the affected area shall be resumed when the Project Site has been rendered harmless, in accordance with the final determination by the Architect/Engineer or other appropriate professional employed by Owner. The Contractor shall not be required to perform without its consent any Work relating to hazardous materials, petroleum or petroleum related products, or other hazardous or toxic substances. In the event the Contractor encounters on the Project Site materials believed in good faith to be hazardous or contaminated material, and the presence of such hazardous or contaminated material was not known and planned for at the time the Contractor submitted its Bid (or Guaranteed Maximum Price proposal), and it is necessary for the Contractor to stop Work in the area affected and delays Work for more than a seven (7) day period, adjustments to the Contract Sum and/or Contract Time shall be made in accordance with this Article V.

5.6 Change Orders; Adjustments to Contract Sum.

A. Change Orders Generally. The increase or decrease in the Contract Sum resulting from a change authorized pursuant to the Contract Documents shall be determined:

- (1) By mutual acceptance of a lump sum amount properly itemized and supported by sufficient substantiating data, to permit evaluation by the Architect/Engineer and Owner; or
- (2) By unit prices stated in the Agreement or subsequently agreed upon; or
- (3) By any other method mutually agreeable to Owner and Contractor.

If Owner and Contractor are unable to agree upon increases or decreases in the Contract Sum and the Architect/Engineer certifies that the work needs to be commenced prior to any such agreement, the Contractor, provided it receives a written Change Order signed by or on behalf of the Owner, shall promptly proceed with the Work involved. The cost of such Work shall then be determined on the basis of the reasonable expenditures of those performing the Work attributed to the change. However, in the event a Change Order is issued under these conditions, the Owner, through the Architect/Engineer, will establish an estimated cost of the Work and the Contractor shall not perform any Work whose cost exceeds that estimated without prior written approval by the Owner. In such case, the Contractor shall keep and present in such form as the Owner may prescribe an itemized accounting, together with appropriate supporting data of the increase in overall costs of the Project. The amount of any decrease in the Contract Sum to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in costs will be the amount of the actual net decrease.

5.7 Owner-Initiated Changes. Without invalidating the Agreement and without notice to any Surety, Owner may, at any time, order additions, deletions or revisions in the Work. These will be authorized by a written amendment, a Field Directive, a Change Order, or a Work Directive Change, as the case may be. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the

Contract Documents (except as otherwise specifically provided). A Work Directive Change may not change the Contract Sum or the Contract Time; but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Sum or Contract Time.

5.8 Unauthorized Work. Contractor shall not be entitled to an increase in the Contract Sum or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents.

5.9 Defective Work. Owner and Contractor shall execute appropriate Change Orders (or written amendments) covering changes in the Work which are ordered by Owner, or which may be required because of acceptance of defective Work, without adjustment to the Contract Sum.

5.10 Estimates for Changes. At any time Architect/Engineer may request a quotation from Contractor for a proposed change in the Work. Within twenty-one (21) calendar days after receipt, Contractor shall submit a written and detailed proposal for an increase or decrease in the Contract Sum or Contract Time for the proposed change. Architect/Engineer shall have twenty-one (21) calendar days after receipt of the detailed proposal to respond in writing. The proposal shall include an itemized estimate of all costs and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in sufficient detail to reasonably permit an analysis by Architect/Engineer of all material, labor, equipment, subcontracts, overhead costs and fees, and shall cover all Work involved in the change, whether such Work was deleted, added, changed or impacted. Notwithstanding the request for quotation, Contractor shall carry on the Work and maintain the progress schedule. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.

5.11 Form of Proposed Changes. The form of all submittals, notices, Change Orders and other documents permitted or required to be used or transmitted under the Contract Documents shall be determined by the Owner. Standard Owner forms shall be utilized.

5.12 Changes to Contract Time. The Contract Time may only be changed pursuant to a Change Order or a written amendment to the Contract Documents. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party. Notice of the extent of the claim with supporting data shall be delivered within fifteen (15) days from detection or beginning of such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled to because of the occurrence of said event. The Contract time will be extended in an amount equal to time lost due to delays beyond the control of Contractor. Such delays shall include, but not be limited to, acts or neglect by Owner or others performing additional Work; or to fires, floods, epidemics, abnormal weather conditions or acts of God. Failure to deliver a written notice of claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

ARTICLE VI ROLE OF ARCHITECT/ENGINEER

6.1 General.

A. Retaining. The Owner shall retain an Architect/Engineer (whether an individual or an entity) lawfully licensed to practice in Florida. That person or entity is identified as the Architect/Engineer in the Agreement and is referred to throughout the Contract Documents as if singular in number.

B. Duties. Duties, responsibilities and limitations of authority of the Architect/Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner and Architect/Engineer. Consent shall not be unreasonably withheld.

C. Termination. If the employment of the Architect/Engineer is terminated, the Owner shall employ a successor Architect/Engineer as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect/Engineer.

6.2 Administration. The Architect/Engineer will provide administration of the Agreement as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect/Engineer approves the final Application for Payment. The Architect/Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

A. Site Visits. The Architect/Engineer will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work complete, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. Unless specifically instructed by Owner, the Architect/Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect/Engineer will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

B. Reporting. Based on the site visits, the Architect/Engineer will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect/Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect/Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

6.3 Interpretation of Project Plans and Specifications. The Architect/Engineer will be the interpreter of the requirements of the Project Plans and Specifications. Upon receipt of comments or objections by Contractor or Owner, the Architect/Engineer will make decisions on all claims, disputes, or other matters pertaining to the interpretation of the Project Plans and Specifications.

6.4 Rejection of Non-Conforming Work. Upon consultation with Owner, the Architect/Engineer shall have the authority to reject Work which does not conform to the Project Plans and Specifications.

6.5 Correction of Work. The Contractor shall promptly correct all Work rejected by the Architect/Engineer for being defective or as failing to conform to the Project Plans and Specifications, whether observed before or after the Substantial Completion Date and whether or not fabricated, installed, or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for Architect/Engineer's additional services made necessary thereby.

6.6 Timely Performance of Architect/Engineer. The Contractor shall identify which requests for information or response from the Architect/Engineer have the greatest urgency and those items which require prioritizing in response by the Architect/Engineer. The Contractor shall also identify the preferred time period for response and shall request a response time which is reasonably and demonstrably related to the needs of the Project and Contractor. If Architect/Engineer claims that Contractor's expectations for a response are unreasonable, Owner shall require Architect/Engineer to communicate such claim to Contractor in writing together with the specific time necessary to respond and the date upon which such response will be made. If Contractor believes that Architect/Engineer is not providing timely services or responses, Contractor shall notify Owner of same in writing not less than two (2) weeks before Contractor believes performance or response time from Architect/Engineer is required without risk of delaying the Project.

ARTICLE VII OWNER'S RIGHTS AND RESPONSIBILITIES

7.1 Project Site; Title. The Owner shall provide the lands upon which the Work under the Contract Documents is to be done, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same. The Owner hereby represents to the Contractor that it currently has and will maintain up through and including the Substantial Completion Date, good title to all of the real property constituting the Project Site. Owner agrees to resolve, at its expense, any disputes relating to the ownership and use of the Project Site which might arise during construction.

7.2 Project Plans and Specifications; Architect/Engineer. The parties hereto acknowledge and agree that Owner has previously entered into an agreement with Architect/Engineer. Pursuant to the terms of such agreement, the Architect/Engineer, as an agent and representative of Owner, is responsible for the preparation of Project Plans and Specifications which consist of drawings, specifications, and other documents setting forth in detail the requirements for the construction of the Project. All such Project Plans and Specifications shall be provided either by Owner or the Architect/Engineer, and Contractor shall be under no obligation to provide same and shall be entitled to rely upon the accuracy and completeness of the Project Plans and Specifications provided by the Architect/Engineer and all preliminary drawings prepared in connection therewith. The Contractor will be furnished a reproducible set of all drawings and specifications reasonably necessary for the performance of Contractor's services hereunder and

otherwise ready for printing. The Contractor shall be notified of any written modification in the agreement between Owner and Architect/Engineer.

7.3 Surveys; Soil Tests and Other Project Site Information. Owner shall be responsible for providing a legal description and certified land survey of the Project Site in a form and content and with such specificity as may be required by the Architect/Engineer and Contractor to perform their services. To the extent deemed necessary by Owner and Architect/Engineer, and solely at Owner's expense, Owner may engage the services of a geotechnical consultant to perform test borings and other underground soils testing as may be deemed necessary by the Architect/Engineer or the Contractor. Contractor shall not be obligated to provide such surveys or soil tests and shall be entitled to rely upon the accuracy and completeness of the information provided; subject, however, to the provisions of Section 2.4.S hereof. Owner shall provide Contractor, as soon as reasonably possible following the execution of the Contract Documents, all surveys or other survey information in its possession describing the physical characteristics of the Project Site, together with soils reports, subsurface investigations, utility locations, deed restrictions, easements, and legal descriptions then in its possession or control. Upon receipt of all surveys, soils tests, and other Project Site information, Contractor shall promptly advise Owner of any inadequacies in such information and of the need for any additional surveys, soils or subsoil tests. In performing this Work, Contractor shall use the standard of care of experienced contractors and will use its best efforts timely to identify all problems or omissions. Owner shall not be responsible for any delay or damages to the Contractor for any visible or disclosed site conditions or disclosed deficiencies in the Project Site which should have been identified by Contractor and corrected by Owner prior to the execution of the Contract Documents.

7.4 Information; Communication; Coordination. The Owner's Project Representative shall examine any documents or requests for information submitted by the Contractor and shall advise Contractor of Owner's decisions pertaining thereto within a reasonable period of time to avoid unreasonable delay in the progress of the Contractor's services. Contractor shall indicate if any such documents or requests warrant priority consideration. However, decisions pertaining to approval of the Project Schedule as it relates to the date of Substantial Completion, the Project Cost, Contractor's compensation, approving or changing the Contract Sum shall only be effective when approved by Owner in the form of a written Change Order or amendment to the Contract Documents. Owner reserves the right to designate a different Owner's Project Representative provided Contractor is notified in writing of any such change. Owner and Architect/Engineer may communicate with Subcontractors, materialmen, laborers, or suppliers engaged to perform services on the Project, but only for informational purposes. Neither the Owner nor the Architect/Engineer shall attempt to direct the Work of or otherwise interfere with any Subcontractor, materialman, laborer, or supplier, or otherwise interfere with the Work of the Contractor. Owner shall furnish the data required of Owner under the Contract Documents promptly.

7.5 Governmental Body. The Contractor recognizes that the Owner is a governmental body with certain procedural requirements to be satisfied. The Contractor has and will make reasonable allowance in its performance of services for such additional time as may be required for approvals and decisions by the Owner and any other necessary government agency.

7.6 Pre-Completion Acceptance. The Owner shall have the right to take possession of and use any completed portions of the Work, although the time for completing the entire Work

or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents.

7.7 Ownership and Use of Drawings, Specifications and Other Instruments of Service.

- (1) The Architect/Engineer and the Architect/Engineer's consultants shall be deemed the authors and owners of their respective instruments of service, including the Project Plans and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the instruments of service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect/Engineer's or Architect/Engineer's consultants' reserved rights.
- (2) The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the drawings and specifications provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Project Plans and Specifications or other instruments of service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the drawings or specifications on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect/Engineer and the Architect/Engineer's consultants.

7.8 Owner's Project Representative. Owner's Project Representative is Owner's Agent, who will act as directed by and under the supervision of the Owner, and who will confer with Owner/Architect/Engineer regarding his actions. The Owner's Project Representative's dealings in matters pertaining to the on-site Work shall, in general, be only with the Owner/Architect/Engineer and Contractor and dealings with Subcontractors shall only be through or with the full knowledge of Contractor.

A. Responsibilities. Except as otherwise instructed in writing by Owner, the Owner's Project Representative will:

- (1) Attend preconstruction conferences; arrange a schedule of progress meetings and other job conferences as required in consultation with Owner/Architect/Engineer and notify those expected to attend in advance; and attend meetings and maintain and circulate copies of minutes thereof;
- (2) Serve as Owner/Architect/Engineer's liaison with Contractor, working principally through Contractor's superintendent, to assist in understanding the intent of the Contract Documents. As requested by Owner/Architect/Engineer, assist in obtaining additional details or information when required at the job site for proper execution of the Work;

- (3) Report to Owner/Architect/Engineer whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents;
- (4) Accompany visiting inspectors representing public or other agencies having jurisdiction over the project; record the outcome of these inspections and report to Owner/Architect/Engineer;
- (5) Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Owner/Architect/Engineer; and
- (6) Perform those duties as set forth elsewhere within the Contract Documents.

B. Limitations. Except upon written instructions of Owner, Owner's Project Representative shall not:

- (1) Authorize any deviation from the Contract Documents or approve any substitute materials or equipment;
- (2) Exceed limitations on Owner/Architect/Engineer's authority as set forth in the Contract Documents;
- (3) Undertake any of the responsibilities of Contractor, Subcontractors or Contractor's superintendent, or expedite the Work;
- (4) Advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents;
- (5) Advise on or issue directions as to safety precautions and programs in connection with the Work;
- (6) Authorize Owner to occupy the project in whole or in part; or
- (7) Participate in specialized field or laboratory tests.

ARTICLE VIII RESOLUTION OF DISAGREEMENTS; CLAIMS FOR COMPENSATION

8.1 Owner to Decide Disputes. The Owner shall reasonably decide all questions and disputes (with the exception of matters pertaining to the interpretation of the Project Plans and Specifications which shall be resolved by the Architect/Engineer pursuant to Section 6.3) that may arise in the execution and fulfillment of the services provided for under the Contract Documents, in accordance with the Procurement Ordinance.

8.2 Finality. The decision of the Owner upon all claims, questions, disputes and conflicts shall be final and conclusive, and shall be binding upon all parties to the Contract Documents, subject to judicial review as provided in Section 8.5 below.

8.3 No Damages for Delay. If at any time Contractor is delayed in the performance of Contractor's responsibilities under the Contract Documents as the result of a default or failure to perform in a timely manner by Owner or Owner's agents or employees, Contractor shall not be entitled to any damages except for compensation specifically authorized in Article III. Contractor's sole remedy will be a right to extend the time for performance. Nothing herein shall preclude Contractor from any available remedy against any responsible party other than Owner. Contractor shall be responsible for liquidated damages for delay if otherwise provided for in the Contract Documents.

8.4 Permitted Claims Procedure. Where authorized or permitted under the Contract Documents, all claims for additional compensation by Contractor, extensions of time affecting the Substantial Completion Date, for payment by the Owner of costs, damages or losses due to casualty, Force Majeure, Project Site conditions or otherwise, shall be governed by the following:

- (1) All claims must be submitted as a request for Change Order in the manner as provided in Article V.
- (2) The Contractor must submit a notice of claim to Owner's Project Representative and to the Architect/Engineer within fifteen (15) days of the beginning of such occurrence. Failure to submit a claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.
- (3) Within twenty (20) days of submitting its notice of claim, the Contractor shall submit to the Owner's Project Representative its request for Change Order, which shall include a written statement of all details of the claim, including a description of the Work affected.
- (4) After receipt of a request for Change Order, the Owner's Project Representative, in consultation with the Architect/Engineer, shall deliver to the Contractor, within twenty (20) days after receipt of request, its written response to the claim.
- (5) In the event the Owner and Contractor are unable to agree on the terms of a Change Order, the Owner shall have the option to instruct the Contractor to proceed with the Work. In that event, the Owner shall pay for those parts of the Work, the scope and price of which are not in dispute. The balance of the disputed items in the order to proceed will be resolved after completion of the Work, based upon completed actual cost.
- (6) The rendering of a decision by Owner with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Owner or Contractor of such right or remedies as either may otherwise have under the Contract Documents or by laws or regulations in respect of any such claim, dispute or other matter.

8.5 Contract Claims and Disputes. After completion of the process set forth in Section 8.4 above, any unresolved dispute under this Agreement shall be decided by the Purchasing Official in accordance with Section 2-26-63 of the Manatee County Code of Laws, subject to an administrative hearing process as provided in Section 2-26-64. The decision of the hearing officer in accordance with Section 2-26-64 of the Manatee County Code of Laws shall be the final and conclusive decision subject to exclusive judicial review in circuit court by a petition for certiorari.

8.6 Claims for Consequential Damages. The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Agreement. This mutual waiver includes:

- (1) damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons, unless any of such damages or losses are covered by insurance placed by the Contractor; and
- (2) damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article XIV. Nothing contained in this Section 8.6 shall be deemed to preclude assessment of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

ARTICLE IX INDEMNITY

9.1 Indemnity.

A. Indemnification Generally. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect/Engineer, Architect/Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.1.

B. Indemnification; Enforcement Actions. The Contractor's duty to indemnify and hold harmless the Owner in Section 9.1 above shall extend to fines, penalties and costs incurred by the Owner as related to any enforcement action taken by local, state, regional or federal regulatory entities. The Owner may deduct any of such fines, penalties and costs as described in this Section from any unpaid amounts then or thereafter due the Contractor under the Contract Documents. Any of such fines, penalties and costs not so deducted from any unpaid amounts due the Contractor shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at the maximum allowable rate.

C. Claims by Employees. In claims against any person or entity indemnified under this Section 9.1 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 9.1.A. shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

9.2 Duty to Defend. The Contractor shall defend the Owner in any action, lawsuit, mediation or arbitration arising from the alleged negligence, recklessness or intentionally wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of the Work. Notwithstanding any other provisions within this Article IX, so long as Contractor, through its own counsel, performs its obligation to defend the Owner pursuant to this Section, Contractor shall not be required to pay the Owner's costs associated with the Owner's participation in the defense.

ARTICLE X ACCOUNTING RECORDS; OWNERSHIP OF DOCUMENTS

10.1 Accounting Records. Records of expenses pertaining to all services performed shall be kept in accordance with generally accepted accounting principles and procedures.

10.2 Inspection and Audit. The Contractor's records shall be open to inspection and subject to examination, audit, and/or reproduction during normal working hours by the Owner's agent or authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the Contractor or any of its payees during the performance of the Work. These records shall include, but not be limited to, accounting records, written policies and procedures, Subcontractor files (including proposals of successful and unsuccessful bidders), original estimates, estimating worksheets, correspondence, Change Order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to the Contract Documents. They shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with the Contract Documents. For such audits, inspections, examinations and evaluations, the Owner's agent or authorized representative shall have access to said records from the effective date of the

Contract Documents, for the duration of Work, and until three (3) years after the date of final payment by the Owner to the Contractor pursuant to the Contract Documents.

10.3 Access. The Owner's agent or authorized representative shall have access to the Contractor's facilities and all necessary records to conduct audits in compliance with this Article. The Owner's agent or authorized representative shall give the Contractor reasonable advance notice of intended inspections, examinations, and/or audits.

10.4 Ownership of Documents. Upon obtainment of Substantial Completion or termination of the Agreement, all records, documents, tracings, plans, specifications, maps, evaluations, reports, transcripts and other technical data, other than working papers, prepared or developed by the Contractor shall be delivered to and become the property of the Owner. The Contractor at its own expense may retain copies for its files and internal use.

ARTICLE XI PUBLIC CONTRACT LAWS

11.1 Equal Opportunity Employment.

A. Employment. The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, disability or age, and will take affirmative action to ensure that all employees and applicants are afforded equal employment opportunities without discrimination because of race, creed, sex, color, national origin, disability or age. Such action will be taken with reference to, but shall not be limited to, recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of training or retraining, including apprenticeship and on-the-job training.

B. Participation. No person shall, on the grounds of race, creed, sex, color, national origin, disability or age, be excluded from participation in, be denied the proceeds of, or be subject to discrimination in the performance of the Agreement.

11.2 Immigration Reform and Control Act of 1986. Contractor acknowledges that it is responsible for complying with the provisions of the Immigration Reform and Control Act of 1986, located at 8 U.S.C. Section 1324, et seq., and regulations relating thereto. Failure to comply with the above statutory provisions shall be considered a material breach and shall be grounds for immediate termination of this Agreement.

11.3 No Conflict of Interest. The Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Agreement, and that it has not paid or agreed to pay any person, company, corporation, individual, or firm other than a bona fide employee working solely for the Contractor, any fee, commission, percentage, gift or any other consideration, contingent upon or resulting from the award or making of this Agreement.

A. No Interest in Business Activity. By accepting award of this Agreement, the Contractor, which shall include its directors, officers and employees, represents that it presently has no interest in and shall acquire no interest in any business or activity which would conflict in any manner with the performance of services required hereunder, including without limitation as described in the Contractor's own professional ethical requirements. An interest in a business or activity which shall be deemed a conflict includes but is not limited to direct financial interest in any of the material and equipment manufacturers, suppliers, distributors, or contractors who will be eligible to supply material and equipment for the Project for which the Contractor is furnishing its services required hereunder.

B. No Appearance of Conflict. The Contractor shall not knowingly engage in any contractual or professional obligations that create an appearance of a conflict of interest with respect to the services provided pursuant to the Agreement. The Contractor has provided the Affidavit of No Conflict, incorporated into the Contract Documents as Exhibit "C", as a material inducement for Owner entering the Agreement. If, in the sole discretion of the County Administrator or designee, a conflict of interest is deemed to exist or arise during the term of this Agreement, the County Administrator or designee may cancel this Agreement, effective upon the date so stated in a written notice of cancellation, without penalty to the Owner.

11.4 Truth in Negotiations. By execution of the Contract Documents, the Contractor certifies to truth-in-negotiations and that wage rates and other factual unit costs supporting the compensation are accurate, complete and current at the time of contracting. Further, the original Contract Sum and any additions thereto shall be adjusted to exclude any significant sums where the Owner determines the Contract Sum was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. Such adjustments must be made within one (1) year after final payment to the Contractor.

11.5 Public Entity Crimes. The Contractor is directed to the Florida Public Entity Crimes Act, Section 287.133, Florida Statutes, specifically section 2(a), and the Owner's requirement that the Contractor comply with it in all respects prior to and during the term of the Agreement.

ARTICLE XII FORCE MAJEURE, FIRE OR OTHER CASUALTY

12.1 Force Majeure.

A. Unavoidable Delays. Delays in any performance by any party contemplated or required hereunder due to fire, flood, sinkhole, earthquake or hurricane, acts of God, unavailability of materials, equipment or fuel, war, declaration of hostilities, revolt, civil strife, altercation or commotion, strike, labor dispute, or epidemic, archaeological excavation, lack of or failure of transportation facilities, or any law, order, proclamation, regulation, or ordinance of any government or any subdivision thereof, or for any other similar cause to those enumerated, beyond the reasonable control and which with due diligence could not have been reasonably anticipated, shall be deemed to be events of Force Majeure and any such delays shall be excused. In the event such party is delayed in the performance of any Work or obligation pursuant to the Contract Documents for any of the events of Force Majeure stated in this Section 12.1, the date for

performance required or contemplated by the Contract Documents shall be extended by the number of calendar days such party is actually delayed.

B. Concurrent Contractor Delays. If a delay is caused for any reason provided in Section 12.1.A. and during the same time period a delay is caused by Contractor, the date for performance shall be extended as provided in 12.1.A. but only to the extent the time is or was concurrent.

C. Notice; Mitigation. The party seeking excuse for nonperformance based on Force Majeure shall give written notice to the Owner, if with respect to the Contractor, or to the Contractor if with respect to the Owner, specifying its actual or anticipated duration. Each party seeking excuse from nonperformance based on Force Majeure shall use its best efforts to rectify any condition causing a delay and will cooperate with the other party, except that neither party shall be obligated to incur any unreasonable additional costs and expenses to overcome any loss of time that has resulted.

12.2 Casualty; Actions by Owner and Contractor. During the construction period, if the Project or any part thereof shall have been damaged or destroyed, in whole or in part, the Contractor shall promptly make proof of loss; and Owner and Contractor shall proceed promptly to collect, or cause to be collected, all valid claims which may have arisen against insurers or others based upon such damage or destruction. The Contractor shall diligently assess the damages or destruction and shall prepare an estimate of the cost, expenses, and other charges, including normal and ordinary compensation to the Contractor, necessary for reconstruction of the Project substantially in accordance with the Project Plans and Specifications. Within fifteen (15) days following satisfaction of the express conditions described in subsections (1), (2) and (3) below, the Contractor covenants and agrees diligently to commence reconstruction and to complete the reconstruction or repair of any loss or damage by fire or other casualty to the Project to substantially the same size, floor area, cubic content, and general appearance as prior to such loss or damage:

- (1) Receipt by the Owner or the trustee of the proceeds derived from collection of all valid claims against insurers or others based upon such damage or destruction, and receipt of other sums from any source such that the funds necessary to pay the Project Cost and any additions to the Project Cost necessitated for repair or reconstruction are available;
- (2) Written agreement executed by the Contractor and the Owner, by amendment to the Contract Documents or otherwise, authorizing and approving the repair or reconstruction and any additions to the Project Cost necessitated thereby, including any required adjustment to the Contract Sum; and
- (3) Final approval by the Owner of the Project Plans and Specifications for such repair or reconstruction and issuance of any required building permit.

12.3 Approval of Plans and Specifications. The Owner agrees to approve the plans and specifications for such reconstruction or repair if the reconstruction or repair contemplated by such plans and specifications is economically feasible, and will restore the Project, or the damaged portion thereof, to substantially the same condition as prior to such loss or damage, and such plans

and specifications conform to the applicable laws, ordinances, codes, and regulations. The Owner agrees that all proceeds of any applicable insurance or other proceeds received by the Owner or the Contractor as a result of such loss or damage shall be used for payment of the costs, expenses, and other charges of the reconstruction or repair of the Project.

12.4 Notice of Loss or Damage. The Contractor shall promptly give the Owner written notice of any significant damage or destruction to the Project, defined as loss or damage which it is contemplated by Contractor will increase the Contract Sum or extend the Substantial Completion Date, stating the date on which such damage or destruction occurred, the then expectations of Contractor as to the effect of such damage or destruction on the use of the Project, and the then proposed schedule, if any, for repair or reconstruction of the Project. Loss or damage which the Contractor determines will not affect the Contract Sum or Substantial Completion Date will be reported to Owner and Architect/Engineer immediately, and associated corrective actions will be undertaken without delay.

ARTICLE XIII REPRESENTATIONS, WARRANTIES AND COVENANTS

13.1 Representations and Warranties of Contractor. The Contractor represents and warrants to the Owner each of the following.

A. The Contractor is a construction company, organized under the laws of the State of _____, authorized to transact business in the State of Florida, with _____ as the primary qualifying agent. Contractor has all requisite power and authority to carry on its business as now conducted, to own or hold its properties, and to enter into and perform its obligations hereunder and under each instrument to which it is or will be a party, and is in good standing in the State of Florida.

B. Each Contract Document to which the Contractor is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Contractor enforceable against the Contractor in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally and subject to usual equitable principles in the event that equitable remedies are involved.

C. There are no pending or, to the knowledge of the Contractor, threatened actions or proceedings before any court or administrative agency, within or without the State of Florida, against the Contractor or any partner, officer, or agent of the Contractor which question the validity of any document contemplated hereunder, or which are likely in any case, or in the aggregate, to materially adversely affect the consummation of the transactions contemplated hereunder, or materially adversely affect the financial condition of the Contractor.

D. The Contractor has filed or caused to be filed all federal, state, local, or foreign tax returns, if any, which were required to be filed by the Contractor, and has paid, or caused to be paid, all taxes shown to be due and payable on such returns or on any assessments levied against the Contractor.

E. Neither Contractor nor any agent or person employed or retained by Contractor has acted fraudulently or in bad faith or in violation of any statute or law in the procurement of this Agreement.

F. The Contractor shall timely fulfill or cause to be fulfilled all of the terms and conditions expressed herein which are within the control of the Contractor or which are the responsibility of the Contractor to fulfill. The Contractor shall be solely responsible for the means and methods of construction.

G. It is recognized that neither the Architect/Engineer, the Contractor, nor the Owner has control over the cost of labor, materials, or equipment, over a Subcontractor's methods of determining bid prices, or over competitive bidding, market, or negotiating conditions.

H. During the term of the Contract Documents, and the period of time that the obligations of the Contractor under the Contract Documents shall be in effect, the Contractor shall cause to occur and to continue to be in effect those instruments, documents, certificates, and events contemplated by the Contract Documents that are applicable to, and the responsibility of, the Contractor.

I. The Contractor shall assist and cooperate with the Owner and shall accomplish the construction of the Project in accordance with the Contract Documents and the Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, or orders that are or will be applicable thereto.

J. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective, and that Owner, representatives of Owner, and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. Contractor shall give Architect/Engineer timely notice of readiness of the Work for all required approvals and shall assume full responsibility, including costs, in obtaining required tests, inspections, and approval certifications and/or acceptance, unless otherwise stated by Owner.

K. If any Work (including Work of others) that is to be inspected, tested, or approved is covered without written concurrence of Architect/Engineer, it must, if requested by Architect/Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Architect/Engineer timely notice of Contractor's intention to cover the same and Architect/Engineer has not acted with reasonable promptness in response to such notice. Neither observations by Architect/Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the Work in accordance with the Contract Documents.

L. If the Work is defective, or Contractor fails to supply sufficient skilled workers, or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof and terminate payments to the Contractor until the cause for such order has been eliminated. Contractor shall bear all direct, indirect and consequential costs for satisfactory reconstruction or removal and replacement with non-defective Work, including, but not limited to fees and charges of Architect/Engineers, attorneys and other professionals and any additional expenses experienced by Owner due to delays to other

Contractors performing additional Work and an appropriate deductive change order shall be issued. Contractor shall further bear the responsibility for maintaining the schedule and shall not be entitled to an extension of the Contract Time or the recovery of delay damages due to correcting or removing defective Work.

M. If Contractor fails within seven (7) days after written notice to correct defective Work, or fails to perform the Work in accordance with the Contract Documents, or fails to comply with any other provision of the Contract Documents, Owner may correct and remedy any such deficiency to the extent necessary to complete corrective and remedial action. Owner may temporarily exclude Contractor from all or part of the site, temporarily take possession of all or part of the Work, Contractor's tools, construction equipment and machinery at the site or for which Owner has paid Contractor but which are stored elsewhere, all for such duration as is reasonably necessary to correct the deficiency. All direct and indirect costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Architect/Engineer and a Change Order will be issued incorporating the necessary revisions.

N. If within three (3) years after the Substantial Completion Date or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective Work or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instruction, Owner may have the defective Work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor. Failing payment by the Contractor and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall have the right to bring a direct action in the Circuit Court to recover such costs.

13.2 Representations of the Owner. To the extent permitted by law, the Owner represents to the Contractor that each of the following statements is presently true and accurate:

- A. The Owner is a validly existing political subdivision of the State of Florida.
- B. The Owner has all requisite corporate or governmental power and authority to carry on its business as now conducted and to perform its obligations under the Contract Documents and each Contract Document contemplated hereunder to which it is or will be a party.
- C. The Contract Documents and each Contract Document contemplated hereby to which the Owner is or will be a party has been duly authorized by all necessary action on the part of, and has been or will be duly executed and delivered by, the Owner, and neither the execution and delivery thereof nor compliance with the terms and provisions thereof or hereof:
 - (a) requires the approval and consent of any other person or party, except such as have been duly obtained or as are specifically noted herein;
 - (b) contravenes any existing law, judgment, governmental rule, regulation or order applicable to or binding on the Owner; or
 - (c) contravenes or results in any breach of, default under, or result in the creation of any lien or encumbrance upon the Owner under any indenture, mortgage, deed of trust, bank loan, or credit agreement, the charter, ordinances, resolutions, or any other agreement or instrument to which the Owner is a

party, specifically including any covenants of any bonds, notes, or other forms of indebtedness of the Owner outstanding on the date of the Contract Documents.

D. The Contract Documents and each document contemplated hereby to which the Owner is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Owner enforceable against the Owner in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally, and subject to usual equitable principles in the event that equitable remedies are involved.

E. There are no pending or, to the knowledge of the Owner, threatened actions or proceedings before any court or administrative agency against the Owner which question the validity of the Contract Documents or any document contemplated hereunder, or which are likely in any case or in the aggregate to materially adversely affect the consummation of the transactions contemplated hereunder or the financial or corporate condition of the Owner.

F. The Owner shall use due diligence to timely fulfill or cause to be fulfilled all of the conditions expressed in the Contract Documents which are within the control of the Owner or which are the responsibility of the Owner to fulfill.

G. During the pendency of the Work and while the obligations of the Owner under the Contract Documents shall be in effect, the Owner shall cause to occur and to continue to be in effect and take such action as may be necessary to enforce those instruments, documents, certificates and events contemplated by the Contract Documents that are applicable to and the responsibility of the Owner.

H. The Owner shall assist and cooperate with the Contractor in accomplishing the construction of the Project in accordance with the Contract Documents and the Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, orders, contracts, or agreements that are or will be applicable thereto or, to the extent permitted by law, enact or adopt any resolution, rule, regulation, or order, or approve or enter into any contract or agreement, including issuing any bonds, notes, or other forms of indebtedness, that will result in the Contract Documents or any part thereof, or any other instrument contemplated by and material to the timely and effective performance of a party's obligations hereunder, to be in violation thereof.

ARTICLE XIV TERMINATION AND SUSPENSION

14.1 Termination for Cause by Owner. This Agreement may be terminated by Owner upon written notice to the Contractor should Contractor fail substantially to perform a material obligation in accordance with the terms of the Contract Documents through no fault of the Owner. In the event Owner terminates for cause and it is later determined by a court of competent jurisdiction that such termination for cause was not justified, then in such event such termination for cause shall automatically be converted to a termination without cause pursuant to Section 14.2.

A. Nonperformance. If the Contractor fails to timely perform any of its

obligations under the Contract Documents, including any obligation the Contractor assumes to perform Work with its own forces, or if it persistently or repeatedly refuses or fails, except in case for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or fails, without being excused, to maintain an established schedule (failure to maintain schedule shall be defined as any activity that falls thirty (30) days or more behind schedule) which has been adopted by the Construction Team, or it fails to make prompt payment to Subcontractors for materials or labor, or disregards laws, rules, ordinances, regulations, or orders of any public authority having jurisdiction, or otherwise is guilty of substantial violations of the Agreement the Owner may, after seven (7) days written notice, during which period the Contractor fails to perform such obligation, make good such deficiencies and perform such actions. The Contract Sum shall be reduced by the cost to the Owner of making good such deficiencies, and the Contractor's compensation shall be reduced by an amount required to manage the making good of such deficiencies. Provided, however, nothing contained herein shall limit or preclude Owner from pursuing additional damages from Contractor because of its breach.

B. Insolvency. If the Contractor is adjudged bankrupt, or if it makes a general assignment for the benefit of its creditors, or if a receiver is appointed because its insolvency, then the Owner may, without prejudice to any other right or remedy, and after giving the Contractor and its surety, if any, fourteen (14) days written notice, and during which period the Contractor fails to cure the violation, terminate the Agreement. In such case, the Contractor shall not be entitled to receive any further payment. Owner shall be entitled to recover all costs and damages arising because of failure of Contractor to perform as provided in the Contract Documents, as well as reasonable termination expenses, and costs and damages incurred by the Owner may be deducted from any payments left owing the Contractor.

C. Illegality. Owner may terminate the Agreement if Contractor disregards laws or regulations of any public body having jurisdiction.

D. Rights of Owner. The Owner may, after giving Contractor (and the surety, if there is one) seven (7) days written notice, terminate the services of Contractor for cause; exclude Contractor from the Project Site and take possession of the Work and of all Contractor's tools, construction equipment and machinery at the Project Site and use the same to the full extent they could be used (without liability to Contractor for trespass or conversion); incorporate in the Work all materials and equipment stored at the Project Site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment beyond an amount equal to the value of material and equipment not incorporated in the Work, but delivered and suitably stored, less the aggregate of payments previously made. If the direct and indirect costs of completing the Work exceed the unpaid balance of the Contract Sum, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Owner in writing; but in finishing the Work, Owner shall not be required to obtain the lowest quote for the Work performed. Contractor's obligations to pay the difference between such costs and such unpaid balance shall survive termination of the Agreement. In such event and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall be entitled to bring a direct action in the Circuit Court to recover such costs.

14.2 Termination without Cause by Owner. The Owner, through its County Administrator or designee, shall have the right to terminate the Agreement, in whole or in part, without cause upon sixty (60) calendar days' written notice to the Contractor. In the event of

such termination for convenience, the Owner shall compensate Contractor for payments due through the date of termination, and one subsequent payment to cover costs of Work performed through the date of termination, subject to the terms and conditions of Section 3.1. The Contractor shall not be entitled to any other further recovery against the Owner, including, but not limited to, anticipated fees or profit on Work not required to be performed, or consequential damages or costs resulting from such termination.

A. Release of Contractor. As a condition of Owner's termination rights provided for in this subsection, Contractor shall be released and discharged from all obligations arising by, through, or under the terms of the Contract Documents, and the Payment and Performance Bond shall be released. Owner shall assume and become responsible for the reasonable value of Work performed by Subcontractors prior to termination plus reasonable direct close-out costs, but in no event shall Subcontractors be entitled to unabsorbed overhead, anticipatory profits, or damages for early termination.

B. Waiver of Protest. Contractor hereby waives any right to protest the exercise by Owner of its rights under this Section that may apply under the Procurement Ordinance.

14.3 Suspension without Cause. Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) days by written notice to Contractor, which will fix the date on which Work will be resumed. Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, directly attributable to any suspension if Contractor makes an approved claim therefor.

14.4 Termination Based Upon Abandonment, Casualty or Force Majeure. If, after the construction commencement date (i) Contractor abandons the Project (which for purposes of this paragraph shall mean the cessation of all construction and other activities relating to the Project, excluding those which are necessary to wind down or otherwise terminate all outstanding obligations with respect to the Project, and no recommencement of same within one hundred twenty (120) days following the date of cessation), or (ii) the Project is stopped for a period of thirty (30) consecutive days due to an instance of Force Majeure or the result of a casualty resulting in a loss that cannot be corrected or restored within one hundred twenty (120) days (excluding the time required to assess the damage and complete the steps contemplated under Section 12.2), the Owner shall have the right to terminate the Agreement and pay the Contractor its compensation earned or accrued to date.

14.5 Vacation of Project Site; Delivery of Documents. Upon termination by Owner pursuant to Section 14.2 or 14.4, Contractor shall withdraw its employees and its equipment, if any, from the Project Site on the effective date of the termination as specified in the notice of termination (which effective date shall not be less than two (2) working days after the date of delivery of the notice), regardless of any claim the Contractor may or may not have against the Owner. Upon termination, the Contractor shall deliver to the Owner all original papers, records, documents, drawings, models and other material set forth and described in the Contract Documents.

14.6 Termination by the Contractor. If, through no act or fault of Contractor, the

Work is suspended for a period of more than ninety (90) consecutive days by Owner or under an order of court or other public authority, or Owner fails to act on any Application for Payment or fails to pay Contractor any sum finally determined to be due; then Contractor may, upon fourteen (14) days written notice to Owner terminate the Agreement and recover from Owner payment for all Work executed, any expense sustained plus reasonable termination expenses. In lieu of terminating the Agreement, if Owner has failed to act on any Application for Payment or Owner has failed to make any payment as aforesaid, Contractor may upon fourteen (14) days written notice to Owner stop the Work until payment of all amounts then due.

SAMPLE

Exhibit A
Title(s) of Drawings

SAMPLE

Exhibit B
Title(s) of Specifications

SAMPLE

Exhibit C
Affidavit of No Conflict

SAMPLE

Exhibit D
Contractor's Certificate(s) of Insurance

SAMPLE

Exhibit E

Contractor's Payment and Performance Bond

SAMPLE

Exhibit F
Standard Forms

SAMPLE