INVITATION FOR BID
IFB # 14-3056DC
SITE IMPROVEMENTS AT JIGGS LANDING

Manatee County, a political subdivision of the State of Florida, (hereinafter "County") will receive sealed bids from individuals, corporations, partnerships, and other legal entities organized under the laws of the State of Florida or authorized to conduct business in the State of Florida.

NON-MANDATORY INFORMATION CONFERENCE
In order to ensure all prospective bidders have sufficient information and understanding of County's needs, an Information Conference will be held at: **9:30 AM on October 23, 2014** at the **Manatee County Purchasing Conference Room, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205**. Attendance is not mandatory, but is highly encouraged.

DEADLINE FOR CLARIFICATION REQUESTS: **5:00 PM on October 27, 2014**
Reference Bid Article A.06

BID OPENING TIME AND DATE DUE: **3:30 PM on November 12, 2014**

FOR INFORMATION CONTACT:
Deborah Carey-Reed, CPPB, Contract Specialist
(941) 749-3074
deborah.carey-reed@mymanatee.org
Manatee County Financial Management Department
Purchasing Division

AUTHORIZED FOR RELEASE: _____

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SECTION A
INFORMATION TO BIDDERS

A.01 OPENING LOCATION

Sealed bids will be **publicly opened** at the **Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205** in the presence of County officials at the time and date stated, or soon thereafter. All bidders or their representatives are invited to attend the sealed bid opening.

Any bids received after the stated time and date will not be considered. It shall be the sole responsibility of the bidder to have their bid delivered to the Manatee County Purchasing Division for receipt on or before the stated time and date. Bidder shall be solely and strictly responsible for its timely delivery to the Purchasing Division. Bids delayed by mail, courier, or bids delayed for any other reason, shall not be considered, shall not be opened at the public opening, and arrangements shall be made for their return at the bidder's request and expense.

A.02 SEALED & MARKED

Bids shall be submitted in **duplicate, one original (marked Original) and one copy (marked Copy)** of your **signed bid** shall be submitted in one **sealed** package, clearly marked on the outside **"Sealed Bid #IFB #14-3056DC Site Improvements at Jiggs Landing"** along with your company name.

For your convenience, a mailing label is provided with this Invitation for Bid package. Or, you may address the package as follows:

Manatee County Purchasing Division
1112 Manatee Avenue West, Suite 803
Bradenton, Florida 34205
Sealed Bid # _____, Title _____

All blank spaces on the bid form must be filled in as noted with amounts extended and totaled and no changes shall be made in the wording of the forms or in the items thereupon. In the event a change is made in your submittal, the bidder shall write its initials by the change. Any bid may be rejected which contains any omissions, alterations, irregularities of any kind, or which shall in any manner fail to conform to the requirements of this Invitation for Bid (IFB).

A bid made by an individual, either in his/her own or proper person or under a trade or firm name, shall be executed under the individual's signature. If made by a partnership, the bid shall be executed by two or more of the general partners. If made by a corporation, the bid shall be executed by its President or other legally authorized corporate officer or agent.

A.03 SECURING BID DOCUMENTS

IFB's and related documents are available on http://www.mymanatee.org/purchasing for download in a portable document format (.PDF) file by clicking on "Bids and Proposals" from the Purchasing Division's web page. You may view and print these files using Adobe Reader software. If necessary, you may download a free copy of Adobe Reader from the link provided on the "Bids and Proposals" page.

Additionally, Manatee County collaborates with the Manatee Chamber of Commerce by announcing solicitation opportunities to the Chamber which are then passed to its members.

Manatee County may also use DemandStar to distribute bids. On the DemandStar website, http://www.DemandStar.com, click on the tab titled "My DemandStar" for more information regarding this service. Participation in the DemandStar system is not a requirement for doing business with Manatee County.

Complete copies of the IFB and all related documents are available for public inspection at the Manatee County Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205, or by calling (941) 749-3014. Appointments are encouraged. Documents are available between the hours of 9:00 AM and 4:00 PM Monday through Friday, with the exception of holidays. A complete set of the IFB documents must be used in preparing bids. County assumes no responsibility for errors and misinterpretations resulting from the use of incomplete sets of bid documents.

A.04 EXAMINATION OF BID DOCUMENTS AND SITE(S)

It is the responsibility of each bidder before submitting a bid, to (a) examine the IFB documents thoroughly; (b) visit the 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 IFB documents; and (e) notify County of all conflicts, errors, or discrepancies in the IFB 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 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 IFB 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 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 IFB 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 IFB documents.

Inspection of the site(s) is **not a requirement** to be considered for award of this bid. Prior to submitting a bid, each bidder shall examine the site(s) and all conditions thereon fully familiarizing themselves with the full scope of the Work. Failure to become familiar with 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 plans and specifications. Bidder shall acknowledge inspection of the project site(s) on his/her signed, submitted Bid Form.

A.05 MODIFICATION OF BID DOCUMENTS

If a bidder wishes to recommend changes to the IFB documents, the bidder shall furnish, in writing, data and information necessary to aid County in evaluating the request to modify the IFB documents. County is not obligated to make any changes to the IFB documents. Unless an Addendum is issued, the IFB documents shall remain unaltered. **Bidders must fully comply with the IFB documents in their entirety.**

A.06 CLARIFICATION & ADDENDA

Each bidder shall examine all IFB documents and shall judge all matters relating to their adequacy and accuracy. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to this IFB shall be made through the Manatee County Purchasing Division. County shall not be responsible for oral interpretations given by any County employee, representative, or others.

5:00 PM on October 27, 2014 shall be the deadline to submit to the Purchasing Division, in writing, all inquiries, suggestions, or requests concerning interpretation, clarification or additional information pertaining to this IFB.

This deadline has been established to maintain fair treatment of all potential bidders, while maintaining progression of the Work.

If any addenda are issued to this IFB, County will post the documents on the Purchasing Division's web page at http://www.mymanatee.org/purchasing, and then by clicking on "Bids and Proposals". If the original solicitation was broadcast via DemandStar, the addenda will also be broadcast on the DemandStar distribution system to "Planholders" on this web service.

The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given.

It shall be the **responsibility of each bidder, prior to submitting a bid**, to contact the Purchasing Division (see contact information on the cover page) to **determine if any addenda were issued** and to make such addenda a part of their bid.

A.07 LOBBYING

After the issuance of any IFB, prospective bidders or any agent, representative or person acting at the request of such bidder shall not contact, communicate with or discuss any matter relating in any way to the IFB with any officer, agent or employee of Manatee County other than the Purchasing Official or the contact identified in this IFB, pursuant to the Manatee County Code of Laws. This prohibition includes the act of carbon copying officers, agents or employees of Manatee County on all correspondence, including email correspondence. This requirement begins with the issuance of an IFB and ends upon execution of Agreement or when the IFB has been cancelled. Violators of this prohibition shall be subject to sanctions as provided in the Manatee County Code of Laws.

A.08 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 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, etc., which the bidder obtained and upon which the bidder relied upon to develop its bid. County reserves the right to reject as nonresponsive any presumptive unbalanced bids where the bidder is unable to demonstrate the validity and/or necessity of the unbalanced unit costs.

A.09 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, etc., which the bidder obtained and upon which the bidder relied 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.10 WITHDRAWAL OF BIDS

Bidders may withdraw bids as follows:

a. Mistakes discovered before the public bid opening may be withdrawn by written notice from the bidder submitting the bid. This request must be received in the Purchasing Division prior to the time set for delivery and opening of the bids. A copy of the request shall be retained and the unopened bid returned to the bidder; or

b. After the bids are opened or a selection has been determined, but before an Agreement is signed, a bidder alleging a material mistake of fact may be permitted to withdraw their bid if:

    1. the mistake is clearly evident in the solicitation document; or

    2. bidder submits evidence which clearly and convincingly demonstrates that a mistake was made. Request to withdraw a bid must be in writing and approved by the Purchasing Official.

A.11 IRREVOCABLE OFFER

Any bid may be withdrawn up until the time and date set for opening of the bid. Any bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of ninety (90) days to sell to Manatee County the goods or services set forth in the attached IFB until one or more of the bids have been duly accepted by County.

A.12 BID EXPENSES

All expenses for making bids to County are to be borne by the bidder.

A.13 RESERVED RIGHTS

County reserves the right to accept or reject any and/or all bids, to waive irregularities and 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 IFB 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 IFB.

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.14 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 Purchasing Division shall be in accordance with the Manatee County Purchasing Ordinance as amended.

A.15 COLLUSION

By submitting a bid to this IFB, 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. Also, bidder certifies, and in the case of a joint bid each party thereto certifies as to their own organization, that in connection with this bid:

a. any 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. any 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 the 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, principal or principals is/are named therein and that no person other than therein mentioned has any interest in this bid or in the resulting Agreement to be entered into; and

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.16 CODE OF ETHICS

With respect to this bid, if any bidder violates, directly or indirectly, the ethics provisions of the Manatee County Purchasing Ordinance and/or Florida criminal or civil laws related to public procurement, including but not limited to Florida Statutes, Chapter 112, Part III, Code of Ethics for Public Officers and Employees, such bidder will be disqualified from eligibility to perform the Work described in this IFB, and may also be disqualified from furnishing future goods or services to, and from submitting any future bids 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. If a bidder is determined to have been untruthful in their bid or any related presentation, such bidder will be disqualified from eligibility to perform the Work described in this IFB, and may also be disqualified from furnishing future goods or services to, and from submitting any future bids to supply goods or services to, Manatee County.

A.17 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 Florida Statute § 287.133, 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 Florida Statutes § 287.017 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 Purchasing 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.18 BID FORMS

Bids must be submitted on the provided forms, although additional pages may be attached. **Bidders must fully complete all pages of the Bid Forms. Bid Forms must be executed by an authorized signatory who has the legal authority to make the bid and bind the company. Bidders must fully comply with all requirements of this IFB in its entirety.** Failure to comply shall result in bidder being deemed nonresponsive.

A.19 LEGAL NAME

Bids shall clearly indicate the legal name, address and telephone number of the bidder on the Bid Form. Bid Forms shall be signed above the typed or printed name and title of the signer. The signer must 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.20 DISCOUNTS

Any and all discounts must be incorporated in the prices contained in the bid and not shown separately. The prices indicated on the Bid Form shall be the prices used in determining award.

A.21 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 his bid for any sales or service taxes. Nothing herein shall affect the bidder's normal tax liability.

A.22 DESCRIPTIVE INFORMATION

Unless otherwise specifically provided in the IFB documents, all equipment, materials and articles provided shall be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in the IFB 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.23 AMERICANS WITH DISABILITIES ACT

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 IFB document at least twenty-four (24) hours in advance of either activity.

A.24 EQUAL EMPLOYMENT OPPORTUNITY CLAUSE

In accordance with the provisions of Title VI of the Civil Rights Act of 1964 and Title 15, Part 8 of the Code of Federal Regulations, County hereby notifies all bidders that they will affirmatively ensure minority business enterprises will be afforded full opportunity to participate in response to this advertisement and will not be discriminated against on the grounds of race, color or national origin in consideration for bid award.

A.25 MBE/DBE

The State of Florida Office of Supplier Diversity provides the certification process and the database for identifying certified MBE/DBE firms. This service may be directly accessed at: http://www.osd.dms.state.fl.us/iframe.htm. If you have any questions regarding this State service, please contact their office at (850) 487-0915.

A.26 MATHEMATICAL ERRORS

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. All bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

A.27 DISCLOSURE

Upon receipt, all inquiries and responses to inquiries related to this IFB become "Public Records", and shall be subject to public disclosure consistent with Florida Statues, 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 bid shall be conducted at the public bid 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 and any amount presented as a total offer without any verification of the mathematics or the completeness of the 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 County, successful bidder must:

a. keep and maintain public records that ordinarily and necessarily would be required by County in order to perform the service;

b. provide the public with access to public records on the same terms and conditions that County would provide and 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; and

d. meet all requirements for retaining public records and transfer, at no cost, to County all public records in possession of successful bidder upon termination of the awarded Agreement and/or PO and destroy any duplicate public records that are exempt or confidential from public records disclosure requirements. All records stored electronically must be provided to County in a format that is compatible with County's information technology systems.

A.28 LOCAL PREFERENCE

Local business is defined as a business legally authorized to engage in the sale of the goods and/or services to be procured, and which certifies within its bid that for at least six (6) months prior to the announcement of the solicitation of bids 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:

1. Purchases or Agreements which are funded, in whole or in part, by a governmental or other funding entity, where the terms and conditions of receipt of the funds prohibit the preference.

2. Any bid announcement which specifically provides that the general local preference policies set forth in this section are 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.

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 Purchasing Division, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205.

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.29 VENDOR REGISTRATION

Registering your business with Manatee County will enhance our opportunities to identify sources for goods and services, plus identify local businesses. This information is used for soliciting quotations up to $250,000.00 and for competitive solicitations of larger purchases.

Our staff can assist you with your registration as needed. Our office hours are 8:00 A.M. to 5:00 P.M., Monday through Friday on regular business days. Please call (941) 749-3014 if you wish to have a Purchasing staff member assist you.

Quick steps to registration: **www.mymanatee.org/purchasing**

A link to Vendor Registration is listed on the Purchasing Division's web page under "Register as a Vendor". Click on "Vendor Registration Form" for on-line input.

Registration is not mandatory; however, by taking the time to register, you are helping County to provide timely notification of quotation, bid and proposal opportunities to your business.

A.30 ePAYABLES

Manatee County and 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 will issue a unique credit card number to each vendor; the card has a zero balance until payments have been authorized.

After goods are delivered or services rendered, vendors submit invoices to the remit to address on the purchase order according to the current process. 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 you are interested in participating in this program, please complete the ePayables Application attached herein and return the completed form via email to Ms. Lori Bryan, Supervisor at lori.bryan@manateeclerk.com.

NOTE: ANY OR ALL STATEMENTS CONTAINED IN THE FOLLOWING SECTIONS: SCOPE OF WORK, BID SUMMARY, GENERAL TERMS AND CONDITIONS, GENERAL CONDITIONS, OR FORM OF CONTRACT, WHICH VARY FROM THE INFORMATION TO BIDDERS, SHALL HAVE PRECEDENCE.

END OF SECTION A

SECTION B
SCOPE OF WORK

B.01 SCOPE OF WORK

The Work included in this bid is described as site improvements to the boat ramp and the onsite parking lot at Jiggs Landing located at 6106 63rd Street East, Bradenton, Florida; and generally includes:

- Constructing an extension to the existing sea wall to prevent erosion beneath the boat ramp.
- The existing boat ramp slabs being removed, stored and re-installed, for preparation of the subgrade installation.
- A concrete parking lot with improved drainage flow patterns to alleviate the existing drainage issues occurring because of the gravel/dirt parking lot.
- A new split rail fence and boat dock installed at the project site.

END OF SECTION B

SECTION C
BID SUMMARY

C.01 MINIMUM QUALIFICATIONS OF BIDDERS

No person who is not certified or registered as a General Contractor pursuant to Florida Statutes, Chapter 489 on the day the bid is submitted, and who has continuously held that certification or registration for a period of at least three (3) consecutive years immediately prior to the day the bid is submitted, may be qualified to bid on this Work. In the event that a bidder is a business organization, including a partnership, corporation, business trust or other legal entity as set forth in Florida Statutes § 489.119(2), then the bidder shall only be qualified to bid on this Work if: 1) the bidder (the business organization) is on the day the bid is submitted, and for at least three (3) consecutive years immediately prior to the day the bid is submitted has been, in continuous existence, properly licensed and registered as required by Florida law; and 2) the bidder, on the day the bid is submitted, has a certified or registered Qualifying Agent, as required by Florida Statutes § 489.119, and that Qualifying Agent has been the same Qualifying Agent of the bidder for a period of at least three (3) consecutive years immediately prior to the day the bid is submitted.

C.02 BASIS OF AWARD

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

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 bids are equal with respect to price, the bid received from a local business shall be given preference in award.

Whenever two or more bids are equal with respect to price, and all other evaluative factors are otherwise equal, including local preference policies, if the company provides documented environmentally preferable “green” products, materials, or supplies, they shall be given preference in award.

Whenever two or more bids which are equal with respect to price are received, and neither of these bids are from a local business, and neither of these bids provides documented “green” products, the award shall be determined by a chance drawing, coin toss, or similar tie-breaking method conducted by the Purchasing Division and open to the public.

END OF SECTION C

SECTION D

GENERAL TERMS & CONDITIONS

D.01 AGREEMENT FORMS

The Agreement resulting from the acceptance of a bid shall be in the form of the Agreement stated in this IFB, which is attached herein.

A written notice confirming award or recommendation thereof will be forwarded to the successful bidder accompanied by the required number of unsigned counterparts of the Agreement. Within ten (10) days thereafter, successful bidder shall sign and deliver the required number of counterparts of the Agreement with any other required documents to County. (Note: Agreement must be approved in accordance with Chapter 2-26 of the Manatee County Code of Laws and the Administrative Standards and Procedures Manual approved by the County Administrator).

D.02 ASSIGNMENT OF AGREEMENT

Successful bidder shall not assign, transfer, convey, sublet or otherwise dispose of the resulting Agreement or of his right, title, or interest therein, or his power to execute such Agreement, or to assign any monies due or to become due there under to any other person, firm or corporation unless first obtaining the written consent of County. The giving of such consent to a particular subcontractor assignment shall not dispense with the necessity of such consent to any further or other assignment.

D.03 COMPLETION OF WORK

The Work will be completed and ready for final inspection within **170 calendar days** from the date the contract time commences to run.

D.04 LIQUIDATED DAMAGES

If the successful bidder refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will hinder its completion within the time specified, County may seek damages. The actual damages for delay will be impossible to determine and in lieu thereof, the successful bidder shall pay to County the sum of **$1,742.00** as fixed, agreed, and liquidated damages for each calendar day of the delay until the Work is finally accepted by County and the successful bidder.

D.05 PAYMENT

Successful bidder may apply for partial payment on monthly estimates, based on the amount of the Work done or completed in compliance with the provisions of the resulting Agreement. Successful bidder shall submit an application, on a standard pay application form provided or approved by County, of an approximate estimate of the proportionate value of the Work done, items and locations of the Work performed up to and including the last day of the period then ending.

County will then review said estimate and make any necessary revisions so that the estimate can receive approval for payment. If the successful bidder and County do not agree on the approximate estimate of the proportionate value of the Work done for any pay period, the determination of County will be binding. The amount of said estimate after deducting any required retainage and all previous payments shall be due and payable to the successful bidder, twenty (20) business days if County is its own Engineer of Record (EOR) or twenty-five (25) business days if outside agent approval is required after the pay estimate has been approved by the agent for County.

In accordance with the Prompt Payment Act, Florida Statutes § 218.735(7), a punch list shall be formulated. Time allowed for development of punch ist:

a. Awarded agreements with an estimated cost of less than $10 million will be within thirty (30) calendar days after reaching substantial completion.

b. Awarded agreements with a cost of $10 million dollars or more will be within thirty (30) calendar days OR if extended by Agreement, up to sixty (60) calendar days after reaching substantial completion.

The final completion date of the resulting Agreement must be at least thirty (30) days after delivery of the list of items. If the list is not provided to the successful bidder by the agreed upon date, the contract completion time must be extended by the number of days County exceeds the delivery date.

It is the successful bidder's responsibility for the care of the materials. Any damage to or loss of said materials is the full responsibility of the successful bidder. Any periodical pay estimate signed by the successful bidder shall be final as to the successful bidder for any or all Work covered by the periodical pay estimate.

Any requests for payment of materials stored on site must be accompanied with a paid receipt. Successful bidder warrants and guarantees that title to all Work, materials and equipment covered by any application for payment, whether incorporated in the Work or not, will pass to County at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter referred to as "Liens").

Successful bidder agrees to furnish an affidavit stating that all laborers, material men, and subcontractors have been paid for Work covered by the application for payment and that a partial or complete release of lien, as may be necessary, be properly executed by the material men, laborers, subcontractors for Work covered by the application for payment, sufficient to secure County from any claim whatsoever arising out of the aforesaid Work. When the successful bidder has completed the Work in compliance with the terms of the Agreement, he shall notify County in writing that the Work is ready for final inspection.

County will then advise successful bidder as to the arrangements for final inspection and what Work, if any, is required to prepare the Work or a portion thereof for final inspection. When County determines the Work or portion thereof is ready for final inspection, County shall perform same. Upon completion of final inspection, County will notify successful bidder of all particulars in which this inspection reveals that the Work is incomplete or defective. Successful bidder shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies. When all such errors have been corrected, a final re-inspection will be made.

The process will be repeated until, in the opinion of County, the Work has been completed in compliance with the terms of the IFB Documents.

When final acceptance has been made by County, County will make final payment of the resulting Agreement amount, plus all approved additions, less approved deductions and previous payments made. The resulting Agreement will be considered complete when all Work has been finished, the final inspection made, approved as-builts received, and the Work finally accepted in writing by County. Successful bidder's responsibility shall then terminate except as otherwise stated.

D.06 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 IFB 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 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 price and contract time, and adding bid items not previously contemplated that change the initial scope of work.

D.07 RETAINAGE

Retainage of 10% of the total Work in place shall be withheld until 50% complete. After 50% completion, the retainage shall be reduced to 5% of the total Work in place until final completion and acceptance of the Work by County. Upon final acceptance, the remaining retainage shall be included in the final payment.

D.08 PROGRESS REQUIREMENTS

All Work done under the resulting Agreement shall be done with a minimum of inconvenience to the private property owners in the area. Successful bidder shall coordinate his Work with private property owners such that existing utility services are maintained and they have access to their property at all times.

D.09 WARRANTY AND GUARANTEE PROVISIONS

All Work, materials, and equipment furnished as defined herein shall be guaranteed and warranted by the successful bidder for a minimum period of three (3) years, unless otherwise specified, from final acceptance by County to be free from defects due either to faulty materials or equipment or faulty workmanship.

All materials, equipment, and workmanship furnished and installed by the successful bidder is warranted and guaranteed by the successful bidder to meet the required standards and to accomplish the purposes and functions of the Work as defined, detailed, and specified herein.

County shall, following discovery thereof, promptly give written notice to the successful bidder of faulty materials, equipment, or workmanship within the period of the guarantee and the successful bidder shall promptly replace any part of the faulty equipment, material, or workmanship at his own cost. These warranty and guarantee provisions create no limitations on County as to any claims or actions for breach of guaranty or breach of warranty that County might have against parties other than the successful bidder, and do not constitute exclusive remedies of County against the successful bidder.

D.10 MATERIALS AND WORKMANSHIP

All materials and apparatus required for this Work, except as specified otherwise, shall be new, of first class quality, and shall be furnished, delivered, connected and finished in every detail. Construction shall be prescribed by good industry practice and in accordance with manufacturer's recommendations for the type being installed.

Use skilled workman trained and experienced in the necessary trades and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this section.

D.11 PROJECT CLOSE-OUT

Clean construction site and remove any and all excess materials. Correct any damages to property that may have occurred as a result of installation and/or delivery. Repair and patch all surfaces cut for installation. The successful bidder shall remedy any deficiencies promptly should County determine any Work is incomplete or defective.

When County determines the Work is acceptable in accordance with the IFB documents, successful bidder shall provide the close out submittals, including but not necessarily limited to the following:

1 set	Certificate of Warranties	
1 set	Manufacturer's Product Literature	(when applicable)
1 set	Project Record Drawings	
1 set	Subcontractor Information	(when applicable)

All manuals, schematics and handbooks shall be provided which are applicable to the equipment delivered. An operators manual, parts manual and technician manual must also be provided. Parts lists (manuals) must include OEM part numbers for items not manufactured by the successful bidder. Successful bidder shall furnish two (2) copies of each.

D.12 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.

D.13 AUTHORIZED PRODUCT REPRESENTATION

The 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 perform accordingly may, in 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.

D.14 REGULATIONS

It shall be the responsibility of the successful bidder to assure compliance with any OSHA, EPA and/or other federal or State of Florida rules, regulations or other requirements, as each may apply.

D.15 CANCELLATION

Any failure of the successful bidder to furnish or perform the Work (including, but not limited to, commencement of the Work, failure to supply sufficient skilled workers or suitable materials or equipment) in accordance with the resulting Agreement, County may order the stop of the Work, or any portion thereof, until the cause for such order has been eliminated. If the successful bidder persistently fails to perform the Work in accordance with the resulting Agreement, County reserves the right to terminate the resulting Agreement and select the next qualified bidder or re-advertise this procurement in part or in whole. County reserves the right to cancel all or any undelivered or unexecuted portion of the resulting Agreement with or without cause.

D.16 INDEMNIFICATION

The successful bidder covenants and agrees to indemnify and save harmless County, its agents and employees, from and against all claims, suits, actions, damages, causes of action, or judgments arising out of the terms of the resulting Agreement for any personal injury, loss of life, or damage to the property sustained as a result of the performance or non-performance of services or delivery of goods; from and against any orders, judgments, or decrees, which may be entered against County, its agents or employees; and from and against all costs, attorney's fees, expenses and other liabilities incurred in the defense of any such claim, suit or action, and the investigation thereof. Nothing in the resulting Agreement shall be deemed to affect the rights, privileges and immunities of County as set forth in Florida Statutes § 768.28.

D.17 SUBCONTRACTORS, SUPPLIERS AND OTHERS

The identity of subcontractors, suppliers, and other persons and organizations (including those who are to furnish the principal items of material and equipment) may be requested by County for each bid item from any of the bidders; and the bidder shall respond within five (5) days after the date of such request. Such list shall be accompanied by an experience statement with pertinent information regarding similar Work and other evidence of qualification for each such subcontractor, supplier, persons or organization if requested by County. If County, after due investigation, has reasonable objection to any proposed subcontractor, supplier, other person or organization, County may, before the notice of intent to award is given, request the successful bidder to submit an acceptable substitute without an increase in contract price or contract time.

If successful bidder declines to make any such substitution, County may award the resulting Agreement to the next lowest qualified bidder that proposes to use acceptable subcontractors, suppliers, and other persons who County does not make written objection to. Successful bidder shall not be required to employ any subcontractor, supplier, other person or organization who successful bidder has reasonable objection to.

Subcontractors shall be bound by the terms and conditions of the resulting Agreement insofar as it applies to their work, but this shall not relieve the successful bidder from the full responsibility to County for the proper completion of all Work to be executed under the resulting Agreement.

D.18 E-VERIFY

The employment of unauthorized aliens by any successful bidder is considered a violation of Section 274(e) of the Immigration and Employment Act. If successful bidder knowingly employs unauthorized aliens, such violation shall be cause for unilateral cancellation of the resulting Agreement.

A complete list of all subcontractors proposed for any portion of the Work may be requested of any bidder deemed necessary by County. Subcontracts shall be awarded only to those subcontractors considered satisfactory by County.

The successful bidder shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the successful bidder during the term of the Agreement; and

The successful bidder shall expressly require any subcontractors performing work or providing services pursuant to the state contract to utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the term of the Agreement.

D.19 NO DAMAGES FOR DELAY

No claim for damages or any claim other than for an extension of time shall be made or asserted against County by reason of any delays. The successful bidder shall not be entitled to an increase in the total contract price or payment or compensation of any kind from County or direct, indirect, consequential impact or other costs, expenses for damages, including but not limited to costs of acceleration or inefficiency arising because of delay, disruption, interference or hindrance from any cause whatsoever; provided, however, that this provision shall not preclude recovery or damages by the successful bidder for hindrance or delays due solely to fraud, bad faith, or active interference on part of County or its agents. Otherwise, the successful bidder shall only be entitled to extensions of the contract time as the sole and exclusive remedy for such resulting delay, in accordance with and to the extent specifically provided above.

D.20 NO INTEREST

Any monies not paid by County when claimed to be due to the successful bidder under this Agreement shall not be subject to interest including prejudgment interest. Any monies not paid by County when claimed to be due to the successful bidder for damages awarded in the case of construction delays shall not be subject to prejudgment interest.

D.21 BE GREEN

All bidders are encouraged to use as many **environmentally preferable** "green" products, materials, supplies, etc. as possible in order to promote a safe and healthy environment. **Environmentally preferable are products or services that have a reduced adverse effect on the environment**. Where all other evaluative factors, including local preference policies, are otherwise equal, such policies and practices will be a determinative factor in the award decision.

Provide detail of your organization's initiative and its ability to meet the goal of environmental sustainability.

END OF SECTION D

SECTION E

GENERAL CONDITIONS

ARTICLE 1. DEFINITIONS

Whenever used in the Contract Documents, the following terms have the meaning indicated which are applicable to both the singular and plural thereof:

Addendum - Written or graphic instruments issued prior to the opening of Bids which clarify or change the Bid Documents.

Administrative Contract Adjustment (ACA) – A minor change to a Contract, which is less than 10% of the Contract Price or less than 20% of the Contract Time, and does not require Board approval. (Reference Resolution R-07-189)

Application for Payment - The form accepted by the Project Representative which is to be used by Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

Award - Acceptance of the Bid from the person, firm, or corporation which in the County's sole and absolute judgment will under all circumstances best serve the public interest. Award shall be made in accordance with Chapter 2-26 of the Manatee County Code.

Bid - The Offer of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bid Bond – An insurance agreement, accompanied by a monetary commitment, by which a third party (the Surety) accepts liability and guarantees that the Bidder will not withdraw the Bid.

Bidder - One who submits a Bid directly to the County, as distinct from a Sub-bidder, who submits a Bid to a Bidder.

Bid Documents - Consists of the Invitation for Bid, which includes but is not limited to the Bid Form, drawings, technical Specifications, terms and conditions, and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids); and becomes a part of the resulting Contract.

Bid Summary – Specifications or scope of Work that specifically describes the Work to be done for this Project.

Bond Rider – A Bond Rider increases the Performance Bond coverage to ensure responsibility of the Contractor in executing the Work for the County in consideration of the increased value resulting from an approved change in the Contract amount.

Change Order - A document recommended by the Project Representative which is signed by Contractor and County and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Contract.

Compensable Delay - Any delay beyond the control and without the fault or negligence of the Contractor resulting from County-caused changes in the Work, differing site conditions, suspensions of the Work, or termination for convenience by County.

Contract - The written Contract between County and Contractor covering the Work to be performed; other Contract Documents are attached to the Contract and made a part thereof as provided therein.

Contract Contingency - A monetary allowance used at the County's discretion, which is part of the total sum of the Contract that allows for minor changes in the Contract that do not change the initial Scope of Work, including Contract Price and Contract Time.

Contract Documents - The Contract, Invitation for Bid in its entirety, Public Construction Bond Form and Insurance Certificate(s), Drawings/Plans, Addenda (which pertain to the Bid Documents), Contractor's Bid Form (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award), and Reports, together with all written Change Orders and other documents amending, modifying or supplementing the Contract Documents issued on or after the Effective Date of the Contract.

Contract Price - The monies payable by County to Contractor under the Contract Documents as stated in the Contract.

Contract Time - The number of days or the date stated in the Notice to Proceed for the completion of the Work.

Contractor - The person, firm or corporation with whom County has entered into a Contract.

Days - All references to days are to be considered calendar days except as specified differently.

Defective - An adjective which when modifying the Work refers to work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to Project Representative's recommendation of final payment (unless responsibility for the protection thereof has been assumed by County).

Drawings - The drawings which show the character and Scope of Work to be performed and which have been prepared or approved by Engineer and are referred to in the Bid and Contract Documents.

Effective Date of the Contract - The date indicated in the Contract on which it becomes effective (date of execution).

Engineer – Licensed professional who is responsible for the preparation, signing, dating, sealing and issuing of any engineering document(s) for any engineering service or Work.

Excusable Delay - Any delay beyond the control and without the negligence of the Contractor, the County, or any other Contractor caused by events or circumstances such as, but not limited to, acts of God or of the public enemy, fires, floods, freight embargoes, acts of government other than County or epidemics. Labor disputes and above average rainfall shall give rise only to Excusable Delays.

Field Directive - A written order issued by an authorized County Representative which approves changes in the Work, but does not involve a change in the initial Scope of Work, including the Contract Price and the Contract Time. A Field Directive must be issued by an authorized County Representative to authorize use of Contract Contingency funds.

Final Completion – The Work (including items defined on the Punch List) has been completed, accepted in writing by the County, approved as-builts have been received, and is ready for final payment.

Float or Slack Time - The time available in the progress schedule during which an unexpected activity can be completed without delaying Substantial Completion of the Work.

Inexcusable Delay - Any delay caused by events or circumstances within the control of the Contractor, such as inadequate crewing, slow submittals, etc., which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of the Contractor.

Information (Pre-Bid) Conference – A meeting held by the Purchasing Division with potential Bidders, prior to the opening of the solicitation, for the purpose of answering questions, clarifying ambiguities, and responding to general issues in order to establish a common basis for understanding all of the requirements of the solicitation; may result in the issuance of an Addendum.

Material Breach – A substantial failure in the performance of the Contract, as to give the affected party the right to remedies available in the Contract.

Non-prejudicial Delay - Any delay impacting a portion of the Work within the available total Float or Slack Time and not necessarily preventing completion of the Work within the Contract Time.

Notice of Award - The written notice to the Successful Bidder stating Award has been approved by the Board of County Commissioners; or by the Purchasing Official in accordance with Chapter 2-26 of the Manatee County Code.

Notice of Intent to Award - The written notice to the apparent Successful Bidder stating Award has been recommended with final Award to be authorized by the Purchasing Official or Board of County Commissioners, as appropriate.

Notice to Proceed - Written notice by County (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 (ten (10) days from date of such notice) Contractor's obligations under the Contract Documents.

Payment Bond – An instrument, issued by a Surety that guarantees that Subcontractors will be paid for labor expended on the Contract.

Performance Bond – An instrument executed subsequent to Award by the successful Contractor that protects the County from loss due to Contractor’s inability to complete the Contract as agreed.

Preconstruction Conference - Prior to starting the Work, a meeting scheduled by County with Contractor to review the Work schedules, to establish procedures for handling Shop Drawings and other submissions, for processing periodical pay estimates, and such other matters as may be pertinent to the project.

Prejudicial Delay - Any excusable or Compensable Delay impacting the Work and exceeding the total float time available in the progress schedule, thus preventing completion of the Work within the Contract Time unless the Work is accelerated.

Pre-operation Testing - All field inspections, installation checks, water tests, performance tests and necessary corrections required of Contractor to demonstrate that individual components of the Work have been properly constructed and do operate in accordance with the Contract Documents for their intended purposes.

Project - The total construction of which the Work to be provided under the Contract Documents (may be the whole or a part as indicated elsewhere in the Contract Documents).

Project Representative - The authorized representative of Manatee County who is assigned to the project or any part thereof.

Punch List – A list of minor deficiencies or additional Work that does not prohibit achieving Substantial Completion yet must be completed before Final Completion of the Contract can be achieved.

Retainage – A certain percentage, identified in the solicitation document, is withheld from payment due to the Contractor until the Work is fully completed and accepted by County.

Schedule of Values – In the case of a total, lump sum Bid, unit prices shall be established for this Contract by the submission of a Schedule of Values. In the case of an itemized Bid, unit prices are the prices bid. The Contractor shall submit a Schedule of Values within ten (10) days of Notice to Proceed date. The schedule shall include quantities and prices of items equaling the Total Offer and will subdivide the Work into components in sufficient detail to serve as the basis for progress payments during construction. Such prices will 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.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by Contractor to illustrate material or equipment for some portion of the Work.

Special Provisions: As required to define Work or procedures not covered in the standard Specifications, and as necessary to supplement or modify items in the standard Specifications.

Subcontractor - An individual or corporation having a direct contact with Contractor or with any other Subcontractor for the performance of a part of the Work at the site. Such person or firm has contractual relations with the Contractor, not with the County.

Substantial Completion - The stage in the progress of the Work (or a specified portion thereof) is sufficiently complete in accordance with the Contract Documents so the Work (or a specified portion thereof) can be utilized for the intended purpose.

Successful Bidder - The lowest, responsible and responsive Bidder to whom an Award is made.

Supplier - A manufacturer, fabricator, Supplier, distributor, material man or vendor.

Surety – A pledge or guarantee by an insurance company, bank, individual or corporation on behalf of the Bidder which protects against default or failure of the principal to satisfy the contractual obligations.

Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments and any encasement containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price Work - Work to be paid for on the basis of unit prices.

Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

Work Directive Change - A written directive to Contractor, issued on or after the Effective Date of the Contract and signed by County and recommended by 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 to emergencies. A Work Directive Change itself may not change the Contract Price or 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 Price or Contract Time.

Written Amendment - A Written Amendment of the Contract Documents, signed by County and Contractor on or after the Effective Date of the Contract and normally dealing with the non-engineering or non-technical rather than strictly Work related aspects of the Contract Documents.

ARTICLE 2. PRELIMINARY MATTERS

Computation of Time: 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.

2.1 The Contractor must submit a proposed schedule of the Work at the Preconstruction Conference. The purpose of this schedule is to enable the County to govern the Work, to protect the functions of the local government and its citizens and to aid in providing appropriate surveillance. The County shall have the right to reschedule Work provided such rescheduling is in accordance with the remainder of the terms of the Contract. The schedule shall show, as 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 County, after necessary rescheduling and obtaining additional information for specific

purposes, shall review and approve the schedule. The Contractor shall also forward to the County, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the Work under the Contract, 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 County's review and approval. In addition, more detailed schedules may be required by the County for daily traffic control.

2.2 A Notice to Proceed may be given at any time within thirty (30) days after the Effective Date of the Contract. The Contract Time will commence at the time specified in such notice. 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 date on which the Contract Time commences to run.

2.3 If at any time the materials and appliances to be used appear to the County as insufficient or improper for securing the quality of Work required or the required rate of progress, the County may order the Contractor to increase his efficiency or to improve the character of his Work and the Contractor shall conform to such an order. The failure of the County to demand any increase of such efficiency of any improvement shall not release the County 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. The County may require the Contractor to remove from the Work such employees as the County deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Work is deemed to be contrary to the County's interest.

2.4 The County 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 3. CONTRACT DOCUMENTS: INTENT, AMENDING, RE-USE

3.1 The Contract Documents comprise the entire Contract between County and Contractor concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the laws and ordinances of the State of Florida and Manatee County.

Should a conflict exist within the Contract Documents, the precedence in order of authority is as follows: 1) Bid Summary, 2) Special Conditions, 3) General Conditions, and 4) Drawings.

Note: Computed dimensions shall govern over scaled dimensions.

3.2 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 in the Contract Documents. 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, 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 County, Contractor or Engineer, or any of their agents or employees from those set forth in the Contract Documents.

3.3 The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.3.1 A Written Amendment

3.3.2 A Change Order

3.3.3 An Administrative Contract Adjustment (ACA)

3.3.4 A Work Directive Change

3.4 In addition, the requirements of the Contract Documents may be supplemented and minor variations and deviations in the Work may be authorized in one or more of the following ways:

3.4.1 Contract Contingency Work – Field Directive

3.4.2 Engineer's approval of a Shop Drawing or sample

ARTICLE 4. CONTRACTOR'S RESPONSIBILITIES

4.1 Contractor shall keep on the Work at all times during its progress a competent resident superintendent; who shall be the Contractor's representative at the site and shall have authority to act on behalf of Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.

4.2 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 will not permit overtime Work or the performance of Work on Saturday, Sunday or legal holiday without County's written consent given after prior notice to Engineer (at least seventy-two (72) hours in advance).

4.2.1 Contractor shall pay for all additional engineering charges to the County for any overtime Work which may be authorized. Such additional engineering charges shall be a subsidiary obligation of Contractor and no extra payment shall be made by County on account of such overtime Work. At County's option, overtime costs may be deducted from Contractor's monthly payment request or Contractor's Retainage prior to release of final payment.

4.3 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.

4.4 All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by 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.

4.5 Contractor shall be fully responsible to County 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. Nothing in the Contract Documents shall create any contractual relationship between County or Engineer and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of County to pay or to see to the payment of any monies due any such Subcontractor, Supplier or other person or organization.

4.6 Permits: Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. County 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.

4.7 During the progress of the Work, Contractor shall keep the premises free from accumulation of waste materials rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall remove all waste materials, rubbish, and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials and shall leave the site clean and ready for occupancy by County. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents.

4.8 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.

4.9 Safety and Protection: Contractor shall comply with the Florida Department of Commerce Safety Regulations and any 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:

4.9.1 all employees on the Work and other persons and organizations who may be affected thereby;

4.9.2 all the Work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

4.9.3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and Underground Facilities not designated for removal, relocation or replacement in the course of construction.

4.9.4 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 way for the public and preservation of the County’s business, taking into full consideration all local conditions. Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as all the Work is completed.

4.10 Emergencies: In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, Contractor, without special instruction or authorization from Engineer or County, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give County prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If County determines that a change in the Contract Documents 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.

4.11 For substitutes not included with the Bid, but submitted after the Effective Date of the Contract, Contractor shall make written application to 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 provisions 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 Engineer in evaluating the proposed substitute. Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed substitute. In rendering a decision, County/Engineer and Contractor shall have access to any available Float or Slack Time in the construction schedule. In the event that substitute materials or equipment not included as part of the Bid, but proposed after the Effective Date of the Contract, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the County and an appropriate Change Order executed.

4.11.1 If a specific means, method, sequence, technique or procedure of construction is indicated in or required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to Engineer if Contractor submits sufficient information to allow Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents.

4.11.2 Engineer will be allowed a reasonable time within which to evaluate each proposed substitute. Engineer will be the sole judge of acceptability and no substitute will be ordered, installed or utilized without Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved shop drawing. County may require Contractor to furnish at Contractor's expense a special performance guarantee or other Surety with respect to any substitute.

4.11.3 Contractor shall reimburse County for the charges of Engineer and Engineer's consultants for evaluating each proposed substitute submitted after the Effective Date of the Contract and all costs resulting from any delays in the Work while the substitute was undergoing review.

4.12 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 construction 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 will 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 will be held responsible for the preservation of all stakes, marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they will be immediately and accurately replaced by the Contractor.

4.13 The Contractor has, by careful examination, satisfied himself as to the nature and location of the Work and all other matters which can in any way affect the Work under this Contract, including, but not limited to details pertaining to boring, as shown on the drawings, are not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the Work, approximately at the locations indicated. The Contractor shall examine boring data, where available, and make his own interpretation of the subsoil investigations and other preliminary data, and shall base his Bid on his own opinion of the conditions likely to be encountered. In no event shall an extension of time be considered for any conditions that existed at the time of bidding, nor shall the Contractor receive extra compensation for completion of the project as intended by the drawings and in keeping with the Contact documents. No verbal agreement or conversation with any officer, agent or employee of the County, before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

4.14 If the Contractor, in the course of the Work, finds that the drawings and/or Contract Documents cannot be followed, he shall immediately inform the County in writing, and the County 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 risk.

ARTICLE 5. COUNTY'S RESPONSIBILITIES

5.1 County shall furnish the data required of County under the Contract Documents promptly and shall make payments to the Contractor within a reasonable time after the Work has been accepted by the County. Payment shall be made no more than twenty (20) business days if County is its own Engineer of Record or twenty-five (25) business days if outside agent approval is required after the pay estimate has been approved by the agent for the County. 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 County/Engineer. Standard County forms shall be utilized.

5.2 The County shall provide the lands upon which the Work under this Contract 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.

5.3 The County 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.

ARTICLE 6. CHANGES IN THE WORK

6.1 Without invalidating the Contract and without notice to any Surety, County may, at any time, order additions, deletions or revisions in the Work. These will be authorized by a Written Amendment, a Change Order, or a Work Directive Change. 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).

6.2 Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented.

6.3 County and Contractor shall execute appropriate Change Orders, or Written Amendments, covering changes in the Work which are ordered by County, or which may be required because of acceptance of defective Work.

6.4 At any time Engineer may request a quotation from Contractor for a proposed change in the Work and within twenty-one (21) calendar days after receipt, Contractor shall submit a written and detailed proposal for an increase or decrease in the Contract Price or Contract Time for the proposed change. 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 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.

ARTICLE 7. CHANGE OF CONTRACT PRICE

7.1 The Contract Price 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 his expense without change in the Contract Price.

7.2 The Contract Price may only be changed by Change Order or by a Written Amendment. Any claim for an increase or decrease in the Contract Price 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 ten (10) days from the beginning of such occurrence and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event.

7.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways, at the County’s discretion:

7.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, cost will be determined by application of such unit prices to the quantities of the items involved.

7.3.2 By mutual acceptance of lump sum.

7.3.3 On the basis of the cost of the Work, plus a 15% Contractor's fee for overhead and profit. (Contractor shall submit an itemized cost breakdown together with supporting data.)

7.4 Either County or Contractor may make a claim for an adjustment in the Contract Price. The unit price of an item of Unit Price Work shall be subject to re-evaluation and adjustment under the following conditions:

7.4.1 If the total cost of a particular item of Unit Price Work amounts to 5% or more of the Contract Price 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 Contract; and

7.4.2 If there is no corresponding adjustment with respect to any other item of Work; and

7.4.3 If a Contractor believes that it has incurred additional expense as a result thereof; or

7.4.4 If County believes that the quantity variation entitles it to an adjustment in the unit price; or

7.4.5 If the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

ARTICLE 8. CHANGE OF CONTRACT TIME

8.1 Contract Time may only be changed by a Change Order or a Written Amendment. 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 as a result of the occurrence of said event.

8.2 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 County or others performing additional Work; or to fires, floods, epidemics, abnormal weather conditions or acts of God.

8.3 All time limits stated in the Contract Documents are of the essence.

ARTICLE 9. WARRANTY, TEST/INSPECTION, CORRECTION

9.1 Contractor warrants, for a minimum period of three (3) years or as otherwise stated herein, and guarantees to County that all Work will be in accordance with the Contract Documents and will not be defective; that County, representatives of County, and governmental agencies with jurisdictional interests will have access to the Work at reasonable time for their observation, inspecting and testing (Contractor shall give 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 County).

9.2 If any Work (including work of others) that is to be inspected, tested, or approved is covered without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice. Neither observations by

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.

9.3 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, County 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 engineers, architects, attorneys and other professionals and any additional expenses experienced by County 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 schedule and shall not be entitled to an extension of the Contract Time and the recovery of delay damages due to correcting or removing defective Work.

9.3.1 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, County may correct and remedy any such deficiency to the extent necessary to complete corrective and remedial action. County may exclude Contractor from all or part of the site, take possession of all or part of the Work, Contractor's tools, construction equipment and machinery at the site or for which County has paid Contractor but which are stored elsewhere. All direct and indirect costs of County in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Engineer and a Change Order will be issued incorporating the necessary revisions.

9.3.2 If within three (3) years after the date of completion 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 County and in accordance with County’s written instructions, either correct such defective Work or if it has been rejected by County, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instruction, County may have the defective Work corrected or removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor.

ARTICLE 10. SUSPENSION OR TERMINATION OF WORK

10.1 County reserves the right to suspend the Work, or any portion thereof, at any time without cause for a period not to exceed 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 Price or an extension of the Contract Time, or both, directly attributable to any suspension if Contractor makes an approved claim therefore.

10.1.1 If Work is suspended by County for a period that exceeds ninety (90) days; or if Work is suspended by an order of court or other public authority; or if County fails to pay Contractor, then Contractor may, upon seven (7) days written notice to County, terminate the Contract and recover payment for all Work executed.

10.1.2 In lieu of terminating the Contract, if the Engineer has failed to act on any Application for Payment or County has failed to make any payment as aforesaid, Contractor may, upon seven (7) days written notice to County, stop the Work until payment of all amounts then due have been received.

10.2 County reserves the right, after giving seven (7) days written notice, to terminate this Contract if:

10.2.1 Contractor persistently fails to perform the Work in accordance with the Contract Documents;

10.2.2 Contractor disregards laws or regulations of any public body having jurisdiction;

10.2.3 Contractor commences a voluntary case under any chapter of the Bankruptcy Code or any similar action by filing a petition under any other federal or state law relating to bankruptcy or insolvency;

10.2.4 Contractor has a petition filed against them under any chapter of the Bankruptcy Code or similar relief under any other federal or state law;

10.3 County may exclude Contractor from the site and take possession of the Work and of all Contractor's tools, construction equipment and machinery at the site and use 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 site or for which County has paid Contractor but which are stored elsewhere, and finish the Work as County may deem expedient.

10.3.1 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.

10.3.2 If the direct, indirect and consequential costs of completing the Work exceed the unpaid balance of the Contract Price, Contractor shall pay the difference to County. Such costs incurred by County shall be verified by County and incorporated in a Change Order; but in finishing the Work, County shall not be required to obtain the lowest figure for the Work performed. Contractor's obligations to pay the difference between such costs and such unpaid balance shall survive termination of this Contract.

10.4 In the event sufficient budgeted funds are not available for a new fiscal year, County shall notify Contractor of such occurrence and Contract shall terminate on the last day of the current fiscal year without penalty or expense to County.

10.5 Failure of Contractor to comply with any of the provisions of this Contract shall be considered a Material Breach of Contract and shall be cause for immediate termination of Contract at the discretion of County.

10.6 In addition to all other legal remedies available to County, County reserves the right to terminate and obtain from another source, any commodities or services which have not been delivered within the Contract Time as stated in the Contract Documents.

ARTICLE 11. CONTRACT CLAIMS & DISPUTES

11.1 Except as otherwise provided herein, any dispute arising under this Contract shall be decided by the Purchasing Official in accordance with Section 2-26-63 of the Manatee County Code subject to an administrative hearing process provided in 2-26-64. The decision of the Board of County Commissioners in accordance with Section 2-26-64 of the Manatee County Code shall be the final and conclusive County decision subject to exclusive judicial review in the circuit court by a petition for certiorari.

ARTICLE 12. RESIDENT PROJECT REPRESENTATIVE - DUTIES, RESPONSIBILITIES

12.1 The Resident Project Representative is the Engineer’s Agent, who will act as directed by and under the supervision of the Engineer, and who will confer with County regarding his actions. Resident Project Representative's dealing in matters pertaining to the on-site Work shall, in general, be only with the County and Contractor and dealings with Subcontractors shall only be through or with the full knowledge of Contractor.

12.2 Resident Project Representative will:

12.2.1 Review the progress schedule, schedule of shop drawing submissions and Schedule of Values prepared by Contractor and consult with County concerning their acceptability.

12.2.2 Attend Preconstruction Conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with County and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.

12.2.3 Serve as County's liaison with Contractor, working principally through Contractor's superintendent and assist him in understanding the intent of the Contract Documents. As requested by Contractor, assist in obtaining additional details or information when required at the job site for proper execution of the Work.

12.2.4 Receive and record date of receipt of Shop Drawings and samples, receive samples which are furnished at the site by Contractor and notify Engineer of their availability for examination.

12.2.5 Advise Engineer and Contractor or his superintendent immediately of the commencement of any Work requiring a shop drawing or sample submission if the submission has not been approved by the County.

12.2.6 Conduct on-site observations of the Work in progress to assist Engineer in determining if the Work is proceeding in accordance with the Contract Documents and that completed Work will conform to the Contract Documents.

12.2.7 Report to County whenever he or she believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or does not meet the requirements of any inspections, tests or approvals required or if Work has been damaged prior to final payment; and advise Contractor when he believes Work should be corrected or rejected or should be uncovered of observation or requires special testing, inspection or approval.

12.2.8 Verify that tests, equipment and system start-ups and operating and maintenance instructions are conducted as required by the Contract Documents and in the presence of the required personnel, and that Contractor maintains adequate records thereof; observe, record and report to Engineer appropriate details relative to the test procedures and start-ups.

12.2.9 Accompany visiting inspectors representing public or other agencies having jurisdiction over the project; record the outcome of these inspections and report to County.

12.2.10 Transmit to Contractor, Engineer's clarifications and interpretations of the Contract Documents.

12.2.11 Consider and evaluate Contractor's suggestions or modifications in drawings or Contract Documents and report them with recommendations to County.

12.2.12 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 subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports and other project related documents.

12.2.13 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. Send copies to County.

12.2.14 Record names, addresses and telephone numbers of all Contractors, Subcontractors and major Suppliers of materials and equipment.

12.2.15 Furnish 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.

12.2.16 Consult with Engineer in advance of scheduling major tests, inspections or start of important phases of the Work.

12.2.17 Report immediately the occurrence of any accident.

12.2.18 Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Engineer, noting particularly their relation to the Schedule of Values, Work completed and materials and equipment delivered at the site but not incorporated in the Work.

12.2.19 During the course of the Work, verify that certificates, maintenance and operations manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed, and deliver this material to County for his review prior to final acceptance of the Work.

12.2.20 Before Engineer issues a certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.

12.2.21 Conduct final inspection in the company of County and/or Engineer and Contractor and prepare a Punch List of items to be completed or corrected. Reference Florida Statutes § 218.735(7).

12.2.22 Verify that all items on final list have been completed or corrected and make recommendations to County concerning acceptance.

12.3 Except upon written instructions of Engineer, Resident Project Representative:

12.3.1 Shall not authorize any deviation from the Contract Documents or approve any substitute materials or equipment;

12.3.2 Shall not exceed limitations on Engineer's authority as set forth in the Contract Documents;

12.3.3 Shall not undertake any of the responsibilities of Contractor, Subcontractors or Contractor's superintendent, or expedite the Work;

12.3.4 Shall not 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;

12.3.5 Shall not advise on or issue directions as to safety precautions and programs in connection with the Work;

12.3.6 Shall not authorize County to occupy the project in whole or in part; and

12.3.7 Shall not participate in specialized field or laboratory tests.

ARTICLE 13. APPRENTICES

13.1 If successful Contractor employs apprentices, he shall be governed and comply with the provisions of Fla.Stat. § 446.011.

NOTE: The form of all submittals, notices, Change Orders and other documents permitted or required to be used or transmitted under the Contract shall be determined by the County. Standard County forms shall be utilized.

END OF SECTION E

SECTION F

FORM OF CONTRACT
BETWEEN THE
COUNTY OF MANATEE, FLORIDA
AND CONTRACTOR AS IDENTIFIED BELOW
ON THE BASIS OF A STIPULATED UNIT COST CONTRACT PRICE

This CONTRACT is made and entered into by and between the COUNTY OF MANATEE, a political subdivision of the State of Florida, hereinafter referred to as "COUNTY" and **insert Contractor name**, hereinafter referred to as "CONTRACTOR," duly authorized to transact business in the State of Florida, with offices located at **insert Contractor address**.

ARTICLE 1. WORK

CONTRACTOR shall furnish all labor, materials, supplies, and other items required to complete the Work for **IFB #14-3056DC Site Improvements for Jiggs Landing** in strict accordance with Contract Documents and any duly authorized subsequent Addenda thereto, all of which are made a part hereof.

ARTICLE 2. COMPENSATION

As compensation to CONTRACTOR, COUNTY shall pay and CONTRACTOR will accept as full consideration for the performance of all Work required by **IFB #14-3056DC Site Improvements for Jiggs Landing**, subject to additions and deductions as provided therein, the sum of **$insert Award amount including contingency dollars** based on a completion time of **120** calendar days.

ARTICLE 3. LIQUIDATED DAMAGES

Time is of the essence in this CONTRACT. As of the date of this CONTRACT, the damages that will be suffered by COUNTY in the event of CONTRACTOR'S failure to timely complete the Work are impossible to determine. In lieu thereof, it is agreed that if CONTRACTOR fails to achieve Final Completion of the Work within **120** calendar days of issuance of the Notice to Proceed (accounting, however, for any extensions of time granted pursuant to approved Change Orders), CONTRACTOR shall pay to COUNTY, as liquidated damages (and not as a penalty), the sum of $**1,742.00** per calendar day

for each day beyond **120** days until CONTRACTOR achieves Final Completion. COUNTY shall have the option of withholding said liquidated damages from any pay application(s) thereafter submitted by CONTRACTOR. Alternatively, CONTRACTOR shall immediately pay said sums to COUNTY upon COUNTY'S demand for same.

ARTICLE 4. ENGINEER

The COUNTY of MANATEE, **Property Management Department**, is responsible as COUNTY and **CPH** is responsible as "ENGINEER," who designed this Project and is responsible for technical/engineering reviews and decisions. The ENGINEER is a member of COUNTY'S Project Management team which is collectively responsible for ensuring the Work is completed in accordance with the Contract Documents.

All communications involving this Project will be addressed to: **Michael DiPinto, Project Manager** and to the Engineer of Record, **CPH**. All invoicing will be addressed to the attention of: **Michael DiPinto, Project Manager**.

Documents are to be mailed to the following:

Manatee County Property Management
Attn: Michael DiPinto, Project Manager
IFB #14-3056DC
1112 Manatee Avenue West, Ste 868
Bradenton, Florida 34205
Phone: (941) 749-3017

CPH
Attn: Joshua Bryant, P.E.
IFB #14-3056DC
3277 A Fruitville Road, Suite 2
Sarasota, Florida 34237
Phone (941) 365-4771

Where the terms ENGINEER and/or COUNTY are used in the Contract Documents, it shall mean COUNTY'S Project Management team.

ARTICLE 5. CONTRACTOR'S REPRESENTATIONS

In order to induce COUNTY to enter into this CONTRACT, CONTRACTOR makes the following representations:

5.1 CONTRACTOR has familiarized itself with the nature and extent of the Bid Documents, Work, site, locality and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

5.2 CONTRACTOR has studied carefully all drawings of the physical conditions upon which CONTRACTOR is entitled to rely.

5.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies which pertain to the physical conditions at or contiguous to the site or which otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Bid Documents; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.

5.4 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Bid Documents with respect to existing Underground Facilities at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. Any additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said Underground Facilities conducted by CONTRACTOR will be done at CONTRACTOR'S expense.

5.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Bid.

5.6 CONTRACTOR has given COUNTY written notice of all conflicts, errors or discrepancies that have been discovered in the Bid Documents and the written resolution thereof by COUNTY is acceptable to CONTRACTOR.

5.7 CONTRACTOR shall schedule and perform the Work subject to COUNTY'S approval and shall hold COUNTY harmless from all liabilities incurred due to CONTRACTOR'S failure to coordinate with COUNTY.

ARTICLE 6. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire CONTRACT between COUNTY and CONTRACTOR concerning the Work consist of the following:

6.1 This CONTRACT and Bid Document **#14-3056DC**

6.2 Invitation for Bid **# 14-3056DC**, in its entirety

6.3 Public Construction Bond Form and Insurance Certificate(s)

6.4 Drawings/Plans (not attached)

6.5 Addendum number **insert Addendum #** to **insert Addendum #** inclusive

6.6 CONTRACTOR'S Bid Form

6.7 Reports

6.8 The following, which may be delivered or issued after the Effective Date of the CONTRACT and are not attached hereto: all written Change Orders and other documents amending, modifying, or supplementing the Contract Documents.

6.9 The documents listed in paragraphs above are attached to this CONTRACT (except as noted otherwise above). There are no Contract Documents other than those listed above in this Article 6.

ARTICLE 7. DISPUTE RESOLUTION

Disputes shall be resolved as follows: good faith negotiations by the designated agents of the parties and if not resolved by such designated agents, CONTRACTOR shall submit its claim, with the basis for the dispute, in writing to the Manatee County Purchasing Official for a determination and handling in accordance with the provisions of Chapter 2-26 of the Manatee County Code.

ARTICLE 8. NO WAIVER

8.1 The failure of CONTRACTOR or COUNTY to insist on the strict performance of the terms and conditions hereof shall not constitute or be construed as a waiver or relinquishment of either party's right to thereafter enforce the same in accordance with this CONTRACT in the event of a continuing or subsequent default on the part of CONTRACTOR or COUNTY.

8.2 Nothing herein shall be interpreted as a waiver of COUNTY of its rights, including the limitations of the limited waiver of sovereign immunity, as set forth in Florida Statute 768.28, or any other statute, and COUNTY expressly reserves these rights to the full extent allowed by law.

ARTICLE 9. NO THIRD-PARTY BENEFICIARIES

This CONTRACT 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 CONTRACT is intended or shall be construed to confer upon or give any person, corporation, partnership, trust, private entity, agency, or any other governmental entity any right, privilege, remedy, or claim under or by reason of this CONTRACT or any provisions or conditions hereof.

ARTICLE 10. GOVERNING LAW, JURISDICTION AND VENUE

10.1 This CONTRACT and the construction and enforceability thereof shall be interpreted under the laws of the State of Florida.

10.2 CONTRACTOR consents and agrees that all legal proceedings related to the subject matter of this CONTRACT shall be governed by the laws of the State of Florida.

10.3 CONTRACTOR consents and agrees that jurisdiction for such proceedings shall lie exclusively with such court, and venue shall be in the Circuit Court of the Twelfth Judicial Circuit in and for Manatee County, Florida.

10.4 In the event of any litigation arising under the terms of this CONTRACT, each party shall be responsible for their own attorney's fees, including appellate fees, regardless of the outcome of the litigation.

ARTICLE 11. FORCE MAJEURE

Neither party shall be considered in default of performance of such obligations hereunder to the extent that performance of such obligations or any of them is delayed or prevented by Force Majeure. Force Majeure shall include, but not be limited to hostility, revolution, civil commotion, strike, epidemic, fire, flood, wind, earthquake, hurricane, or other disruptive event of nature, act of terrorism, explosion, lack of or failure of transportation or bridge/roadway facilities, any law, proclamation, regulation, ordinance or other act of government, or any act of God or any cause whether of the same or different nature, existing or future; provided that the cause, whether or not enumerated in this Article, is beyond the control and without the fault or negligence of the party seeking relief under this Article.

ARTICLE 12. MISCELLANEOUS

12.1 Terms used in this CONTRACT are defined in Article 1 of Section E, General Conditions.

12.2 No assignment by a party hereto of any rights under or interest in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law); and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignee from any duty or responsibility under the Contract Documents.

12.3 COUNTY and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements, and obligations contained in the Contract Documents.

12.4 By accepting Award of this CONTRACT, 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 duties or services required hereunder.

CONTRACT

IFB # IFB #14-3056DC

IN WITNESS WHEREOF, the parties hereto have caused this CONTRACT **IFB #14-3056DC for Site Improvements for Jiggs Landing** to be duly executed by their authorized representatives.

CONTRACTOR

By: _____

_____
Print Name & Title of Signer

Date: _____

COUNTY OF MANATEE, FLORIDA

By: _____
Melissa M. Wendel, CPPO
Purchasing Official

Date: _____

BID FORM

(Submit in triplicate)

For: IFB #14-3056DC
SITE IMPROVEMENTS FOR JIGGS LANDING

TOTAL OFFER: $_____

We, the undersigned, hereby declare that we have carefully reviewed the IFB Documents in their entirety and with full knowledge and understanding of the aforementioned herewith submit this bid, completely meeting each and every specification, term, and condition contained therein.

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

Communications concerning this bid shall be addressed as follows: **(Complete all fields)**

Bidder's Name: _____

Mailing Address: _____

Telephone: ( ) _____ Fax: ( ) _____

Email Address: _____

Acknowledge Addendum No.____ Dated: _____ Acknowledge Addendum No._____ Dated: _____
Acknowledge Addendum No.____ Dated: _____ Acknowledge Addendum No._____ Dated: _____
Acknowledge Addendum No.____ Dated: _____ Acknowledge Addendum No._____ Dated: _____

Authorized Signature(s): _____

Name and Title of Above Signer(s): _____

Date: _____

SITE IMPROVEMENTS AT JIGGS LANDING

ITEM NO.	DESCRIPTION	UNITS	QTY	UNIT PRICE	EXTENDED PRICE
2.01	Mobilization	LS	1		$
2.02	Maintenance of Traffic	LS	1		$
2.03	Survey and Control Layout by Contractor	LS	1		$
2.04	As-Built Survey	LS	1		$
2.05	Prevention, Control, and Abatement of Erosion and Water Pollution	LS	1		$
2.06	Remove and Store Exist. Site Items (Signs, Wheel Stops, Trash Can/Pads, Bollards, Wood Deck, Aluminum Ramp)	LS	1		$
2.07	Clearing and Grubbing	LS	1		$
2.08	Remove and Dispose of Exist. Gravel	SY	2398	$	$
2.09	Remove and Dispose of Exist. Concrete	SY	303	$	$
2.10	Grading	LS	1		$
2.11	Adjust Exist. Valve Box To Grade	EA	2	$	$
2.12	Adjust Manhole Rim To Grade	EA	2	$	$
2.13	12-Inch Sub-Base (Stab. w/ Min. 60 LBR)	SY	2414	$	$
2.14	Pavement Cement Concrete (6-Inch Thick Min., 4000 PSI), including Macrosynthetic Fiber Reinforcement (5.0 lbs/CY, 1.5-Inch Forta-Ferro)	SY	2414	$	$
2.15	Concrete Sidewalk (4-Inch Thick Min., 3000 PSI), including Macrosynthetic Fiber Reinforcement (5.0 lbs/CY, 1.5-Inch Forta-Ferro)	SY	4	$	$
2.16	Flowable Fill (Under Wood Deck)	CY	15	$	$
2.17	Curb & Gutter, Concrete (Type "F", Manatee County)	LF	50	$	$
2.18	Concrete Flume	EA	2	$	$
2.19	Sodding	SY	222	$	$
2.20	Split Rail Fence	LF	286	$	$
2.21	Re-Install Exist. Site Items (Signs, Wheel Stops, Trash Can/Pads, Wood Deck)	LS	1		$
2.22	Sign (New)	EA	1	$	$
2.23	Detectable Warning (Armortile)	SY	11	$	$
2.24	Thermoplastic Traffic Stripes and Markings	LS	1		$
2.25	Remove and Store Exist. Concrete Boat Ramp Panel	EA	4	$	$
2.26	Excavation (Exist. Material Below Boat Ramp)	CY	34	$	$
2.27	Retaining Wall Extension (Vinyl) including Concrete Cap	LF	4	$	$
2.28	Aluminum Floating Dock (20' x 8') including Aluminum Ramp (20' x 5')	LS	1		$
2.29	8-Inch Crushed Shell Base (Min. 100 LBR) (Under Concrete Boat Ramp Panel)	TN	28	$	$
2.30	Concrete (Steel Reinforced, 5000 PSI)	CY	13	$	$
2.31	Re-Install Exist. Concrete Boat Ramp Panel	EA	4	$	$
2.32	Vinyl Sheet Piling, 5-Inch Profile (Along Ramp Sides)	SF	1300	$	$
2.33	Precast Concrete Beam, 12-Inch x 16-Inch (Steel Reinforced, 5000 PSI)	LF	26	$	$
2.34	Clean Fill Material (Min. 100 LBR) (Under Articulating Concrete Block)	CY	20	$	$
2.35	Articulating Concrete Block Mattress (8.5-Inch Thick) including Geotextile Fabric	SY	87	$	$
2.36	Aggregate, #57 Stone (For Articulating Concrete Block Mattress)	CY	20	$	$
2.37	Concrete (Steel Reinforced, 5000 PSI, Tremie Pour)	CY	8	$	$
2.38	Testing Allowance				$10,000.00
	SUBTOTAL CONSTRUCTION COST				**$**
2.39	Contingency (Used only with County approval)	10% OF ABOVE SUBTOTAL			$
	TOTAL OFFER				**$**
5.00	Bid as Alternative to above Bid Item 2.08				
5.01	Remove, Transport, Deliver Exist. Gravel To County Facility	SY	2398	$	$

BIDDER (FIRM NAME)_____

AUTHORIZED SIGNATURE_____

MAILING LABEL

Cut along the outside border and affix this label to your sealed bid envelope to identify it as a "Sealed Bid". Be sure to include the name of the company submitting the bid and the bid due date and time where requested.

MAILING LABEL TO AFFIX TO OUTSIDE OF SEALED BID PACKAGE:

SEALED BID - DO NOT OPEN

BIDDER: _____

SEALED BID NO: IFB #

BID TITLE: IFB TITLE

DUE DATE/TIME: _____ @ _____

EXHIBIT A

INSURANCE AND BONDING REQUIREMENTS

The successful bidder will not commence Work under the resulting Agreement until all insurance under this section, and such insurance coverage as might be required by County, has been obtained. The successful bidder shall obtain, and submit to the Purchasing Division within ten (10) calendar days from the date of notice of intent to award, at his expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy):

Insurance / Bond Type	**Required Limits**
1. ☒ Automobile Liability:	Bodily Injury and Property Damage, Owned/Non-Owned/Hired; Automobile included $ 1,000,000 each occurrence *This policy shall contain severability of interests provisions.*
2. ☒ Commercial General Liability: (Occurrence Form - patterned after the current ISO form)	Bodily Injury and Property Damage $ 1,000,000 single limit per occurrence; $ 1,000,000 aggregate This shall include Premises and Operations; Independent Contractors; Products and Completed Operations and Contractual Liability. *This policy shall contain severability of interests provisions.*
3. ☒ Employer's Liability:	$ 1,000,000 single limit per occurrence
4. ☒ Worker's Compensation:	Statutory Limits of Florida Statutes, Chapter 440 and all Federal Government Statutory Limits & Requirements
5. ☒ Other Insurance, as noted:	a. ☐ Aircraft Liability $ _____ per occurrence Coverage shall be carried in limits of not less than $5,000,000 each occurrence if applicable to the completion of the services under this Agreement. b. ☐ Installation Floater $ _____ If the resulting Agreement **does not** include construction of or additions to above ground building or structures, but does involve the installation of machinery or equipment, successful bidder shall provide an **"Installation Floater"** with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s). c. ☐ Maritime Coverage (Jones Act) $ _____ per occurrence Coverage shall be maintained where applicable to the completion of the Work.

Insurance / Bond Type	Required Limits
	d. ☐ Pollution $ _____ per occurrence
	e. ☐ Professional Liability $ _____ per claim and in the aggregate • $1,000,000 per claim and in the aggregate • $2,000,000 per claim and in the aggregate f. ☐ Project Professional Liability $ _____ per occurrence g. ☐ Property Insurance $ _____ If the resulting Agreement includes construction of or additions to above ground buildings or structures, bidder *may* provide **"Builder's Risk"** insurance with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s). *To the extent that property damage is covered by commercial insurance, County and successful bidder agree to waive all subrogation rights against each other, except such rights as they may have to the proceeds of such insurance. Successful bidder shall require a similar waiver of subrogation from each of its bidder personnel and sub-consultants, to include Special Consultants; successful bidder shall provide satisfactory written confirmation to County of these additional waivers.* h. ☒ U.S. Longshoreman's and Harborworker's Act $ _____ per occurrence Coverage shall be maintained where applicable to the completion of the Work. i. ☐ Valuable Papers Insurance $ _____ per occurrence j. ☐ Watercraft, $ _____ per occurrence
6. ☒ Bid Bond:	Bid bond shall be submitted by bidder for 5% of the total amount of the bid.
7. ☒ Performance Bond:	For projects in excess of $100,000.00, performance bond shall be submitted by bidder for 100% of the award amount. $ _____

The amounts and types of insurance coverage shall conform to the minimum requirements set forth in this Insurance and Bonding exhibit, with the use of Insurance Services Office (ISO) forms and endorsements or their equivalents. If successful bidder has any self-insured retentions or deductibles under any of the listed minimum required coverage, successful bidder must identify on the certificate of insurance the nature and amount of such self-insured retentions or deductibles and provide satisfactory evidence of financial responsibility for such obligations. All self-insured retentions or deductibles will be successful bidder's sole responsibility.

Nothing herein shall in any manner create any liability of County in connection with any claim against the successful bidder for labor, services, or materials, or of subcontractors; and nothing herein shall limit the liability of the successful bidder or successful bidder's sureties to County or to any workers, suppliers, material men or employees in relation to the resulting Agreement.

By way of its submission of a bid hereto, bidder:

a. Represents that bidder maintains, and will maintain during the term of any Agreement arising from this solicitation, all insurance coverage required herein from responsible companies duly authorized to do business under the laws of the State of Florida that hold an A.M. Best rating of "A-" or better, and are deemed acceptable to County as set forth in this solicitation.

b. Agrees that insurance, as specified herein, shall remain in force and effect without interruption from the date of commencement of the Work throughout the duration of the project, including any warranty periods.

c. Agrees that if the initial or any subsequently issued certificate of insurance expires prior to completion of the Work, successful bidder shall furnish to County renewal or replacement certificate(s) of insurance no later than ten (10) calendar days after the expiration date on the certificate. Failure of successful bidder to provide County with such renewal certificate(s) shall be considered justification for County to terminate any and all agreements.

d. Agrees that bidder and/or its insurance carrier shall provide thirty (30) days written notice to County of policy cancellation or non-renewal on the part of the insurance carrier or the successful bidder. Successful bidder shall also notify County, in a like manner, within twenty-four (24) hours after receipt, of any notices of expiration, cancellation, non-renewal or material change in coverage or limits received by successful bidder from its insurer and nothing contained herein shall relieve successful bidder of this requirement to provide notice. In the event of a reduction in the aggregate limit of any policy to be provided by successful bidder hereunder, successful bidder shall immediately take steps to have the aggregate limit reinstated to the full extent permitted under such policy.

e. Agrees that failure of successful bidder to obtain and maintain proper amounts of insurance at all times as called for herein shall constitute a material breach of the resulting Agreement, which may result in immediate termination.

f. Agrees that, should at any time the successful bidder not maintain the insurance coverage(s) required herein, County may terminate the Agreement or at its sole discretion shall be authorized to purchase such coverage(s) and charge successful bidder for such coverage(s) purchased. If successful bidder fails to reimburse County for such costs within thirty (30) days after demand, County has the right to offset these costs from any amount due successful bidder under this Agreement or any other agreement between the County and successful bidder. County shall be under no obligation to purchase such

insurance, nor shall it be responsible for the coverage(s) purchased or the insurance companies used. The decision of County to purchase such insurance coverage(s) shall in no way be construed to be a waiver of any of its rights under the Contract Documents.

g. Agrees to provide, upon request, the entire and complete insurance policies required herein.

Certificate of Insurance Requirements:

a. Certificates of insurance in duplicate evidencing the insurance coverage specified herein shall be filed with the Purchasing Division before operations are begun. The required certificates of insurance shall name the types of policy, policy number, date of expiration, amount of coverage, companies affording coverage, and also shall refer specifically to the bid number and title of the project, and must read: For any and all work performed on behalf of Manatee County.

b. **Additional Insured:** The Automobile Liability and Commercial General Liability policies provided by the successful bidder to meet the requirements of this IFB shall name Manatee County, Board of County Commissioners, as an additional insured as to the operations of the successful bidder under this IFB and shall contain severability of interests provisions.

c. In order for the certificate of insurance to be accepted it **must** comply with the following:

1. The "Certificate Holder" shall be:
   Manatee County
   Board of County Commissioners
   Bradenton, FL
   IFB# insert IFB #, insert IFB title
   For any and all work performed on behalf of Manatee County.

2. Certificate shall be mailed to:
   Manatee County Purchasing Division
   1112 Manatee Avenue West, Suite 803
   Bradenton, FL 34205
   Attn: insert name, insert title

Bid Bond/Certified Check:

By submitting a bid to this Invitation for Bid, the bidder agrees should the bidder's bid be accepted, **to execute the form of Agreement and present the same to Manatee County for approval within ten (10) calendar days after notice of intent to award**. The bidder further agrees that failure to execute and deliver said form of Agreement **within ten (10) calendar days** will result in damages to Manatee County and as guarantee of payment of same a bid bond/certified check shall be enclosed within the submitted sealed bid in the amount of five (5%) percent of the total amount of the bid. The bidder further agrees that in case the bidder fails to enter into an Agreement, as prescribed by Manatee County, the bid bond/certified check accompanying the bid shall be forfeited to Manatee County as agreed liquidated damages. If County enters into an Agreement with a bidder, or if County rejects any and/or all bids, accompanying bond will be promptly returned.

Performance and Payment Bonds:

Successful bidder shall furnish surety bonds using the Public Construction Bond form prescribed in Florida Statutes § 255.05, which is provided herein, as security for faithful performance of the Agreement awarded as a result of this bid and for the payment of all persons performing labor

and/or furnishing material in connection therewith. Failure to provide the required bonds on the prescribed form may result in successful bidder being deemed nonresponsive. Bonds must be in the form prescribed in Florida Statutes § 255.05, and must not contain notice, demand or other terms and conditions, including informal pre-claim meetings, not provided for in Florida Statutes § 255.05.

Surety of such bonds shall be in an amount equal to 100% of the Contract Price issued by a duly authorized and nationally recognized Surety company, authorized to do business in the State of Florida, satisfactory to this County. Surety shall be rated as "A-" or better as to general policy holders rating and Class V or higher rating as to financial size category and the amount required shall not exceed five (5%) percent of the reported policy holders' surplus, all as reported in the most current Best Key Rating Guide, published by A.M. Best Company, Inc. of 75 Fulton Street, New York, New York, 10038. The attorney-in-fact who signs the bonds must file with the bonds, a certificate and effective dated copy of power-of-attorney. Performance and payment bonds shall be issued to Manatee County, a political subdivision of the State of Florida, within ten (10) calendar days after notice of intent to award.

In addition, pursuant to Florida Statutes § 255.05(1)(b), prior to commencing Work, the successful bidder shall be responsible and bear all costs associated to record the performance and payment bond with the Manatee County Clerk of the Circuit Court. A certified copy of said recording shall be furnished to the Purchasing Division upon filing. Pursuant to Florida Statutes § 255.05(1)(b), County will make no payment to the successful bidder until the successful bidder has complied with this paragraph.

Furnishing performance and payment bonds shall be requisite to execution of an Agreement with County. Said performance and payment bonds will remain in force for the duration of the Agreement with the premiums paid by the successful bidder. Failure of the successful bidder to execute such Agreement and to supply the required bonds shall be just cause for cancellation of the award. County may then contract with the next lowest, responsive and responsible bidder or re-advertise this IFB. If another bidder is accepted, and notice given within ninety (90) days after the opening of the bids, this acceptance shall bind the bidder as though they were originally the successful bidder.

Failure of County at any time to require performance by the successful bidder of any provisions set out in the resulting Agreement will in no way affect the right of County, thereafter, to enforce those provisions.

When activity occurs within the resulting Agreement that increases the amount of the Agreement by either an approved Administrative Contract Adjustment (ACA) or an approved Change Order, a recorded bond rider shall be provided before the additional Work can proceed. All premiums shall be paid by the successful bidder.

EXHIBIT B

BIDDER'S QUESTIONNAIRE

(Submit in Duplicate)

The 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 what type of business:

   _____

   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. **Name the contractor for the boat ramp.**

_____

_____

_____

BIDDER: _____

12. If any, list MBE/DBE (with Agreement amount) to be utilized:

_____

_____

_____

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. List the following in connection with 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: _____

BIDDER: _____

EXHIBIT C

PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

SWORN STATEMENT PURSUANT TO ARTICLE V, MANATEE COUNTY PURCHASING ORDINANCE

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 a County agreement for public improvements, procurement of goods or services (including professional services) or a County lease, franchise, concession or management agreement, or shall receive a grant of County monies unless such person or entity has submitted a written certification to County 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 County'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 County's Purchasing Official. Upon presentation of such satisfactory proof, the person or entity shall be allowed to contract with County.

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 CONTRACT 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 FLORIDA
COUNTY OF _____

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

Personally known _____ OR Produced 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.

EXHIBIT D

SWORN STATEMENT

THE FLORIDA TRENCH SAFETY ACT

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 **IFB NO. 14-3056DC Site Improvement at Jiggs Landing**
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 County and Engineer, 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 Measure (LF, SY)	Unit 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: _____

R. B. "Chips" Shore

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

EXHIBIT E: E PAYABLES 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_____

Revised: June 26, 2013

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

PROJECT MANUAL

JIGGS LANDING

MANATEE COUNTY

CPH Job No. M13107

October 7th, 2014

Engineers
Architects
Planners
Landscape Architects
Surveyors
Environmental Scientists
Construction Management
Design/Build

Certificate of Authorization No. 00003215

3277 A Fruitville Road, Suite 2
Sarasota, Florida 34237
Ph. 941.365.4771
Joshua Bryant, P.E.

PROJECT MANUAL INDEX

JIGGS LANDING

Bidding Requirements, Contract Forms, and Conditions of the Contract

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SECTION 01110

SUMMARY OF WORK

PART 1 GENERAL

1.01 Section Includes

Summary of work, other contracts, work sequence, operation of existing facilities, use of premises, Owner furnished products, coordination, cutting and patching

1.02 Summary of Work

A. The Project consists of the removal and disposal of existing gravel and concrete, removal and reinstallation of existing boat ramp concrete panels, and installation of the following: concrete curbing, aluminum floating ramp and dock, vinyl sheet piling, articulating concrete block mattress, cast-in-place concrete, concrete sidewalk, sodding, and striping.

B. Furnish all materials, equipment, tools, and labor which is reasonably and properly inferable and necessary for the proper completion of the Work, whether specifically indicated in the Contract Documents or not.

C. All fees and permits for the permanent construction that are required by controlling agencies or authorities, including fees for the review of Contract Documents prior to construction, will be procured by the Owner. Other licenses or permits for construction facilities of a temporary nature that are necessary for the prosecution of the work shall be secured and paid for by the Contractor.

D. Repair, replace, or otherwise settle with the Owner, if damage to property or existing facilities occurs, including damage to pavements, utilities, lawns, structures, etc.

E. Construct the Project under a single unit price contract.

1.03 Work Under Other Contracts – N/A

1.04 Work Sequence

The Contractor's sequence of work may be of his choosing in order to complete the work in the allowed time frame while accommodating other contractors on site.

1.05 Operation of Existing Facilities

The Owner shall be able to operate existing facilities 24 hours per day, 7 days per week.

1.06 Contractor Use of Premises

Confine operations at the site to areas permitted by applicable laws, ordinances, permits, and by the Contract Documents. Do not unreasonably encumber the site with materials or equipment. Do not load structures with weight that will endanger the structure. The Contractor shall assume full responsibility for protection and safekeeping of products stored on the job site.

1.07 Owner Furnished Products - N/A

1.08 Coordination

A. The Contractor shall be fully responsible for the coordination of his work and the work of his employees, subcontractors, and suppliers and to assure compliance with schedules.

B. The coordination requirements of this Section are in addition to the requirements of Section 00700, General Conditions, and 00800, Supplementary Conditions.

C. It is the Contractor's responsibility to coordinate with all the utilities regarding locates, testing, or relocations.

1.09 Cutting and Patching

A. The Contractor shall, at no additional expense to the Owner, perform cutting and patching necessary to the completion of the Project. Perform cutting and patching in a manner to prevent damage to the structure or previously completed work.

B. Refinish surfaces as necessary to provide an even finish.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01120

ALLOWANCE

PART 1 - GENERAL

1.01 REQUIREMENTS

Include in the Total Offer the allowance stated in the Contract Documents.

Testing Laboratory Allowance:

Allow the limiting amount of: $10,000.00

1.02 RELATED REQUIREMENTS

Conditions of the Contract.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.01 GENERAL

The Testing Laboratory Allowance is to be used as directed by the Engineer for first tests only.

Any re-testing due to failed first tests shall be at the Contractor's expense and is not subject to compensation through the Testing Laboratory Allowance. Monies in the Testing Laboratory Allowance will be used only on issuance of invoices for tests that were authorized by the Engineer and indicate results that conform to the specifications.

END OF SECTION

SECTION 01270

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 Description

A. Payment for all Work done in compliance with the Contract Documents, inclusive of furnishing all manpower, equipment, materials, and performance of all operations relative to construction of this project, will be made under Pay Items listed herein. Work for which there is not a Pay Item will be considered incidental to the Contract and no additional compensation will be allowed.

B. The Owner reserves the right to alter the Drawings, modify incidental work as may be necessary, and increase or decrease quantities of work to be performed to accord with such changes, including deduction or cancellation of any one or more of the Pay Items. Changes in the work shall not be considered as a waiver of any conditions of the Contract nor invalidate any provisions thereof. When changes result in changes in quantities of Work to be performed, the Contractor will accept payment according to Contract Unit Prices that appear in the original Contract.

C. Quantities necessary to complete the work as shown on the Drawings or as specified herein shall govern over those shown in the Proposal. The Contractor shall take no advantage of any apparent error or omission in the Drawings or Specifications, and the Engineer shall be permitted to make corrections and interpretations as may be deemed necessary for fulfillment of the intent of the Contract Documents.

D. The Engineer will make measurements and determinations as necessary to classify the work within pay items and determine the quantities for pay purposes; such decisions will be final after 3 days if the Contractor does not submit a written notice as defined in the following paragraph.

E. If the Contractor differs with the Engineer's classification of the Pay Items or determination of quantities of the Pay Items, he must notify the Engineer in writing within 3 days of the time that the Contractor is informed of the Engineer's decision. Otherwise the Owner will not consider any such difference as a claim for payment.

F. Failure on the part of the Contractor to construct any item to plan or authorized dimensions within the specification tolerances shall result in: reconstruction to acceptable tolerances at no additional cost to the Owner; acceptance at no pay; or, acceptance at reduced final pay quantity or reduced unit price, all at the discretion of the Engineer.

G. Work shall not be considered complete until all testing has been satisfactorily completed and the item of work has demonstrated compliance with plans and specifications.

H. A preliminary monthly application for payment shall be submitted to the Owner/Engineer for review five (5) days prior to the submittal for approval of the Contractor's monthly payment request.

I. Where FDOT pay item numbers are shown on the bid form, they generally follow FDOT pay item number formatting; however, they are only provided in order to use them for pay application purposes. FDOT pay item descriptions do not apply; utilize the descriptions on the bid form and within this section to determine the work associated with each pay item.

PART 2 PAY ITEMS

2.01 Mobilization

A. Work Includes

Preparatory work and operations in mobilizing for beginning work on the Project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, plus permits and fees, bonds, and insurance. Also included are temporary utilities/facilities, survey and layout safety equipment and all other items not specifically identified under other bid items which are necessary for the construction. Also included is compliance with administrative and regulatory requirements, provision of record drawings and closeout documents, demobilization, cleanup, removal of equipment, materials, supplies, and incidentals from the project site.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

C. Payment of this item shall be distributed equally over the first three payment applications.

2.02 Maintenance of Traffic

A. Work Includes

The construction and maintenance of any necessary detour facilities; the providing of necessary facilities for access to residences and businesses along the project; the furnishing, installation and maintenance of traffic control and safety devices during construction; daily inspections of the traffic control devices (including nighttime inspections); replacement of all equipment and devices found not to be conforming with approved standards during the inspection; the control of dust, and any other special requirements for safe and expeditious movement of traffic as may be called for on the plans. The term “Maintenance of Traffic” shall include all such facilities, devices, and operation as are required for the safety and convenience of the public as well as for minimizing public nuisance; all

as required by the FDOT, the Engineer and the Owner. This work shall also consist of the removal of existing pavement markings necessary in order to implement traffic control, temporary signs, and the removal or relocation of existing signs in order to implement traffic control. This item also includes any adjustments necessary to the traffic control devices under emergency conditions.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

C. Payment of this item shall be made under the following schedule:

Percent of Original Contract Amount Earned	Allowable Percent of the lump sum Price to be Paid
5	25
10	50
25	75
50	100

2.03 Survey and Control Layout by Contractor

A. Work Includes

All necessary Survey work performed by a Professional Licensed Surveyor in the State of Florida to layout all necessary horizontal and vertical controls, as shown on the construction plans.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

2.04 As-Built Survey

A. Work Includes

All necessary Survey work performed by a Professional Licensed Surveyor in the State of Florida as required in the RECORD DRAWINGS Specification, 01780.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

2.05 Prevention, Control, and Abatement of Erosion and Water Pollution

A. Work Includes

Preparation and implementation of stormwater pollution prevention control plan, including monitoring, inspecting, and reporting, providing erosion and sediment control measures, preparing and filing EPA NPDES NOI and NOT forms, and providing required contractor certifications. Also includes hay bales, filter bags, and filter fabric as needed for supplemental inlet protection and to supplement silt fence, including replacement and maintenance needed during construction. Also includes, all work required under Specification 01415, Specification 13000, and Appendix B (SWFWMD Permit).

B. Unit of measurement is Lump Sum (LS), performed and accepted.

C. Payment of this item shall be made under the following schedule:

Percent of Original Contract Amount Earned	Allowable Percent of the lump sum Price to be Paid
5	25
10	50
25	75
50	100

2.06 Remove and Store, Exist. Site Items (Signs, Wheel Stops, Trash Can/Pads, Bollards, Wood Deck, Aluminum Ramp)

A. Work Includes

Removing and storing, all existing site items as needed to complete the proposed project as shown on the Construction Plans. The existing items to be removed and stored on-site in a nice, neat, orderly location are: Signs, Wheel stops, Trash Cans and Pads, Bollards, Wood Deck members and hardware, Aluminum ramps and hardware, Concrete boat ramps, split rail fence members and hardware, and any other items as required to complete the project. All items to be stored onsite will remain the property of the County. Items to be re-installed at a later date, shall be protected from thief and construction activities.

For all items, deemed non-salvageable by the County Construction Manager in writing, shall become property of the Contractor. Once approval has been given in writing, the Contractor shall remove and dispose of these non-salvageable items as needed. The contractor shall be responsible for removing, disposing, and hauling offsite, and any necessary fees, for these non-salvageable items.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

C. Payment of this item shall be made under the following schedule:

Percent of Original Contract Amount Earned	Allowable Percent of the lump sum Price to be Paid
5	25
10	50
25	75
50	100

2.07 Clearing and Grubbing

A. Work Includes

Clearing, grubbing, disposal of debris, and all work necessary to prepare the site for the proposed improvements.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

2.08 Remove and Dispose of, Exist. Gravel

A. Work Includes

Removal and disposal of existing gravel material from the site.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

2.09 Remove and Dispose of, Exist. Concrete

A. Work Includes

Removal and disposal of existing concrete, including milling and saw cutting as needed.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

2.10 Grading

A. Work Includes

Finish grading (to uniform smooth surface, positive drainage), filling depressions, dressing with suitable topsoil.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

2.11 Adjust Exist. Valve Box To Grade

A. Work Includes

Adjusting existing valve boxes to the necessary proposed grades as shown on the construction plans.

B. Unit of measurement is Each (EA), installed and accepted.

2.12 Adjust Exist. Manhole Rim To Grade

A. Work Includes

Adjusting existing manhole rim to the necessary proposed grades as shown on the construction plans.

B. Unit of measurement is Each (EA), installed and accepted.

2.13 12-Inch Sub-Base (Stab. w/ Min. 60 LBR)

A. Work Includes

Placing, grading, mixing, and compacting stabilized subgrade material. The amount and nature of the stabilizing material to be added shall be determined by the Contractor.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

C. Whenever coring or other data indicates that the sub-base thickness is less than called for on the Plans (thicknesses required by the plans shall be considered to be minimum thicknesses), or does not otherwise meet the Specifications, the Contractor will correct the deficiency by replacing the full thickness for a length extending 50' from each end of the deficient area. The Contractor will receive no compensation for any sub-base so removed, for work in removing such sub-base, and will be paid only for accepted sub-base within the allowable limit. Sub-base in excess of the thickness called for on the Plans will be allowed to remain in place and no extra compensation paid to the Contractor, provided the excess thickness does not cause unsatisfactory conditions and is compatible with the adjacent work.

2.14 Pavement Cement Concrete (6-Inch Thick Min., 4000 PSI), including Macrosynthetic Fiber Reinforcement (5.0 lbs/CY, 1.5-Inch Forta-Ferro)

A. Work Includes

Forming, placing, finishing and curing new concrete parking area, and sawcutting joints.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

2.15 Concrete Sidewalk (4-Inch Thick Min., 3000 PSI), including Macrosynthetic Fiber Reinforcement (5.0 lbs/CY, 1.5-Inch Forta-Ferro)

A. Work Includes

Forming, placing, finishing and curing new concrete sidewalk, including ADA ramps, and sawcutting joints.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

2.16 Flowable Fill (Under Wood Deck)

A. Work Includes

Forming, placing, curing, sawcutting joints, testing.

B. Unit of measurement is Cubic Yard (CY), installed and accepted.

2.17 Curb & Gutter, Concrete (Type "F", Manatee County)

A. Work Includes

Forming, placing, curing, sawcutting joints, testing.

B. Unit of measurement is Linear Foot (LF), installed and accepted.

2.18 Concrete Flume

A. Work Includes

Forming, placing, curing, sawcutting joints.

B. Unit of measurement is Each (EA), installed and accepted.

2.19 Sodding

A. Work Includes

Soil preparation, sod installation, sanding joints, fertilizing, watering, and mowing.

B. The quantity of sodding shown on the Bid Form is generally based on grassing the areas of construction. Should the Contractor disturb more areas for his convenience (construction access and stockpiling), then the Contractor shall restore (including grassing) these areas at no additional cost to the Owner.

C. Unit of measurement is per Square Yard (SY), installed and accepted.

2.20 Split Rail Fence

A. Work Includes

Submitting Shop Drawings for proposed split rail fence, including but not limited to, materials and installation of fence, posts, and gates, and installation of corner posts, end posts, pull posts, rails, chain link fabric, tension wire, tie wire, barb wire attachment, connection to existing fence.

B. Unit of measurement is Linear Foot (LF), installed and accepted.

2.21 Re-Install Exist. Site Items (Signs, Wheel Stops, Trash Can/Pads, Wood Deck)

A. Work Includes

Re-installing, as shown on the construction plans, all existing site items which were previously stored onsite, including but not limited to, Signs, Wheel stops, Trash Cans and Pads, Bollards, Boardwalk members and hardware, Aluminum ramps and hardware, Concrete boat ramps, split rail fence members and hardware, and any other items as required to complete the project.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

2.22 Sign (New)

A. Work Includes

Furnishing and Installing new Sign plates, posts, accessories, and foundations.

B. Unit of measurement is each.

2.23 Detectable Warning (Armortile)

A. Furnish and install, new Armortile detectable warning, as directed in Specification 09614.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

2.24 Thermoplastic Traffic Stripes and Markings

A. Work Includes

Permanent thermoplastic pavement marking installation in areas where new paving occurs. New markings to tie to existing markings.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

2.25 Remove and Store, Exist. Concrete Boat Ramp Panel

A. Remove and Store existing pre-cast concrete boat ramp panel, as directed in Specification 13000.

B. Unit of measurement is Each (EA), installed and accepted.

2.26 Excavation (Exist. Material Below Boat Ramp)

A. Work Includes
Remove, haul, and dispose of, all existing material below the existing boat ramp panels, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Cubic Yard (CY), installed and accepted.

2.27 Retaining Wall Extension (Vinyl) including Concrete Cap

A. Work Includes:

Furnish and Install, Vinyl Sheet Piling (5-Inch Profile), excavation and backfill necessary to install the new retaining wall, make connection to existing retaining wall and the new proposed vinyl sheet along the side of the ramp; furnish and install all necessary concrete for the concrete cap, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Linear Foot (LF), installed and accepted.

2.28 Aluminum Floating Dock (20' x 8') including Aluminum Ramp (20' x 5')

A. Furnish and Install, Aluminum Floating Dock (20' x 8'), and Aluminum Ramp (20' x 5'), as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Lump Sum (LS), performed and accepted.

2.29 8-Inch Crushed Shell Base (Min. 100 LBR) (Under Concrete Panels)

A. Furnish and Install, 8-Inch of crushed Shell base, compacted to minimum of 100 LBR below the re-installed boat ramp concrete panels, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is per Ton (TN), installed and accepted.

2.30 Concrete (Steel Reinforced, 5000 PSI)

A. Furnish and Install, Concrete (5000 PSI) with steel reinforcement, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Cubic Yard (CY), installed and accepted.

2.31 Re-Install Exist. Concrete Boat Ramp Panel

A. Re-install existing pre-cast concrete boat ramp panel, as directed in the construction plans and Specification 13000.

B. Unit of measurement is Each (EA), installed and accepted.

2.32 Vinyl Sheet Pile, 5-Inch Profile (Along Ramp Sides)

A. Work Includes

Furnish and Install, Vinyl Sheet Piling (5-Inch Profile), excavation and backfill necessary to install the new vinyl sheet piling along the ramp sides, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is per Square Foot (SF), installed and accepted.

2.33 Precast Concrete Beam, 12-Inch x 16-Inch (Reinforced, 5000 PSI)

A. Furnish and Install, Precast Concrete Beam, 12-Inch x 16-Inch, 5000 PSI concrete with steel reinforcement, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Linear Foot (LF), installed and accepted.

2.34 Clean Fill Material (Min. 100 LBR) (Under Articulating Concrete Block)

A. Furnish and Install, Clean Fill Material, compacted to minimum of 100 LBR below the articulating concrete block, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Cubic Yard (CY), installed and accepted.

2.35 Articulating Concrete Block Mattress (8.5-Inch Thick) including Geotextile Fabric

A. Furnish and Install, Articulating Concrete Block Mattress (8.5-Inch Thick), including but not limited to, Geotextile fabric, anchors, hardware, grout, and the necessary compaction, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

2.36 Aggregate, #57 Stone (For Articulating Concrete Block Mattress)

A. Furnish and Install, Aggregate, #57 Stone, per FDOT Specification, including but not limited to, grading, and compaction, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Cubic Yard (CY), installed and accepted.

2.37 Concrete (Steel Reinforced, 5000 PSI, Tremie Pour)

A. Furnish and Install, Concrete (5000 PSI) with steel reinforcement using the Tremie Pour installation method, as directed in the construction plans and in Specification 13000.

B. Unit of measurement is Cubic Yard (CY), installed and accepted.

2.38 Testing Allowance

Payment under this item shall be made as stipulated in Specifications Section 01120.

PART 3 – Not Used

PART 4 – Not Used

PART 5 BID AS ALTERNATIVE

5.01 Remove, Transport, Deliver Exist. Gravel To County Facility (Alternate Bid Item 2.08)

A. Work Includes:

Removing, transporting, and delivering, all existing gravel, as needed to complete the proposed project as shown on the Construction Plans, to the County address below:

400 Palma Sola Blvd, Bradenton, FL 34209.

The gravel shall be placed neatly in a specific location at the County Facility, as directed by the County's Construction Manager.

B. Unit of measurement is per Square Yard (SY), installed and accepted.

END OF SECTION

SECTION 01310

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 Section Includes

Meetings, construction progress documentation, submittals.

1.02 Related Sections

A. Section 01770 - Contract Closeout

B. Section 01780 - Record Drawings

1.03 Preconstruction Meeting

The Owner will schedule a preconstruction meeting prior to beginning the Work to review shop drawing procedures, submittal requirements, and construction administration requirements (project coordination and communication). The Contractor shall bring to the preconstruction meeting the proposed construction schedule, which will be reviewed with the Owner during the meeting.

1.04 Definitions

A. Shop Drawings - Shop drawings are original drawings, prepared by the Contractor, a subcontractor, supplier, or distributor, which illustrate some portion of the Work; showing fabrication, layout, setting, or erection details. Shop drawings shall be prepared by a qualified detailer and shall be identified by reference to sheet and detail numbers on the Contract Drawings

B. Product Data - Product data are manufacturer's standard schematic drawings and manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Catalog sheets, brochures, etc., shall be clearly marked to identify pertinent materials, products, or models.

C. Samples - Samples are physical examples to illustrate materials, equipment, or workmanship and to establish standards by which work is to be evaluated.

1.05 Submittal Requirements

A. Prior to submission, thoroughly check shop drawings, product data, and samples for completeness and for compliance with the Contract Documents. Verify all field measurements, quantities, dimensions, specified performance criteria, fabrication, shipping, handling, storage, assembly, installation, and safety requirements.

B. Coordinate the submittals with the requirements for other related work.

C. Notify the Engineer, in writing at the time of submission, of deviations in submittals from the requirements of the Contract Documents. The Contractor's responsibility for deviations in submittals from the requirements of the Contract Documents is not relieved by the Engineer's review of submittals, unless the Engineer gives written acceptance of specific deviations.

D. Submit at least six (6) copies of each shop drawing and product data. The specific number of copies required of all submittals will be determined during the preconstruction meeting. Submit the number of samples indicated in the individual Specification Sections.

E. Where a specific product manufacturer and model number is listed in individual specification sections and is proposed by the Contractor to be used, full submittal of product data is not required. In this case, submit in letter format the name of the product, manufacturer, model number, specification section, and name of project. Certify the identified product is proposed to be used in the project.

F. Shop drawings, product data, and samples shall be accompanied by a letter of transmittal referring to the name of the project and to the specification page number and/or Drawing number for identification of each item. Submittals for each type of work shall be numbered consecutively, and the numbering system shall be retained throughout all revisions.

G. Submittals shall bear the Contractor's stamp of approval certifying that they have been checked and indicate appropriate specification section and/or drawing location. Submittals without the Contractor's initialed or signed certification stamp and submittals which, in the Engineer's opinion, are incomplete, contain numerous errors or have not been properly checked, will be returned unchecked by the Engineer for resubmission.

H. Begin no work which requires submittals until return of submittals with Engineer stamp and initials or signature indicating the submittal has been approved.

1.06 Engineer Review of Submittals

A. Engineer’s review and approval of submittals will not extend to means, methods, techniques, sequences, procedures of construction or to safety precautions.

B. The review and approval of a separate item will not indicate approval of the assembly in which the item functions. Engineer’s review and approval of submittals shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents.

C. The Engineer will review submittals with reasonable promptness. The Engineer's review of submittals shall not be construed as a complete check and shall not

relieve the Contractor from responsibility for complete compliance with the Contract requirements.

D. No corrections, changes, or deviations indicated on submittals reviewed by the Engineer shall be considered as a change order.

E. Where review of submittals is required by the Owner or other agencies, the Engineer will forward the appropriate submittal(s) to these parties after Engineer review. Once review of all parties is complete, the submittal(s) will be returned to the Contractor reflecting the review of all parties

F. If the submittal is not satisfactory, one copy of the submitted item will be retained by the Engineer and all other copies returned to the Contractor for appropriate action.

G. In the event a third submittal is required, due to previous submittals of incomplete or incorrect data or not in compliance with the Contract Documents, the Contractor will be charged one-half of the cost incurred by the Engineer for the review of the third submittal. The Contractor shall bear the total cost incurred by the Engineer for all subsequent reviews. The Engineer costs charged to the Contractor will be at the cost plus rate generally charged by the Engineer and will be deducted by the Owner from payments due to the Contractor.

H. Distribution of copies of acceptable submittals will be as mutually determined by the Contractor, Owner, and Engineer on an individual item basis during or following the preconstruction conference.

1.07 Progress Meetings

A. The frequency of progress meetings shall be determined during the preconstruction meeting. As a minimum, progress meetings shall be held once per month during construction.

B. The Contractor and Owner shall attend the progress meetings.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01315

PRECONSTRUCTION VIDEO

PART 1 GENERAL

1.01 Description

A. Provide continuous color audio-DVD recording along the entire length of all proposed work areas prior to construction to serve as a record of pre-construction conditions.

B. Supplement audio video recording with digital color photographs for areas which require details not ascertainable on the DVD.

1.02 Related Requirements

Section 01310 - Administrative Requirements

1.03 Definitions

Construction Area = All areas used for construction of the proposed improvements, temporary construction, stockpile areas, staging and storage areas, and entry and exit points used by equipment, delivery vehicles, service vehicles, and other vehicles used for transport of labor, equipment, and materials to the job site.

1.04 Qualifications

The preconstruction audio-video recording shall be of professional quality that will clearly log an accurate visual description of existing conditions. Any portion of the digital recording that is determined by the Owner or Engineer to be not acceptable in the documentation of the existing condition shall be re-filmed at no additional cost to the Owner.

PART 2 PRODUCTS

2.01 General

The total video recording system and the procedures employed in its use shall be such as to produce a finished product that will fulfill the technical requirements of the project. The digital portion of the recording shall produce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls or any other form of picture imperfection. The audio portion of the recording shall produce the commentary of the camera operator with proper volume, clarity, and be free from distortion. The recording system shall utilize EIA standard video and RGB compatible video.

2.02 Camera

The camera used in the recording system shall be capable of recording in true color and on standard format DVD.

2.03 Recorder

The recording shall be made with a DVD-based DVR. The recorder shall record the color signal with a minimum horizontal resolution of 240, 4:3 lines, aspect ratio, MPEG-2 video, stored at a resolution of 720 x 480 (NTSC). Audio shall be recorded using Dolby Digital (AC-3) minimum.

2.04 Video Disk

The video disk used for the recordings shall be high resolution, extended still frame capable. The video disk shall be new and thus shall not have been used for any previous recording.

2.05 Video Playback Compatibility

The recorded DVD shall be compatible for playback with any TV Standard DVD player.

PART 3 EXECUTION

3.01 General

A. The recordings shall contain coverage of all surface features located within the construction area and extend outward a minimum of 30-ft outside the construction area plus all off road access routes used to reach the construction area. The recording shall include all surface conditions supported by appropriate audio description.

B. The surface features documented in the recordings shall include, but not be limited to, all driveways, sidewalk, curb, gutter, buildings, walls, storage sheds, swales, culverts, headwalls, landscaping, trees, shrubbery, pull boxes, valve boxes, concrete pads, power poles, mailboxes, and fences.

C. The recordings shall also document the existence or nonexistence of any faults, fractures, or defects, and existing man made material such as debris, construction stockpiles, trash, and fuel containers.

D. Each video recording of each DVD shall be a simultaneous recorded audio recording. This audio recording, exclusively containing the commentary of the camera operator, shall assist in viewer orientation and in any needed identification, differentiation, clarification, or objective description of the feature being shown in the video portion of the recording. The audio recording also shall be free from any conversations between the camera operator and any other production technicians.

E. All DVDs shall be permanently labeled and shall be properly identified by video number, Project title, and date(s) of the recording.

F. Each video shall have a log of that video's contents. The log shall describe the various segments of coverage contained on that video in terms of the names of streets or easements, coverage beginning and end, directions of coverage, and video unit counter numbers.

3.02 Recording Schedule

A. The recording shall be performed prior to the placement of any construction materials or equipment on the proposed construction site.

B. The Contractor shall coordinate the video recording with the construction schedule so that those portions of the construction that will be completed first will be recorded first.

C. Off road access routes to and from the construction area shall be recorded prior to mobilizing to work areas.

D. The Contractor shall deliver the video recordings to the Owner upon their completion. Upon delivery of the DVD's, transfer of ownership of those DVD's shall be made to the Owner.

3.03 Visibility

All recordings shall be performed during times of good visibility. No recording shall be done during periods of significant precipitation, mist, or fog. The recording shall only be done when sufficient sunlight is present to properly illuminate the subject, and to produce bright, sharp video recordings of those subjects. No recording shall be performed when more than 10% of the area to be recorded contains debris or obstructions unless otherwise authorized by the Engineer.

3.04 Continuity of Coverage

A. In order to increase the continuity of the coverage, the coverage shall consist of a single, continuous, unedited recording which begins at one end of a particular construction area. However, where coverage is required in areas not accessible by conventional wheeled vehicles and smooth transport of the recording system is not possible, such coverage shall consist of an organized, interrelated sequence of recordings at various positions along that proposed construction area.

B. The average rate of travel during a particular segment of coverage (e.g., coverage of one side of the street) shall be directly proportional to the number, size, and value of the surface features within that construction area's zone of influence.

3.05 Camera Height and Stability

When conventional wheeled vehicles are used as conveyances for the recording system, the distance between the camera lens and the ground shall not be more than 10 feet. The camera shall be firmly mounted, such that transport of the camera during the recording process will not cause any unsteady picture.

3.06 Camera Control

Camera pan, tilt, zoom-in, and zoom-out rates shall be sufficiently controlled such that recorded objects will be clearly viewed during video playback. In addition, all other camera and recording system controls, such as lens, focus, and aperture, video level, pedestal, chroma, white balance, and electrical focus, shall be properly controlled or adjusted to maximize recorded picture quality.

3.07 Viewer Orientation Techniques

The audio and video portions of the recording shall maintain viewer orientation. To this end, overall establishing views and visual displays of all visible house and building addresses shall be utilized. In easements where the proposed construction location will not be readily apparent in the recorded video, highly visible yellow flags shall be placed in such a fashion as to clearly indicate the proposed centerline of construction.

3.08 Areas to be Video Recorded

A. When video recording on private property, the Contractor shall give the Owner sufficient prior notice of such entry so that property owners may be advised of, and their permission obtained for, the Work.

B. All video recording shall be done during regular business hours, unless otherwise specified by the private property owner or the Engineer. The Contractor shall enter and leave private property in a professional and orderly, workmanlike manner.

END OF SECTION

SECTION 01320

PROJECT COMPLETION SCHEDULE

PART 1 GENERAL

1.01 Section Includes

Project completion scheduling

1.02 Submittals

A. Prior to construction, prepare a schedule showing all major activities needed to complete project. Include major material and equipment order and delivery times. Submit to Owner no later than the date of the preconstruction conference.

B. Schedule to utilize Critical Path Method formatted by establishing a precedence diagram which is time scaled. Include on schedule activity start dates, stop dates, and duration; critical path; float; delivery schedules. Include submittal dates and durations for components with extended lead times in schedule.

C. Include on the schedule a minimum float of 1 day every 3 weeks during construction.

D. Project substantial and final completion dates shown on schedule shall be same as or earlier than the contractual dates.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 Monitoring and Updating of Schedule

A. Float shown on the schedule belongs to the project.

B. Progress data shall be accumulated to update the schedule on a monthly basis, prior to submittal of the application for payment. Progress data shall include:

1. Activities started
2. Activities completed.
3. Predicted activity starts
4. Predicted activity completions
5. Changes in original duration for specific activities
6. Changes in activity sequences
7. Percent complete on activities

C. Update of schedule to include effect of the progress projected for the next two (2) reporting periods.

END OF SECTION

SECTION 01410

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 Section Includes

Regulatory requirements, project permits

1.02 Requirements of Regulatory Agencies

A. All piping installed within the right-of-way of any city, county, state, or federal highway or railroad shall be in accordance with a permit to construct issued by the controlling agency and obtained by the Owner. In no case shall an open trench be constructed within a railroad right-of-way unless otherwise indicated.

B. Whenever the Drawings and Specifications conflict with the requirements of the permit, then the requirements of the permit shall govern and the cost of abiding by the provisions of the permit shall be considered incidental to the Contract.

C. All electrical apparatus and wiring pertaining to a piece of equipment or an appliance furnished and installed under this Contract shall comply with the National Electrical Code and shall be listed by Underwriters Laboratories or bear the approval of a recognized Testing Laboratory approved by the Engineer.

D. All construction projects 1 or more acres in size that discharge to offsite areas are required to abide by the provisions of the National Pollution Discharge Elimination System (NPDES) General Permit.

1.04 Project Permits

A. The following permits have been obtained for the construction of the project, and are contained in the Appendix of the Project Manual:

1. Southwest Florida Water Management District Environmental Resource Permit No.685278 / 43034511.003, dated November 7th, 2013.

B. The Contractor shall review and become familiar with all permits for the Project, complete with all conditions, attachments, exhibits and permit modifications. A copy of all permits for the Project shall be maintained by the Contractor at the project site, and shall be available for review upon request.

C. The Contractor shall be fully responsible to abide by all provisions of the permits. The Contractor is responsible for the selection, implementation and operation of all measures required by the permits, including the maintenance of said measures as necessary during construction. No additional compensation will be allowed for any work associated with permit requirements.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01415

STORMWATER POLLUTION PREVENTION / NPDES REQUIREMENTS

PART 1 GENERAL

1.01 Section Includes

Stormwater Pollution Prevention Plan requirements and recommendations under the NPDES program for construction projects located in Florida.

1.02 Purpose

The purpose of this section is to outline minimum requirements for stormwater pollution prevention as required under the NPDES program. There may be more stringent local government or Owner requirements for Erosion and Sediment Control, which would be located in the Specifications or on the Drawings. The more stringent requirement governs.

1.03 Related Sections

A. Section 01410 – Regulatory Requirements

B. Section 02370 – Erosion and Sediment Control

1.04 Abbreviations

A. NPDES - National Pollution Discharge Elimination System

B. SWPPP - Stormwater Pollution Prevention Plan

C. NOI - Notice of Intent

D. NOT - Notice of Termination

1.05 Definitions

The term “NPDES Generic Permit” means the State of Florida Department of Environmental Protection (FDEP) Generic Permit For Stormwater Discharge from Large and Small Construction Activities.

1.06 Construction Projects Requiring Compliance with NPDES Generic Permit

A. All projects 1 or more acres in size that discharge to offsite areas.

B. Smaller projects that are in the same construction corridor as larger construction projects where the larger project is 1 or more acre in size and is required to

comply with the NPDES Generic Permit. In this case, even if the smaller project is less than 1 acre in size, the smaller project must comply with the NPDES Generic Permit.

1.07 General Requirements

A. Construction of this project is required to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharge from Small and Large Construction Activities.

B. In order to meet NPDES requirements, the Contractor is responsible for preparing a Stormwater Pollution Prevention Plan (SWPPP), implementing, inspecting, maintaining, and reporting on all elements of the SWPPP, completing and submitting the required Notice of Intent (NOI) and Notice of Termination (NOT) forms as the Operator, and paying all associated fees. Copies of the NPDES Generic Permit, NOI, and NOT forms, and permit application fee information are available for download at dep.state.fl.us/water/stormwater/npdes/

C. The Contractor must include in the SWPPP the names and addresses of all subcontractors working on this project who will be involved with the major construction activities that disturb site soil or who implement a pollutant control measure. These subcontractors, in addition to the Contractor, shall comply with the requirements of the NPDES Generic Permit and any local governing agency having jurisdiction concerning erosion and sedimentation control, and shall sign a copy of the certification statement in the SWPPP.

D. The SWPPP shall describe and ensure the implementation of best management practices which will be used to reduce the pollutants in stormwater discharge associated with construction activity and to assure compliance with the terms and conditions of the NPDES Generic Permit. The erosion and sediment control measures shown on these Drawings are the minimum required and are to be installed prior to construction. The Contractor is responsible for complying with all applicable rules, regulations and water quality standards and may need to install additional controls to meet these requirements.

1.08 SWPPP Implementation and Submittal Requirements

A. The SWPPP shall be completed prior to submittal of the NOI and shall include the elements necessary to comply with the NPDES Generic Permit for construction activities administered by the FDEP and shall also include all local governing agency and Owner requirements. There may be more stringent local government or Owner requirements for Erosion and Sediment Control, which would be located in the Specifications or elsewhere on these Drawings.

B. The Contractor must file the NOI with FDEP and the Owner at least two (2) business days prior to the start of construction. The Contractor shall also submit a copy of the NOI to the MS4 operator for all projects that discharge stormwater associated with construction activity to a municipal separate stormwater system

(MS4). A copy of the NOI and a description of the project must be posted in a prominent place for public viewing at the construction site.

C. The SWPPP must be implemented at the start of construction. A complete copy of the SWPPP, including copies of all inspection reports, plan revisions, etc., must be retained at the project site at all times during working hours and kept in the permanent project records for at least three years following submission of the NOT.

D. Final Stabilization means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover (evenly distributed, without large bare areas) with a density of at least 70% for all unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as geotextiles) have been employed. Once construction is completed and final stabilization has been achieved, the Contractor must file the NOT to FDEP, the Owner, and the MS4 operator within 14 days.

1.09 Inspections

A. It is the responsibility of the Contractor to assure the adequacy of site pollutant discharge controls. Between the time the SWPPP is implemented and final site stabilization is achieved, all disturbed areas and pollutant controls must be inspected at least once every seven calendar days and within 24 hours following a rainfall of 0.5 inches or greater. The inspections are to be conducted by the Contractor's qualified designated representative.

B. All inspections shall be documented in an inspection report that summarizes the scope of the inspection, the names and qualifications of personnel making the inspection; the date of the inspection; rainfall data; major observations relating to the implementation of the SWPPP, and actions taken in order to ensure compliance with NPDES requirements and the SWPPP. Such reports shall identify any incidents of non-compliance and actions taken to bring the project into compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the NPDES requirements and the SWPPP. Each inspection report shall be signed and certified by each inspector.

1.10 Updating and Modifying the SWPPP

A. Based on inspection results, any modifications necessary to increase effectiveness of the SWPPP to an acceptable level must be made within seven calendar days of the inspection.

B. The SWPPP must be updated each time there are significant modifications to the pollutant prevention system or a change of contractors working on the project who disturbs site soil. For construction activities where the operator changes, the new operator shall file an NOI for coverage under this permit at least two (2)

days before assuming control of the project and the previous operator shall file an NOT to terminate permit coverage in accordance with the NPDES Generic Permit. Amendments to the plan shall be prepared, signed, dated, and kept as attachments to the original SWPPP.

1.11 Minimum SWPPP Provisions

A. Each SWPPP shall provide a description of pollutant sources and other information including a description of the nature of the construction activity; the intended sequence of major activities which disturb soils for major portions of the site; estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other construction activities; existing data describing the soil or the quality of any discharge from the site and an estimate of the size of the drainage area for each discharge point; a site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, an outline of areas which may not be disturbed, the location of major structural and nonstructural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters, wetlands, and locations where stormwater is discharged to a surface water or MS4; and the latitude and longitude of each discharge point and the name of the receiving water(s) for each discharge point.

B. The following site data is provided to the Contractor for use in preparing the SWPPP and completing the NOI:

Total Site Area:	7.5 Ac
Total Area Impacted by Construction:	2.5 Ac
Existing Site Soils:	Sandy
Drainage Area Contributing to Each Discharge Point:	1.25 Ac
Latitude and Longitude of Project Location:	27.43 Lat, -82.48 Long
MS4 Operator Name:	Manatee County
Receiving Waters:	Ward Lake

1.12 Minimum Erosion and Sediment Control Construction Requirements

A. Stabilize all construction site exits with coarse aggregate or other approved materials, in accordance with details on the Drawings. Other minimum construction requirements that need to be implemented in order to comply with the NPDES Generic permit include installation of sediment barriers down slope from construction activities that disturb site soil; constructing rock surface temporary parking areas; installation of sediment barriers down slope prior to clearing and grubbing; installation of sediment barriers on the down slope side of utility construction and soil stockpiles; and the installation of sediment barriers on the down slope side of grading activities.

B. Stabilization measures shall be initiated as soon as practicable, but in no case more than 7 days, in portions of the site where construction activities have temporarily or permanently ceased.

C. The Owner has the authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, trenching, borrow and embankment operations. The Owner also has authority to direct Contractor to provide immediate permanent or temporary erosion and sediment control measures.

D. The Contractor shall respond to erosion and sediment control maintenance requirements or implement additional measures to control erosion ordered by Owner or governing authorities within 48 hours or sooner if required at no additional cost to the Owner.

E. The Contractor shall incorporate permanent erosion control features into project at earliest practical time to minimize need for temporary controls.

F. For drainage basins with 10 or more disturbed acres at one time, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage basins with 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls is not attainable, a combination of smaller sediment basins and/or sediment traps and other BMPs should be used. At a minimum, silt fences, or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.

G. Water trucks shall be used as needed during construction to reduce dust generated on the site. Dust control must be provided by the Contractor and shall be in compliance with applicable local and state dust control regulations.

1.13 Maintenance Requirements

A. Maintain all erosion and sediment control measures throughout construction. Repair or replace all damaged sediment barriers. Remove accumulated sediment along all silt fences where the height of the sediment exceeds one-third of the height of the silt fence. Inspect all temporary and permanent grassing areas and re-grass where there are bare spots, washouts, or unhealthy growth.

B. At the completion of construction, once final stabilization has been achieved, clean all accumulated sediment from all storm structures, pipelines, and stormwater ponds. Remove all temporary sediment controls upon receipt of authorization to remove has been received from the Owner or Engineer. Note

that this may not occur for some time after construction activities have been completed, in order to ensure their removal has not occurred until final stabilization has been achieved to the satisfaction of the Owner and Engineer.

1.14 Stormwater Discharge Provisions

A. Non-stormwater components of site discharge must be clean water. Water used for construction, which discharges from the site, must originate from a public water supply or private well approved by the governing local agency. Water used for construction that does not originate from an approved public supply must not discharge from the site. Allowable non-stormwater discharges include discharges from fire fighting activities; Fire hydrant flushing; Water used to wash vehicles or control dust; Water flowing from potable sources and water line flushing; Irrigation drainage; and runoff from pavement wash down where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents have not been used.

B. Solid materials, including building materials, are not allowed to be discharged from the site with stormwater. All solid waste, including disposable materials incidental to the major construction activities, must be collected and placed in containers. The containers shall be emptied periodically by a contract trash disposal service and hauled away from the site.

C. Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site. As an example, special care must be exercised during equipment fueling and servicing operations. If a spill occurs, it must be contained and disposed so that it will not flow from the site or enter groundwater, even if this requires removal, treatment, and disposal of soil in accordance with local and state regulations.

D. All personnel involved with construction activities must comply with state and local sanitary or septic system regulations. Temporary sanitary facilities shall be provided at the site throughout the construction phase for use by all construction personnel and shall be serviced by a commercial operator at least once a week.

E. Discharges resulting from groundwater dewatering activities at construction sites are permitted provided the groundwater is free of sediments, is not contaminated, and dewatering occurs in accordance with state and local governing agency regulations.

F. Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed at an approved solid waste or chemical disposal facility.

G. The discharge of hazardous substances or oil in the stormwater discharge(s) from a facility or activity shall be prevented. This does not relieve the operator of the reporting requirements of 40 CFR part 117 and 40 CFR part 302. The operator shall submit within 14 calendar days of knowledge of the release a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, and remedial steps to be taken. The SWPPP must be modified within 14 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the plan must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

CONTRACTOR AND SUBCONTRACTOR CERTIFICATION

The Contractor and subcontractor(s) that will implement the pollutant control measures described in the SWPPP must be identified below. Each must sign a statement certifying that they understand the NPDES Generic permit authorizing stormwater discharges during construction. These statements must be maintained in the SWPPP file on site.

Contractor implementing the SWPPP:

_____

Business Name

_____

Business Address

_____

_____

_____

Business Telephone Number

CERTIFICATION: (Note signature requirements in Part VI.G. of the NPDES Generic Permit.)

> **"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."**

_____

Signature Date

_____

Printed Name

CONTRACTOR
CERTIFICATION

The SWPPP has been prepared by:

Business Name

Business Address

Business Telephone Number

The Contractor who has prepared the SWPPP shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature Date

Printed Name

PART 2 PRODUCTS – Not Used

PART 3 EXECUTION – Not Used

END OF SECTION

SECTION 01420

REFERENCES

PART 1 GENERAL

1.01 Section Includes

Referenced standards and abbreviations

1.02 Referenced Standards

A. Any reference to published specifications or standards of any organization or association shall comply with the requirements of the specification or standard which is current on the date of Advertisement for Bids. In case of a conflict between the referenced specifications or standards, the one having the more stringent requirements shall govern.

B. In case of conflict between the referenced specifications or standards and the Contract Documents, the Contract Documents shall govern.

1.03 Abbreviations

The following are definitions of abbreviations used within the Project Manual:

AA	Aluminum Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ANSI	American National Standard Institute
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
CRSI	Concrete Reinforcing Steel Institute
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FS	Florida Statutes
NEC	National Electrical Code
NECA	National Electrical Contractors' Association
NEMA	National Electrical Manufacturers Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration
PS	United States Products Standards
SSPC	Structural Steel Painting Council
UL	Underwriter's Laboratories, Inc.
FDOT Specification	FDOT Standard Specification for Road and Bridge Construction, latest edition

FDOT Index	FDOT Roadway and Traffic Design Standards, latest edition

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01425

FDOT STANDARDS REFERENCE

PART 1 GENERAL

1.01 Section Includes

Instruction on the use and applicability of FDOT standards on the project

1.02 Requirements

A. The Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, latest non-metric edition ("Standard Specifications"), and Roadway Traffic and Design Standards, latest non-metric edition ("Design Standards") are referenced herein as source documents for applicable technical specifications and construction details to be used in the construction of this project. The term “latest edition” refers to the latest edition implemented by FDOT and includes all FDOT implemented supplements.

B. Method of Measurement and Basis of Payment is to be in accordance with these Contract Documents rather than the Florida Department of Transportation Standard Specifications. Any item which is detailed in the Plans and for which material types, sizes and quality are also called out, the "Design Standards" shall take preference over the plan detail unless otherwise directed by the Engineer.

C. Where the FDOT Standard Specifications use the reference "Department", replace "Department" with "Owner", except for when such reference is to Department Standards and evaluation criteria.

D. The Design Standards are referenced herein as a source document for applicable construction items and details called for in the plans for which a specific plan detail is not provided. The Contractor shall construct the items called for in the plans in accordance with the "Design Standards" unless otherwise defined or detailed in the plans or as directed by the Owner, Engineer or authorized representative.

E. In case of conflict, the Project Manual takes precedence over FDOT specifications for a particular construction requirement.

F. Copies of the latest implemented edition and implemented supplements of the Florida Department of Transportation Standard Specifications may be purchased from FDOT for a nominal charge. Copies are also for download via the internet at “www.dot.state.fl.us/specificationsoffice”.

G. The Contractor shall inform the Owner and Engineer in writing of any specification that the Contractor feels is ambiguous or conflicting with other plan

notes and details prior to the construction of the associated item. The Engineer will determine which information is to be used for construction. The Contractor is

H. responsible for the removal and replacement of any item improperly constructed resulting from a misinterpretation of the specifications at no additional cost to the Owner.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 General

The Contractor shall use Divisions Two (II) and Three (III) of the FDOT Specifications as they relate to methods of construction and material types and quality for the appropriate construction items contained within this project.

END OF SECTION

SECTION 01450

QUALITY CONTROL

PART 1 GENERAL

1.01 Section Includes

Quality control, quality assurance

1.02 Quality Control

A. It is the Contractor's responsibility to perform all work to a degree and in a manner that satisfies and complies with the Project requirements. In order to fulfill this responsibility, the Contractor is required to have an approved Quality Control Program, including testing, as part of his Contract work in accordance with the Contract Documents and to submit details of his Program to the Engineer for review and approval prior to commencing any construction operations. The submittal shall include detailed information on locations and number of all tests, etc., that will be necessary for the Contractor to make his own determination that the work is being performed in compliance with the Project requirements.

B. As part of the Contractor's Quality Control Program included as part of his work, the Contractor shall employ and pay for an independent, approved soils testing laboratory to perform testing services outlined in these Contract Documents.

C. The Contractor's Quality Control Program shall include, but not be limited to, the following in addition to the type and frequency of tests as required by the technical specifications:

1. Piping and structural excavation, bedding and backfill materials and density quality control testing

2. Determination of compactive effort needed for compliance with the density requirements.

3. Portland cement concrete and asphalt paving quality control testing including design mix review, materials, field slump and air content, and field and lab cured strength samples and testing.

D. In addition to Quality Control Testing, the Contractor shall be responsible for required testing or approvals for any work (or any part thereof) if laws or regulations of any public body having jurisdiction specifically require testing, inspections or approval. The Contractor shall pay all costs in connection therewith and shall furnish the Engineer the required certificates of inspection, testing or approval. The Contractor shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with

Owner or Engineer acceptance of a supplier of materials or equipment proposed to be incorporated into the work.

E. Any design or testing laboratory utilized by the Contractor shall be an independent laboratory acceptable to the Owner and the Engineer, approved in writing, and complying with the latest edition of the "Recommended Requirements for Independent Laboratory Qualification", published by the American Council of Independent Laboratories.

F. Testing laboratories, whether provided by the Owner or the Contractor, shall promptly notify the Engineer and the Contractor of irregularities or deficiencies of work that are observed during performance of services. Laboratories shall submit two (2) copies of all reports directly to the Engineer and two (2) copies to the Contractor.

1.03 Quality Assurance

A. In addition to the services provided by the laboratory paid for by the Contractor as a part of his work, the Owner, at his sole discretion, may employ an additional independent soils laboratory as part of Owner's Quality Assurance Program to verify that the work meets the requirements of the Contract Documents. The Owner furnished Quality Assurance testing may include the type and frequency of tests as required by the technical specifications. The Owner reserves the right to have additional tests made beyond those specified in the Contract Documents. The Contractor shall cooperate with the Owner and make the work and samples available for Owner testing at no additional cost in case the Owner chooses to have additional Owner furnished testing performed. It is the sole responsibility of the Contractor to see that his work meets all provisions of the Contract Documents.

B. The Contractor shall cooperate with the soils laboratory personnel and provide access to the work to be tested. The Contractor shall notify the Engineer and Owner's testing laboratory sufficiently in advance of operations to allow scheduling of tests. The Contractor shall furnish casual labor and facilities to obtain and handle samples at the site and to store and cure test samples as required.

1.04 Testing of Materials

A. Unless otherwise specified, all materials shall be sampled and tested in accordance with the latest published standard methods of ASTM in effect at the time bids are received. If no ASTM Standards apply, applicable standard methods of the Federal Government or of other recognized agencies shall be used.

B. Test of materials shall be made by a representative of the Contractor, unless otherwise provided. Testing of equipment shall be the responsibility of the Contractor or an authorized manufacturer's representative. All test results shall be furnished to the Engineer in writing. The Contractor shall provide facilities

required to collect and forward samples. The Contractor shall furnish the required samples without charge.

C. The Contractor shall not make use of or incorporate in the work, the materials represented by the sample until tests have been made and the material found to be in accordance with the requirements of the Specifications.

D. Materials to be tested and the applicable test procedure shall be as outlined in the individual sections of these Specifications.

1.05 Source and Quality of Materials and Equipment

A. The source of materials to be used shall be in accordance with the Contract Documents and as approved by the Engineer before delivery. The approval of the source of any material shall continue as long as the material conforms to the Specifications.

B. All material not conforming to the requirements of the Specifications shall be considered as defective and shall be removed from the work. If in place, faulty materials shall be removed by the Contractor at his expense and replaced with acceptable material unless permitted otherwise by the Owner. No defective materials that have been subsequently corrected shall be reused until approval has been given.

C. Upon failure of the Contractor to comply immediately with any order of the Engineer to remove and replace defective material, the Owner shall have authority to remove and replace defective materials, and to deduct the cost of removal and replacement from any monies due or to become due to the Contractor. Failure to reject any defective materials or work at the time of installation shall in no way prevent later rejection when such defects are discovered, nor obligate the Owner to final acceptance.

1.06 Additional Testing

In addition to soils laboratory and materials testing, the Contractor shall perform other testing called for in the Contract Documents including but not limited to piping, pressure, leakage, infiltration and exfiltration, as appropriate.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01520

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 Section Includes

Construction facilities, controls, temporary utilities, project identification signs, field office and storage sheds, storage of materials and equipment.

1.02 Related Sections

Section 01550 - Maintenance of Traffic

1.03 Submittals

A. Prior to installation of construction facilities and temporary controls, submit the following items for review and approval:

B. Project identification sign - provide proposed text, layout, and sizing of all required signs

1.04 Construction Facilities and Temporary Controls

All construction facilities and temporary controls remain the property of the Contractor establishing them and shall be maintained in a safe and useful condition until removed from the construction site.

1.05 Removal of Temporary Construction

Remove the various temporary facilities, services, and controls and legally dispose of them as soon as the Engineer deems permissible. Portions of the site used for temporary facilities shall be properly reconditioned and restored to a condition acceptable to the Engineer.

1.06 Transportation and Handling

A. Manufactured materials and products shall be delivered to the project site as needed for installation, undamaged, in original packages, containers, or bundles, as packaged by the manufacturer with manufacturer's name, brand, seals, and labels intact.

B. Materials other than those designated within the Specifications or approved by the Engineer shall not be delivered to the project site.

1.07 Storage and Protection

A. The Contractor shall be responsible for protection and preservation of all materials until final acceptance of the Project. Any damage to work prior to acceptance shall be remedied by the Contractor at no additional cost to the Owner.

B. Provide temporary weather-tight enclosures to protect work from damage by the elements, and protect finished surfaces to prevent any damage resulting from the work of any trade.

1.08 Security

A. Contractor shall, at all times, be responsible for the security required in all project areas and shall provide all reasonable protection to prevent damage, injury or loss to employees on the Work and all other persons who may be affected thereby; all the work materials and equipment to be incorporated therein, whether in storage on or off the project site, under the care, custody or control of the Contractor or any subcontractors; and any other property under the care, custody or control of the Contractor or any subcontractors. Contractor shall be responsible for such security and safety until final acceptance of the Work.

B. Full time watchmen will not be specifically required as a part of the Contract, but the Contractor shall provide inspection of work area daily and shall take whatever measures are necessary to protect the safety of the public, workmen, and materials, and provide for the security of the site, both day and night.

PART 2 PRODUCTS

2.01 Temporary Electric Service

A. Furnish and maintain temporary lighting and power required to perform the Work. Include in the Bid all costs for providing temporary electrical service.

B. Temporary service shall include protective enclosures, branch wiring, outlets, lamps, and grounding as required by NEC and Local Electrical Codes.

2.02 Temporary Heating

The Contractor shall furnish fuel or power and provide and operate all temporary heating units. Heat shall be provided as necessary to perform the Work. Temporary heating units shall be adequately vented and approved devices which will not damage finished areas. The Contractor shall also furnish all tarpaulins and temporary enclosures necessary to provide this protection.

2.03 Temporary Ventilation

The Contractor shall provide, operate, and furnish power for temporary ventilation required for the proper installation and curing of materials and safety of workmen.

2.04 Temporary Water

A. Provide a temporary water distribution system for all construction purposes and pay for all water used. Obtain temporary meters from the local water utility as required and pay all associated fees.

B. Furnish potable drinking water in suitable dispensers and with cups for use of all employees at the job.

C. Provide all temporary piping, hoses, etc., required to transport water to the point of usage by all trades.

2.05 Temporary Sanitary Facilities

Provide temporary toilet facilities as required. Maintain these during the entire period of construction under this Contract for the use of all construction personnel on the job. Enough chemical toilets shall be provided to conveniently serve the needs of all personnel. Chemical toilets and their maintenance shall meet the requirements of State and local health regulations and ordinances.

2.06 Temporary Pumping and Site Drainage

Keep the site free from water at all times to permit continuous access and to prevent damage to the work.

2.07 Material Hoists and Cranes

A. Provide material hoists required for normal use by all trades and employ skilled hoist operators. Provide all necessary guards, signals, safety devices, etc., required for safe hoist operation. The construction and operation of material hoists shall be in accordance with the applicable ANSI Standards, the "Manual Code of Accident Prevention in Construction" of the Associated General Contractors of America, OSHA, and of other Federal, State, and municipal codes or ordinances. The Contractor shall prohibit the use of hoists for transporting personnel. Hoists shall be located to avoid risk of damage to completed work.

B. Special rigging and hoisting facilities shall be provided by each trade requiring their use.

2.08 Temporary Runways, Scaffolding, and Ladders

A. Provide temporary ladders, ramps, and runways as required for performance and inspection of the work. The above facilities shall be constructed and maintained in accordance with the applicable Federal, State, and Municipal regulations and codes.

B. Furnish, erect, and maintain all scaffolding required for this work. Scaffolding shall be constructed and maintained in accordance with applicable State and

Federal laws and local ordinances. Scaffolding shall be promptly removed after serving its purpose.

C. The structural strength and safety of scaffolding, runways, covers, railings, ladders, stairs, etc., and compliance with law shall be the sole responsibility of the Contractor.

2.09 Temporary Chutes

No materials shall be dropped from structures except through enclosed wooden or metal chutes which shall be provided and maintained as required for the performance of the work by the various trades.

2.10 Project Identification Sign

A. As soon as practicable after award of contract, but no later than twenty (20) days after the Notice to Proceed is issued, furnish and erect one sign for the project, placed at a location determined by Owner. The sign shall be erected when the work is started and shall be suitably supported, braced, and maintained, and shall be removed upon completion of the project or when directed by the Owner.

B. Submit to the Owner for approval the proposed sign lettering (fonts, size) and text prior to fabricating the signs.

C. No other signs will be permitted.

2.11 Contractor's Field Office and Storage Sheds

The Contractor shall provide field office and storage sheds that it determines are required for the performance of the Work and protection of materials and equipment.

2.12 Owner / Engineer Field Office - N/A

PART 3 EXECUTION

3.01 Access Roads and Parking Areas

A. Construct temporary roadways and parking areas within the site as required to provide proper access to the site for delivery of material and equipment of all trades. It is up the Contractor to determine whether it needs to construct any temporary roads or parking areas to accommodate its construction (including delivery of materials, equipment, and manpower to the site).

B. At completion of the work or when directed by the Engineer, surfacing and sub-base material used for the temporary road and parking areas shall be removed, unless otherwise approved by the Engineer.

END OF SECTION

SECTION 01550

MAINTENANCE OF TRAFFIC

PART 1 GENERAL

1.01 Section Includes

Traffic and dust control

1.02 Related Sections

Section 01520 - Temporary Facilities and Controls

1.03 Definitions

The term "Maintenance of Traffic" as used herein, shall include all facilities, devices, traffic control personnel, and operations as are required for the safety and convenience of the public as well as for minimizing public nuisance.

1.04 References

A. Florida Department of Transportation Roadway and Traffic Design Standards

B. Manual on Uniform Traffic Control Devices

1.05 Submittals

Provide traffic control plan. Include proposed signs, markings, barricades, detour routes, sequencing, and phasing for vehicular and pedestrian traffic routes during construction.

1.06 Qualifications

Provide at least one employee in the field (superintendent or foreman) who holds an IMSA (International Municipal Signal Association) Work Zone Traffic Control Safety Certification. This certified employee shall be on the job site when the traffic control measures are installed and when work is occurring within the zones.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 Site Preparation

A. Contact property owners affected by construction. Coordinate temporary driveway closures and sequencing. Maintain access for all property owners during construction.

B. Remove existing pavement markings and remove or relocate existing signs as necessary to implement traffic control.

C. Install signs, markings, barricades in accordance with approved traffic control plan.

D. Implement lane closures in accordance with the parameters shown on the drawings and in the approved traffic control plan.

E. Perform work in a manner that will cause minimum interruptions to traffic.

F. Place excavated material outside roadway clear zones, and away from pedestrian facilities.

G. All trenches shall be backfilled each day prior to the completion of construction activities.

H. Where special hazards exist, install traffic control through the use of lighted concrete barriers, barricades, or other such traffic control facilities as needed to ensure public safety.

3.02 Maintenance

A. Inspect traffic control devices on a daily basis to ensure placement of barricades and function of lights is maintained throughout construction.

B. Wet unstabilized areas as necessary to control dust.

C. Adjust traffic control devices as required under emergency conditions.

END OF SECTION

SECTION 01630

PRODUCT SELECTION AND SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 Section Includes

Product selection and substitution procedures

1.02 Product Selection

A. Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, new at the time of installation.

B. To the fullest extent possible, provide products of the same kind from a single source.

C. Compatibility among product options is required. Where more than one choice is available as options during product selection, select an option which is compatible with other products and materials already selected.

D. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.

E. Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

F. Where Contract Documents are at variance with specific manufacturer's details and installation procedures, contact Engineer for resolution prior to start of work.

G. For products specified by naming a number of products and manufacturers and "or equal", select any of the products and manufacturers listed, or propose a substitution. If the Contractor wishes to propose a substitution, the Contractor must submit a request for product substitution for approval by the Engineer and Owner.

H. For products specified naming only one product and manufacturer or a number of products and manufacturers without the "or equal" allowance, no substitutes are allowed.

I. For products specified by reference standards only, the Contractor may provide any product complying with the specified standard.

J. For products specified by performance and descriptive methods, without naming manufacturer's products, the Contractor may provide the products of any

manufacturer complying with the Contract Documents, subject to the review of product data and concurrence by the Engineer as specified herein.

1.03 Substitutions

A. The intent of these Specifications is to provide the OWNER with a quality facility without discouraging competitive bidding. Substitutions may be submitted and will be evaluated as specified herein.

B. If the Contractor wishes to provide a product other than one named in the Specifications, he shall submit sufficient information to the Engineer for evaluation and determination of acceptability of the product prior to Bid Opening.

C. The Contractor is responsible for obtaining information required by the Engineer for the evaluation of products. The Engineer is responsible for determination of the equality of products, and his decision shall be final, except as otherwise provided by law and funding agency regulations.

D. Substitution requests can be made after Bid Opening when:

1. A specified product is no longer available
2. The product cannot be delivered by the manufacturer in a timely manner
3. The product is found to be incompatible with other specified products
4. Proposed substitutions will yield a cost savings to the Owner

E. The Contractor shall be responsible for the constructability and performance of any substitute materials requested by the Contractor and approved by the Engineer or by the Owner. The Contractor shall ensure that any approved substitute materials will perform to the intent of the specified materials, at no additional cost or time to the Owner, including the costs of installation, testing, repair, or correction of the utility system due to the performance or lack thereof of the substitute material.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01770

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 Section Includes

Substantial completion requirements, clean-up, final completion requirements, closeout submittals

1.02 Clean-Up Operations

A. The entire Project site shall be thoroughly cleaned at the completion of the Work.

B. Clean all installed pipelines, structures, sidewalks, paved areas, accumulated silt in ponds, plus all adjacent areas affected by construction, as directed by the Owner or jurisdictional agency. Equipment to clean these surfaces shall be subject to approval by the Owner.

1.03 Substantial Completion Requirements

A. Complete the following before requesting the inspection for certification of substantial completion.

1. Submit Record Drawings.
2. Deliver tools, spare parts, extra stocks of material and similar physical items to the Owner.
3. Complete required cleaning and testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change over and remove temporary facilities and services from the project site, along with construction tools and facilities, mock-ups, and similar elements.
4. Complete final cleaning up requirements, including touch-up painting of marred surfaces.
5. Touch-up and otherwise repair and restore marred exposed finishes.

B. Work is not substantially complete until regulatory agency letters of clearance for placing systems into service are received by the Owner.

1.04 Closeout Submittals

A. At the Completion of all Work, provide the following to the Owner:

1. Executed Certificates of Substantial Completion and Final Completion
2. Final Record Drawings
3. Manufacturer operation and maintenance instructions

4. Submittal of manufacturers' guarantees, warranties, bonds, and letters of coverage extending beyond the time limitations of the Contractor's guarantee
5. Material and Workmanship Bond
6. Delivery of any salvaged or borrowed materials or equipment to the Owner
7. Waivers of lien from Contractor plus all Subcontractors and Suppliers
8. Checklist indicating satisfactory completion of all unfinished items from the final inspection
9. Consent of Surety to Final Payment
10. Stormwater NPDES Notice of Termination

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 01780

RECORD DRAWINGS

PART 1 GENERAL

1.01 Section Includes

Record Drawing requirements including format requirements and submittal procedures.

1.02 General Requirements

A. As the Work progresses, the Contractor shall be responsible for recording information on the approved Contract Documents concurrently with construction progress.

B. Mark on the Contract Drawings all changes in direction and location of structure, piping, equipment, electrical, and mechanical work.

C. If requested, mark on the Specifications the manufacturer, trade name, catalog, and supplier of each product actually installed, and mark changes made by Change Order or Field Order.

D. All Record Drawings shall be prepared by the Contractor in ACAD format using construction plan sheets provided by the Engineer. As-built information shall be field verified, measured, added to the ACAD files of the construction plan sheets provided by the Engineer, and certified, signed and sealed by the Contractor's licensed Surveyor who will be responsible for the accuracy of all dimensions and elevations.

E. Record Drawings shall clearly show all field changes of dimension and detail including changes made by field order or by change order.

F. The X, Y and Z location based on the coordinate system Florida East Zone State Plane Coordinate Feet NAD 83, of all valves (center of pipe) and valve boxes (grade), hydrants (grade), blow offs (grade), sample points (grade) and meter boxes (grade) etc. shall be clearly shown. Acceptable position accuracy shall be sub-meter or better for compatibility with Global Positioning System (GPS) equipment. The vertical datum used shall be NAVD 88 unless otherwise shown on the construction plans.

G. All water valves, hydrants, and blowoffs shall be horizontally referenced from at least two and preferably three permanent points.

H. The as-built information shown on the Record Drawings is to include, but not be limited to, the following:

1. Stormwater control structure dimensions and elevations, including all weirs, slots, orifices, grates, flumes, and skimmers.
2. Stormwater conveyance systems including dimensions, elevations, contours, and cross sections.
3. Horizontal locations and vertical elevations of all utility valves, fittings, connection points, etc.
4. Vertical elevations of all pipelines at crossings of potable water mains (whether the water main is existing or new) in order to document that the minimum required vertical separation has been met.
5. Horizontal offsets from adjacent potable water mains (whether the water main is existing or new) in order to document that the minimum required horizontal separation has been met.
6. Pavement width and elevations at the centerline and edge of pavement every 20 feet plus at all changes in longitudinal slope, cross slope, inlet locations, and at all driveway and street intersections. For parking lots, record centerline and edge of pavement elevations along all drive aisles and islands.
7. All parking areas and sidewalk ramps designated for handicap access shall contain horizontal and vertical measurements in order to verify required widths and slopes have been met.
8. All boat ramp elevations, finish concrete curbing elevations, vinyl sheet piling elevations and lengths, articulated concrete block mattress widths and elevations,
9. The location of all new pull boxes.
10. Horizontal and vertical data for any construction that deviates from the approved engineering drawings.
11. Where the plans contain specific horizontal location data, such as station and offset, the as-built drawings are to reflect the actual horizontal location.
12. Where the plans contain specific vertical elevation data, the as-built drawings are to reflect the actual measured vertical elevation.

1.03 Submittal Requirements

A. Record Drawings are to be prepared by the Contractor, certified by the Contractor's licensed surveyor, and delivered to the Engineer for review. The Engineer will review the drawings for completeness in accordance with the requirements of this section within seven (7) full working days. For preliminary review, submittal in ACAD and PDF format is sufficient and signed and sealed copies are not necessary. Final submittal of complete Record Drawings shall consist of one set signed and sealed by the Contractor's licensed surveyor plus ACAD and PDF files of the Record Drawings delivered to the Engineer.

B. If the drawings are found to be incomplete or inaccurate, the drawings will be returned to the Contractor for correction.

C. In cases where the Owner determines partial clearances from permitting agencies are beneficial to the Owner for completed portions of the project,

provide preliminary record drawings (ACAD format) to the Engineer for its use in preparing the partial clearance applications for the Owner.

D. Complete record drawings that are found to be satisfactory as a result of the Engineer's review will be used as the basis for the final project Record Drawings prepared by the Engineer using the Contractor provided record drawings plus Engineer added information.

E. Complete signed and sealed Record Drawings are required to be delivered to the Owner prior to final inspection of the project. Final inspections will only be scheduled upon receipt of signed and sealed record drawings that have been reviewed by the Engineer and delivered by the Engineer to the Owner.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 02220

SITE DEMOLITION

PART 1 GENERAL

1.01 Section Includes

A. Demolition of designated site structures, retaining walls and foundations and removal of materials from project site.

B. Demolition and removal of pavements, curbs and gutters, drainage structures, utilities, signage or landscaping.

C. Disconnecting and capping or removal of identified utilities.

D. Filling voids in subgrade created as a result of removals or demolition.

E. Disposal of demolished materials.

1.02 Related Sections

A. Section 02230 - Site Preparation

B. Section 02310 - Finish Grading

C. Section 02315 - Excavation and Fill

1.03 Regulatory Requirements

A. Conform to applicable State and local codes for demolition of structures, safety of adjacent structures, dust control, and runoff control.

B. Obtain required permits and licenses from appropriate authorities. Pay associated fees including disposal charges.

C. Notify affected utility companies before starting work and comply with their requirements.

D. Do not close or obstruct roadways, sidewalks, or fire hydrants without appropriate permits.

E. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered.

F. Test soils around buried tanks for contamination.

1.04 Project Record Documents

Accurately record actual locations of capped utilities and subsurface obstructions that will remain after demolition.

1.05 Project Conditions

A. Structures to be demolished will be discontinued in use and vacated prior to start of work.

B. Owner assumes no responsibility for condition of structures to be demolished.

C. Conditions existing at time of inspection for bidding purposes will be maintained by Owner as practicable. Variations within structures may occur by Owner's removal and salvage operations prior to start of demolition work.

D. Unless otherwise indicated in Contract Documents or specified by the Owner, items of salvageable value to Contractor shall be removed from site and structures. Storage or sale of removed items on site will not be permitted and shall not interfere with other work specified in Contract Documents.

E. Explosives shall not be brought to site or used to demolish structures.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 Preparation

A. Provide, erect, and maintain erosion control devices, temporary barriers, and security devices at locations indicated on Construction Drawings.

B. Protect existing landscaping materials, appurtenances, and structures which are not to be demolished. Repair damage caused by demolition operations at no cost to Owner.

C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as needed.

D. Mark location of utilities. Protect and maintain in safe and operable condition utilities that are to remain. Prevent interruption of existing utility service to occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities as acceptable to governing authorities and Owner.

3.02 Salvage

A. Contractor to salvage items specifically listed in the Construction Plans. Salvaged items include, but are not limited to, existing fence posts and rails, signs, concrete ramp panels, aluminum ramps, garbage cans/pads, wheel stops, to be potentially re-used and re-installed. If they

3.03 Demolition Requirements

B. Conduct demolition to minimize interference with adjacent structures or pavements.

C. Cease operations immediately if adjacent structures appear to be in danger and notify the Owner. Do not resume operations until directed by the Owner.

D. Conduct operations with minimum of interference to public or private access. Maintain ingress and egress at all times.

E. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon, or limit access to their property.

F. Sprinkle work with water to minimize dust. Provide hoses and water connections for this purpose.

G. Comply with governing regulations pertaining to environmental protection.

H. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.

I. Demolition plan identifies major structures and items to be demolished. Include incidental demolition to completely demolish structures whether indicated on plan or not.

3.04 Demolition

A. Demolish buildings completely and remove from site using methods as required to complete work within limitations of governing regulations. Small structures may be removed intact when acceptable to the Owner.

B. Locate demolition equipment and remove materials so as to prevent excessive loading to supporting walls, floors, or framing.

C. Demolish concrete and masonry in small sections. Break up concrete slabs-on-grade that are 2-feet or more below proposed subgrade. Remove slabs-on-grade and below grade construction within 2-feet of proposed subgrade.

3.05 Filling Voids

A. Completely fill below grade areas and voids resulting from demolition or removal of structures, underground fuel storage tanks, wells, cisterns, etc., using approved select fill materials consisting of stone, gravel, and sand free from debris, trash, frozen materials, roots, and other organic matter.

B. Ensure that areas to be filled are free of standing water, frost, or unsuitable material, trash, and debris prior to fill placement.

C. Place fill materials in accordance with Sections 02315 or 02320 as applicable unless subsequent excavation for new work is required.

D. Grade surface to match adjacent grades and to provide flow of surface drainage after fill placement and compaction.

3.06 Disposal of Demolished Materials

A. Remove from site debris, rubbish, and other materials resulting from demolition operations.

B. No burning of any material, debris, or trash on-site or off-site will be allowed.

C. Transport materials removed from demolished structures with appropriate vehicles and dispose off-site to areas that are approved for disposal by governing authorities and appropriate property owners.

3.07 Cleanup

A. Clean the Project site to a condition satisfactory to the Engineer, free from demolished materials, rubbish or debris. Grade the site to meet adjacent contours and provide a positive flow for surface drainage.

B. Restore items intended to remain that have been damaged by demolition work at no cost to, and to the satisfaction of the Owner.

C. Return all interrupted utility services to their pre-demolition state and disconnect temporary services, unless otherwise specified.

END OF SECTION

SECTION 02230

SITE PREPARATION

PART 1 GENERAL

1.01 Section Includes

A. Layout of work and protection of bench marks.

B. Protection of structures, trees, or vegetation to remain.

C. Clearing and grubbing.

D. Stripping and storing topsoil.

1.02 Related Sections

A. Section 02220 - Site Demolition

B. Section 02370 - Erosion and Sedimentation Control

1.03 Coordination

A. Notify the utility owners which may have utilities in the project area and coordinate with them to avoid service interruptions and/or safety hazards.

B. Contact “Sunshine State, One-Call” by dialing “811”, to determine if there are other utilities in the area, and their location. For additional information: www.callsunshine.com.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 Bench Marks and Monuments

Maintain all existing bench marks, monuments and other reference points; if destroyed, replacement costs will be deducted from payments due the Contractor.

3.02 Laying Out Work

A. Base lines, property lines, and easement lines, are shown on the Drawings. Bench marks utilized are also shown on the drawings. If the bench marks are disturbed as a result of construction activities, reestablish such items by utilizing a surveyor licensed in the state where the project is located.

B. Stake out the construction, establish lines and levels, temporary bench marks, batter boards, centerlines and reference points for the work, and verify all dimensions relating to interconnection with existing features.

C. Report any inconsistencies in the proposed grades, lines and levels, dimensions and locations to the Engineer before commencing work.

D. Contain all construction activities within the right-of-way, easements, and property secured by the Owner, as shown on the drawings. Do not disturb surrounding properties or travel on surrounding properties without written consent from the property owner. Repair or reconstruct damaged areas on an immediate basis. All costs for repairs shall be the responsibility of the Contractor.

3.03 Burning

Burning is not allowed, unless notes on the drawings specifically allow it to occur. In the event burning is allowed, secure all necessary permits.

3.04 Protection of Trees and Shrubs

A. Protect all trees and shrubs located outside the right-of-way, easements, and Owner secured property, particularly those trees and shrubs located adjacent to work areas.

B. Within the right-of-way, easements, and Owner secured property, the intent is to allow tress and shrubs to remain in accordance with the following schedule:

1. New roadway construction – trees and shrubs to remain where located more than 15 feet from the back of curb, or outside the limits of excavation or fill areas, whichever is further.
2. Utility pipeline construction – trees and shrubs to remain outside a 15 foot wide path, centered on the pipeline.

C. Protect branches, trunks, and roots of trees and shrubs that are to remain. Trees to remain in the construction area shall be boxed, fenced or otherwise protected before any work is started; remove boxing when directed by the Engineer. Do not permit heavy equipment or stockpiles within branch spread. Remove interfering branches without injury to trunks and cover scars with tree paint.

3.05 Relocation of Utilities

A. Active utilities which do not interfere with the work shall be supported and protected from damage. After obtaining the Engineer's approval, relocate or remove active utilities which will interfere with work as indicated. Pay for all damage to active utilities and for relocation or removal of all interfering utilities which are ascertainable from Drawings, surveys, site inspection or encountered during construction.

B. Coordinate with each utility and pay all costs associated with the protection of existing facilities during construction. Also coordinate necessary relocations or other construction related matters with each utility.

C. Inactive or abandoned utilities and appurtenant structures encountered shall be removed to avoid interference as directed by the Engineer. Exposed ends of abandoned lines shall be plugged or capped in a water-tight manner.

3.06 Clearing and Grubbing

A. Areas to receive clearing and grubbing shall include all areas to be occupied by the proposed improvements, areas for fill and site grading, and borrow sites. Remove trees outside of these areas only as indicated on the Drawings or as approved in writing by the Engineer.

B. Clearing shall consist of removing trees and brush and disposal of other materials that encroach upon or otherwise obstruct the work.

C. Exercise extreme care during the clearing and grubbing operations. Do not damage existing structures, pipes or utilities.

D. Grubbing shall consist of removing and disposing of stumps, roots larger than 2" in diameter, and matted roots. Remove to a depth of not less than 18" below the original surface level of the ground.

E. All combustible debris and refuse from site preparation operations shall be removed to legal offsite disposal areas.

3.07 Topsoil Removal

A. All areas to be occupied by proposed improvements, and borrow sites shall be stripped of all brush, weeds, grass, roots and other material.

B. Remove all loamy, organic topsoil suitable for seeding and planting to whatever depth encountered and store separately from other excavated material. Stockpile in designated areas and provide for proper drainage. Cover storage piles as required to prevent windblown dust.

C. All removed topsoil shall be stockpiled within the project work area. Topsoil can be incorporated into the project in all areas that are to be grassed.

D. Dispose of unsuitable topsoil as specified under disposal of debris. Excess topsoil shall be removed from site unless specifically noted on Contract Drawings.

3.08 Disposal of Debris

A. All combustible debris and refuse from site preparation operations shall be removed to legal offsite disposal areas.

B. All non-combustible debris (not including acceptable fill material, fences, or other structures), resulting from site preparation operations shall become the property of the Contractor and shall be removed to legal offsite disposal areas.

END OF SECTION

SECTION 02240

DEWATERING

PART 1 GENERAL

1.01 Section Includes

Dewatering design and operation requirements

1.02 Related Sections

Section 02370 - Erosion and Sedimentation Control

1.03 General Requirements

A. Obtain the services of a qualified dewatering specialist to provide dewatering plan as may be necessary to complete the Work. Contractor shall be solely responsible for the design, installation, operation, maintenance, and any failure of any component of the system.

B. Dewatering discharge from the site shall comply with all NPDES general permit requirements and state water quality standards. Provide all testing and permitting required and comply with all treatment or disposal methods required to meet all local, state and federal requirements.

C. Design and provide dewatering system using accepted and professional methods consistent with current industry practice to eliminate water entering the excavation under hydrostatic head from the bottom and/or sides. Design system to prevent differential hydrostatic head which would result in floating out soil particles in a manner termed as a “quick” or “boiling” condition. System shall not be dependent solely upon sumps and/or pumping water from within the excavation where differential head would result in a quick condition, which would continue to worsen the integrity of the excavation’s stability.

D. Provide dewatering system of sufficient size and capacity to prevent ground and surface water flow into the excavation and to allow all Work to be installed in a dry condition.

E. No additional payment will be made for any supplemental measures to control seepage, groundwater, or artesian head.

F. If dewatering equipment needed exceeds any of the following: 1) 6" pump volute; 2) 100,000 GPD total 24 hour (1 day) dewatering, and; 3) 1,000,000 GPD pump capacity, the Contractor shall be required to permit the dewatering system with the water management district.

G. Contractor shall be responsible for and shall repair without cost to the Owner any damage to work in place, or other contractor's equipment, utilities, residences, highways, roads, railroads, private and municipal well systems, adjacent structures, natural resources, habitat, existing wells, and the excavation, including, damage to the bottom due to heave and including but not limited to, removal and pumping out of the excavated area that may result from Contractor's negligence, inadequate or improper design and operation of the dewatering system, and any mechanical or electrical failure of the dewatering system.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 General Requirements

A. Control, by acceptable means, all water regardless of source and be fully responsible for disposal of the water.

B. Confine discharge piping and/or ditches to available easement or to additional easement obtained by Contractor.

C. Control groundwater in a manner that preserves strength of foundation soils, does not cause instability or raveling of excavation slopes, and does not result in damage to existing structures. Where necessary to these purposes, lower water level in advance of excavation, utilizing wells, wellpoints, jet educators, or similar positive methods. Maintain the groundwater level to a minimum of 2 feet below excavations. Provide piezometers if directed by the Engineer to document the groundwater level is being maintained.

D. Commence dewatering prior to any appearance of water in excavation and continue until Work is complete to the extent that no damage results from hydrostatic pressure, flotation, or other causes.

E. Open pumping with sumps and ditches shall be allowed, provided it does not result in boils, loss of fines, softening of the ground, or instability of slopes.

F. Install wells and/or wellpoints, if required, with suitable screens and filters, so that continuous pumping of fines does not occur. During normal pumping, and upon development of well(s), levels of fine sand or silt in the discharge water shall not exceed 5 ppm. Install sand tester on discharge of each pump during testing to verify that levels are not exceeded.

G. Control grading around excavations to prevent surface water from flowing into excavation areas.

H. Remove subgrade materials rendered unsuitable by excessive wetting and replace with approved backfill material at no additional cost to the Owner.

I. Walls shall not be exposed to water pressure before structural work at the next higher level has properly cured and the cantilever action of walls is eliminated.

J. Any dewatering pumps within 1500-ft of private residences shall be equipped with satisfactory sound suppression.

K. Water from dewatering activities shall be disposed in a manner that does not cause flooding, erosion, or the transfer of sediments.

3.02 Maintaining Excavation in Dewatering Condition

A. Dewatering shall be a continuous operation. Interruptions due to power outages, or any other reason will not be permitted.

B. Continuously maintain excavation in a dry condition with positive dewatering methods during preparation of subgrade, installation of pipe, and construction of structures until the critical period of construction and/or backfill is completed to prevent damage of subgrade support, piping, structure, side slopes, or adjacent facilities from flotation or other hydrostatic pressure imbalance.

C. Provide standby equipment on site, installed, wired, and available for immediate operation if required to maintain dewatering on a continuous basis in the event any part of the system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, perform such work as may be required to restore damaged structures and foundation soils at no additional cost to Owner.

D. System maintenance shall include but not be limited to 24-hour supervision by personnel skilled in the operation, maintenance, and replacement of system components, and any other work required to maintain excavation in dewatered condition.

3.03 System Removal

Remove all dewatering equipment from the site, including wells and related temporary electrical service.

END OF SECTION

SECTION 02310

FINISH GRADING

PART 1 GENERAL

1.01 Section Includes

Topsoil placement, grading of site

1.02 Related Sections

A. Section 02230 - Site Preparation

B. Section 02315 - Excavation and Fill

C. Section 02320 - Trenching, Bedding, and Backfilling

1.03 References

A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:

1. AASHTO T267 – Determination of Organic Matter in Soils by Loss on Ignition

PART 2 PRODUCTS

2.01 Topsoil

A. Topsoil shall be fertile, friable, natural topsoil typical of the area, free from subsoil, stones, plants, roots or other extraneous material and shall not be used while muddy or frozen.

B. Topsoil shall contain not less than 8% organic matter (AASHTO T267). The topsoil shall consist of either natural topsoils typical of the locality and free from coarse stone aggregate or surface soils stripped from the site and enriched with humus at a rate of 8% by volume. The soil mixture prepared by mixing surface soils and humus shall be free of oil, cinders, coarse stone, and woody root material.

PART 3 EXECUTION

3.01 General

Provide all topsoil placement and finish grading and filling to achieve the lines and grades indicated on the Drawings. All earthwork shall be done in a manner that provides drainage.

3.02 Topsoil Placement

Place topsoil in all areas of new grading. The compacted subgrade to receive topsoil shall be scarified to a depth of 3 inches. Topsoil shall be spread evenly and compacted to a thickness of not less than 6 inches, to the proposed elevations and grades. Grade flush with walks, curbs, and paving.

3.03 Finish Grading

A. All areas of the project including all previously grassed areas that have been disturbed, borrow sites, excavated and filled sections and adjacent transition areas shall be uniformly smooth-graded. Depressions from settlement shall be filled and compacted. Tops of embankments and breaks in grade shall be rounded. All surfaces shall be finished to provide adequate drainage. Finished surfaces shall be reasonably smooth, compacted, free from irregular surface changes and comparable to the smoothness obtained by blade-grader operations.

B. Slope grades to drain away from structures at a minimum of ¼-inch per foot for 10 feet.

C. Finished surfaces adjacent to paved or surfaced areas and within 10 feet of structures shall be within 1 inch of the proposed grade. All other areas shall be within 3 inches of the proposed grade.

D. Newly graded areas shall be protected from traffic and erosion. All settlement or washing away that may occur from any cause prior to seeding or acceptance shall be repaired and grades re-established to the required elevations and slopes at no additional cost to the Owner.

E. Unless otherwise indicated, dispose of all surplus material.

END OF SECTION

SECTION 02315

EXCAVATION AND FILL

PART 1 GENERAL

1.01 Section Includes

A. Excavation and fill for roads, ponds, general site work

B. Sheeting, shoring and bracing

C. Compaction

1.02 Related Sections

A. Section 02230 - Site Preparation

B. Section 02240 - Dewatering

C. Section 02310 - Finish Grading

D. Section 02320 - Trenching, Bedding, and Backfilling

E. Section 02370 - Erosion and Sedimentation Control

1.03 References

A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:

1. AASHTO M145 - Classification of Soils and Soil Aggregate Mixtures
2. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb Rammer and 18-in Drop

B. American Society for Testing and Materials (ASTM) latest edition:

1. ASTM D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort
2. ASTM D2487 - Classification of Soils for Engineering Purposes

C. Occupational Safety and Health Administration (OSHA) Regulations, including:

1. Part 1926 Subpart P – Excavations

1.04 Definitions

A. Backfill = material placed in newly excavated areas to the topsoil, paving sub-grade, or foundation level.

B. Influence Area = the area within lines sloped downward at 45 degrees from the outer edges of paving, foundations, and utility lines. As a minimum, the influence area shall extend 5 feet beyond the edge of pavement (where there is no curb) or 5 feet beyond the back of curb.

1.05 Quality Assurance

A. Field density testing frequencies:

1. One test for each 5,000 square feet or fraction thereof per lift of general backfilling, minimum 2 tests each layer.
2. One test per each lift of backfill around and under structures.
3. One test per lift per each change in type of fill.
4. One test per 1000 square feet of pavement subgrade, minimum of 2 tests.

B. Pond construction shall result in the finished pond having side slopes and dimensions that are in accordance with the construction drawings. It is the Contractor's sole responsibility to ensure that these requirements have been met. If the constructed side slopes are steeper than the required side slopes, or the pond volume is not within three (3) percent of the design volume, the Contactor may be required to make corrections to the pond at no additional cost to the Owner.

C. Sheeting, shoring, and bracing used for the support of excavations over 20 feet deep shall be designed by a professional engineer licensed by the State of Florida.

1.06 Preconstruction Requirements

Precondition surveys and vibration monitoring are required for those areas where residential structures are within 100 feet of the proposed construction.

PART 2 PRODUCTS

2.01 General

It is intended that previously excavated materials conforming to the following requirements be utilized wherever possible.

2.02 Materials

A. Acceptable materials (suitable material): AASHTO M145 classification A-1, A-3, A-2-4, A-2-6; ASTM D2487 classification GW, GP, GM, SM, SW, SP; unless otherwise disapproved within the Soil and Subsurface investigation reports. No more than 12% of acceptable materials shall pass the number 200 sieve.

B. Unacceptable materials (unsuitable material): AASHTO M145 classification A-2-5, A-2-7, A-4, A-5, A-6, A-7, A-8; ASTM D2487 classification GC, SC, ML, MH, CL, CH, OL, OH, PT; unless otherwise approved within the Soil and Subsurface investigation reports.

C. Flowable fill shall be “Excavatable” and shall meet the requirements of FDOT specification section 121, with a maximum 28-day compressive strength of 100 psi and a minimum 28-day compressive strength of 80 psi.

2.03 Sheeting, Shoring, and Bracing

A. The structural strength and safety of all sheeting, shoring and bracing shall be the sole responsibility of the Contractor. Repair any damage resulting from failure to provide adequate supports.

B. Provide timber work, shoring, bracing, sheeting, and sheet piling where necessary to retain banks of excavations, prevent cave-in of adjacent ground, prevent displacement of utilities and structures, and to protect public safety.

C. Contractor is solely responsible for the design, installation, and operation of dewatering systems and their safety and conformity with local codes and regulations.

PART 3 EXECUTION

3.01 General Construction Requirements

A. Provide suitable temporary drainage channels for any water that may flow along or across the work as specified hereafter.

B. Provide barriers, warning lights and other protective devices at all excavations.

C. Sidewalks, roads, streets, and pavements shall not be blocked or obstructed by excavated materials, except as authorized by the Engineer, in which case adequate temporary provisions must be made for satisfactory temporary passage of pedestrians, and vehicles. Minimize inconvenience to public travel or to tenants occupying adjoining property.

D. Where necessary to place excavated material adjacent to buildings, erect barriers to keep earth at least 4 feet from such buildings. Earth deposited on lawns shall be promptly and carefully removed to preserve the turf. All trees, shrubs, and landscaping shall be protected. Boring and jacking shall be used, if necessary, except where written permission is granted to remove trees and shrubs.

E. If open excavations cross existing rigid surfacing, the surfacing shall be removed for a width one foot beyond the anticipated edge of the excavation. The pavement break shall be sawed to insure a straight joint. Surface replacement

shall match existing surfacing except as otherwise indicated on the Drawings. Where open excavation is allowed along or across public roadways, excavation, backfill, and surface replacement shall conform to the requirements of all permits applicable thereto. In no case shall surface replacement edges bear on less than 12" of undisturbed soil.

3.02 Preparation

A. Identify required lines, levels, contours, and datum.

B. Locate and identify existing utilities that are to remain and protect from damage.

C. Notify utility companies to remove or relocate utilities that are in conflict with proposed improvements.

D. Protect plant life, lawns, fences, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

E. Protect benchmarks, property corners, and other survey monuments from damage or displacement. If marker needs to be removed it shall be referenced by licensed land surveyor and replaced, as necessary, by same.

F. Prior to placing fill in low areas, such as previously existing ditches, ponds, or lakes, perform following procedures:

1. Drain water out by gravity with ditch having flow line lower than lowest elevation in low area. If drainage cannot be performed by gravity ditch, use adequate pump to obtain the same results.
2. After drainage of low area is complete, remove mulch, mud, debris, and other unsuitable material by using acceptable equipment and methods that will keep natural soils underlying low area dry and undisturbed.
3. If proposed for fill, muck, mud, and other materials removed from low areas shall be dried on-site by spreading in thin layers for observation by Engineer. Material shall be inspected and, if found to be suitable for use as fill material, shall be incorporated into lowest elevation of site filling operation, but not under building or pavement subgrade or within 10'-0" of perimeter of building subgrade or paving subgrade. If, after observation by Engineer, material is found to be unsuitable, unsuitable material shall be removed from site.

3.03 Sheeting, Shoring, and Bracing

A. Furnish, install, and maintain, without additional compensation, sheeting, bracing, and shoring support required to keep excavations within the easement provided, to support the sides of the excavation, and to prevent any movement which may damage adjacent pavements or structures, damage or delay the work, or endanger life and health. Voids outside the supports shall be immediately filled and compacted.

B. Sheeting, where required, shall be driven below the bottom of excavation so the lowest set of wales and struts are above the bottom of the excavation to allow necessary working room.

C. The Engineer may direct in writing that supports in trenches be cut off at any specified elevation, in which case Contractor shall be paid for the supports left in place.

D. Contractor may leave in place, to be embedded in the backfill of the excavation, any or all supports for the purpose of preventing injury to persons or property, whether public or private. However, no supports which are within 4' of the ground or pavement surface may be left in place without written permission of the Engineer. No extra payment will be made for supports left in place at the Contractor's option.

E. All supports not left in place shall be removed in such manner as to avoid endangering the piping, structures, utilities or property, whether public or private. All voids left by the withdrawal of sheeting shall be immediately filled and compacted.

F. The right of the Engineer to order supports left in place shall not be construed as creating an obligation on his part to issue such orders. Failure by the Engineer to exercise this right shall not relieve the Contractor from total liability for damages to persons or property resulting from the failure of the Contractor to leave in place sufficient supports to prevent any caving or moving of the ground adjacent to the excavation.

3.04 Excavation

A. Do not excavate for any structure until that structure is scheduled for construction. Excavate only to the depth and dimensions necessary for the construction. Slope sides of excavations in accordance with OSHA requirements and the recommendations contained within the project geotechnical report.

B. The bottom of all excavations shall be undisturbed earth unless otherwise indicated, and shall be approved by the Engineer before any subsequent work is started. Over excavate a minimum of 2 feet where excavations occur within unsuitable soils, and replace over excavated material with suitable soils.

C. Excavations carried below depths indicated on the Drawings without the previous approval of the Engineer shall be filled with 2500 psi concrete or flowable fill to the correct level at the expense of the Contractor.

D. Maintain excavations in good order. If the bearing capacity of the foundation soils is reduced because the excavation is allowed to remain open prior to commencing work, the weathered soil shall be removed and replaced with 2500 psi concrete or flowable fill at the Owner’s discretion at the expense of the Contractor.

E. All suitable materials removed from excavation areas shall be used for the project. Excess excavated suitable material shall be stockpiled on site at a location of the Owner's choosing, and shall become the property of the Owner, unless otherwise indicated on the Drawings.

F. Suitable onsite excavated materials containing silty or slightly clayey to clayey fine sands shall be sufficiently dried by surface spreading and discing if necessary, or by mixing with cleaner fine sands prior to placement in fill areas.

G. Unsuitable materials within the influence area of construction shall be excavated, removed from the site, and disposed, unless otherwise indicated on the Drawings.

H. Excavations shall be kept dry, compacted, and stable to a depth two feet below the bottom of the excavation.

I. If portions of the bottom of excavations consist of material unstable to such a degree that, in the opinion of the Engineer, it cannot adequately support the construction, the bottom shall be over excavated and stabilized with approved coarse granular stabilization material. Depth of stabilization shall be as directed by the Engineer. The initial 50 tons of stabilization shall be incidental to the Contract. Compensation will be allowed only for such additional quantities as the Engineer shall direct in writing to be placed.

3.05 Filling

A. All fill material shall be suitable soils or flowable fill. Fill placed within 1 foot of structures shall not contain rock or stone larger than 2 inch diameter. If a sufficient quantity of suitable material is not available from other excavations within the site, provide additional suitable material or flowable fill.

B. Fill within the influence area of roadways, structures, foundations, or slabs, shall be placed in layers of 8 inch loose depth. In all other areas, place fill in layers of 12 inch loose depth.

C. Take necessary precautions not to cause settlement or damage to adjacent slabs, walls, structures, or foundations. Place fill materials evenly adjacent to structures, without wedging against structures.

D. Where filling is required on both sides of structures, fill and compact simultaneously on opposite sides in even layers.

3.06 Compaction

A. Unless otherwise indicated, the type of equipment and number of passes required to obtain the specified degree of compaction shall be determined at the site, subject to the approval of the Engineer.

B. Provide mechanical compaction for cohesive material and vibratory compaction for granular materials, unless otherwise approved by the Engineer. Vibratory compaction is not allowed within 100 feet of existing structures. In these areas, compaction shall be accomplished by static means only. If compaction difficulties arise, the Engineer shall be consulted to review and possibly modify compaction procedures.

C. Noncohesive soils shall be compacted with vibrating roller or equivalent; cohesive soils shall be compacted with sheeps-foot roller, pneumatic tamping, or approved equivalent, unless otherwise indicated.

D. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

3.07 Testing and Cleanup

A. Provide for testing and cleanup as soon as practicable, so these operations do not lag far behind pipe installation. Perform preliminary cleanup and grading operations immediately after backfilling.

B. All surplus excavated material shall be disposed of by the Contractor.

3.08 Field Quality Control

A. Minimum Density Requirement (ASTM D1557 or AASHTO T180):

1. Fill placed under and within the influence area of roadways, structures, slabs, foundations = 98 percent
2. Fill placed within pond and road embankment = 95 percent
3. Fill placed within public road right-of-way and utility easements outside the road influence area = 95 percent
4. Fill placed within landscape areas = 85 percent
5. Fill placed within all other areas = 90 percent

Where fill is placed and differing density requirements are defined, the more stringent density requirement governs.

END OF SECTION

SECTION 02320

TRENCHING, BEDDING, AND BACKFILLING

PART 1 GENERAL

1.01 Section Includes

A. Trenching for piping and electrical work.

B. Excavation for manholes, junction boxes, meter vaults, and appurtenances.

C. Sheeting, shoring and bracing

D. Bedding, backfilling, and compaction.

1.02 Related Sections

A. Section 02230 - Site Preparation

B. Section 02240 - Dewatering

C. Section 02310 - Finish Grading

D. Section 02315 - Excavation and Fill

E. Section 02370 - Erosion and Sedimentation Control

1.03 References

A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:

1. AASHTO M145 - Classification of Soils and Soil Aggregate Mixtures
2. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb Rammer and 18-in Drop

B. American Society for Testing and Materials (ASTM) latest edition:

1. ASTM D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort
2. ASTM D2487 - Classification of Soils for Engineering Purposes

C. Occupational Safety and Health Administration (OSHA) Regulations, including:

1. Part 1926 Subpart P – Excavations

1.04 Definitions

A. Bedding = Area from bottom of trench to centerline of pipe

B. Backfill = material above the top of pipe to the topsoil, paving sub-grade, or foundation level.

C. Influence Area = the area within lines sloped downward at 45 degrees from the outer edges of paving, foundations, and utility lines. As a minimum, the influence area shall extend 5 feet beyond the edge of pavement (where there is no curb) or 5 feet beyond the back of curb.

1.05 Quality Assurance

A. Field density testing frequencies:

1. One test for each 150 linear feet of pipeline or fraction thereof per lift of general backfilling in the pipeline trench. Where less than 150 linear feet of pipeline is installed, one test per lift of backfill is required, staggered along the pipeline at locations determined by the Engineer
2. One test for each 100 square feet or fraction thereof of backfill around and under structures, with a minimum of two tests per lift.
3. One test per lift per each change in type of fill.

B. Sheeting, shoring, and bracing used for the support of excavations over 20 feet deep shall be designed by a professional engineer licensed by the State of Florida.

1.06 Preconstruction Requirements

Precondition surveys and vibration monitoring are required for those areas where residential structures are within 100 feet of the proposed construction.

PART 2 PRODUCTS

2.01 General

It is intended that previously excavated materials conforming to the following requirements be utilized wherever possible.

2.02 Materials

A. Acceptable materials (suitable material): AASHTO M145 classification A-1, A-3, A-2-4, A-2-6; ASTM D2487 classification GW, GP, GM, SM, SW, SP; unless otherwise disapproved within the Soil and Subsurface investigation reports. No more than 12 percent of acceptable materials shall pass the number 200 sieve.

B. Unacceptable materials (unsuitable material): AASHTO M145 classification A-2-5, A-2-7, A-4, A-5, A-6, A-7, A-8; ASTM D2487 classification GC, SC, ML, MH,

CL, CH, OL, OH, PT; unless otherwise approved within the Soil and Subsurface investigation reports.

C. Flowable fill shall be “Excavatable” and shall meet the requirements of FDOT specification section 121, with a maximum 28-day compressive strength of 100 psi and a minimum 28-day compressive strength of 80 psi.

2.03 Sheeting, Shoring, and Bracing

A. The structural strength and safety of all sheeting, shoring and bracing shall be the sole responsibility of the Contractor. Repair any damage resulting from failure to provide adequate supports.

B. Provide timber-work, shoring, bracing, sheeting, and sheet piling where necessary to retain banks of excavations, prevent cave-in of adjacent ground, prevent displacement of utilities and structures, and to protect public safety.

C. Contractor is solely responsible for the design, installation, and operation of dewatering systems and their safety and conformity with local codes and regulations.

PART 3 EXECUTION

3.01 General Construction Requirements

A. Provide suitable temporary drainage channels for any water that may flow along or across the work as specified hereafter.

B. Provide barriers, warning lights and other protective devices at all excavations.

C. Sidewalks, roads, streets, and pavements shall not be blocked or obstructed by excavated materials, except as authorized by the Engineer, in which case adequate temporary provisions must be made for satisfactory temporary passage of pedestrians, and vehicles. Minimize inconvenience to public travel or to tenants occupying adjoining property.

D. Where necessary to place excavated material adjacent to buildings, erect barriers to keep earth at least 4 feet from such buildings. Earth deposited on lawns shall be promptly and carefully removed to preserve the turf. All trees, shrubs, and landscaping shall be protected. Boring and jacking shall be used, if necessary, except where written permission is granted to remove trees and shrubs.

E. If open excavations cross existing rigid surfacing, the surfacing shall be removed for a width one foot beyond the anticipated edge of the excavation. The pavement break shall be sawed to insure a straight joint. Surface replacement shall match existing surfacing except as otherwise indicated on the Drawings. Where open excavation is allowed along or across public roadways, excavation, backfill, and surface replacement shall conform to the requirements of all permits

applicable thereto. In no case shall surface replacement edges bear on less than 12 inches of undisturbed soil.

3.02 Preparation

A. Identify required lines, levels, contours, and datum.

B. Locate and identify existing utilities that are to remain and protect from damage.

C. Notify utility companies to remove or relocate utilities that are in conflict with proposed improvements.

D. Protect plant life, lawns, fences, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

E. Protect benchmarks, property corners, and other survey monuments from damage or displacement. If marker needs to be removed it shall be referenced by licensed land surveyor and replaced, as necessary, by same.

3.03 Sheeting, Shoring, and Bracing

A. Furnish, install, and maintain, without additional compensation, sheeting, bracing, and shoring support required to keep excavations within the easement provided, to support the sides of the excavation, and to prevent any movement which may damage adjacent pavements or structures, damage or delay the work, or endanger life and health. Voids outside the supports shall be immediately filled and compacted.

B. Sheeting, where required, shall be driven below the bottom of excavation so the lowest set of wales and struts are above the bottom of the excavation to allow necessary working room.

C. The Engineer may direct in writing that supports in trenches be cut off at any specified elevation, in which case Contractor shall be paid for the supports left in place.

D. Contractor may leave in place, to be embedded in the backfill of the excavation, any or all supports for the purpose of preventing injury to persons or property, whether public or private. However, no supports which are within 4 feet of the ground or pavement surface may be left in place without written permission of the Engineer. No extra payment will be made for supports left in place at the Contractor's option.

E. All supports not left in place shall be removed in such manner as to avoid endangering the piping, structures, utilities or property, whether public or private. All voids left by the withdrawal of sheeting shall be immediately filled and compacted.

F. The right of the Engineer to order supports left in place shall not be construed as creating an obligation on his part to issue such orders. Failure by the Engineer to exercise this right shall not relieve the Contractor from total liability for damages to persons or property resulting from the failure of the Contractor to leave in place sufficient supports to prevent any caving or moving of the ground adjacent to the excavation.

3.04 Trenching

A. All excavations shall be made by open cut unless otherwise indicated. Sides of trenches shall be kept as nearly vertical as possible from the trench bottom to a level of one foot above the top of the pipe. Slope sides of trenches in accordance with OSHA requirements and the recommendations contained within the project geotechnical report.

B. Excavation of trenches shall not advance more than 50 feet ahead of completed pipe installation except as approved by the Engineer.

C. Excavate trenches to depth indicated or required for indicated flow lines and invert elevations. Over excavate trenches a minimum of 2 feet where excavations occur within unsuitable soils, and replace over excavated material with suitable soils.

D. Where rock is encountered, carry excavation 6 inches below scheduled elevation and backfill with a 6 inch layer of crushed stone or gravel prior to installation of pipe.

E. For pipes or conduit 5 inches or less, excavate to indicated depths. Hand excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.

F. For pipes or conduit 6 inches or larger, and other work indicated to receive subbase, excavate to subbase depth indicated, or, if not otherwise indicated, to 6 inches below bottom of work to be supported.

G. Except as otherwise indicated, excavate for pressure piping so top of piping is minimum 3 feet below finished grade.

H. Unsuitable excavated materials shall be removed from the site and disposed, unless otherwise indicated on the Drawings.

I. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.

J. Trench bottoms shall be kept dry, compacted, and stable to a depth two feet below the bottom of the trench.

K. Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide 9 -12 inch clearance on each side of pipe or conduit.

L. If more than one pipe is to be installed in a trench, the pipes shall be spaced a minimum of one foot apart for pipes 4 inches and larger.

M. If portions of the bottom of trenches consist of material unstable to such a degree that, in the opinion of the Engineer, it cannot adequately support the pipe or structure, the bottom shall be over excavated and stabilized with approved coarse granular stabilization material. Depth of stabilization shall be as directed by the Engineer. The initial 50 tons of stabilization shall be incidental to the Contract. Compensation will be allowed only for such additional quantities as the Engineer shall direct in writing to be placed.

N. Do not backfill trenches until tests and inspections have been made.

3.05 Trench Backfilling

A. Following placement of pipe and inspection of joints, install tamped bedding material. Place bedding fill materials in layers of 6 inch loose depth.

B. All bedding and backfill material shall be suitable soils or flowable fill. Backfill material within 1 foot of pipe and appurtenances shall not contain rock or stone larger than 2 inch diameter. If a sufficient quantity of suitable material is not available from the trench or other excavations within the site, provide additional suitable material or flowable fill.

C. After completion of bedding and preliminary approval of piping and testing, the pipe shall be covered to a point one foot above the top of the pipe for the full trench width, placed in layers of 8 inch loose depth.

D. Place backfill over pipe. Where trench is within the influence area of roadways, structures, foundations, or slabs, place backfill in layers of 8 inch loose depth. In all other areas, place backfill in layers of 12 inch loose depth.

E. Take necessary precautions not to cause settlement or damage to adjacent slabs, walls, structures, or foundations. Place backfill and fill materials evenly adjacent to structures, without wedging against structures or displacement of piping or conduit.

3.06 Minor Structural Excavation and Backfilling

A. Minor structures are defined as manholes, junction boxes, inlets, valve vaults, and meter vaults. Do not excavate for any structure until that structure is scheduled for construction. Excavate only to the depth and dimensions necessary for the construction.

B. The bottom of all excavations shall be undisturbed earth unless otherwise indicated, and shall be approved by the Engineer before any subsequent work is started. Over excavate a minimum of 2 feet where excavations occur within unsuitable soils, and replace over excavated material with suitable soils.

C. Excavations carried below depths indicated on the Drawings without the previous approval of the Engineer shall be filled with 2500 psi concrete or flowable fill at the Owner's discretion to the correct level at the expense of the Contractor.

D. Maintain excavations in good order. If the bearing capacity of the foundation soils is reduced because the excavation is allowed to remain open prior to commencing work, the weathered soil shall be removed and replaced with 2500 psi concrete or flowable fill at the Owner's discretion at the expense of the Contractor.

E. Do not backfill until new concrete has properly cured, coatings have been approved, and any required tests have been accepted.

F. Fill within the influence area of roadways, structures, foundations, or slabs, shall be placed in layers of 8 inch loose depth. In all other areas, place fill in layers of 12 inch loose depth.

G. Exercise care during backfilling operations to avoid any puncture, break or other damage to waterproofing systems, if any. Backfill adjacent to waterproofing in the presence of the Engineer.

H. Where backfilling is required on both sides of structures, backfill and compact simultaneously on opposite sides in even layers. Other backfilling sequences shall be as specifically noted.

3.07 Compaction

A. Unless otherwise indicated, the type of equipment and number of passes required to obtain the specified degree of compaction shall be determined at the site, subject to the approval of the Engineer.

B. Provide mechanical compaction for cohesive material and vibratory compaction for granular materials, unless otherwise approved by the Engineer. Vibratory compaction is not allowed within 100 feet of existing structures. In these areas, compaction shall be accomplished by static means only. If compaction difficulties arise, the Engineer shall be consulted to review and possibly modify compaction procedures.

C. Noncohesive soils shall be compacted with vibrating roller or equivalent; cohesive soils shall be compacted with sheeps-foot roller, pneumatic tamping, or approved equivalent, unless otherwise indicated.

D. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

3.08 Testing and Cleanup

A. Provide for testing and cleanup as soon as practicable, so these operations do not lag far behind pipe installation. Perform preliminary cleanup and grading operations immediately after backfilling.

B. All surplus excavated material shall be disposed of by the Contractor.

3.09 Field Quality Control

A. Minimum Density Requirement (ASTM D1557 or AASHTO T180):

1. Backfill placed under and within the influence area of roadways, structures, slabs, foundations = 98 percent
2. Backfill placed within pond and road embankment = 95 percent
3. Backfill placed within public road right-of-way and utility easements outside the road influence area = 95 percent
4. Backfill placed within landscape areas = 85 percent
5. Backfill placed within all other areas = 90 percent

Where backfill is placed and differing density requirements are defined, the more stringent density requirement governs.

END OF SECTION

SECTION 02370

EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.01 Section Includes

Designing, providing, maintaining, removing temporary erosion and sedimentation controls.

1.02 Related Sections

A. Section 01415 - Stormwater Pollution Prevention / NPDES Requirements

B. Section 02230 - Site Preparation

C. Section 02240 - Dewatering

D. Section 02315 - Excavation and Fill

E. Section 02320 - Trenching, Bedding, and Backfilling

1.03 References

A. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, latest edition:

1. Specification 104 - Prevention, Control, and Abatement of Erosion and Water Pollution
2. Specification 300 - Prime and Tack Coats for Base Courses
3. Specification 985 - Geotextile Fabrics

1.04 Owner's Instructions / Sequencing

A. Owner has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, trenching, borrow and embankment operations. Owner also has authority to direct Contractor to provide immediate permanent or temporary erosion and sediment control measures.

B. Contractor shall respond to erosion and sediment control maintenance requirements or implement additional measures to control erosion ordered by Owner or governing authorities within 48 hours or sooner if required at no additional cost to the Owner.

C. Contractor will be required to incorporate permanent erosion control features into project at earliest practical time to minimize need for temporary controls.

PART 2 PRODUCTS

2.01 Erosion Control

A. Seeding and Mulching

B. Sodding

C. Hydro-seeding

D. Coarse Aggregate

E. Prime Coat - Per FDOT Specification 300

2.02 Sedimentation Control

A. Silt Fence - Per FDOT Index No. 102

B. Floating Turbidity Barriers - Per FDOT Index No. 103

PART 3 EXECUTION

3.01 Erosion Control

A. Maintain temporary erosion control systems as directed by Owner or governing authorities to control erosion and siltation during life of contract.

B. The erosion and sediment control measures shown on the plans represent a minimum requirement. The Contractor is responsible for determining additional erosion and sediment control measures needed in order to prevent the transfer of sediment from the project area and prevent the erosion of surfaces during construction, as needed to protect adjacent properties and water bodies.

C. Permanently grass cut slopes as excavation proceeds to extent considered desirable and practical as determined by the Owner.

D. Grass all disturbed areas within 7 days of initial disturbance. Type of grassing shall be as follows: temporary grassing to be sodding at all drainage structures, retention areas, swales and ditches, and where slopes are steeper than 5:1. Temporary grassing can be seed and mulch at all other locations unless otherwise indicated in the drawings or specifications.

E. Erosion control of areas to be paved shall meet the following:

1. Install subgrade and base course materials within 48 hours of the removal/open cutting of existing pavement consisting of streets, driveways, or sidewalk. Install final surface courses within 14 days after removal of existing pavement.

2. Areas to receive asphalt shall receive erosion control measures no later than 48 hours after installation of base course. Temporary erosion control consists of placement of a bituminous prime coat and sanding the surface. Permanent erosion control consists of placement of the structural course.
3. Areas to receive concrete paving shall be either protected with a layer of FDOT coarse aggregate material or shall be paved within 48 hours of installation of the subgrade.

F. Dirt roads are to be stabilized and compacted within 7 days of the completion of trenching and grading activities.

3.02 Sedimentation Control

A. Install prior to construction.

B. Inspect every two weeks during construction.

C. Remove any sediment build-up.

D. Repair and reinstall any damaged or missing sediment control measures. Install additional measures if inspection reveals additional sedimentation control is necessary.

E. Rough excavate and grade any proposed stormwater ponds at the start of site grading activities. Direct site runoff to the ponds to minimize runoff to offsite areas.

END OF SECTION

SECTION 02710

STABILIZED SUBGRADE

PART 1 GENERAL

1.01 Section Includes

Stabilized subgrade for asphalt pavement

1.02 References

A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:

1. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb Rammer and 18-in Drop

B. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition:

1. Section 914 - Materials for Subgrade Stabilization

1.03 Quality Assurance

Field compaction density, stability, and thickness testing frequencies of the subgrade shall be tested once every 300 linear feet of paving per 24-ft wide strip, staggered left, center and right of centerline. Where less than 300 linear feet of asphalt is placed in one day, provide minimum of one test for each per day's construction at a location designated by the Engineer.

1.04 System Description

A. Stabilize the roadbed below the proposed base to provide a firm and unyielding subgrade.

B. Provide a finished roadbed section that meets the bearing value requirements, regardless of the quantity of stabilizing materials necessary to be added.

PART 2 PRODUCTS

2.01 General

A. The Contractor may choose the type of stabilizing material, Commercial or Local.

B. Materials may be either limerock, shell rock, cemented coquina or shell base sources approved by FDOT.

2.02 Limerock

For limerock, carbonates of calcium and magnesium shall be at least 70%. Materials having a plasticity index of more than ten or a liquid limit greater than 40 shall not be used as a stabilizer. The gradation of limerock shall be such that 97% of these materials will pass a 3½ -inch (90 mm) sieve.

2.03 Crushed Shell

A. Crushed shell for this use shall be mollusk shell (i.e., oysters, mussels, clams, cemented coquina). Steamed shell will not be permitted.

B. Material having a plasticity index of more than ten or a liquid limit greater than 40 shall not be used as a stabilizer.

C. At least 97% by weight of the total material shall pass a 3½ -inch (90 mm) sieve and at least 50% by weight of the total material shall be retained on the No. 4 [4.75 µm] sieve.

D. Not more than 20% by weight of the total material shall pass the No. 200 [75 µm] sieve. The determination of the percentage passing the No. 200 [75 µm] sieve shall be by washing only.

2.04 Local Materials

A. Local materials used for this stabilizing may be soils or recyclable materials such as crushed concrete, roof tiles and asphalt coated base or reclaimed pavement. However, no materials that deteriorate over time, cause excessive deformations, contain hazardous substances, contaminates, or do not improve the bearing capacity of the stabilized material may be used in accordance with FDOT Specification Section 914.

B. At least 97% by weight of the total material shall pass a 3½ -inch (90 mm) sieve. Material having a plasticity index greater than ten or a liquid limit greater than 40 shall not be used as a stabilizer.

PART 3 EXECUTION

3.01 General

A. Prior to the beginning of stabilizing operations, construct the area to be stabilized to an elevation such that, upon completion of stabilizing operations, the completed stabilized subgrade will conform to the lines, grades, and cross-section shown in the plans. Prior to spreading any additive stabilizing material, bring the surface of the roadbed to a plane approximately parallel to the plane of the proposed finished surface.

B. Process the subgrade to be stabilized in one course, unless the equipment and methods being used do not provide the required uniformity, particle size limitation, compaction, and other desired results, in which case, the Engineer will direct that the processing be done in more than one course.

C. Vibratory compaction is not allowed within 100 feet of existing structures. In these areas, compaction shall be accomplished by static means only. If compaction difficulties arise, the Engineer shall be consulted to review and possibly modify compaction procedures.

3.02 Application of Stabilizing Material

A. When additive stabilizing materials are required, spread the designated quantity uniformly over the area to be stabilized.

B. When materials from an existing base are to be used in the stabilizing at a particular location, place and spread all of such materials prior to the addition of other stabilizing additives.

C. Spread commercial stabilizing material by the use of mechanical material spreaders, except that where use of such equipment is not practicable, use other means of spreading, but only upon written approval of the proposed alternate method.

3.03 Mixing

A. Perform mixing using rotary tillers or other equipment meeting the approval of the Engineer. The Contractor may mix the materials in a plant of an approved type suitable for this work. Thoroughly mix the area to be stabilized throughout the entire depth and width of the stabilizing limits.

B. Perform the mixing operations, as specified, (either in place or in a plant) regardless of whether the existing soil, or any select soils placed within the limits of the stabilized sections, have the required bearing value without the addition of stabilizing materials.

3.04 Maximum Particle Size of Mixed Materials

At the completion of the mixing, ensure that the gradation of the material within the limits of the area being stabilized is such that 97% will pass a 3½-inch sieve and that the material does not have a plasticity index greater than eight or liquid limit greater than 30. Note that clay balls or lumps of clay size particles (2 microns or less) cannot be considered as individual particle sizes. Remove any materials not meeting the plasticity requirements from the stabilized area. The Contractor may break down or remove from the stabilized area materials not meeting the gradation requirements.

3.05 Compaction

Compact the materials at a moisture content permitting the specified compaction. If the moisture content of the material is improper for attaining the specified density, either add water or allow the material to dry until reaching the proper moisture content for the specified compaction.

3.06 Finish Grading

Shape the completed stabilized subgrade to conform with the finished lines, grades, and cross-section indicated in the plans. Check the subgrade using elevation stakes or other means approved by the Engineer.

3.07 Condition of Completed Subgrade

A. After completing the stabilizing and compacting operations, ensure that the subgrade is firm and substantially unyielding to the extent that it will support construction equipment and will have the bearing value required by the plans.

B. Remove all soft and yielding material, and any other portions of the subgrade which will not compact readily, and replace it with suitable material so that the whole subgrade is brought to line and grade, with proper allowance for subsequent compaction.

3.08 Maintenance of Completed Subgrade

After completing the subgrade, maintain it free from ruts, depressions, and any damage resulting from the hauling or handling of materials, equipment, tools, etc. The Contractor is responsible for maintaining the required density until the subsequent base or pavement is in place including any repairs, replacement, etc., of curb and gutter, sidewalk, etc., which might become necessary in order to recompact the subgrade in the event of underwash or other damage occurring to the previously compacted subgrade. Perform any such recompaction at no expense to the Owner. Construct and maintain ditches and drains along the completed subgrade section.

3.09 Field Quality Control

When proper moisture conditions are attained, compact the material to not less than 98% of maximum density determined by AASHTO T180, and a minimum Limerock Bearing Ratio of 40.

END OF SECTION

SECTION 02920

GRASSING

PART 1 GENERAL

1.01 Section Includes

Soil preparation, sodding, seeding, mulching, fertilizing, watering, and maintenance of grassed areas

1.02 References

Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest implemented edition.

1.03 Submittals

A. All sod shall have a valid and current state of Florida, Division of Plant Industry (DPI) inspection certification prior to being transported to the construction site. Submit the DPI certification to the Engineer and maintain a copy of the certification onsite with the construction records.

B. Tickets from each sod pallet of sod delivered to the site shall be provided to the Owner. The tickets are to identify the sod type, the sod farm (source) of the sod, and the date the sod was cut.

C. Provide signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within 6 months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed.

1.04 Warranty

All seeding shall be warrantied by the General Contractor to be true to name and in a vigorous growing condition through one growing cycle including one summer and one winter season.

1.05 Certification

Sod shall have a valid and current State of Florida, Division of Plant Industry (DPI) inspection certification prior to being transported to the construction site.

1.06 Maintenance

A. Maintenance for lawns shall begin immediately after seeding or sodding. Provide fertilizing, watering, mowing and replanting and continue as necessary until a close healthy stand of specified grasses is established.

B. Mowing and watering shall be continued until project completion as directed by the Owner.

PART 2 PRODUCTS

2.01 Lime

Lime shall be agricultural grade dolomitic limestone, ground sufficiently fine so that at least 80 percent will pass through a No. 8 sieve, and it shall contain not less than 80 percent calcium carbonate equivalent. Moisture content at time of delivery shall not exceed 8 percent.

2.02 Fertilizer

Fertilizer shall be a composition recommended by a local County Agricultural Agent or State Agricultural Extension Service or a preformulated 10-6-4 mixture.

2.03 Water

Water shall be free from oil, acid, alkali, salts, and other harmful substances.

2.04 Sod

A. Sod shall be either field or nursery grown sod that is native to the locality of the Project. The Contractor shall obtain Engineer's approval of the source of the sod prior to cutting the sod.

B. Sod grown on soil high in organic matter, such as peat, will not be acceptable. The consistency of sod shall be such that it will not break, crumble or tear during handling and placing. Sod shall be reasonably free of stones, crab grass, noxious weeds, and other objectionable plants or substances injurious to plant growth.

C. Sod shall have at least 1 inch of soil adhering firmly to the roots and cut in rectangular pieces with the shortest side not less than 12 inches. At the time of cutting sod the grass shall be mowed to a height not less than 2 inches nor more than 4 inches.

D. Sod cut for more than 48 hours shall not be used without the approval of the Engineer.

E. Bermuda Sodding shall be 419 Tifway Bermuda.

F. Bahia Sodding shall be Argentine Bahia Sod.

G. If so designated on the drawings, Bahia Sodding along coastal areas subject to high salt content shall be Seashore Paspalum Bahia (Paspalum vagination), such as Sea Isle 1, as produced by Turfgrass America, or approved equal.

2.05 Seed and Mulch

A. Permanent grass seed shall be scarified argentine bahia, in accordance with FDOT specification 981.

B. Temporary grass seed shall be annual rye grass in accordance with FDOT specification 981.

C. Mulch shall be dry mulch in accordance with FDOT specification 981.

PART 3 EXECUTION

3.01 Timing Requirements

A. Grass all disturbed areas, whether temporary or permanent grassing, within 7 days of initial disturbance.

B. Permanently grass disturbed areas after all required testing is complete.

3.02 Regrading of Topsoil

Topsoil shall be graded reasonably smooth and level after final settlement. All humps shall be removed and depressions or eroded areas filled in with additional topsoil before proceeding with seeding or sodding.

3.03 Preparation for Sodding or Seeding

A. Preparation shall not be started until all other site and utility work and finished grading within the areas to be seeded have been completed.

B. Loosen topsoil by tilling it to a depth of at least 3 inches and smooth out all surface resulting irregularities. Leave area free of rocks or hard soil clods that will not pass through the tines of a standard garden rake.

C. At least 7 days before applying fertilizer, spread lime uniformly in sufficient quantity to produce a soil pH of 6.5. Work lime thoroughly into topsoil to a depth of 3 inches.

D. Apply fertilizer uniformly at a rate of 20 pounds per 1000 square feet. Work fertilizer into soil prior to seeding or sodding.

3.04 Sodding

A. Provide sod in areas indicated on the Drawings. Generally, all disturbed areas are to be sodded except for those areas specifically identified to be seeded and

mulched or hydroseeded. Sodding shall also be used in ditches and drainage swales and on all embankment slopes steeper than 3 to 1 unless protection is provided against erosion of seeding.

B. Place sod with the edges in close contact and alternate courses staggered. Lightly tamp or roll to eliminate air pockets. On slopes 2 to 1 or steeper, stake sod with not less than 4 stakes per square yard and with at least one stake for each piece of sod. Stakes shall be driven with the flat side parallel to the slope. Do not place sod when the ground surface is frozen or when air temperature may exceed 90 degrees F. Water the sod thoroughly within 8 hours after placement and as often as necessary to become well established.

C. In ditches, the sod shall be placed with the longer dimension perpendicular to the flow of water in the ditch. On slopes, starting at the bottom of the slope, the sod shall be placed with the longer dimension parallel to the contours of the ground.

D. All exposed edges of sod shall be buried flush with the adjacent turf.

3.05 Seeding and Mulching – N/A

3.06 Hydroseeding – N/A

3.07 Watering

Immediately after placing erosion control or mulch, water seeded areas thoroughly with a fine mist spray. Keep soil thoroughly moist until seeds have sprouted and achieved a growth of 1 inch. For sod, immediately begin watering and continually keep moist until the sod has firmly knit itself to the topsoil.

3.08 Protection of Work

Protect newly seeded and sodded areas from all traffic by erecting temporary fences and signs. Protect slopes from erosion. Properly and promptly repair all damaged work when required.

3.09 Application of Fertilizer

Six weeks after completion of seeding or sodding apply granular fertilizer over all areas at the rate of two pounds of nitrogen nutrients per 1000 square feet of area.

3.10 Turf Establishment

A. Any sod that is more than 20% brown and has not become green within 14 calendar days of installation shall be re-sodded as directed by the Owner.

B. Any sod that does not have root establishment (can be pulled up by hand) 14 calendar days or more after installation shall be re-sodded as directed by the Owner.

C. All bare spots larger than 1 square foot shall be re-grassed as directed by the Owner.

D. Any bare areas compromising more than 1% of any given 1000 square foot area shall be re-grassed as directed by the Owner.

E. For the re-grassing, areas that were sodded are to be re-sodded and areas that were seeded are to be re-seeded.

F. Scattered bare spots, none of which is larger than one square foot, will be allowed up to a maximum of 3% of the total area.

G. Except for factors caused by a third party (other than the Contractor, subcontractor or supplier for the project), all re-grassing or repair of washed out and eroded areas shall be at no additional cost to the Owner.

H. Grassed areas not showing a close uniform stand of healthy specified grasses at the time of substantial completion shall be replaced and maintained until final payment is made to the Contractor.

3.11 Clean-Up

At the time of final inspection of work, but before final acceptance, remove from seeded and sodded areas all debris, rubbish, excess materials, tools, and equipment.

END OF SECTION

SECTION 03100

CONCRETE FORMS

PART 1 GENERAL

1.01 Section Includes

General formwork, forms, form liners, and coatings, form ties.

1.02 Related Sections

Section 03150 - Concrete Accessories

1.03 References

A. American Concrete Institute (ACI) latest edition:

1. ACI 301 - Structural Concrete for Buildings
2. ACI 318 - Building Code Requirements for Reinforced Concrete
3. ACI 347 - Guide to Formwork for Concrete
4. ACI SP-4 - Formwork for Concrete

1.04 System Description

Provide formwork to produce members of the size, shape, and exterior finish required, for the structural adequacy of the forms to carry construction loads without excessive deflection, and for the safe use of forms in connection with completion of the concrete work. The Contractor shall be responsible for any injury or damage arising from inadequate forms or from premature removal of formwork.

1.05 Submittals

Submit samples of patterned concrete form liner panels and form ties.

PART 2 PRODUCTS

2.01 Formwork

A. Form ties shall be a watersealing snap-in type. For patterned concrete, use stainless steel snap ties.

B. Plywood forms and liners shall be minimum grade B-B High Density Overlay Concrete Form Panels, Class I.

C. Formwork lumber shall be straight and clean. All nails shall be withdrawn and surfaces in contact with concrete shall be thoroughly cleaned before reuse

D. Metal forms shall be in accordance with ACI SP-4.

2.02 Patterned Concrete Form Liners

A. The special liners shall be configured in such a manner as to produce patterned finish concrete that will duplicate the surface appearance of the cut limestone building panels. The location, extent, and configuration of the surface treatment shall be as indicated on the Drawings. In addition to form release agents, rustication may be slightly beveled, approximately 1 to 8 maximum, to facilitate form release.

B. Produce the patterned concrete with a smooth finish by using either plywood and/or tempered hardboard, complying with requirements for Grade A Forms, in conjunction with finished lumber, or approved fiberglass liners; or an approved equal liner. Liner joint marks shall not be apparent.

PART 3 EXECUTION

3.01 General

A. Coordinate with other trades and properly place and locate in position all necessary dowels, bolts, anchors, anchor slots, inserts, sleeves, openings, hangers, metal ties and other fastening devices required for attachment and support of adjacent work. Securely anchor all embedded items.

B. Formwork shall comply with ACI 347 and to shape, lines and dimensions of the members as indicated on the Drawings. Joints in forms shall be horizontal or vertical. Forms shall be properly braced or tied to maintain position and shape under all dead and live loads and to prevent leakage. Forms shall be assembled so their removal will not damage the concrete. Tolerances for formed surfaces shall be in compliance with ACI 301.

C. Lumber formwork may be used for surfaces which will not be exposed to view. Use plywood or metal forms for exposed surfaces.

D. Provide temporary openings at the base of forms greater than 4 feet high, if necessary, to facilitate cleaning and inspection immediately before depositing concrete.

E. All external corners of concrete exposed to view shall be chamfered by using 3/4 inch by 3/4 inch by 45 degree wood stripping, except as otherwise indicated on the Drawings.

3.02 Grade A Forms

A. Unless otherwise indicated, Grade A forms shall be used for all exposed concrete.

B. Grade A forms shall consist of steel forms lined with 3/16 inch thick tempered hardboard or 1/4 inch thick plywood, or by using plywood forms.

C. Full sized sheets shall be used wherever possible. The edges of all sheets shall be straightened to insure tight, close fitting joints. Bulges or depressions more than 1/8 inch in 4 feet will not be permitted. Open joints which would permit leakage shall be sufficient cause for rejection of forms. Other tolerances shall be as allowed by ACI 347.

3.03 Grade B Forms

A. Use lumber, plywood or metal forms. All joints shall be solidly backed, aligned and made leakproof.

B. Unless otherwise indicated, Grade B Forms are intended for use where concrete will not be exposed to view, such as below grade, below normal liquid levels in water-retaining structures, or inside manholes, boxes, vaults, etc.

3.04 Surface Treatment of Formwork

The inside surface of lumber forms shall be soaked with clean water prior to placing concrete. All other forms shall be treated with an approved form oil or lacquer. If oil is used, all excess oil shall be wiped off.

3.05 Inspection of Formwork

Concrete shall not be placed until the forms have been inspected by the E/A to assure surfaces in conformance with the Drawings and Specifications. The inspection of formwork by the E/A does not relate to the structural adequacy or the safety of the formwork.

3.06 Removal of Forms

Forms shall be removed in accordance with requirements of ACI 318, without damaging the concrete. Leave shoring in place until concrete will safely support its own weight plus any live loads that may be placed upon it.

END OF SECTION

SECTION 03150

CONCRETE ACCESSORIES

PART 1 GENERAL

1.01 Section Includes

Construction joints, anchors and inserts, waterstops

1.02 Related Sections

A. Section 03100 - Concrete Forms

B. Section 07900 - Joint Sealants

1.03 References

A. American Society for Testing and Materials (ASTM) latest edition:

1. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
2. ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction

1.04 Submittals

Provide samples and certifications of all proposed materials.

PART 2 PRODUCTS

2.01 Joint Fillers

A. Joint fillers shall be products of the following manufacturers, or equal

1. W. R. Meadows, Inc., Elgin, Illinois
2. W. R. Grace and Co., Cambridge, Massachusetts

B. Preformed sponge rubber joint filler shall conform to ASTM D1752, Type I.

C. Preformed cork joint filler shall conform to ASTM D1752, Type II.

D. Preformed bituminous fiber joint filler shall be non_extruding type conforming to ASTM D1751.

E. Control joint strips shall have a minimum depth of 25 percent of slab thickness and a minimum thickness of 1/8 inch.

2.02 Joint Sealants

Sealants for joints shall be in accordance with Section 07900.

2.03 Waterstop

A. Waterstop shall be either rubber (SBR or Neoprene) or PVC and shall be dense, homogeneous and uniform. PVC is preferred. Holes and imperfections shall be cause for rejection

B. Waterstops for construction joints shall be 4 inch by 3/16 inch minimum split waterstop or 6 inch by 3/8 inch minimum with hollow center bulb. Waterstops for expansion joints shall be 9 inch by 3/8 inch with 3/4 inch hollow center bulb. Multiple rib type of waterstop is preferred, if available. Where size and type of waterstop are not indicated, 6 inch by 3/8 inch minimum with hollow center bulb shall be used.

C. Provide prefabricated tees, crosses, and other configurations as required for all intersections of waterstop.

PART 3 EXECUTION

3.01 Preparation

Remove existing concrete and provide openings for installation of new work as indicated on Drawings. Repair all damage to existing work caused by concrete removal.

3.02 General

A. Arrange construction joint bulkheads to allow concrete to be placed between construction joints in one continuous operation.

B. Provide construction joints with shear transfer keyways and waterstops as indicated. Unless otherwise indicated on the Drawings, spacing of construction joints for walls shall not exceed 75 feet.

C. Erect bulkheads where shown on the Drawings or where approved by the E/A. Bulkheads shall be at right angles to the main reinforcement and shall produce a tongue and grooved joint of the configuration indicated on the Drawings. Install waterstop as indicated.

D. Obtain the E/A's approval if it becomes necessary to eliminate or relocate construction joints shown on the Drawings.

E. Tops of edge forms, bulkheads and screeds shall be set to the finished elevations and to provide uniform pitch to drains as indicated on Drawings.

3.03 Horizontal Joints

Provide methods of achieving a leakproof joint. No horizontal construction joints will be permitted in slabs, beams, or girders

3.04 Vertical Joints

Joints in reinforced slabs, beams, and girders shall be perpendicular to the axis or plane of the members joined.

3.05 Expansion Joints

A. Provide expansion joints and waterstops where indicated. Joint fillers shall be placed on each side of waterstops.

B. Unless otherwise indicated, provide preformed sponge rubber or preformed cork filler. Allow for installation of two component traffic grade polyurethane sealant in compliance with Section 07900.

C. For drives, pavements, parking areas, walks and slabs on grade, provide preformed non-extruding asphalt strip or bituminous fiber joint filler set 1/8_inch below finished surface unless otherwise indicated. Tool concrete edges on each side of joint. No sealant is required.

D. Unless otherwise indicated, provide preformed sponge rubber or cork filler with allowance for installation of two-component polysulfide sealant in compliance with Section 07900.

E. Unless otherwise indicated, provide preformed sponge rubber or cork filler with allowance for installation of two component polysulfide sealant in compliance with Section 07900.

3.06 Waterstops

A. Provide continuous waterstops where so indicated on the Drawings

B. Embed approximately half of the waterstop on each side of the joint. Field splice and joint PVC waterstop by heat sealing butt joints. Rubber waterstop shall be spliced or jointed with solid web rubber unions and the manufacturer's approved cold applied cement.

C. All splices and joints shall be in accordance with the manufacturer's recommendations to produce a water-tight joint. Lap splices will not be permitted. Support and protect the waterstop during construction. Repair or replace all damaged waterstop.

END OF SECTION

SECTION 03200

CONCRETE REINFORCEMENT

PART 1 GENERAL

1.01 Section Includes

Reinforcement for concrete, not including reinforcement for masonry.

1.02 References

A. American Concrete Institute (ACI) latest edition:

1. ACI 315 - Standard Practice for Detailing Reinforced Concrete Structures
2. ACI 318 - Building Code Requirements for Reinforced Concrete

B. American Society for Testing and Materials (ASTM) latest edition:

1. ASTM A36 - Carbon Structural Steel
2. ASTM A185 - Steel Welded Wire Reinforcement, Plain, for Concrete
3. ASTM A615- Deformed and Plain Billet-Steel Bars for Concrete Reinforcement

C. Concrete Reinforcing Steel Institute (CRSI) latest edition:

1. Manual of Standard Practice for Reinforced Concrete Construction

1.03 Submittals

A. Certifications for reinforcement

B. Reinforcement steel shop drawings prepared in accordance with ACI 315. Drawings shall indicate bending diagrams, shapes, dimensions, clearances, splicing and laps, accessories, and installation notes.

PART 2 PRODUCTS

2.01 General

A. Reinforcement bars shall be ASTM A615, Grade 60 deformed bars, except as otherwise indicated.

B. Smooth dowels shall be ASTM A615, Grade 60 plain bars

C. Threaded dowels shall be ASTM A36.

D. Welded wire fabric shall conform to ASTM A185. Where welded wire fabric is shown but not sized on Drawings, use 6" x 6" x W2.9 x W2.9 WWF.

E. Accessories for proper installation of reinforcement shall conform to CRSI "Manual of Standard Practice for Reinforced Concrete Construction". Bar supports at exposed surfaces shall be Class C Plastic Protected.

F. Reinforcement fabrication shall conform to ACI 315 and ACI 318, and approved shop drawings.

PART 3 EXECUTION

3.01 Preparation

A. On porous subgrade or beddings, provide vapor barrier.

B. Coordinate with other trades and properly place and locate in position all necessary reinforcement, dowels, bolts, anchors, anchor slots, inserts, hangers, metal ties, and other fastening devices required for attachment and support to adjacent work. Securely anchor all fixtures and embedded items.

3.02 General

A. The placement of reinforcing steel shall conform to "Placing Reinforcing Bars", as published by the Concrete Reinforcing Steel Institute except as noted.

B. Reinforcement shall be inspected and approved by the E/A before enclosing forms are erected and shall be rechecked immediately prior to depositing concrete.

3.03 Splices, Laps, and Dowels

A. Provide continuous reinforcement or dowels through construction joints. The use of inserts in lieu of dowels shall be subject to the E/A's approval. One half of reinforcement shall be discontinued across control joints unless otherwise indicated. All reinforcement shall be discontinued across expansion joints, except for sleeved or greased dowels, if indicated

B. Splice laps shall be as indicated on the Drawings. Dowels shall be of the same size as the largest bar to which they lap, unless otherwise indicated.

C. Splices for horizontal wall reinforcement of circular tanks shall be staggered so that no more than each fifth bar in each face is spliced within any two feet of wall perimeter. Slab reinforcement splices for circular tanks shall be staggered as indicated on the Drawings. The minimum length of staggered lap splices in circular structures shall be as indicated on the Drawings.

3.04 Fabric Reinforcement for Slabs

A. Fabric reinforcement for slabs shall be overlapped at splices not less than the spacing of the cross wires plus 2 inches. Fabric shall extend to within 4 inches of concrete edges.

B. Unless otherwise shown, place reinforcement 2 to 3 inches below the top of the finished slab. Mesh shall either be sandwiched between two layers of fresh concrete or supported on mesh supports. Supports that may puncture the vapor barrier, if any, shall not be used.

3.05 Reinforcement for Formed Concrete

Secure steel reinforcement to maintain proper position during concrete placement. Concrete protection for reinforcement shall conform to ACI 318, except as otherwise indicated on the Drawings. The distance from the center of reinforcing bars to the opposite face of all structural slabs, walls, columns, or beams shall conform to ACI 318. The distance may be increased provided the required cover is maintained.

3.06 SYNTHETIC FIBROUS REINFORCEMENT for Formed Concrete

A. Configuration – Fiber should be a macrosynthetic synergistic combination of a twisted-bundle non-fibrillating monofilament and a fibrillating network fiber system.

B. Chemistry – Fiber shall be made of 100% virgin materials in the form of fully-oriented copolymer/polypropylene, gray in color.

C. Contents – Fiber shall be used at a dosage rate of _5_pounds per cubic yard (as documented on the Construction Plans).

D. Correct Length – Fiber Length shall be _1.5__ - Inches (as documented on the Construction Plans).

E. Compliance: Fibers shall comply with A.S.T.M. C-1116 “Standard Specification for Fiber Reinforced Concrete and Shotcrete” and A.S.T.M. D-7508 “Standard Specification for Polyeolefin Chopped Strands for Use in Concrete”. The approved product is FORTA-FERRO® macrosynthetic fiber as manufactured by FORTA Corporation, Grove City, PA, U.S.A. Phone: 1-800-245-0306. Represented in Florida by FRC Resources, phone 727-433-4350 or emethfessel@frcresources.com

F. The fiber product name and addition rate per cubic yard is required to be on each concrete delivery ticket.

G. The fiber representative is required to be present for the first placement of concrete to confirm the amount of fiber used per cubic yard and that the manufacturer’s recommendations are followed. The contractor is required to provide 5 days notice. Contact is Ed Methfessel, see item v above for contact information.

H. The Contractor shall submit shop drawing for fiber to be used.

END OF SECTION

SECTION 03300

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 Section Includes

General requirements for formwork, reinforcement, accessories and cast-in-place concrete.

1.02 References

A. American Concrete Institute (ACI) latest edition:

1. ACI 301 - Structural Concrete for Buildings
2. ACI 305 - Hot Weather Concreting
3. ACI 306 - Cold Weather Concreting
4. ACI 315 - Detailing Manual
5. ACI 318 - Building Code Requirements for Structural Concrete
6. ACI 347 - Formwork for Concrete

B. American Association of State Highway and Transportation Officials (AASHTO) latest edition:

1. AASHTO T152 - Air Content of Freshly Mixed Concrete by the Pressure Method

C. American Society for Testing and Materials (ASTM) latest edition:

1. ASTM A185 - Steel Welded Wire Reinforcement, Plain, for Concrete
2. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
3. ASTM C31 - Making and Curing Concrete Test Specimens in the Field
4. ASTM C33 - Concrete Aggregates
5. ASTM C39 - Test Method for Compressive Strength of Cylindrical Concrete Specimens
6. ASTM C94 - Ready-Mixed Concrete
7. ASTM C138 - Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
8. ASTM C143 - Test Method for Slump of Hydraulic Cement Concrete
9. ASTM C150 - Portland Cement
10. ASTM C173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
11. ASTM C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
12. ASTM C260 - Air-Entraining Admixtures for Concrete
13. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete

14. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Bituminous Types)

1.03 Submittals

A. Submit reinforcement steel shop drawings prepared in accordance with ACI 315, Manual of Standard Practice for Detailing Reinforced Concrete Structures. Drawings shall indicate bending diagrams, shapes, dimensions, clearances, splicing and laps, accessories, and installation notes.

B. Submit manufacturer's literature for all admixtures proposed for the work.

C. Submit delivery tickets in accordance with ASTM C94 for each batch of ready-mixed concrete. Information on the ticket shall include class of concrete, water content, time of loading, truck number, admixtures, and quantity.

D. At least 35 days prior to placing of concrete, the Contractor shall submit proposed mix proportions and samples of proposed materials.

1.04 Quality Control

A. Materials and methods of mixing and placing concrete shall conform to ACI 318, Building Code Requirements for Reinforced Concrete.

B. Tests for slump shall be made when directed by the Engineer in accordance with ASTM C143.

C. Air content tests shall be made, when directed by the Engineer, in accordance with ASTM C138, C173, C231, or AASHTO T-152.

PART 2 PRODUCTS

2.01 Formwork

Formwork lumber shall be straight and clean. All nails shall be withdrawn and surfaces in contact with concrete shall be thoroughly cleaned before reuse.

2.02 Reinforcement

A. Reinforcement bars shall be ASTM A615, Grade 60 deformed bars, except as otherwise indicated.

B. Welded wire fabric shall conform to ASTM A185. Where welded wire fabric is shown but not sized on Drawings, use 6" x 6" x W2.9 x W2.9 WWF.

C. Accessories for proper installation of reinforcement shall conform to CRSI "Manual of Standard Practice for Reinforced Concrete Construction". Bar supports at exposed surfaces shall be Class C-Plastic Protected.

D. Reinforcement fabrication shall conform to ACI 315 and ACI 318, and approved shop drawings.

E. **SYNTHETIC FIBROUS REINFORCEMENT**

i. Configuration – Fiber should be a macrosynthetic synergistic combination of a twisted-bundle non-fibrillating monofilament and a fibrillating network fiber system.

ii. Chemistry – Fiber shall be made of 100% virgin materials in the form of fully-oriented copolymer/polypropylene, gray in color.

iii. Contents – Fiber shall be used at a dosage rate of _5_ pounds per cubic yard (as documented on the Construction Plans).

iv. Correct Length – Fiber Length shall be _1.5_ - Inches (as documented on the Construction Plans).

v. Compliance: Fibers shall comply with A.S.T.M. C-1116 "Standard Specification for Fiber Reinforced Concrete and Shotcrete" and A.S.T.M. D-7508 "Standard Specification for Polyeolefin Chopped Strands for Use in Concrete". The approved product is FORTA-FERRO® macrosynthetic fiber as manufactured by FORTA Corporation, Grove City, PA, U.S.A. Phone: 1-800-245-0306. Represented in Florida by FRC Resources, phone 727-433-4350 or emethfessel@frcresources.com

vi. The fiber product name and addition rate per cubic yard is required to be on each concrete delivery ticket.

vii. The fiber representative is required to be present for the first placement of concrete to confirm the amount of fiber used per cubic yard and that the manufacturer's recommendations are followed. The contractor is required to provide 5 days notice. Contact is Ed Methfessel, see item v above for contact information.

viii. The Contractor shall submit shop drawing for fiber to be used.

2.03 Joint Fillers

A. Joint fillers shall be products of the following manufacturers, or equal:

1. W. R. Meadows, Inc., Elgin, Illinois
2. W. R. Grace and Co., Cambridge, Massachusetts.

B. Preformed bituminous fiber joint filler shall be non-extruding type conforming to ASTM D1751.

C. Control joint strips shall have a minimum depth of 25 percent of slab thickness and a minimum thickness of 1/8 inch.

2.04 Concrete Materials

A. Water shall be clean and potable

B. Portland cement shall be ASTM C150 Type I, II or III.

C. Fine and coarse aggregate shall be clean, hard, natural, or manufactured material conforming to ASTM C33.

D. The nominal maximum size of the aggregate shall not be larger than three-fourths of the minimum clear spacing between individual reinforcing bars. Coordinate with maximum aggregate sizes specified hereafter for classes of concrete.

E. Admixtures shall conform to ASTM C260 (air entrainment) or C494 (water reduction) and shall be products of one of the following manufacturers, or equal.

1. Dewey and Almy Chemical Div., W. R. Grace and Co.
2. Euclid Chemical Co.
3. Master Builders Co.
4. Sika Chemical Corp.

2.05 Miscellaneous Materials

A. Vapor barrier shall be polyethylene film 0.006 inches thick and shall conform to Product Standard PS-17.

B. Liquid membrane curing compound shall conform to ASTM C309, Type 1 or Type 2. Type 2 compound shall be used for P.C.C. pavement only. All permanently exposed exterior slabs shall receive clear acrylic curing and sealing compound. Moisture loss shall not be more than 0.055 gr./sq. cm when applied to 200 sq. ft./gal.

C. Liquid membrane curing compound shall be products of one of the following manufacturers, or equal:

1. W.R. Meadows "Curettard"
2. Sonneborn-Contech "Sonsil"
3. Burke Co. "Res-Xnu"
4. Lambert Corp. "Gardseal"

D. Chemical hardener shall be colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, conforming to Federal Specifications TT-C-800A and Corps of Engineers Specification CE 204.

E. Chemical hardener shall be products of one of the following manufacturers, or equal:

1. Euclid Chemical Co. "Surfhard"
2. Sonneborn-Contech "Lapidolith"
3. Master Builders "Saniseal"
4. Lambert Corp. "Solidus"

2.06 Concrete Mixtures

A. Concrete not indicated otherwise shall be Class A concrete.

B. The proportions of cement, aggregate, and water shall be selected by the Contractor in accordance with ACI 318 to provide a plastic and workable mix. Coarse aggregate shall be limited to prevent harshness and honeycombing. Coarse aggregate size shall not be greater than the maximum listed for the various classes of concrete and as previously specified under aggregate.

C. Class A structural concrete shall have a 28 day strength of 4000 psi, shall contain not less than 540 pounds (5-3/4 bags) of cement per cubic yard of concrete, shall have a water-cement ratio of not more than 0.47 (5-1/4 gallons per bag of cement), and shall contain 4 percent to 6 percent entrained air, by volume, except interior slabs subject to abrasion shall not contain more than 3 percent entrained air. In addition, Class A concrete shall contain a water-reducing, densifying admixture and have a maximum slump of 4 inches. The maximum aggregate size for slabs shall be 1 inch.

D. Class B lean concrete shall have a 28 day strength of 3000 psi, it shall contain not less than 420 pounds (4-1/2 bags) of cement per cubic yard of concrete, shall have a water-cement ratio of not more than 0.71 (8 gallons per bag of cement), and shall have a 5 inch maximum slump. The maximum aggregate size shall be 2 inches.

E. Water-reducing densifying admixture added to Class A concrete shall reduce the water-cement ratio while maintaining slump and compressive strength. Use as manufacturer recommends.

F. Other admixtures may be proposed by the Contractor or requested by the Engineer and shall be provided at no additional cost to the Owner. Subject to approval, admixtures may be used for the following:

1. To increase slump up to 50 percent while maintaining compressive strength and water-cement ratio.
2. To retard set during hot weather

G. Calcium chloride, admixtures containing calcium chloride, or admixtures not approved, in writing by the Engineer, are prohibited.

PART 3 EXECUTION

3.01 General

A. Comply with ACI 305 or 306 for hot or cold weather concreting.

B. Do not mix salt, chemicals, or other foreign materials with the concrete to prevent freezing without approval of the Engineer. Maintain the temperature of concrete above 50 degrees F for 5 days after placement. When high early strength Portland cement concrete is used, the temperature shall not be less than 70 degrees F for 2 days or 50 degrees F for 3 days.

C. In no case shall the temperature of concrete exceed 90 degrees F at the time of placement.

3.02 Preparation

A. Remove existing concrete and provide openings for installation of new work as indicated on Drawings. Repair all damage to existing work caused by concrete removal.

B. Coordinate with other trades and properly place and locate in position all necessary dowels, bolts, anchors, anchor slots, inserts, sleeves, openings, hangers, metal ties and other fastening devices required for attachment and support of adjacent work. Securely anchor all embedded items.

C. The subgrade and/or bedding shall be compacted and free of frost. If placement is allowed at temperatures below freezing, provide temporary heat and protection as required to remove all frost. Saturate the subgrade approximately 8 hours before placement and sprinkle ahead of the placement of concrete in areas where vapor barrier is not used. Remove all standing water, ice, mud, and foreign matter before concrete is deposited.

D. On porous subgrade or beddings, or where indicated on the Drawings, provide vapor barrier. Lay vapor barrier sheets with 6 inch edge laps and tape or seal with mastic. Stretch and weight edges and laps to maintain their positions until concrete is placed. Coordinate with placement of reinforcement.

3.03 Formwork Requirements

A. Formwork shall comply with ACI 347 and to shape, lines and dimensions as indicated on the Drawings. Forms shall be properly braced or tied to maintain position and shape under all dead and live loads and to prevent leakage. Forms shall be assembled so their removal will not damage the concrete. Tolerances for formed surfaces shall be in compliance with ACI 301.

B. Lumber formwork may be used for surfaces which will not be exposed to view. Use plywood or metal forms for exposed surfaces.

C. The inside surface of lumber forms shall be soaked with clean water prior to placing concrete. All other forms shall be treated with an approved form oil or lacquer. If oil is used, all excess oil shall be wiped off.

3.04 Reinforcement

A. The placement of reinforcing steel shall conform to "Placing Reinforcing Bars", as published by the Concrete Reinforcing Steel Institute except as noted.

B. Provide continuous reinforcement or dowels through construction joints. One half of reinforcement shall be discontinued across control joints unless otherwise indicated. All reinforcement shall be discontinued across expansion joints.

C. Splice laps shall be as indicated on the Drawings.

D. Fabric reinforcement for slabs shall be overlapped at splices not less than the spacing of the cross wires plus 2 inches. Fabric shall extend to within 4 inches of concrete edges.

E. Unless otherwise shown, place reinforcement 2 to 3 inches below the top of the finished slab. Mesh shall either be sandwiched between two layers of fresh concrete or supported on mesh supports. Supports that may puncture the vapor barrier, if any, shall not be used.

3.05 Joints

A. Provide construction joints with shear transfer keyways as indicated.

B. Tops of edge forms and screeds shall be set to the finished elevations and to provide uniform pitch to drains as indicated on Drawings.

C. For drives, pavements, parking areas, walks and slabs on grade, provide preformed non-extruding asphalt strip or bituminous fiber joint filler set 1/8 inch below finished surface unless otherwise indicated. Tool concrete edges on each side of joint. No sealant is required.

3.06 Batching

A. Materials for concrete shall be proportioned and batched according to the approved design mix.

B. Water shall be measured to within 1 pint of the total amount required per batch. Admixtures shall be measured by weight or volume to an accuracy of 3 percent.

3.07 Mixing and Transporting Concrete

A. Concrete shall be ready-mixed or job-mixed at the Contractor's option; however, if fibers are used in the concrete, then volumetric trucks may not be used. Ready-mixed concrete shall be mixed and delivered to the project in accordance with ASTM C94. Job-mixed concrete shall be in accordance with the requirements of ACI 318.

B. Concrete shall be in its final position within one hour after the water and aggregate have been added to the cement, except in cool weather (50 degrees F or less).

C. Concrete shall be transported from the mixer to place of final deposit in such manner to prevent separation or loss of ingredients.

3.08 General Concrete Placement Schedule

A. All structural concrete shall be Class A Concrete.

B. Sidewalks, curbing, and driveways shall be Class B Concrete.

3.09 Depositing Concrete

A. Concrete shall be placed in accordance with the requirements of ACI 318 and within 10 feet of its final position. Place concrete only during normal working hours unless the Engineer is notified at least 24 hours in advance. Concrete shall not be placed until the Engineer has approved the formwork, reinforcement, and embedded items and debris has been removed.

B. Whenever new concrete is to be placed against existing surfaces, roughen and clean the surface to improve bond.

C. Provide runways and chutes to discharge concrete close to final position to minimize spreading and segregation.

D. Place slabs-on-grade using formed construction joints. Maximum size of pour shall be 40 feet each way for slabs with wire mesh reinforcement and 75 feet each way for slabs with bar reinforcement. Allow 24 hours between pours of adjacent slabs. Provide joints as specified or shown. Set continuous joint strips between slabs and abutting vertical surfaces as indicated on the Drawings.

3.10 Finishing Slabs and Flatwork

A. Unless otherwise indicated, provide the following slab finishes:

Description	Concrete Finish
Class B concrete surfaces	Float
Submerged slabs	1 Troweling
Exposed slabs	3 Trowelings
Ramps and walks	Float and broom finish

B. Concrete shall be within ¼ inch of a 10 foot straightedge in all directions except where slabs are dished for drains. Deviations from the elevation indicated shall not exceed ¼ inch.

C. Slabs sloped for drainage shall not have depressions that retain water.

D. Immediately after placement, screed concrete with straightedges or power strikeoffs. Do not use roller screeds or vibrating screeds.

E. Stakes for wet screeds shall be driven down flush with subgrade or pulled out as work progresses to avoid disturbing screeded concrete.

F. For drains in level slabs, form a 5 foot diameter depression approximately ½ inch below the adjacent slab surface.

G. Unless otherwise indicated on the Drawings, slabs sloped for drainage shall be uniformly pitched toward the drains at 1/8 inch per foot. Form a dished depression at drains unless otherwise indicated.

H. Immediately after screeding, darby surface with wood or magnesium darby to eliminate ridges and to fill in voids left by screeding.

3.11 Float Finish

A. Float concrete using magnesium or aluminum hand floats or power floats after the concrete has stiffened to a point where only a ¼ inch indentation can be imparted by normal foot pressure.

B. Float finish shall result in a uniform, smooth, granular texture. After floating, check slab tolerances with 10-foot straightedge. Fill low spots with fresh concrete; do not sprinkle with dry cement.

3.12 Trowel Finish

A. Where scheduled, or indicated, trowel with steel trowels after floating.

B. Initial troweling shall be done either by power or by hand with the trowel blade kept as flat as possible against concrete surface to prevent washboard or chatter effect.

C. Second troweling may be done by power if three trowelings are scheduled. If two trowelings are specified, second troweling shall be done by hand.

D. Third troweling shall be done by hand and shall continue until the concrete is consolidated to a uniform, smooth, dense surface free of trowel marks and irregularities.

E. Allow sufficient time between successive trowelings to allow the concrete to become harder. Each successive troweling shall be done with trowels that are progressively smaller and are tipped more to increase compaction of the concrete surface.

3.13 Brooming

Broom at right angles to direction of traffic to give a non-skid finish. Use a fine, soft-bristled broom for pedestrian ramps and walks, and a coarse, hard-bristled broom for vehicular pavement.

3.14 Control Joints

A. Control joints for non-structural slabs shall consist of partial depth plastic strips set flush with finished surface or 1/8 inch wide joints cut with a diamond saw. Control joints shall be one- quarter to one-third the depth of the slab unless otherwise indicated.

B. Saw joints as soon as concrete has hardened sufficiently so aggregate will not be dislodged but before shrinkage stresses develop cracks. Sawn joints shall be filled with approved joint sealant.

C. Unless otherwise indicated on the Drawings, spacing of control joints shall not exceed 25 feet in each direction.

3.15 Protection and Curing

A. Comply with ACI 305 and 306 for protecting and curing concrete in hot and cold weather. Fresh concrete shall be protected from rain, premature drying and excessively hot or cold temperatures, and shall be maintained with minimal moisture loss for the period of time necessary for the hydration of the cement and proper hardening of the concrete. Cure all concrete for a minimum period of 7 days (3 days for high early strength concrete) after placing.

B. Immediately after finishing, begin curing by covering with constantly saturated moisture retaining fabrics, impervious sheeting, or membrane curing compounds. Surfaces shall be thoroughly wetted with a fine spray before they are covered with sheeting.

C. Sheeting shall provide complete surface coverage with all joints lapped at least 4 inches and shall be placed and secured in a manner that will not mar or damage the concrete surface.

D. Apply membrane-curing compound in accordance with manufacturer's recommendations. Apply by spraying in a two coat continuous operation. Apply the coats at right angles to each other with a coverage of 200 square feet per gallon per coat. Begin application not later than 4 hours after finishing of the surface. The application shall result in an uninterrupted adherent film free of defects.

E. On surfaces scheduled to receive sealants, paint, seamless flooring, or other adhesive bonded finishes, either the membrane curing compound shall be compatible with the bonding agent or the curing compound shall be removed with sandblasting, acid etching or grinding, to the satisfaction of the installer of the finish surfacing. Bonded surfaces that fail to adhere to the concrete shall be removed and replaced at no additional cost to the Owner.

F. Apply hardener to floors of mechanical and electrical rooms and in other areas as required. Application shall be in strict accordance with the manufacturer's recommendations and as follows:

1. Hardener shall be applied at original container consistency without dilution to dry, clean surfaces no sooner than 30 days following completion of curing. NOTE: Hardener shall not be applied over surfaces covered with membrane curing agent.
2. Application shall generally be a three-coat process adjusted to accommodate extreme concrete densities only if prior review has been obtained from the Engineer. Application coverage shall be made at the approximate rate of one gallon to 100 square feet.
3. Apply first and second coats generously to surface, mop or squeegee standing water to leave a uniformly wet surface, allow to dry. Apply third coat in a manner similar to first two, except that surplus must be scrubbed with stiff bristled broom and flushed from floor surface with clear water. Scrubbing and flushing shall remove all traces of effervescence. Remove excess water and allow to dry.

3.16 Defective Concrete

A. All concrete not formed as indicated on the Drawings within tolerances specified in ACI 347 shall be removed and replaced.

B. Temperature and shrinkage cracks which develop prior to final acceptance of the work shall be repaired.

3.17 Miscellaneous Concrete Work

Provide concrete equipment pads and supports as indicated and conforming to approved shop drawings. Fastening devices and accessories shall be located by templates or setting diagrams furnished by the manufacturer.

3.18 Clean-Up

A. All concrete floor construction shall have the surfaces thoroughly scrubbed and cleaned with clear water. After cleaning, the floors shall be protected until they are accepted.

B. Clean all surfaces affected by the Concrete Work. No extraneous concrete or discoloration shall be left on any construction.

3.19 Concrete Testing

A. Compressive Strength Tests: Conform to ASTM C31 and ASTM C39. One set of four cylinders for each 50 cubic yards or fraction thereof, of each strength concrete placed in any one day. Test one specimens at seven days; test two specimens at 28 days. One specimen shall be retained for 56 days and tested only at the direction of the Engineer.

B. Slump Tests: Conform to ASTM C143. Perform one test for each load point of discharge and one for each set of compressive strength test specimens.

END OF SECTION

SECTION 03400

PRECAST CONCRETE

1. GENERAL

1.01 Description

A. Work specified Herein and Elsewhere.

1. Work under this Section includes:

   a. Parking blocks.
   b. Splash pads.
   c. Sills and copings.

2. Related work specified elsewhere:

   a. Cast_in_place concrete _ Division 3.
   b. Masonry _ Division 4.
   c. Flashing _ Section 07600.

1.02 Submittals

Shop Drawings

For sills and copings, submit shop drawings and schedules in compliance with Section 01000, indicating setting, anchorage and flashing details, and other items as requested by the E/A.

2. PRODUCTS

2.01 Parking Blocks

Provide and install 7_foot long x 9_inch wide x 6_inch high parking blocks as indicated on the Drawings. Blocks shall be reinforced lengthwise with four reinforcement bars and shall be securely anchored in place. Use Class A concrete as specified in Division 3.

2.02 Splash Pads

Provide splash pads for each downspout discharge unless otherwise noted on the Drawings. Splash pads shall be 12_inch by 18_inch reinforced concrete using Class A concrete as specified in Division 3. Form 2_inch by 2_inch curbs at longest edges, and top surface shall be sloped and coved to drain.

2.03 Sills and Copings

A. All masonry materials shall conform to the requirements specified in Division 4. Use Class A concrete as specified in Division 3.

B. Exposed finishes shall be smooth and dense, without imperfections.

C. Produce sills and copings accurately to shape and dimensions with joints and bonding as indicated. Provide exposed faces in the pattern and configuration indicated on the Drawings with straight, true

and sharp lines and arises. Beds and joints shall be straight and at right angles to the face. Provide reglet grooves for flashing where indicated.

D. Exterior sills and copings with exposed top surfaces shall have a wash on the top surface. Where sills and copings project beyond the wall line, the sides of cross joints in overhang shall be roughened to provide bond for the mortar or mastic pointing.

E. Provide holes and sinkages for all anchors, clamps, and dowels as necessary. Provide sinkages for clamps on bed side of each coping joint unless dowels or bolts are used to secure coping. Include all cutting and drilling necessary for installation of work of other trades as indicated on Drawings and specified under other Sections.

3. EXECUTION

3.01 Parking Blocks

Install parking blocks where indicated on the Drawings. Anchor with 1/2_inch steel dowels, 18 inches long.

3.02 Splash Pads

Install splash pads where indicated on the Drawings. Slope to drain away from structure.

3.03 Sills and Copings

A. Flashing

Install through_wall flashing and all other flashings as indicated on the Drawings and as specified under Section 07600 of the Specifications. All surfaces on which flashing material is to be installed shall be clean and rough particles removed.

B. Handle sills and copings by methods that will guard against soiling, mutilating, or chipping.

C. Where sills are backed_up with concrete or concrete blocks, coat the face of the back_up material with dampproofing as specified in Section 07150.

D. Set sills and copings plumb, level, and true to line in a full bed of mortar and tap to even bearing.

E. Set in a solid bed of non_staining mortar with not less than 1/4_inch wide joints, except where otherwise indicated or specified. All vertical joints, except those specified below, shall be filled full depth with mortar; before the mortar has set, the joints shall be raked back 3/4_inch from the face to allow for pointing. Completely fill all holes for anchors, dowels, and accessories. Avoid splashing mortar on the exposed surface.

F. All copings, sills, and other projecting stones, shall be set with unfilled vertical joints. Caulk the exterior profile of these joints for 3/4_inch from the face with non_staining dry rope yarn or oakum. Fill the joint from above with mortar to within 3/4_inch of top. After the grout has set remove caulking leaving joints ready for back_up material, caulking and sealing compound as required.

G. Provide expansion or control joints in work at locations indicated. Form expansion joints by placing continuous strips of preformed joint filler material in vertical joint to within 1/2_inch of the exposed face; fill remainder of joint with polysulfide sealant as specified in Section 07900.

H. All concrete and masonry workmanship shall conform to the requirements of Divisions 3 and 4.

I. Water Repellent Treatment

The exposed face of sills and copings shall be treated with a coat of clear nonstaining water repellent. Apply water repellent after walls have been cleaned and are thoroughly dry. Application shall be in strict accordance with manufacturer's directions. Avoid splashing on metals, glass and other adjacent surfaces. Immediately remove any splashes.

END OF SECTION

SECTION 03410

FLOWABLE FILL

1. GENERAL

1.01 Description (FDOT Specification 121 – FLOWABLE FILL)

A. Furnish and place flowable fill as an alternative to compacted soil as approved by the Engineer. Applications for conventional flowable fill include beddings; encasements; closures for tanks and pipes; and general backfill for trenches, embankments and walls. Applications for cellular concrete flowable fill include beddings; encasements; closures for tanks and pipes; and general backfill for embankments and walls.

1.02 Materials.

Meet the following requirements, per FDOT Standard Specifications for Road and Bridge Construction (2014 Ed.)

Fine Aggregate* .....Section 902
Portland Cement (Types I, II, or III) .....Section 921
Water .....Section 923
Admixtures** .....Section 924
Fly Ash, Slag and other Pozzolanic Materials ..Section 929
Preformed Foam .....ASTM C 869

*Any clean fine aggregate with 100% passing a 3/8 inch mesh sieve and not more than 15% passing a No. 200 sieve may be used.
**High air generators or foaming agents may be used in lieu of conventional air entraining admixtures and shall be added at jobsite and mixed in accordance with the manufacturer's recommendation.

1.03 Mix Design

Conventional flowable fill is a mixture of portland cement, fly ash, fine aggregate, admixture and water. Flowable fill contains a low cementitious content for reduced strength development. Cellular concrete flowable fill is a low density concrete made with cement, water and preformed foam to form a hardened closed cell foam material. Cellular concrete flowable fill may also contain fine aggregate, fly ash, slag and admixtures.

Submit mix designs to the Engineer for approval. The following are suggested mix guides for excavatable, non-excavatable and cellular concrete flowable fill:

	Excavatable	Non-Excavatable	Cellular Concrete
Cement	75-100 lb/yd3	75-150 lb/yd3 Min	150 lb/yd3
Pozzolans or Slag	None	150-600 lb/yd3	Optional
Water	*	*	*
Air**	5-35%	5-15%	****
28 Day Compressive Strength**	Maximum 100 psi	Minimum 125 psi	Minimum 80 psi
Unit Weight **	90-110 lb/ft3	100-125 lb/ft3	20-80 lb/ft3
Fine Aggregate	***	***	Optional

*Mix designs shall produce a consistency that will result in a flowable self-leveling product at time of placement.

**The requirements for percent air, compressive strength and unit weight are for laboratory designs only and are not intended for jobsite acceptance requirements.
***Fine Aggregate shall be proportioned to yield 1 yd3.
****In cellular concrete, preformed foam shall be proportioned at the job site to yield 1 yd3 in accordance with the design requirements.

1.04 Production and Placing

Use flowable fill manufactured at a production facility that meets the requirements of 347-3. Deliver flowable fill using concrete construction equipment. Revolution counter are waived. Place flowable fill by chute, pumping or other methods approved by the Engineer. Tremie flowable fill through water. Cellular concrete flowable fill may not be placed within three feet of the bottom elevation for roadway base courses.

1.05 Construction Requirements

Use straps, soil anchors or other approved means of restraint to ensure correct alignment when flowable fill is used as backfill for pipe or where flotation or misalignment may occur. Protect flowable fill from freezing for a period of 36 hours after placement. Place flowable fill to the designated fill line without vibration or other means of compaction. Do not place flowable fill during inclement weather, e.g. rain or ambient temperatures below 40ºF. Take all necessary precautions to prevent any damages caused by the hydraulic pressure of the fill during placement prior to hardening. Provide the means to confine the material within the designated space.

1.06 Acceptance

Acceptance of flowable fill will be based on the following documentation and a minimum temperature of flowable fill at the point of delivery of 50ºF.

Furnish a delivery ticket to the Engineer for each load of flowable fill delivered to the worksite. Ensure that each ticket contains the following information:

(1) Project designation,
(2) Date,
(3) Time,
(4) Class and quantity of flowable fill,
(5) Actual batch proportions,
(6) Free moisture content of aggregates,
(7) Quantity of water withheld.

Leave the fill undisturbed until the material obtains sufficient strength. Sufficient strength is 35 psi penetration resistance as measured using a hand held penetrometer in accordance with ASTM C-403. Provide a hand held penetrometer to measure the penetration resistance of the hardened flowable fill.

1.07 Basis of Payment

When the item of flowable fill is included in the Contract, payment will be made at the Contract unit price per cubic yard. Such price and payment will include all cost of the mixture, in place and accepted, determined as specified above. No measurement and payment will be made for material placed outside the neat line limits or outside the adjusted limits, or for unused or wasted material.

Payment will be made under: Flowable Fill - per cubic yard (CY).

END OF SECTION

SURFACE APPLIED DETECTABLE/TACTILE WARNING SURFACES

SECTION 09614
DETECTABLE/TACTILE WARNING SURFACES

LOCAL CONTACT INFORMATION:
KYLE MORO, (407) 803-2966

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Special Conditions and Division 1 Specifications Section, apply to this Section.

1.02 DESCRIPTION

A. This Section specifies furnishing and installing Surface Applied Detectable/Tactile Warning Surface Tiles where indicated. Not recommended for asphalt applications.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's literature describing products, installation procedures and routine maintenance.
B. Samples for Verification Purposes: Submit two (2) tile samples minimum 12"x12" of the kind proposed for use.
C. Shop drawings are required for products specified showing fabrication details, composite structural system, tile surface profile, fastener locations, sound on cane contact amplification feature, plans of tile placement including joints, and material to be used as well as outlining installation materials and procedure.
D. Material Test Reports: Submit complete test reports from qualified accredited independent testing laboratory's to qualify that materials proposed for use are in compliance with requirements and meet or exceed the properties indicated on the specifications. All tests shall be conducted on a Surface Applied Detectable/Tactile Warning Surface Tile system as certified by a qualified independent testing laboratory.
E. Maintenance Instructions: Submit copies of manufacturer's specified installation and maintenance practices for each type of Detectable Warning Surface Tile and accessory as required.

1.04 QUALITY ASSURANCE

A. Provide Surface Applied Detectable/Tactile Warning Surface Tiles and accessories as produced by a single manufacturer with a minimum of five (5) years' experience in the manufacturing of Surface Applied Detectable/Tactile Warning Surface Tiles.
B. Installer's Qualifications: Engage an experienced Installer certified in writing by Surface Applied Detectable/Tactile Warning Surface Tile manufacturer as qualified for installation, who has successfully completed installations similar in material, design, and extent to that indicated for Project.
C. Americans with Disabilities Act (ADA): Provide Surface Applied Detectable/Tactile Warning Surface Tiles which comply with the detectable warnings on walking surfaces section of the Americans with Disabilities Act (Title III Regulations, 28 CFR Part 36 ADA STANDARDS FOR ACCESSIBLE DESIGN, Appendix A, Section 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES).
D. California Code of Regulations (CCR): Provide only approved DSAAC detectable warning products as provided in the California Code of Regulations (CCR) Title 24, Part 2, Section 205 definition of "Detectable Warning". Section 1117A.4 and 1127B.5 for "Curb Ramps" and Section 1133B.8.5 for "Detectable Warnings at Hazardous Vehicular Areas".
E. Vitrified Polymer Composite (VPC) Surface Applied Detectable/Tactile Warning Surface Tiles shall be an epoxy polymer composition with an ultra violet stabilized coating employing aluminum oxide particles in the truncated domes. The tile shall incorporate an in-line pattern of truncated domes measuring nominal 0.2" height, 0.9" base diameter, and 0.45" top diameter, spaced center-to-center 2.35" to 2.40"as measured side by side in line. For wheelchair safety the field area shall consist of a non-slip surface with a minimum of 40 - 90° raised points 0.045" high, per square inch; "Armor-Tile" as manufactured by Engineered Plastics Inc., Tel: 800-682-2525, no known equal.

1. Dimensions: Surface Applied Detectable/Tactile Warning Surface Tiles shall be held within the following dimensions and tolerances:

Specifiers Note: Edit section below by selecting desired length and width. Delete non-relevant dimensions.

Length and Width: [36x48] [36x60] nominal
Depth: 0.1875 (3/16”), (+/-) 5% max.
Face Thickness: 0.1875 (3/16), (+/-) 5% max.
Warpage of Edge: 0.5% max.

2. Water Absorption of Tile when tested by ASTM D 570-98 not to exceed 0.05%.
3. Slip Resistance of Tile when tested by ASTM C 1028-96 the combined Wet and Dry Static Co-Efficients of Friction not to be less than 0.80 on top of domes and field area.
4. Compressive Strength of Tile when tested by ASTM D 695-02a not to be less than 28,000 psi.
5. Tensile Strength of Tile when tested by ASTM D 638-03 not to be less than 19,000 psi.
6. Flexural Strength of Tile when tested by ASTM D 790-03 not to be less than 25,000 psi.
7. Chemical Stain Resistance of Tile when tested by ASTM D 543-95 (re approved 2001) to withstand without discoloration or staining - 10% hydrochloric acid, urine, saturated calcium chloride, black stamp pad ink, chewing gum, red aerosol paint, 10% ammonium hydroxide, 1% soap solution, turpentine, Urea 5%, diesel fuel and motor oil.
8. Abrasive Wear of Tile when tested by BYK - Gardner Tester ASTM D 2486-00 with reciprocating linear motion of 37± cycles per minute over a 10” travel. The abrasive medium, a 40 grit Norton Metallite sand paper, to be fixed and leveled to a holder. The combined mass of the sled, weight and wood block is to be 3.2 lb. Average wear depth shall not exceed 0.060 after 1000 abrasion cycles when measured on the top surface of the dome representing the average of three measurement locations per sample.
9. Resistance to Wear of Unglazed Ceramic Tile by Taber Abrasion per ASTM C501-84 (re approved 2002) shall not be less than 500.
10. Fire Resistance of Tile when tested to ASTM E 84-05 flame spread shall be less than 15.
11. Gardner Impact to Geometry "GE" of the standard when tested by ASTM D 5420-04 to have a mean failure energy expressed as a function of specimen thickness of not less than 550 in. lbf/in. A failure is noted when a crack is visible on either surface or when any brittle splitting is observed on the bottom plaque in the specimen.
12. Accelerated Weathering of Tile when tested by ASTM G 155-05a for 3000 hours shall exhibit the following result – $\Delta E < 4.5$, as well as no deterioration, fading or chalking of surface of tile color No 33538
13. Accelerated Aging and Freeze Thaw Test of Tile and Adhesive System when tested to ASTM D 1037-99 shall show no evidence of cracking, delamination, warpage, checking, blistering, color change, loosening of tiles or other detrimental defects.
14. Salt and Spray Performance of Tile and Adhesive System when tested to ASTM B 117-03 not to show any deterioration or other defects after 200 hours of exposure.

1.05 DELIVERY, STORAGE AND HANDLING

A. Surface Applied Detectable/Tactile Warning Surface Tiles shall be suitably packaged or crated to prevent damage in shipment or handling. Finished surfaces shall be protected by sturdy wrappings and tile type shall be identified by part number.
B. Surface Applied Detectable/Tactile Warning Surface Tiles shall be delivered to location at building site for storage prior to installation.

1.06 SITE CONDITIONS

A. Environmental Conditions and Protection: Maintain minimum temperature of 40°F in spaces to receive Surface Applied Detectable/Tactile Warning Surface Tiles for at least 24 hours prior to installation, during installation, and for not less than 24 hours after installation.
B. The use of water for work, cleaning or dust control, etc. shall be contained and controlled and shall not be allowed to come into contact with the general public. Provide barricades or screens to protect the general public.

1.07 GUARANTEE

A. Surface Applied Detectable/Tactile Warning Surface Tiles shall be guaranteed in writing for a period of five (5) years from date of final completion. The guarantee includes defective work, breakage, deformation, fading and loosening of tiles.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. The Vitrified Polymer Composite (VPC) Surface Applied Detectable/Tactile Warning Surface Tile specified is based on Armor-Tile manufactured by Engineered Plastics Inc. (800-682-2525). No equal substitutions allowed after bidding process.
B. Color: Yellow conforming to Federal Color No. 33538. Color shall be homogeneous throughout the tile. Tiles are also available in Light Grey (Federal Color No. 26280), Dark Grey (Federal Color No. 36118), Onyx Black (Federal Color No. 17038), Pearl White (Federal Color No. 37875), Brick Red (Federal Color No. 22144), Ocean Blue (Federal Color No. 15187), Ochre Yellow (Federal Color No. 23594), and Colonial Red (Federal Color No. 20109).

2.02 MATERIALS

A. Fasteners: Color matched, corrosion resistant, flat head drive anchor: ¼" diameter x 1 ½" long as supplied by Engineered Plastics Inc.
B. Adhesive: Tactile Bond and Seal as supplied by Engineered Plastics Inc.
C. Sealant: Tactile Bond and Seal as supplied by Engineered Plastics Inc.

PART 3 EXECUTION

3.01 INSTALLATION

A. During all surface preparation and Surface Applied Detectable/Tactile Warning Surface Tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.
B. The application of all tiles, adhesives, mechanical fasteners, and caulking shall be in strict accordance with the guidelines set by their respective manufacturers. Not recommended for asphalt applications.
C. Coordinate with the Contractor or Engineer to ensure that the surfaces being prepared and fabricated to receive the tiles are constructed correctly and adequately for tile installation. Review manufacturer and contract drawings with the Contractor prior to the construction and refer any and all discrepancies to the Engineer.
D. Set the tile true and square to the curb ramp area as detailed in the design drawings, so that its location can be marked on the concrete surface. A thin permanent marker works well. Remove tile when done marking its location.
E. The surface to receive the Surface Applied Detectable/Tactile Warning Surface Tile is to be mechanically cleaned with a diamond cup grinder or shot blaster to remove any dirt or foreign material. This cleaning and roughening of the concrete surface should include at least 4 inches around the perimeter of the area to receive the tile, and also along the cross pattern established by the corresponding areas on the backside of the tile. Those same areas should then be cleaned with a clean rag soaked in Acetone.
F. Immediately prior to installing the Surface Applied Detectable/Tactile Warning Surface Tile, the concrete surfaces must be inspected to ensure that they are clean, dry, free of voids, curing compounds, projections, loose material, dust, oil, grease, sealers and determined to be structurally sound and cured for a minimum of 30 days.
G. Using Acetone, wipe the backside of the tile around the perimeter and along the internal cross pattern, to remove any dirt or dust particles from the area to receive the adhesive.
H. Apply Armor-Bond adhesive to the backside of the tile, following the perimeter and internal cross pattern established by the tile manufacturer. Sufficient adhesive must be placed on the prescribed areas to have full coverage across the 2" width of the adhesive locator and shall be applied to within 1/4" continuously around the perimeter edge of the tile. The entire tube of adhesive shall be applied to the back of each tile, sizes 24" x 36" and greater.
I. Set the tile true and square to the curb ramp area as detailed in the design drawings.
J. Working from the center of the tile outwards, proceed to drill and install all fasteners in the tile's molded recesses.

K. Standing with both feet applying pressure around the molded recess provided in the tile, drill a hole true and straight to a depth of 3½" using a 1/4" masonry drill bit. Drill through the tile without hammer option (on the drill) until the tile has been successfully penetrated, then with hammer option (on the drill) to drill into the concrete. Maintaining foot pressure on both sides of the hole while drilling prevents concrete dust from accumulating between the tile and concrete which can affect the tile being installed flush and may compromise installation integrity.
L. Immediately after drilling each hole, before moving on to the next, and while still applying foot pressure, mechanically fasten tiles to the concrete substrate using a leather bound or hard plastic mallet to set the fasteners. Ensure the fastener has been placed to full depth in the dome, straight, and flush to the top of dome. Drive the pin of the fastener with the mallet, taking care to avoid any inadvertent blows to the truncated dome or tile surface.
M. Following the installation of the fasteners, the concrete dust should be vacuumed, brushed or blown away from the tile's surface and adjacent concrete. Using Acetone on a rag, wipe the concrete around the tile's perimeter to ensure a clean, dry surface to receive perimeter sealant.
N. Armor-Seal perimeter caulking sealant should be applied following the sealant manufacturer's recommendations. Tape all perimeter edges of the tile back 1/16" from the tile's perimeter edge and tape the adjacent concrete back 1/2" from the tile's perimeter edge to maintain a straight and even caulking line. Apply sealant around tile perimeter using care to work sealant into any void between the tile and concrete interface. Tool the perimeter caulking with a rounded plastic applicator or spatula to create a cove profile between the tile and adjacent concrete. Remove tape immediately after tooling perimeter caulking sealant.
O. Do not allow foot traffic on installed tiles until the perimeter caulking sealant has cured sufficiently to avoid tracking. Curing time is weather dependant (average cure time at 75° F is 30 minutes). Adhesive or caulking on the surface of the Armor-Tile can be removed with Acetone.
P. If installing adjacent tiles, note the orientation of each tile. Careful attention will reveal that one of the long edges of the tile is different than the other in regard to the tiny dotted texture. You may also note a larger perimeter margin before the tiny dotted texture pattern begins. Consistent orientation of each Armor-Tile is required in order that the truncated domes on adjacent tiles line up with each other.
Q. In order to maintain proper spacing between truncated domes on adjacent tiles, the tapered edge should be trimmed off using a continuous rim diamond blade in a circular saw or mini-grinder. The use of a straightedge to guide the cut is required. All cuts should be made prior to installation of the tiles. If installing adjacent tiles, care should be taken to leave a 1/8 inch gap between each tile to allow for expansion and contraction.
R. If tiles are custom cut to size, if pre-molded recesses (to receive fasteners) are removed by the cut, or to maintain a tight installation to the substrate then any truncated dome can be center-drilled with a 1/4 inch masonry drill bit to create a through hole, and the through hole must be countersunk with a suitable carbide countersink bit to receive mechanical fasteners. Care should be taken to not countersink too widely or deeply. Fasteners should be flush with the top of the truncated dome when countersunk properly.

3.02 CLEANING, PROTECTING AND MAINTENANCE

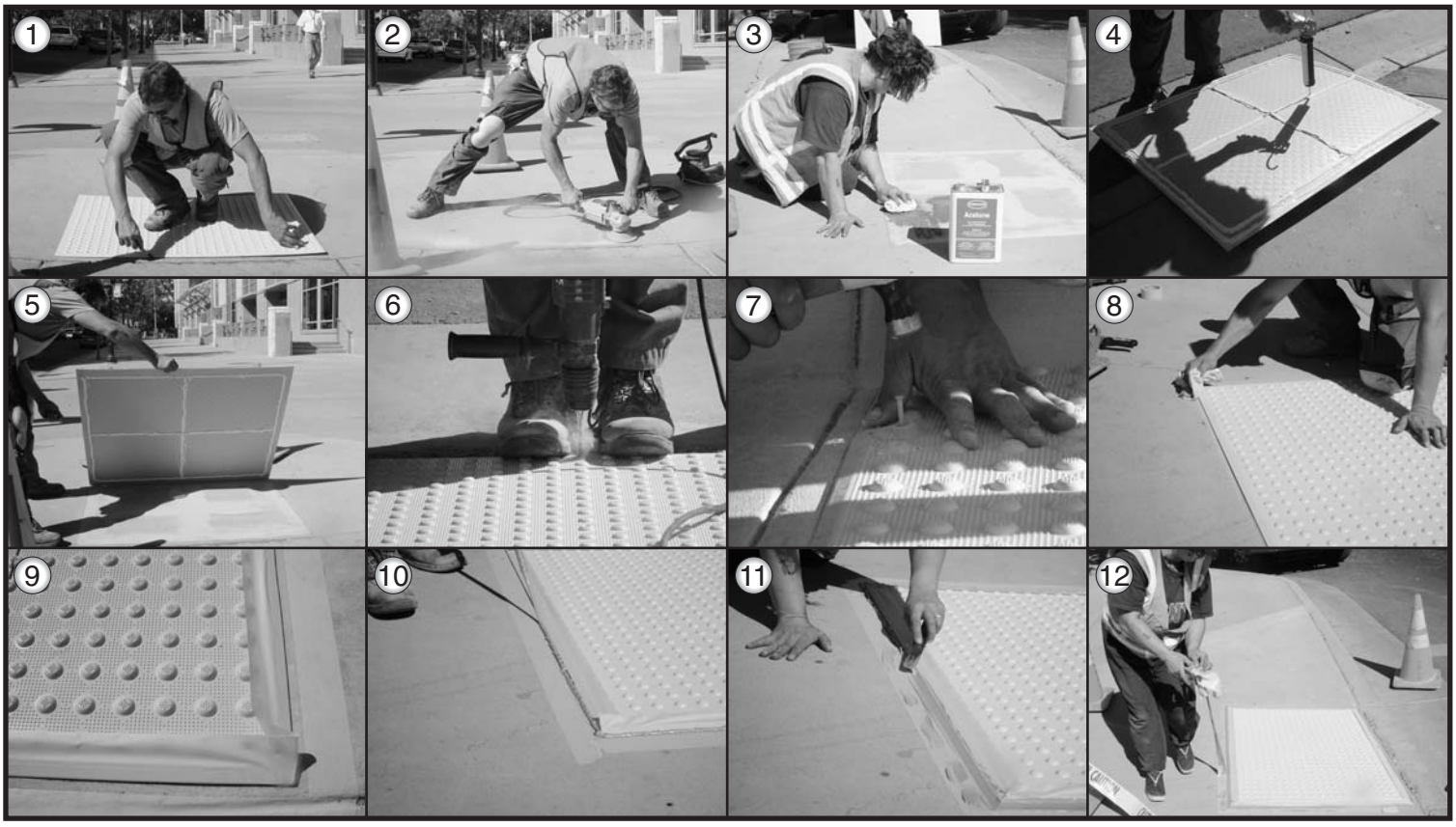
A. Protect tiles against damage during construction period to comply with Tactile Tile manufacturer's specification.
B. Protect tiles against damage from rolling loads following installation by covering with plywood or hardwood.
C. Clean Tactile Tiles not more than four days prior to date scheduled for inspection intended to establish date of substantial completion in each area of project. Clean Tactile Tile by method specified by Tactile Tile manufacturer.
D. Comply with manufacturers maintenance manual for cleaning and maintaining tile surface and it is recommended to perform annual inspections for safety and tile integrity.

END OF SECTION

Armor-Tile
Tactile Systems

Installation Instructions
Surface Applied Inline Dome Tile

View installation slide show, drawings and specifications on our website - **www.armor-tile.com**
Call 1-800-682-2525 if you have any questions



1. Place the tile on the designated location and trace the perimeter with a thin permanent marker.
2. Set the tile aside and using a 4" diamond cup grinder, scour the concrete within the marked location and on a cross pattern corresponding with the boss on the backside of the tile to remove any dirt or foreign material. (Not recommended for asphalt surfaces).
3. Clear away the dust with a leaf blower then clean the back of the tile and the concrete with rag soaked in Acetone.
4. Apply the entire tube of adhesive (Armor-Bond) to the back of the tile following the perimeter and cross pattern. The first bead should be applied thin, ¾" from the perimeter edge and a second bead applied 1" inside of the first. Extra adhesive can be applied to each corner should extra adhesive (Armor-Bond) be available.
5. Set the tile true and square to the curb ramp and press down firmly.
6. Keeping weight on either side of the pilot hole, drill down 3 ½" into the concrete using a hammer drill and the recommended diameter drill bit. Drill through the tile without the hammer option until the tile has been penetrated, then with the hammer option drill into the concrete.
7. While still applying pressure, remove the dust and any adhesive that surfaces and carefully set the mechanical fastener with a hammer. To prevent damage to the tile, a plastic dead blow or leather hammer is recommended. Repeat 6 & 7.
8. Clean the perimeter of the tile and the immediately surrounding concrete with Acetone making sure to remove any adhesive that has escaped from beneath the tile.
9. Mask the edge of the tile and the concrete leaving a ½" gap back from the tile's perimeter edge.
10. Apply the perimeter sealant (Armor-Seal).
11. Using a plastic applicator or spatula smooth out the sealant (Armor-Seal) in a cove profile between the tile and adjacent concrete.
12. Carefully remove the masking tape immediately after tooling the perimeter sealant.

Installation Manual
Armor-Tile Surface Applied
Inline Dome Detectable/Tactile Warning Surface Tile

A. During all surface preparation and Surface Applied Detectable/Tactile Warning Surface Tile installation procedures, ensure adequate safety guidelines are in place and that they are in accordance with the applicable industry and government standards.

B. The application of all tiles, adhesives, mechanical fasteners, and caulking shall be in strict accordance with the guidelines set by their respective manufacturers. Not recommended for asphalt applications.

C. Coordinate with the Contractor or Engineer to ensure that the surfaces being prepared and fabricated to receive the tiles are constructed correctly and adequately for tile installation. Review design drawings with the Contractor prior to the construction and refer any and all discrepancies to the Engineer.

D. Set the tile true and square to the curb ramp area as detailed in the design drawings, so that its location can be marked on the concrete surface. A thin permanent marker works well. Remove tile when done marking its location.

E. The surface to receive the Surface Applied Detectable/Tactile Warning Surface Tile is to be mechanically cleaned with a diamond cup grinder or shot blaster to remove any dirt or foreign material. This cleaning and roughening of the concrete surface should include at least 4 inches around the perimeter of the area to receive the tile, and also along the cross pattern established by the corresponding areas on the backside of the tile. Those same areas should then be cleaned with a clean rag soaked in Acetone.

F. Immediately prior to installing the Surface Applied Detectable/Tactile Warning SurfaceTile, the concrete surfaces must be inspected to ensure that they are clean, dry, free of voids, curing compounds, projections, loose material, dust, oil, grease, sealers and determined to be structurally sound and cured for a minimum of 30 days.

G. Using Acetone, wipe the backside of the tile around the perimeter and along the internal cross pattern, to remove any dirt or dust particles from the area to receive the adhesive.

H. Apply Armor-Bond adhesive to the backside of the tile, following the perimeter and internal cross pattern established by the tile manufacturer. Sufficient adhesive must be placed on the prescribed areas to have full coverage across the 2" width of the adhesive locator and should be applied to within 1/4" continuously around the perimeter edge of the tile. The entire tube of adhesive should be applied to the back of each tile, sizes 24" x 36" and greater.

I. Set the tile true and square to the curb ramp area as detailed in the design drawings.

J. Working from the center of the tile outwards, proceed to drill and install all fasteners in the tile's molded recesses.

K. Standing with both feet applying pressure around the molded recess provided in the tile, drill a hole true and straight to a depth of 3½" using a 1/4" drill bit. Drill through the tile without hammer option until the tile has been successfully penetrated, then with hammer option to drill into the concrete. Maintaining foot pressure on both sides of the hole while drilling prevents concrete dust from accumulating between the tile and concrete which can affect the tile being installed flush and may compromise installation integrity.

L. Immediately after drilling each hole, before moving on to the next, and while still applying foot pressure, mechanically fasten tiles to the concrete substrate using a leather bound or hard plastic mallet to set the fasteners. Ensure the fastener has been placed to full depth in the dome, straight, and flush to the top of dome. Drive the pin of the fastener with the mallet, taking care to avoid any inadvertent blows to the truncated dome or tile surface.

M. Following the installation of the fasteners, the concrete dust should be vacuumed, brushed or blown away from the tile's surface and adjacent concrete. Using Acetone on a rag, wipe the concrete around the tile's perimeter to ensure a clean, dry surface to receive perimeter sealant.

N. Armor-Seal perimeter caulking sealant should be applied following the sealant manufacturer's recommendations. Tape all perimeter edges of the tile back 1/16" from the tile's perimeter edge and tape the adjacent concrete back 1/2" from the tile's perimeter edge. Apply sealant around tile perimeter using care to work sealant into any void between the tile and concrete interface. Tool the perimeter caulking with a plastic applicator or spatula to create a straight edge in a cove profile between the tile and adjacent concrete. Remove tape immediately after tooling perimeter caulking sealant.

O. Do not allow foot traffic on installed tiles until the perimeter caulking sealant has cured sufficiently to avoid tracking. Adhesive or caulking on the surface of the Armor-Tile can be removed with Acetone.

P. If installing adjacent tiles, note the orientation of each tile. Careful attention will reveal that one of the long edges of the tile is different than the other in regard to the tiny dotted texture. You may also note a larger perimeter margin before the tiny dotted texture pattern begins. Consistent orientation of each Armor-Tile is required in order that the truncated domes on adjacent tiles line up with each other.

Q. In order to maintain proper spacing between truncated domes on adjacent tiles, the tapered edge should be trimmed off using a continuous rim diamond blade in a circular saw or mini-grinder. The use of a straightedge to guide the cut is required. All cuts should be made prior to installation of the tiles. If installing adjacent tiles, care should be taken to leave a 1/8 inch gap between each tile to allow for expansion and contraction.

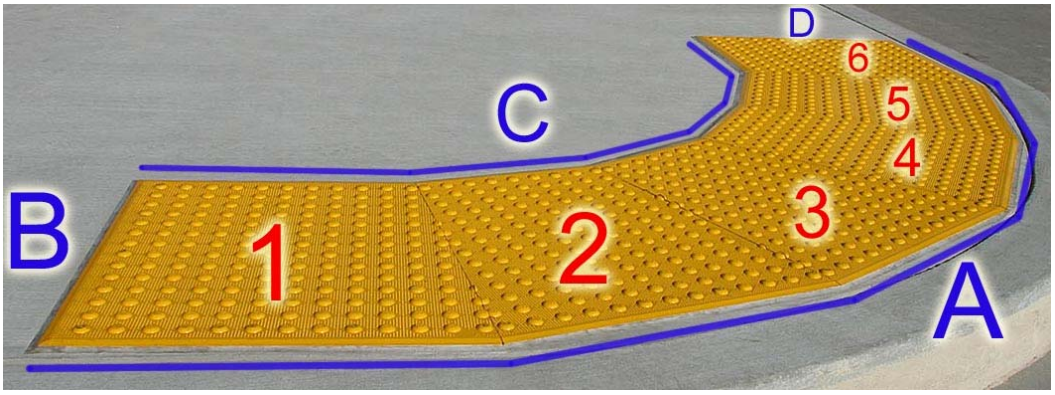
R. If tiles are custom cut to size, if pre-molded recesses (to receive fasteners) are removed by the cut, or to maintain a tight installation to the substrate then any truncated dome can be center-drilled with a 1/4 inch through hole, and countersunk with a suitable bit, to receive mechanical fasteners. Care should be taken to not countersink too widely or deeply. Fasteners should be flush with the top of the truncated dome when countersunk properly.

INSTALLATION PROCEDURE

FOR
SURFACE-APPLIED ARMOR-TILE
ON A RADIUS

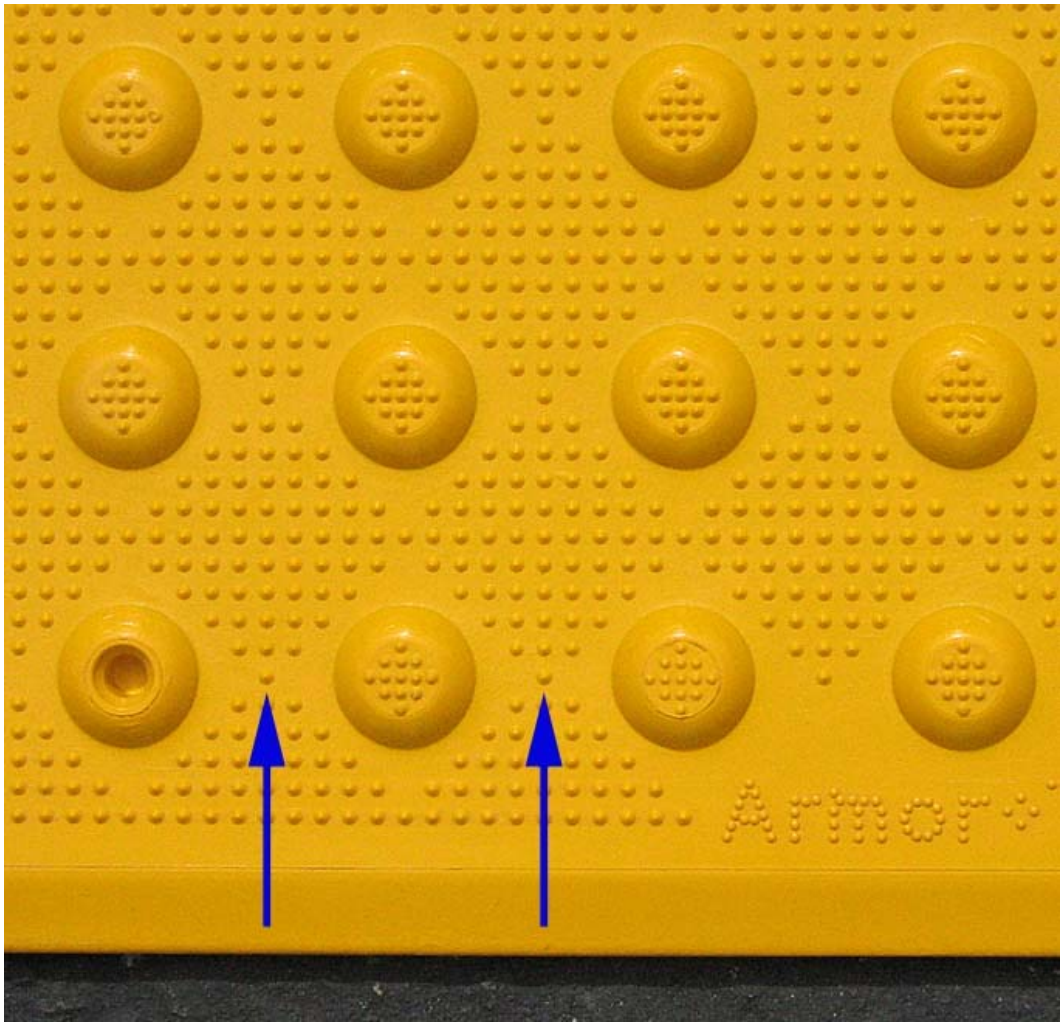
- Installation instructions for single tile installations should be downloaded from our website at http://www.armor-tile.com/surface_applied_system.html. They are available in both English and Spanish. A video can be viewed at the same web page. Many of the installation procedures outlined there, apply here. It is important to become familiar with the essential steps of the installation procedure. This document does not detail all required installation procedures; it merely gives additional information which would be helpful for a radius installation.

- When cutting tiles for installation in a radius, the tapered edge of each tile should remain intact all along the outside perimeter. The tapered flanges will only be cut off, on the sides where the tiles will butt up against each other. In the attached photo called, “Numbered Radius”, note the factory tapered edge intact along the entire outside edges, labeled A, B, C, and D. Note that all of the butt-joints between tiles have all tapered edges removed. When removing the tapered edge between tiles, the cut should be made at the “common cone” as described below.



Surface Applied - Numbered Radius

- When trying to determine the exact center between truncated domes, simply reference the tiny conical shapes in the background field of the tile. Notice the pattern of tiny cones form a diamond-shaped pattern in-between the truncated domes. The single tiny conical shape where adjacent diamond-shaped patterns meet, we will refer to as the “common cone”. Adjacent diamond-shaped patterns have this single cone in common. Note the reference arrows in the attached photo called, “close-up of conical shapes”. This common cone is the exact center between truncated domes. A straight cut can be made across an Armor-Tile by keeping the straight-edge which guides the blade, parallel to any row of the conical points.



Close-up of conical shapes

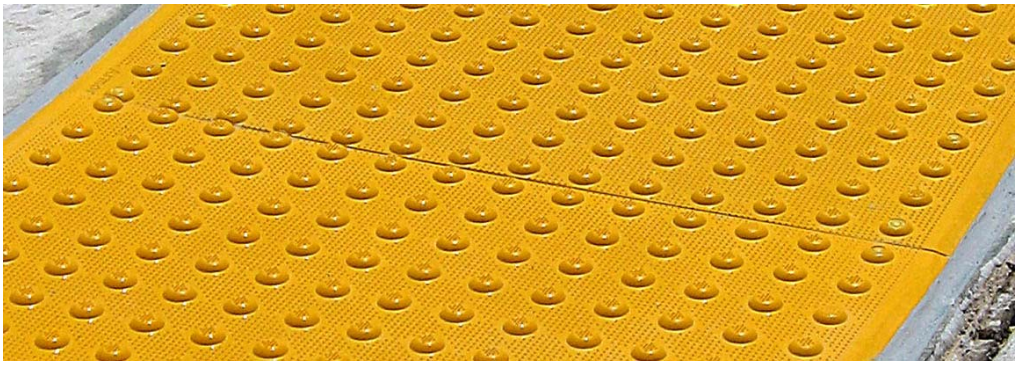
- The size, to which whole tiles should be cut in order to fit around a radius, depends on the tightness of the curve. A long gentle radius, where the detectable warning is to be 2-feet deep in the direction of travel, could be installed using whole 2'x4' tiles or perhaps whole 2'x3' tiles. If the curve is tighter, either of those tiles could be cut in half first, to yield segments which are only 2' wide, or even 1-1/2' wide. Obviously, the smaller the segments, the more exactly they will match the curve. In a situation where the detectable warning is to be 3-feet deep in the direction of travel, one might use whole 3'x4' tiles or perhaps whole 2'x3' tiles. For tighter curves, those tiles could be cut in half as previously outlined. All the procedures outlined herein would apply, no matter what size tiles were used.

- The tiles should be installed so that the edge nearest the curb is 6 inches minimum and 8 inches maximum from the curb line. When deciding what size to make each segment, some consideration should be given to achieving equal-sized tiles, and also to the fact that no tile should be narrower than about 10 inches.

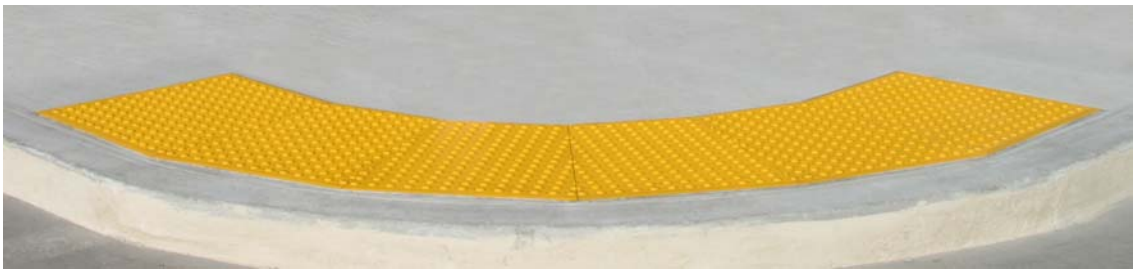
- Armor-Tiles are easily cut with a continuous-rim diamond blade designed for concrete. The blade can be used in a circular saw or a mini-grinder, and should be guided by a straight-edge.

- As the tiles are cut, the pre-drilled recesses for the mechanical fasteners may be lost. New fastener holes can be drilled through any truncated dome. After drilling, a countersink bit should be used so that the fastener will be flush with the top of the truncated dome. A piece of Armor-Tile cut to 2x2 feet or 1-1/2x2 feet should contain at least 4 fasteners. If, during installation, the need is seen for an additional fastener, any dome can be drilled to accept one. The drill bit used may be the same masonry bit used to drill the holes in the concrete.

- The key to installing Armor-Tiles in a radius is simply to determine the amount by which each tile will overlap, and cut ½ of the amount off each tile. In the attached photos called, “Joint Close-up” and “SA Radius”, note that each joint between tiles is symmetrical. As truncated domes on one tile have been cut, the truncated domes on the opposing tile have been cut the same amount. When the tiles are brought together, there is no trip hazard.



Joint Close-up



SA Radius

- Two Armor-Tiles should be identified as those which will be placed at the two opposing ends of the radius. These tiles will retain their perimeter tapered flange and should be identified as different from the other tiles. The remainder of the tiles required for the radius can be cut in half or otherwise sized, and the tapered flange should be removed from the proper two sides, as described above. Layout of the radius can now begin. Some installers prefer to begin in the middle of the radius and work toward the ends. Sometimes the installation begins at one end and proceeds toward the other.

S A Radius

- The procedure for layout and determining the overlap to be removed is as follows:
  - Using a Sharpie marker, mark a line on the substrate which is parallel to the radius curb face. All tiles will be installed such that the corners of each piece of Armor-Tile touch it. This line should be no closer than 6 and no further than 8 inches from the curb line. This permanent marker will be covered later by caulking.

- From that radius layout line, determine and outline the full area which will be covered by Armor-Tiles. Use a grinding cup to scuff the entire area, as detailed in our written installation instructions.

- To avoid confusion later, it is helpful to take all pieces of tile which were cut to become pieces of the radius, and lay them out in the place they will hold in the final installation. Attention should be paid to the orientation of the “Armor-Tile” logo which is embossed at the perimeter of each tile. The tiles should be installed such that all the logos are on the same side. Some Armor-Tiles are intentionally not exactly symmetrical, and this procedure will assure that all truncated domes will line up. If both sides of the Armor-Tile contain the logo, this step can be disregarded. Place a piece of tape on the tapered flange at the “street side” of each tile, and mark each tile with a sequential number, representing the tile’s place in the string of tiles.

- Keep in mind that the tile numbered as 1 may or may not be the first tile installed. Installation may commence with the tile which is near the center of the radius, for example, 6, and proceed 7 through 12, followed by 5, then 4, etc. For this reason, these instructions will not refer to tiles by number.

- Place the first piece of tile to be installed, so that the corners touch the radius layout line and place a sandbag on it.

- When the adjacent piece of tile is placed, it will overlap the first tile somewhat. When this happens, it might be difficult to know where the corner of the first tile is. Therefore, before placing the second tile, use a straight-edge to make a pencil line on the substrate, which is an extension of the edge of the first tile. The line only needs to be long enough to be seen after the second tile is placed. Do not use a Sharpie, because it will mar the concrete.

- Place the second piece of tile so that the corner touches the radius layout line, making it coincide exactly with the corner of the first tile placed. Then shift the tile until the other corner now touches the radius line also. This will cause this tile to overlap the first tile. Verify that both corners of both tiles still touch the radius layout line.

- Measure the amount by which the two tiles overlap each other. The measurement can be taken from the corner of the tile just placed, along its edge, to the pencil line drawn as an extension of the tile beneath it. Exactly one half of that measurement should be noted and written down.

- Now all that is required is to cut a triangle off of each tile, removing half of the overlap. Using an extra fine point Sharpie, mark the edge of each tile, with the measurement just written down. Then make an accurate cut in the tile in a straight line, from that mark, to the other corner, where the amount to be removed is zero. As a double-check on accuracy, the triangles of scrap removed from each of these two tiles should be the same size when placed back-to-back.

- After making only these two cuts, replace the tiles on the substrate and verify that when the corners are touching the radius layout line, the tiles meet each other as planned. If the fit is good, place a 1/16" gap between the two tiles, put sandbags on both of these tiles and proceed to place the next tile, following the same procedure to find the amount of overlap and then remove the overlap as previously outlined. When each of those two cuts are made, the second tile in the sequence of three now has triangles of scrap removed from both sides. Continue to repeat the procedure until the third tile in the sequence has had both triangles of scrap removed.

- At this point, the second and third tiles in the sequence can be anchored with Armor-Bond and mechanical fasteners. Be certain to wipe the substrate with Acetone just prior to adhering the tiles. Leave a 1/16" gap between the tiles. The process can then be repeated. We DO NOT recommend cutting the overlap from all the tiles before beginning the process of anchoring them.

- When examining the back side of a Surface-Applied Armor-Tile, one will note embossed sections around the perimeter, and in a "+" pattern across the center of the tile. These are the only places where adhesive will be applied. These areas are roughened at the factory, so that the adhesive will achieve a better bond. It should be noted that if part or all of these embossed areas are cut off during this radius installation process, a new area about 2-1/2 inches wide should be scuffed with a grinding cup or diamond blade. Dust from this grinding must be removed as outlined in our detailed installation instructions, prior to applying the adhesive.

- A 1/16-inch gap should be left between each installed tile, to allow for expansion and contraction.

- When all the tiles have been installed, the entire perimeter should be caulked with Armor-Seal as detailed in our written instructions. Do not caulk between tiles.

- <u>Some useful items for the radius layout and installation would include:</u>

  - ✓ Fine point wood pencil
  - ✓ Extra fine point Sharpie marker
  - ✓ Fine point Sharpie marker
  - ✓ String or tool to mark radius layout line
  - ✓ Half a dozen sandbags
  - ✓ Straight-edge
  - ✓ Bar clamps to hold straight-edge to tiles during cuts
  - ✓ Continuous-rim diamond blade
  - ✓ Circular saw
  - ✓ Vacuum for dust control
  - ✓ Dust masks
  - ✓ Sawhorses with work surface
  - ✓ Hammer Drill
  - ✓ ¼"x6" long masonry drill bit (or 3/16", depending on the fasteners supplied)
  - ✓ Caulking gun
  - ✓ Utility knife

- ✓ Countersink bit
- ✓ Leaf blower
- ✓ Grinding cup in minigrinder
- ✓ Acetone
- ✓ Rags
- ✓ Plastic-headed hammer
- ✓ Masking tape
- ✓ Safety glasses
- ✓ Caution tape or cones for wet caulking
- ✓ Printout of installation instructions from Armor-Tile website

13000 BOAT RAMP

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1.0 SCOPE

1.1 GENERAL: The Work consists of: (i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations in connection with replacement of the existing boat ramp, extension of the existing vinyl seawall, installation of an articulating concrete block mat and installation of a new floating dock with aluminum ramp at Manatee County's Jiggs Landing Facility in Bradenton within the lines, grades and cross-sections specified in these specifications and on the Construction Drawings. The Contractor shall pay for all work items described in these Specifications and Contract Documents unless otherwise noted.

1.2 PROJECT DESCRIPTION: Manatee County's Jiggs Landing Facility is located at 6106 63rd St. E. in Bradenton; Parcel ID 1879700001. Approximately 975 SF of the existing concrete boat ramp shall be removed and replaced; the existing vinyl seawall shall be extended approximately 4 ft to the east to meet the replaced boat ramp; approximately 780 SF of articulating concrete block mat shall be placed at the based of the ramp to protect the existing soils from scour; and approximately 160 SF of floating dock and approximately 160 SF of aluminum ramp shall be installed from the water-ward end of the existing stationary dock structure.

2.0 RELATED DOCUMENTS AND PRE-CONSTRUCTION CONFERENCE

2.1 GENERAL: The Contractor shall comply with all companion documents and references as described herein. All reference standards shall be the latest published version unless otherwise specified. These publications are referred to in the text by the basic designations only.

A. Construction Drawings
B. Geotechnical Report and/or Subsurface Soils Investigations
C. Project Permits
   1) SWFWMD/USACE Joint Environmental Resource Permit (ERP) and Proprietary Authorization for Use of State Owned Submerged Lands - Permit No. 43034511.003 (Exp. 11/07/18)
   2) NPDES Generic Permit for Discharge of Produced Ground Water from Any Non-Contaminated Site Activity (to be obtained by the Contractor, if site dewatering is required)
   3) Permits for Removal and Transport of Debris/Excavated Material (to be obtained by the Contractor)
D. OSHA Standards for Construction
E. Manatee County Construction Contract
F. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, 2013 Edition (hereafter referred to as FDOT 2013) and as described herein unless specified elsewhere.
   - Section 100 (Construction Equipment – General Requirements)
   - Section 101 (Mobilization)
   - Section 104 (Prevention, Control, and Abatement of Erosion and Water Pollution)
   - Section 105 (Contractor Quality Control General Requirements)
   - Section 120 (Excavation and Embankment)
   - Section 125 (Excavation for Structures and Pipe)
   - Section 145 (Geosynthetic Reinforcement)
   - Section 400 (Concrete Structures)
   - Section 415 (Reinforcing Steel)
   - Section 450 (Precast Prestressed Concrete Construction)

- Section 514 (Plastic Filter Fabric – Geotextile)
- Section 548 (Retaining Wall Systems)
- Section 901 (Course Aggregate)
- Section 902 (Fine Aggregate)
- Section 913 (Shell Material)
- Section 921 (Portland Cement and Blended Cement)
- Section 923 (Water for Concrete)
- Section 924 (Admixtures for Concrete)
- Section 925 (Curing Materials for Concrete)
- Section 926 (Epoxy Compounds)
- Section 931 (Metal Accessory Materials for Concrete Pavement and Concrete Structures)
- Section 962 (Structural Steel and Miscellaneous Metal Items, Other than Aluminum)
- Section 985 (Geotextile Fabrics)

2.2 PRE-CONSTRUCTION CONFERENCE: Prior to commencement of construction activity, a pre-construction conference shall be held at the site among the Contractor, the County and the Engineers. The Engineer will notify the Contractor of the date and site for the pre-construction conference. A schedule of all submittals required during Project construction will be discussed at the pre-construction conference and the Contractor will be informed of all procedures and lines of authority as well as contractual and administrative matters pertaining to the Contract.

2.3 ORDER OF PRECEDENCE: In the event the requirements, stipulations, provisions, and guidance contained herein conflict with the Manatee County's Instructions, Terms and Conditions, Supplemental General Conditions, or any other section of the contract documents, the more stringent requirement, stipulation, provision, or guidance shall apply.

3.0 ALTERNATE CONSTRUCTION METHODS AND DESIGN

3.1 GENERAL: The Contractor's bid shall be based on the Contract Documents. However, the Contractor is free to propose additional or alternate construction methods and designs as long as they satisfy the technical, functional and aesthetic requirements established in the Technical Specifications and the Construction Drawings. Any Contractor proposal for alternate or additional construction methods or designs shall be presented to the Engineer and the County for consideration and approval. The Contractor's submittal shall include drawings and specifications of sufficient detail and clarity to satisfy the Engineer of the validity of the alternate proposal. The County is under no obligation to accept alternative designs or methods submitted by the Contractor.

4.0 PHYSICAL DATA

4.1 GENERAL: Data and information furnished or referred to below is for the Contractor's information. The County and the Engineer shall be not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

4.2 PHYSICAL SITE CONDITIONS: The indications of physical conditions on the Construction Drawings or in the Supplemental Technical Provisions are the result of site investigations by surveyors and/or core borings. When the indicated physical conditions are the result of site investigations by core borings, the core boring locations are shown on the Construction Drawings. While the Engineer's core borings are representative of subsurface conditions at their respective locations and vertical reaches, local variations

of subsurface materials of this region are to be expected.

4.3 WEATHER MONITORING: The Contractor shall maintain full-time monitoring of the NOAA marine weather broadcasts and avail themselves of such other local, commercial, weather forecasting services as may be available. It shall be the Contractor's responsibility to obtain information concerning rain, wind and wave conditions that could influence the work.

5.0 CONTRACTOR SUBMITTALS

5.1 WORK PLAN: The work shall be completed in the most effective manner according to Project timing and critical path management. The Contractor shall prepare a Construction Work Plan a minimum of 14 days prior to commencement of construction activities and prior to the preconstruction conference. The Work Plan is subject to approval by the County and the Engineer. The Work Plan shall include at a minimum:

- Letter Appointing the Project Superintendent
- List of Equipment
- List of Sub-Contractors
- Critical Path Schedule
- Written Description of Construction Means and Methods (for each major work component)
- Site Access and Staging Plan
- Sediment Disposal Haul Routes
- Construction Sequencing
- Dewatering and Turbidity Control Plan (if necessary)
- Contractor's Quality Control Plan
- Environmental Protection Plan
- List of Additional Permits Required to Perform Work (if any)

5.2 CRITICAL PATH SCHEDULE: The Critical Path Schedule shall be consistent with timing indicated within these documents and shall indicate all major milestones of construction progress, completion projection dates, and labor requirements to complete construction. The Contractor must demonstrate sufficient labor and equipment availability to ensure Project completion within the period specified in these Documents. The Critical Path Schedule must be updated and submitted to the County and the Engineer on a weekly basis.

5.3 SITE ACCESS AND STAGING PLAN:

A. The Site Access Plan shall include at a minimum:
   - Identification of all proposed site access routes and staging areas;
   - Areas to be disturbed by site access and staging (i.e., vegetation, sidewalks, barriers, fences, utilities, etc.);
   - Itemized list of restoration efforts of disturbed site features;
   - Soil Tracking Prevention; and
   - Anticipated permit and approvals required for requested site access.

B. Entry and exit from the construction areas shall be only through those points specifically approved by the Owner and the Engineer. Initial improvement, maintenance and final restoration of the ingress and egress routes is the responsibility of the Contractor.

5.4 CONSTRUCTION SEQUENCING: The Contractor shall submit a Construction Sequencing Plan describing the sequence of each major work component as it relates to the Critical Path Schedule. The Contractor's sequencing plan shall provide a clear, detailed description of the Project construction sequence of work components. Work hour restrictions, including trucking time restrictions on public roads, shall be in accordance with local authorities.

5.5 DEWATERING AND TURBIDITY CONTROL PLAN:

A. The Contractor shall prepare and submit a Dewatering and Turbidity Control Plan for review and approval by the County and the Engineer. The Construction Drawings identify available contractor work areas. The Contractor shall contain the dewatering efforts within the boundaries as shown on the Construction Drawings. The design of the dewatering system shall be based upon the means and methods of the Contractor based upon his investigations of the site. The Contractor shall submit as part of the Dewatering Plan all dewatering calculations, anticipate excavation production rates and associated settling times, polymer selection (if applicable) and shop drawings for the proposed dewatering system. The Contractor must also provide for turbidity control to meet the Permit and Contract Document requirements.

B. If dewatering is required, Contractor shall obtain a Generic Permit for Groundwater Discharges from a Non-Contaminated Site from FDEP.

5.6 MATERIALS: The Contractor shall submit a notarized certification from the manufacturer(s) indicating that the material(s) utilized meet the Project specifications for review and approval by the County and the Engineer. Materials shall be ordered only after the required submittals and shop drawings have been received and approved. All materials proposed by the Contractor are subject to approval by the County and the Engineer. Approval by the County and/or the Engineer shall not relieve the Contractor from the responsibility of procuring the appropriate materials to meet the design and performance intent of these Contract Documents.

5.7 SHOP DRAWINGS: The Contractor shall submit all shop drawings to the County and the Engineer for approval. The County and the Engineer shall be allowed seven (7) working days for review and approval.

A. Approval by the County and the Engineer covers general design of details only, and if any change is made, which would cause members not to fit, or would not give sufficient strength, the Contractor shall call the County or the Engineer's attention to the fact at once, in writing, so that corrections may be made. If the Contractor fails to do this, the sole responsibility shall rest upon the Contractor.

B. Any error or omission on the Contractor's drawings, even though approved, shall not relieve the Contractor from the responsibility of performing the work in accordance with the specifications.

C. Any details not sufficiently shown on the Construction Drawings will be furnished to the Contractor by the County or the Engineer upon request.

5.8 QA/QC PLAN: The Contractor shall prepare and submit a Quality Assurance and Quality Control (QA/QC) Plan including the site layout, excavation positioning control, progress survey schedule and required testing. Records of verification, testing, inspections and the survey data shall be provided as scheduled and specified. Inspection of the work to ensure conformance with the contract documents shall at a minimum include:

- excavation procedures, quantities, staking and surveys;
- correct alignment, location and elevation of excavation;
- construction to required elevations and dimensions;
- performance and submittal of required quality control testing; and

- removal of all stakes, alignment ropes and equipment employed during the work.

5.9 ENVIRONMENTAL PROTECTION PLAN: The Contractor shall submit a written Environmental Protection Plan to the County and the Engineer. The Environmental Protection Plan shall include but not be limited to the following:

- Oil Spill Contingency Plan
- On-Site Fuel Containment and Storage
- Environmental monitoring procedures for the protection of water, land and air resources and noise prevention.
- Protection of Existing Vegetation.

5.10 AS-BUILT DATA AND DRAWINGS:

A. Red-line as-built drawings must be maintained onsite at all times denoting the Project components completed to-date.

B. The Contractor shall be required to submit a certified as-built drawing to the County and the Engineer with two (2) days of the Engineer's acceptance of construction activities. The as-built survey shall be performed at a spacing of not more than 10 ft perpendicular to the construction baseline. The profile surveys shall be conducted using differential leveling techniques and extend a minimum of 50 ft beyond the Project limits. All level loops shall close to within 0.05 ft. All topographic features shall be detailed by the surveys, including dunes, pavement, structures and vegetation. On smoothly sloping sections, a maximum of approximately 0.5 ft vertical difference is allowable between adjacent points. The as-built drawing shall be submitted on 24x36 inch sheets to a maximum scale of 1"=40' unless otherwise approved by the County or the Engineer. The Contractor shall be required to submit four certified hard-copies of the as-built drawings in addition to the electronic CAD file in *.dwg format.

C. The Engineer shall notify the County of any deficiencies or acceptance of the construction efforts within the lines, grades and cross-sections specified in these Documents and on the Construction Drawings.

D. Final payment shall not be made to the Contractor until these drawings and record data are turned over to the County.

5.11 ADDITIONAL PERMITS REQUIRED TO PERFORM WORK: The County has obtained a joint ERP from SWFWMD and USACE to perform the work as outlined in the Construction Drawings. The Contractor shall be responsible for obtaining all applicable additional permits required to perform the work as outlined in the Construction Drawings. Such permits shall include but are not limited to:

- Manatee County Building Permit (for dock and seawall structures)
- NPDES Construction Generic Permit

5.12 PAYMENT: No separate payment will be made for Contractor Submittals with the exception of the as-built drawings which shall be included in the unit bid price for **"Item – As-Built Survey".**

6.0 CONSTRUCTION SURVEY AND STAKEOUT

6.1 LAYOUT OF WORK AND PRE-CONSTRUCTION SURVEY:

A. Survey control monumentation and baseline stations have been established for this site. The control point coordinates will be reported horizontally in North American Datum of 1983 (NAD 83), Florida State Plane, West Zone and vertically referenced to North American Vertical Datum of 1988 (NAVD

88). Reference monument locations have been provided on the Construction Drawings. The Contractor shall establish any intermediate benchmarks, grade staking, and additional vertical control, as necessary, to construct the Project.

B. The Contractor shall use a professional surveyor to establish horizontal and vertical control from the Engineer's baseline and to verify existing site conditions prior to the commencement of construction activities.

C. The Contractor shall utilize cross-sections provided by the Engineer to establish the construction lines and grades. Work layout may be subject to modifications by the County and the Engineer to meet changed conditions or as a result of other required modifications to the Work.

D. The Contractor shall immediately contact the Engineer if any discrepancies are discovered in any of the information presented concerning all monumentation. If the Contractor does not contact the Engineer, it is understood that the Contractor agrees with all information presented in the Plans related to beach monumentation elevation and control information.

E. The Contractor shall furnish, at his own expense, such stakes, templates, platforms, equipment, tools and material, and all labor as may be required in layout out any part of the work from the monuments, control data and elevations established by the Engineer. It shall be the responsibility of the Contractor to protect and maintain all permanent and temporary monuments, stakes and other markers established through the construction of the Project unless authorized to remove them by the Engineer. If the monuments or temporary markers are destroyed or damaged by the Contractor prior to their authorized removal, the monuments or temporary markers shall be replaced and the cost deducted from any amounts due or to become due to the Contractor. All temporary markers and stakes placed by the Contractor must be removed upon completion of the Project.

6.2 PAYMENT: Work specified in this section shall be included in the unit **bid price for "item – Survey and Control Layout by Contractor".**

7.0 MOBILIZATION

7.1 GENERAL:

A. Mobilization will be in accordance with FDOT Standard Specification 101. To qualify for the mobilization payment, the Contractor must demonstrate that all equipment is onsite and operating at a capacity consistent with the Contractor's Work Plan. Retainage shall not be withheld from the Contractor's mobilization payment.

B. In the event the County or the Engineer considers that the amount of this item does not bear a reasonable relation to the cost of the Work in this Contract, the County or the Engineer may require the Contractor to produce data to justify the cost. Failure to justify such cost to the satisfaction of the County or the Engineer shall result in payment of actual mobilization costs, as determined by the County or the Engineer at the completion of mobilization, and payment of the remainder of this item in the final payment under this Contract.

7.2 PAYMENT: Work specified in this section shall be included in the unit **bid price for "Item – Mobilization".**

8.0 PREVENTION, CONTROL, ABATEMENT OF EROSION AND WATER POLLUTION

8.1 GENERAL:

A. Erosion and Sediment Control Best Management Practices (BMPs) should be designed and installed as per the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual*, June 2007.

B. Silt fencing shall be installed as show on the Construction Drawings per FDOT Index #102.

C. Floating turbidity barriers shall be installed as shown on the Construction Drawings per FDEP Index #103

C. A dewatering system, if required, shall be designed and utilized by the Contractor to remove and dispose of standing water that would interfere with the work. A Dewatering and Turbidity Control Plan shall be developed by the Contractor and submitted to the County and the Engineer for review and approval. The Dewatering and Turbidity Control Plan must comply with all applicable laws and regulations.

8.2 CONTRACTOR'S DEWATERING AND TURBIDITY CONTROL RESPONSIBILITIES:

A. The Contractor shall conduct excavation and dewatering operations in a manner to minimize turbidity and such operations shall conform to all water quality standards required by the permits and those prescribed by Federal, State and Local agencies.

B. At all times during work, ample means and equipment shall be provided to promptly and properly remove and dispose of all standing water that would interfere with the work. Water pumped or drained from the work area shall be disposed of in a suitable manner without damage to adjacent property, including major and minor structures and lands, and shall be in accordance with the environmental specifications. Any and all water damage shall be promptly repaired by the Contractor at his expense.

C. The Contractor shall obtain a National Pollutant Discharge Elimination System (NPDES) Generic Permit for Discharge of Produced Ground Water from Any Non-Contaminated Site Activity at least 48 hours in advance of discharge activities in accordance with Rule 62B-621.300(4)(a), F.A.C. A copy of the certified Notice of Intent (NOI) or a copy of the FDEP coverage confirmation letter shall be provided to the County and the Engineer prior to the commencement of discharge activities and displayed onsite at all times during construction. A copy of the Stormwater Pollution Prevention Plan (SWPPP) as well as copies of the inspection and maintenance records shall be maintained at the project site and shall be readily available to the County, the Engineer and all County or State inspectors. All dewatering by the Contractor shall be in accordance with Best Management Practices (BMP) under 62-621, F.A.C.

D. The Contractor must ensure that all existing drainage conveyances remain functional throughout the extent of the Project and that no upstream flooding is created due to blocked drainage.

E. The Contractor is to ensure that all effluent discharges to Ward Lake associated with dewatering activities meet state water quality standards. The standards for discharging water to Ward Lake shall not exceed 29 nephelometric turbidity units (NTUs) above background in accordance with 62-302.530(70).

F. The Contractor shall be responsible for turbidity monitoring as follows:

1) Turbidity monitoring will be performed daily by Contractor upon observed potential turbidity violation by County, Engineer or regulatory agency. The Contractor shall provide copies of the

turbidity logs to the County and the Engineer daily with QA/QC report. The Contractor shall notify the County, FDEP and the Engineer immediately upon any measured turbidity violation.

2) In situ turbidity measurements will be taken by a trained individual familiar with the proper calibration and operation of turbidimeters. The situ turbidity will be measured in NTUs. Background and compliance samples at both the surface and mid-water depth shall be collected and analyzed except where shallow water depths at the discharge site permit only one sample in the water column.

3) A log shall be kept that includes the following:
   - Date, time, and location of sampling,
   - A scaled schematic map with the sample site shown,
   - Water depth,
   - Sample depth,
   - Weather, wind, and current conditions, and
   - Approximate tide.

4) Background samples shall be collected at least 1,200 ft up-current and outside of any visible turbidity plume. Compliance samples shall be taken within the densest portion of the visible turbid plume. Samples are to be taken at a minimum of two hours after continuous discharging or construction activity, a minimum of two hours before sunrise and a minimum of two hours before sunset. Samples shall be analyzed within 60 minutes of collection.

5) If the turbidity at the compliance station described above exceeds 29 NTUs above the corresponding background levels, construction activities shall cease and not resume until corrective measures have been taken and turbidity has returned to acceptable levels. If a turbidity problem persists, additional measures will be implemented to reduce turbidity such changing the construction methods and/or the installation of turbidity curtain(s).

G. The Contractor is to inspect the effluent at the outfall on an hourly basis during active discharge for scour. Should scour occur at the outfall, the Contractor is to notify County and the Engineer immediately to determine remedies required to prevent scour. Scour prevention measures may include a stone-filled mattress or similar geotextile scour apron at the discharge point.

H. The Contractor is required to install and maintain silt fencing and turbidity barriers as shown on the Construction Drawings and as otherwise may be required to control turbidity and to prevent siltation of adjacent properties, streets, sewers and adjacent wetlands/surface waters shall be employed for the duration of construction in compliance with State Water Quality Standards and the regulatory permits. Turbidity curtains, if used, shall extend to within one (1) ft of the bottom. The Contractor shall be responsible for ensuring that the silt fencing and turbidity curtains are inspected daily and maintained in good working order.

I. All dewatering activities are to be in accordance with Section IV and Appendix II of the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual* (June 2007), the Environmental Specifications, and the Construction Drawings.

8.3 **TEMPORARY COFFER DAM:** The Contractor may use any means necessary to construct the ramp within the limits of the Contract Documents. This may include the potential use of a temporary coffer dam and continual dewatering.

8.4 PAYMENT: Erosion control will be in accordance with **"Bid Item – Prevention, Control, Abatement of Erosion & Water Pollution"** under FDOT Standard Specification 104.

9.0 SITE ACCESS & PREPARATION

9.1 SCOPE: The work to be performed under this section includes all labor, equipment and performing of operations in connection with site preparation activities as necessary to construct the Project including (1) removal of vegetation required to construct the Project as shown on the Construction Drawings and (2) removal of vegetation identified as "To Be Removed" or "To Be Relocated", as shown on the Construction Drawings. Site Preparation also includes but is not limited to incidentals such as the protection of existing trees and vegetation outside of the work area, installation of a soil tracking entrance, debris disposal, and installation of site security measures.

9.2 SITE ACCESS:

A. The Contractor shall provide a Site Access Plan that identifies how the Contractor will access the site to perform the required work. The Site Access Plan will be submitted to the County and the Engineer for review and approval prior to commencement of construction. The Site Access Plan will identify site access routes as well as all areas to be disturbed (i.e., vegetation, sidewalks, barriers, fences, utilities, etc.) and will include video and/or photographic record of all site access area to be disturbed.

B. Hauling and transport of construction materials shall not be allowed on private property. All temporary vehicle access routes required for the construction of this Project must be removed upon Project completion and the areas affected must be restored to their original condition before final acceptance of the Work.

C. Expenses incurred by the Contractor relating to any pertinent road use and delivery expenses shall be paid by the Contractor. All necessary transportation easements, accesses and permissions must be obtained by the Contractor prior to mobilizing equipment to the site.

D. The Contractor will be responsible for obtaining all necessary permits and approvals associated with the site access as well as restoration of all disturbed areas within the site access area.

E. The Contractor is advised that 63rd Street East in Bradenton is a predominantly residential roadway. The Contractor is responsible for complying with all permits, laws and regulations regarding weight limits for bridges and roads utilized for transport. The Contractor is likewise responsible for complying with all applicable traffic, safety, and speed laws. The Contractor shall notify and coordinate with local law enforcement and highway agencies regarding transport activities which shall be undertaken for the Work.

F. The Contractor shall provide and maintain all signs, barricades, warning signals, and flagmen to safeguard pedestrian and vehicular traffic within the Project area as required by Federal, State and local regulations (if applicable). Any costs associated with this requirement shall be incidental to the Project.

G. The Contractor shall install fencing and trespassing signage around the site to deter public access to the construction site and to ensure public safety.

H. The Contractor shall maintain the site in good, working order; keeping the site free of trash and debris. The Contractor shall also mow all grassed areas, as appropriate, to keep the site in good, working order.

9.3 CONSTRUCTION ENTRANCE: A construction entrance in accordance with FDOT Index #106 (Soil Tracking Prevention) shall be installed and maintained for the duration of construction. The Contractor shall coordinate with the County and the Engineer regarding the location of the construction entrance.

9.4 REMOVAL OF EXISTING CONCRETE RAMP PANELS: The Contractor shall remove and store the four (4) existing pre-cast concrete ramp panels. The existing pre-cast concrete ramp panel area is approximately 1,000 SF as shown on the construction drawings.

9.5 DISPOSAL: Items to be removed or cleared shall be removed from the Project site and disposed of in a lawful manner at an upland site as approved by the County or the Engineer. Upland disposal shall meet all applicable environmental regulations including but not limited to those regulations of the USEPA and FDEP. The Contractor shall identify the disposal location and haul route(s) as part of the submitted Work Plan. On-site burying of removed or cleared items shall be prohibited. As clearing is completed, Contractor shall immediately remove and dispose of all cleared materials and shall keep the site free, clear and in good order.

9.6 REMOVAL AND PRESERVATION OF TREES AND VEGETATION: The Contractor shall stake the limits of the vegetation to be cleared and receive approval from the County and the Engineer prior to the commencement of clearing activities. The Contractor shall provide and maintain a functional barrier around the vegetation to be preserved during construction. No material or equipment shall enter or be placed in the areas protected by barricades without prior approval. In the event vegetation denoted as "to be preserved" is damaged, it shall be replaced immediately following construction at a 1:1 damaged: replaced ratio within the pre-construction vegetation footprint or as approved by the County or the Engineer. Vegetation to be removed shall have the entire root system removed to a minimum of 18 inches below the surface.

9.7 PROTECTION OF MONUMENTS: The Contractor shall not disturb permanent markers or monuments and shall be responsible to maintain and preserve all monuments.

9.8 PROTECTION OF EXISTING STRUCTURES:

A. The Contractor shall be responsible for determining and documenting the pre-construction condition of existing structures and monitoring them during construction activities; taking appropriate measures to prevent damage to any existing structures during construction; and performing a post-construction verification inspection of those structures previously inspected. The Contractor shall assume all responsibility for damages to existing structures within and bordering the Project boundaries as a result of construction activities. This includes, but is not limited to, damages as a result of equipment impact and construction due to operation of equipment within close proximity to the existing structures.

B. The Contractor shall take photographs of all existing walls and other above ground improvements prior to and after Project construction. These photographs shall be identified and cataloged by the Contractor. The location and description of each structure shall be included in a submittal to the County.

9.9 PROTECTION OF UTILITIES:

A. The Contractor shall not disturb existing above ground or buried utilities and shall be responsible to maintain and preserve any and all existing above ground and buried utilities.

B. Locations, elevations and dimensions of existing utilities, structures and other features are shown according to the best information available at the time of preparation of the Construction Drawings. The Contractor shall verify the locations, elevations and dimensions of all existing utilities, structures and other features affecting this work prior to commencement of construction activities.

C. Prior to initiation of site construction, the Contractor shall verify any existing utilities including gas, water, electric, cable TV, communications, sanitary sewers and storm drainage systems on and/or adjacent to the site.

D. The Contractor shall exercise caution in areas of buried utilities and shall call "Sunshine One-Call" at 1-800-432-4770 at least 48 hours prior to construction to arrange for field locations of buried utilities.

E. The Contractor is responsible for repairing any damage to existing facilities, above or below ground that may occur as a result of the Work performed by the Contractor or sub-contractors, as called for in these Contract Documents.

9.10 STAGING AND STORAGE: The Contractor shall propose in the plan of work the use of access and staging areas to the County and the Engineer within ten (10) days of the Notice of Award. The plan shall include a description of the routes and areas he intends to use to transport and store material and equipment during construction. The plan shall also describe how the Contractor intends to access the project site and work areas as well as measures for debris and dust control. All transport routes, storage areas, and access areas are subject to the approval of the County and the Engineer. The final work plan and staging areas shall be negotiated with the County and the Engineer prior to commencement of the Work.

9.11 MEASUREMENT: Clearing and grubbing shall be paid for on a lump sum basis. The total removed and stored concrete panels shall be computed for payment based on each concrete panel removed and stored for re-use, as defined in the Construction Drawings.

9.12 PAYMENT: No separate payment will be made for Site Access and Preparation with the exception of the removal of clearing and grubbing which shall be included under bid item – **"Clearing and Grubbing"** and removal and storage of the existing concrete ramp panels which call be included under bid item – **"Remove and Store, Exist. Concrete Boat Ramp Panel".**

10.0 EXCAVATION

10.1 SCOPE: The work to be performed under this section includes all labor, equipment and performing of operations in connection with excavation of approximately 8 inches of subsurface material under the existing pre-cast concrete ramp panels as shown in the Construction Drawings.

10.2 GENERAL:

A. Excavation shall be in accordance with FDOT Standard Specification 120.

B. Excavation removal elevations shall be maintained based upon the plan limits of the proposed ramp footprint and shall not exceed the depths as shown on the Construction Drawings. Removal of sediment to depths exceeding those shown on the Construction Drawings must be reviewed and approved by the Engineer prior to full excavation of the material.

C. The Contractor shall notify the County and the Engineer of any misplaced material within one (1) day of occurrence.

10.3 EXCAVATION LIMITS:

A. Due to existing site conditions, excavation to construct the Project will occur within close proximity of existing wall structures, docks and other such structure features. It is the responsibility of the Contractor to conduct excavation operations in such a manner as to protect the existing structures.

B. The Contractor shall utilize cross-sections provided by the Engineer to establish the construction lines and grades. Work layout may be subject to modifications by the County and the Engineer to meet changed conditions or as a result of other required modifications to the Work.

10.4 DISPOSAL: The Contractor shall lawfully dispose of the excavated debris and removed vegetation material at an upland site as approved by the County and the Engineer. Upland disposal shall meet all applicable environmental regulations including but not limited to those regulations of the USEPA and FDEP. The Contractor shall identify the disposal location and haul route(s) as part of his Work Plan.

10.5 MEASUREMENT: Measurement of excavation shall be in accordance with FDOT Standard Specification 120.

10.6 PAYMENT: Work specified in this section shall be included in the unit bid price for **bid item – "Excavation".**

11.0 EXPANSION OF EXISTING VINYL SEAWALL AND CONCRETE CAP

11.1 SCOPE: The Work shall consist of design, furnishing, transporting, and installing vinyl sheet piling and associated concrete cap as shown on the Construction Drawings.

11.2 MATERIALS:

A. All sheet piling shall be manufactured entirely from a rigid, high impact, ultraviolet- (UV) inhibited, weatherable vinyl compound. Sheet piling shall match the existing. All exposed surfaces of the sheet piling shall be UV resistant, and comprised of virgin material with a minimum ASTM D4216 Cell Classification of 1-42443-33. If mono-extrusion technology is used, the entire sheet pile must be comprised of virgin material with a minimum ASTM D4216 Cell Classification of 1-42443-33.

B. The sheet piling shall match the existing sheet piling in terms of profile, thickness, materials, interlock design and all other aspects.

C. New sections shall match existing sections vertical depth or greater.

D. All male interlocks must incorporate reinforcement to resist lock separation and decrease seepage.

E. The Contractor shall comply with Technical Specification 12.0 (Cast-In-Place Concrete) as shown below. Upon approval of the vinyl panel installation by the Engineer and County, the Contractor shall construct the concrete cap to the elevations and dimensions as shown on the Construction Drawings. The concrete cap shall be constructed immediately following installation of the vinyl panels.

11.3 SITE PREPARATION:

A. All clearing or other site preparation within the area to be occupied by the vinyl sheet piles shall be completed before the sheet piling is installed as shown on the drawings.

B. Contractor shall demolish concrete on the existing cap back 18 inches +/- from the end and maintain and preserve the existing reinforcing steel within the existing cap. Contractor shall provide ½ inch profiled roughened surface for bonding of new concrete cap to existing concrete cap.

11.4 INSTALLATION OF VINYL SHEET PILING:

A. Vinyl sheet piling shall be installed at the location specified in the Construction Plans, to extend the existing wall as shown.

B. Contractor shall install first new vinyl sheet piling section into existing vinyl sheet piling section at exposed end ineterlock. Remaining sections shall be installed to extend wall 4 ft +/- as specified in the Construction Drawings.

C. Contractor shall install filter fabric along the landward side of the wall to conform to FDOT Specification, Standard Index 199, US 230 (Woven). Filter fabric shall extend to approximately 3 ft below the water-side dredge/bottom elevation. Contractor shall lap/fold and stitch filter fabric at all joints.

D. The sheet piling shall be placed by one of the following methods:

1) Driving Sheet Piling

The Contractor shall provide driving heads and other devices for sheet pile driving that conform to the recommendations of the manufacturer.

The sheet piling shall be driven in such a manner as to insure lock engagement and integrity throughout the entire length of each sheet pile. The sheet piles shall be held in proper alignment during driving by means of assembling frames or other suitable temporary guide structures. Temporary guide structures shall be removed when they have served their purpose.

At any time the forward edge of the sheet pile wall is found to be out of correct alignment: (a) the sheet piling already assembled and partly driven shall be driven to the required depth, and (b) taper sheet piles shall be then driven to bring the forward edge into correct alignment before additional regular sheet piling is assembled and driven.

The Contractor shall not attempt to drive sheet piles beyond the point of refusal, as indicated by excessive bouncing of the hammer or kicking of the sheet pile as concurred by the Engineer.

2) Trench Embedment of Sheet Piling

Vinyl sheet piling is embedded by excavating a trench to the dimensions and lines shown on the drawings and backfilling, as needed to extend the existing wall as shown.

Backfill material shall contain no sod, brush, roots, trash, organics, or other perishable material.

Backfill material shall be placed and compacted to the density of the surrounding material, taking care not to displace or damage the sheet piling. The adequacy of compaction will be concurred by the soil testing agency or the Engineer.

E. Construct new cap to match height, depth, width, reinforcing steel and all other aspects of the existing concrete cap. Lap new steel to existing cap and extend to approximately 2 inches beyond end of new vinyl sheets.

11.5 CUTTING OFF SHEET PILES: The Contractor shall cut off the sheet pile at the specified elevations. The length of the sheet pile cut off shall be sufficient to permit the removal of all damaged material.

11.6 DEFECTIVE SHEET PILES: Defective or damaged sheet piles shall not be driven and any sheet pile ruptured in the interlock or otherwise damaged during installation shall be pulled and replaced.

11.7 MEASUREMENT: The total installed vinyl sheet pile wall shall be computed for payment based on linear feet of installed vinyl sheet pile wall and cap, as defined in the Construction Drawings.

11.8 PAYMENT: Work specified in this section shall be included in the unit bid price for item, **"Retaining Wall Extension".**

12.0 CAST-IN-PLACE CONCRETE

12.1 SUMMARY:

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
   1) Concrete Wall Cap; and
   2) Cast-In Place Concrete Ramp.

B. Contractor shall refer to the Construction Drawings for concrete and reinforcing requirements.

12.2 DEFINITIONS:

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

12.3 SUBMITTALS:

B. Product Data: For each type of product indicated.

C. Design Mixtures: For each concrete mixture. submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments. Indicate amounts of mixing water to be withheld for later addition at Project site.

D. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

E. Material Test Reports: Required for aggregates, from a qualified testing agency, indicating compliance with the requirements specified in the Construction Drawings.

F. Material Certificates: For each of the following, signed by manufacturers:
   1) Cementitious materials;
   2) Admixtures;
   3) Form materials and form-release agents;
   4) Steel reinforcement and accessories;
   5) Curing compounds;
   6) Bonding agents;
   7) Adhesives; and
   8) Repair materials.

G. Field quality-control test and inspection reports.

12.4 QUALITY ASSURANCE:

A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
   1) Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

B. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
   1) Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
   2) Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
   1) ACI 301, "Specification for Structural Concrete,"
   2) ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

12.5 DELIVERY, STORAGE, AND HANDLING: For steel reinforcement, deliver, store, and handle steel reinforcement to prevent bending and damage.

12.6 MANUFACTURERS:

12.6.1 In other articles under this specification where titles below introduce lists, the following requirements apply to product selection:

12.6.1.1 Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

12.6.1.2 Products: Subject to compliance with requirements, provide one of the products specified.

12.6.1.3Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

12.6.1.4Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

12.7 FORM-FACING MATERIALS

12.7.1 Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

12.7.2 Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

12.7.3 Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

12.7.3.1Formulate form-release agent with rust inhibitor for steel form-facing materials.

12.7.4 Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

12.7.4.1Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.

12.7.4.2Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.

12.8 STEEL REINFORCEMENT

12.8.1 Reinforcing Bars: MMFX 2.

12.8.2 Where MMFX steel is specified on the construction drawings, the contractor has the option of using MMFX steel or Solid Stainless Steel as specified in AASHTO MP 18M / MP18-09.

12.9 REINFORCEMENT ACCESSORIES

12.9.1 Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

12.9.1.1For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 2 stainless-steel bar supports.

12.10 CONCRETE MATERIALS

12.10.1 Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

12.10.1.1 Portland Cement: ASTM C 150, Type I/II Supplement with the following:

- Fly Ash: ASTM C 618.
- Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

12.10.2 Silica Fume: ASTM C 1240, amorphous silica.

12.10.3 Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory

service in similar applications and service conditions using similar aggregates and cementitious materials.

12.10.3.1 Maximum Coarse-Aggregate Size: 3/4 inch nominal.

12.10.3.2 Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

12.10.4 Water: ASTM C 94 and potable.

12.11 ADMIXTURES

12.11.1 Air-Entraining Admixture: ASTM C 260.

12.11.2 Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

12.11.2.1 Water-Reducing Admixture: ASTM C 494/C 494M, Type A.

12.11.2.2 Retarding Admixture: ASTM C 494/C 494M, Type B.

12.11.2.3 Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

12.11.2.4 High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

12.11.2.5 High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

12.11.2.6 Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

12.11.3 Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

12.11.3.1 Products:

- Axim Concrete Technologies; Catexol 1000CI.
- Boral Material Technologies, Inc.; Boral BCN2.
- Grace Construction Products, W. R. Grace & Co.; DCI-S.
- Master Builders, Inc.; Rheocrete 222+.
- Sika Corporation; FerroGard-901.

12.11.4 Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

12.12 CURING MATERIALS

12.12.1 Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

12.12.2 Water: Potable.

12.13 RELATED MATERIALS

12.13.1 Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

12.13.2 Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

12.13.2.1 Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

12.14 REPAIR MATERIALS

12.14.1 Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

12.14.1.1 Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

12.14.1.2 Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.

12.14.1.3 Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.

12.14.1.4 Compressive Strength: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.

12.14.2 Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

12.14.2.1 Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

12.14.2.2 Primer: Product of topping manufacturer recommended for substrate, conditions, and application.

12.14.2.3 Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.

12.14.2.4 Compressive Strength: Not less than **5000 psi** at 28 days when tested according to ASTM C 109/C 109M.

12.15 CONCRETE MIXTURES, GENERAL

12.15.1 Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

12.15.1.1 Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

12.15.2 Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.

12.15.3 Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

12.15.4 Admixtures: Use admixtures according to manufacturer's written instructions.

12.15.4.1 Use high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

12.15.4.2 Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

12.15.4.3 Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

12.15.4.4 Use corrosion-inhibiting admixture in concrete mixtures where indicated.

12.16 FABRICATING REINFORCEMENT: Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

12.17 CONCRETE MIXING

12.17.1 Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information.

12.17.1.1 When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

12.18 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
   1) Class B, 1/4 inch for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
   1) Install keyways, reglets, recesses, and the like, for easy removal.
   2) Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

12.19 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
   1) Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
   2) Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Engineer.

12.20 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
   1) Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

12.21 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
   1) Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
   2) Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
   3) Space vertical joints in caps as indicated.
   4) Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
   5) Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
   6) Insert spacing of contraction joints here or on Drawings if required. Contraction-joint spacings vary with slab thickness, aggregate size, and slump based on PCA's recommendations. Depth of joint may be varied to suit cutting method or if steel-fiber

reinforcement is used. Early-entry saws may cut less than one-fourth of concrete thickness; steel-fiber-reinforced slabs, one-third of concrete thickness.

12.22 CONCRETE PLACEMENT

12.22.1 Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

12.22.2 Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.

12.22.3 Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1) Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

A. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
   1) Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
   2) Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
   3) Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

B. Deposit and consolidate concrete for in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
   1) Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   2) Maintain reinforcement in position on chairs during concrete placement.
   3) Screed slab surfaces with a straightedge and strike off to correct elevations.
   4) Slope surfaces uniformly to drains where required.
   5) Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

C. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
   1) When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
   2) Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
   3) Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

D. Hot-Weather Placement: Comply with ACI 301 and as follows:

1) Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2) Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

12.23 FINISHING FORMED SURFACES

12.23.1 Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1) Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

2) Apply to concrete surfaces exposed to public view.

12.24 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

12.25 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

1) Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   - Water.
   - Continuous water-fog spray.
   - Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days.

Immediately repair any holes or tears during curing period using cover material and waterproof tape.

- Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
- Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
- Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.

12.26 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

12.26.1.1 Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

12.26.1.2 Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

12.26.1.3 Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1) Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2) After concrete has cured at least 14 days, correct high areas by grinding.
3) Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4) Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5) Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6) Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7) Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

12.27 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

C. Inspections:

12.27.1.1	Steel reinforcement placement.
12.27.1.2	Steel reinforcement welding.
12.27.1.3	Headed bolts and studs.
12.27.1.4	Verification of use of required design mixture.
12.27.1.5	Concrete placement, including conveying and depositing.
12.27.1.6	Curing procedures and maintenance of curing temperature.
12.27.1.7	Verification of concrete strength before removal of shores and forms from beams and slabs.

D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
1) Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
2) Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3) Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

4) Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5) Unit Weight: ASTM C 567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
6) Compression Test Specimens: ASTM C 31/C 31M.
   - Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
   - Cast and field cure two sets of two standard cylinder specimens for each composite sample.
7) Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
   - Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
   - A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
8) When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
9) Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
10) Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
11) Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
12) Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Engineer.
13) Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
14) Correct deficiencies in the Work that test reports and inspections indicate dos not comply with the Contract Documents.

12.28 PAYMENT: No separate or direct payment will be made for the items covered by this section of the Specifications. All costs associated with the execution of the items covered by this Section of the Specifications shall be considered incidental to and included in the applicable Contract unit and lump sum prices for construction.

13.0 FLOATING DOCK AND ALUMINUM RAMP

13.1 SCOPE:

A. The work to be performed under this section includes all labor, equipment and performing of operations in connection with installation of a pre-manufactured floating dock and aluminum ramp system from the water-ward end of the existing stationary dock structure which is located immediately adjacent to the concrete boat ramp.

B. Contractor shall submit intent information with bid and show drawings for review by EOR prior to proceeding with Construction.

13.2 MEASUREMENT: The installed floating dock and aluminum ramp shall be computed for payment based on floating dock and aluminum ramp units installed, as defined in the Construction Drawings.

13.3 PAYMENT: Work specified in this section shall be included in the unit bid price for bid item – **"Aluminum Float Dock (20' x 8') including Aluminum Ramp (20' x 5')".**

14.0 PLACEMENT OF FILL MATERIAL

14.1 SCOPE: The work to be performed under this section includes all labor, equipment and performing of operations in connection with placement of aggregate material as a base for the newly installed ramp and within the developing hole at the water-ward end of the existing ramp.

14.2 GENERAL:

A. Placement of fill material shall be in accordance with FDOT Standard Specification 120.

B. The aggregate fill material shall be clean and free of vegetation and debris prior to replacement within the project area.

C. In the event that unsuitable material is placed on the dune, the Contractor shall cease placement, delineate the location of unacceptable material and immediately notify the Engineer. Any unsuitable material placed exceeding a 1,000 SF area shall be removed by the Contractor. The Contractor must provide a written explanation for any violations in the quality of the material along with the corrective action proposed to prevent reoccurrences.

D. The Contractor shall notify the County and the Engineer of any misplaced material within one (1) day of occurrence.

E. If any material is deposited other than in placed designated within the Construction Drawings or approved by the Engineer or the County, the Contractor may be required to remove such misplaced material and redeposit it where directed by the Engineer or the County, at the Contractor's expense.

14.3 PLACEMENT OF FILL MATERIAL:

A. All fill material shall be transported to and deposited within the lines, grades and cross sections show in the Construction Drawings.

B. Prior to placement of fill material, the Contractor shall remove from the Work site all trash, snags, driftwood, and similar debris lying within the foundation limits of the fill section. All debris removed shall be taken from the Work area and disposed of in an appropriate and legal manner and at the expense of the Contractor.

C. The vertical tolerance for placement of fill material for the ramp base and to fill the existing hole at the water-ward end of the ramp shall be 1 inch in vertical direction.

14.4 MEASUREMENT: Measurement of fill material placement shall be in accordance with FDOT Standard Specification 120.

14.5 PAYMENT: Work specified in this section should be included in the unit bid price for **"Item – 8-Inch Crushed Shell Base (Min. 100 LBR) (Under Concrete Panels)".**

15.0 RAMP INSTALLATION

15.1 SCOPE: The work performed under this section includes all labor, equipment and performing of operations in connection with re-installation of the existing pre-cast concrete ramp panels and installation of the cast-in-place concrete slab in accordance with the base aggregates, grades, and dimensions as shown on the Construction Drawings. Re- installation of the existing pre-cast concrete panels shall be in accordance with the Manufacturer's Installation Instructions.

15.2 PRE-CAST CONCRETE SLAB: Existing pre-cast concrete ramp slabs to be removed, stored and re-installed at new location, as indicated on construction drawings. Contractor to remove 8 inch thick area of existing sub-surface material and replace with compacted crushed shell to provide a level, consistent slope for which the existing pre-cast concrete slab can bear.

15.3 CAST-IN-PLACE CONCRETE SLAB:

A. All concrete materials batching and workmanship shall conform to the following:
   1) ACI 304 – concrete placed under water
   2) ACI 301 – specifications for structural concrete for buildings
   3) ACI 318 – building code requirements for reinforced concrete
   4) ASTM C94 – ready-mix concrete

B. Concrete minimum compressive strength(s) for concrete shall be as noted on the structural plans, slump 4" +/-1" with a maximum water-to-cement ratio of 0.35 (5,000 psi), 0.46 (3,000 psi). Provide fly ask substitution to 20% of cement content, add 50 lbs of silica fume per cubic yard of material. In all concrete provide a high range water reducing admixture conforming to ASTM C260; all other admixtures shall conform to ASTM C494 and shall be used in strict accordance with the manufacturer's directions. Add corrosion inhibitor admixture per manufacturer's recommendations.

C. Submit mix design(s) for review by the Engineer of Record a minimum of 7 days prior to initial concrete pour.

D. All mild reinforcement shall be MMFX 2 Rebar (ASTM A615 Grade 75 and ASTM A1035-04).

E. Reinforcing steel shall be detailed, fabricated, placed and supported to conform with the ACI detailing manual, ACI SP-66.

F. Minimum reinforcing steel lap slice length, unless noted otherwise is 36X bar diameter.

G. Pour structural concrete within the following tolerances:
   1) Variation from plumb: ¼" in 10'-0"
   2) Variation from level in tops of slabs, and beam: 1/8" in 10'-0"

H. Inserts, sleeves, conduits, fasteners, etc., where required by the documents, shall be installed so as not to impair the integrity of the structure, and in a manner which will not require the bending, cutting or displacement of the reinforcement.

I. For ready mix concrete, the maximum time permitted between batching and depositing the form work is 90 minutes, concrete not placed within this time limit shall be rejected.

J. The addition of mix water at the site to increase the concrete slump shall not be allowed and shall be cause for rejection of that batch of concrete.

K. Openings or fasteners required after concrete placement shall be installed only with the approval of the Engineer of Record.

L. Placement of concrete to be poured below water shall be coordinated with maximum low tide permissible.

M. Submit shop drawings for reinforcement detailing, bending, and placing of concrete reinforcement.

N. For all concrete surfaces where legs of support devices are in contact with forms, provide supports with legs that are stainless steel (CRSI, Class 2).

O. All concrete shall be wet cured for a minimum of 3 days.

P. Provide concrete sting of concrete material confirming design strengths.

Q. Provide 1/4" deep x 1/4" wide grooves in ramp slab at 1/2" O/C. Texture is a minimum profile. Contractor to provide means and methods of texture installation with bid.

15.4 MEASUREMENT: Measurement of ramp installation shall be computed for payment based on (1) cubic yards (CY) of steel reinforced concrete installed for the poured-in-place concrete slab at the top of the ramp; (2) the number of existing pre-case concrete ramp panels re-installed; (3) the face square footage (SF) of vinyl sheet piling installed along the sides of the ramp; (4) the linear feet (LF) of pre-cast concrete beam installed at the water-ward base of the ramp; and (5) cubic yards (CY) of steel reinforced tremie pour.

15.5 PAYMENT: Work specified in this section should be included in the unit bid price for the following bid items:

- **"Concrete (Steel Reinforced, 5,000 psi)"**
- **"Re-Install, Exist. Concrete Ramp Panel"**
- **"Vinyl Sheet Piling, 5-Inch Profile (Along Ramp Sides)"**
- **"Precast Concrete Beam, 12-Inch x 16-Inch (Reinforced, 5,000 psi)"**
- **"Concrete (Steel Reinforced, 5,000 psi, Tremie Pour)".**

16.0 ARTICULATING CONCRETE BLOCK MATTRESS

16.1 SCOPE: The work required under this technical specification shall be performed in accordance with manufacturer's specifications, except as modified herein. The work shall consist of placing the articulating block mat system and anchoring the mat, as specified.

16.2 MATERIALS:

A. Articulating Concrete Block Mattress
   1) This system shall be made up of concrete mats placed side by side and clamped together to provide one homogeneous erosion protection system.

   2) At the joint where the articulating block and concrete ramp meet, the contractor shall fill the gap by encapsulating aggregate in a thixotropic grout with anti-washout properties that will set underwater and consolidate the aggregate into a solid mass. The aggregate to be encapsulated shall be Size No. 1 per FDOT Standard Specifications. The grout shall be approved by the Engineer.

   3) The concrete mats are made up of concrete blocks connected to each other by interwoven stainless steel or polyester cables. Mats are installed over a geotextile fabric that is attached to the cables and to the base of each concrete mat.

   4) The concrete blocks shall have a minimum weight of 70 pounds per square foot (psf) of mat and shall be 8.5 inches in height.

   5) Prior to beginning work, the Contractor shall submit product data and shop drawings for the articulating concrete mats for approval by the Engineer of Record.

B. Concrete: Concrete blocks shall use normal weight concrete with the following properties:
   1) Minimum compressive strength at 28 days: 4,000 psi
   2) Minimum total cementitious materials content: 564 lb/yd^3
   3) Maximum water to cementitious materials ratio: 0.441 lb/lb
   4) Air content ratio: four to seven percent

C. Geotextile
   1) The plastic filter fabric shall be as specified in Section 514 of the FDOT Standard Specifications and under this technical specification. The standard geotextile material used shall be an eight ounce (8 oz) needle punched, non-woven fabric.

   2) The geotextile is attached to the base of the concrete block mats. An overlap of 1’-6” to 2’-0” shall be incorporated on three sides of the mat. The overlap provides area for the adjoining mats to be placed upon to prevent undermining of the erosion control system.

D. Clamps
   1) Stainless steel U-type screw clamps shall be provided to secure loops of adjoining articulating concrete mats.

   2) When placing clamps under existing water, the Contractor shall obtain from the manufacturer the appropriate clamp for the conditions and the clamp shall be approved by the Engineer of Record.

E. Anchors: Anchors shall be installed according to the manufacturer’s specifications.

F. Bedding Stone: Bedding stone shall be #57 Course Aggregate Stone or other material approved by the Engineer of Record.

16.3 METHOD OF CONSTRUCTION:

A. The Contractor shall determine if mats smaller than 8'x16' are required to fit the area as specified on the plans. If such mats are required the Contractor shall design and manufacture such mats and submit to the Engineer of Record for approval.

B. The Contractor shall have a representative of the articulating concrete mats manufacturer on-site at the start of installation to advise the Contractor in any special techniques needed to ensure a correct installation.

C. The mats shall be laid from the water-ward edge of the plan area to the base of the concrete ramp so the geotextile joints are shingled to direct flow over the joint and to prevent undermining.

D. The mats shall be cabled into one system. No loose or stacked blocks shall be permitted unless authorized by the Engineer of Record. The outside edges of the mat system shall be entrenched and buried for the width of 2 blocks using existing channel bottom sediment.

E. Contractor shall obtain a final bathymetric survey performed by a surveyor, registered in the State of Florida, and signed and sealed and submitted to the Engineer of Record as a final as-built condition of the concrete block mattress.

16.4 MEASUREMENT: The quantity to be paid for will be the plan area, in square yards, measured in place, completed and accepted. The outside edges of the mat system (entrenched and buried into the ground) shall be incidental to the plan area quantity. The bedding material shall be paid for based upon cubic yards (CY) of material installed.

16.5 PAYMENT: Price and payment for work and materials described in this section, including bedding material, articulating concrete mats, grout, geotextiles, clamps, anchors, granular fill, base re-work, leveling, special design/manufacturing of mats, site visits by manufacturer's representatives and installation, and all other incidentals shall be included in the unit bid price for

- **"Item - Aggregrate, #57 Stone"**
- **"Item – Articulating Concrete Block Mattress (8.5-Inch Thick) including Geotextile Fabric".**

17.0 SITE RESTORATION AND PROJECT COMPLETION

17.1 RESTORATION: The Contractor shall remove all evidence of temporary construction facilities at the Project Site and Staging Areas including but not limited to: equipment, staking and markers, haul roads, work areas, temporary structures, foundations of temporary structures, waste and excess material stockpiles. The Contractor shall return all areas pre-construction condition or better. The Contractor shall repair any and all damage to the site at the Contractor's expense. The Contractor shall restore all disturbed areas within the Manatee County Right-of-Way to Manatee County restoration requirements. Further, the Contractor shall replace all inadvertently disturbed vegetation and trees, identified on the Construction Drawings as preserved, at a 1:1 ratio. Contractor shall be responsible for watering newly installed plants and trees in accordance with landscape supplier recommendation for a minimum of 60 days following installation. A watering plan shall be submitted to the County and the Engineer for approval.

17.2 PROJECT COMPLETION:

A. Upon completion of all initial construction activities, the Contractor shall notify the County and the Engineer in writing. The Engineer shall perform a complete site inspection and indicate in writing to the Contractor all items requiring further attention for either completion or correction. The Contractor shall then take steps necessary to correct and/or complete each item and notify the County

in writing of Project completion. The Engineer shall then perform a second inspection and inform the Contractor and County of any deficiencies with respect to the debris removal. Upon approval of the initial construction activities, the Contractor will be permitted to initiate final site cleanup. The Engineer shall then perform a final inspection and inform the Owner as to the status or need for final acceptance. Final submittals from the Contractor will then be made concerning the Contractor's waiver of liens, special guarantees and bonds, subcontractors and suppliers, lien waivers against property of the Owner, and final payment estimate.

B. The Contractor shall remove all temporary construction facilities such as stockpiles of excess waste materials, temporary equipment, staking and markers, and construction debris and return the site to the condition equal to or better than pre-construction activities. The Contractor shall repair any and all damage to the site at the Contractor's expense.

17.3 PAYMENT: No separate or direct payment will be made for the items covered under this section. All costs associated with the execution of items under this Section shall be considered incidental to and included in the applicable contract unit and lump sum prices for construction.

18.0 ENVIRONMENTAL PROTECTION

18.1 GENERAL: The Contractor shall provide all equipment, materials and labor and shall perform all work required to prevent environmental pollution and damage as a result of construction operations under this Contract. For the purposes of this specification, environmental pollution and damage are defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural and/or historical purposes. The control of environmental pollution requires consideration of air, water, and land resources; management of visual aesthetics, solid waste, and noise are associated issues within environmental protection steps. It is the Contractor's responsibility to investigate and comply withal applicable Federal, State, and Local laws, regulations, and permits governing environmental protection.

18.2 WORK AREA LIMITS: The Contractor shall limit all construction activity within the Work areas defined by the Construction Drawings. The Contractor shall not remove, cut, deface, injure, or destroy and land resource without special permission by the Owner. Monuments and markers shall be protected before construction operations commence. The Contractor shall convey to his/her personnel and subcontractors the purpose for marking and/or protecting all necessary objects.

18.3 QUALITY CONTROL: The Contractor shall establish and maintain quality control of environmental protection of all items set forth herein. The Contractor shall conform to all specifications listed in this section as well as to Federal, State and Local laws, regulations and permits. The Contractor shall record on Daily Quality Control Reports, or attachments thereto, any problems in complying with laws, regulations, ordinances and permits and any corrective action taken.

18.4 CONTRACTOR/SUB-CONTRACTOR RESPONSIBILITIES: Assurance of compliance with this section by any Sub-Contractor(s) on the Project shall be the responsibility of the Contractor.

18.5 NONCOMPLIANCE/CORRECTIVE ACTION: The County or the Engineer shall notify the Contractor and applicable regulatory agencies in writing of any observed noncompliance with the aforementioned Federal, State, or Local laws, regulations, permits, and any elements of this section of these specifications. Upon notification, the Contractor shall be required to take immediate corrective action. If the Contractor fails or refuses to comply promptly, the County or the Engineer may issue an order stopping all or part of the Work until satisfactory corrective action has been taken.

18.6 PRE-CONSTRUCTION CONFERENCE: The Contractor shall attend a pre-construction conference to review the specific conditions and monitoring requirements of the permits with the County, the Engineer and regulatory agencies prior to the commencement of any work. The County or the Engineer will provide advance written notification to the Contractor of the date, time, and location of the pre-construction conference.

18.7 EROSION, DEWATERING AND TURBIDITY CONTROL: Dewatering and the control of water shall be in accordance with Sections 9.0 and 11.0 of these Specifications.

18.8 PROTECTION OF DISTURBED AREAS: Runoff from the construction site shall be controlled by the construction of diversion ditches, benches and berms to retard and divert runoff to protect drainage courses and shall include any measures required by area-wide plans approved under Paragraph 208 of the Clean Water Act. Other methods shall be utilized as necessary to effectively prevent erosion and control sedimentation.

18.9 PROTECTION OF HISTORICAL AND ARCHEOLOGICAL RESOURCES: If historical or archaeological artifacts are discovered at any time within the Project site, the Contractor shall immediately notify the Engineer and Manatee County Historical Resources and cease work. Examples of evidence of historical resources include whole or fragmentary stone tools, shell tools, aboriginal pottery, historic glass, bottles, building foundations, bone tools, shell mounds, shell middens or sand mounds.

18.10 PROTECTION OF ENVIRONMENTAL RESOURCES: All environmental resources within the Project boundaries and those affected outside the limits of permanent work under this Contract shall be protected throughout the Project duration and shall be the Contractor's responsibility until notice of final Project acceptance. The Contractor shall confine his/her activities to areas defined by the Contract Drawings and Specifications.

18.11 PROTECTION OF LAND RESOURCES: Prior to construction, the Contractor shall stake out and identify all vegetation to be preserved within the work area in consultation with the County and the Engineer. The approximate limits of the vegetation to be preserved are shown in the Construction Drawings. The Contractor shall not remove, cut, deface, injure, or destroy vegetation and other land resources within the preservation areas. Trees, shrubs, grasses, land forms, and other landscape features to be preserved shall be identified by the Contractor by protective marking, fencing, or other protective and noticeable means. No ropes, cables, or guy wires shall be fastened to or attached to any trees for anchorage unless specifically authorized. The Contractor shall be responsible for the replacement of any damaged or destroyed vegetation to the satisfaction of the County, the Engineer and regulatory agencies. Failure to replace damaged or destroyed vegetation by the Contractor will result in replacement by the County and the cost of replacement shall be deducted from monies due to the Contractor.

18.12 SOLID WASTE: Solid wastes (including clearing debris) shall be handled in environmentally sound manners, placed in containers, and discarded on regular schedules. It shall be the Contractor's responsibility to maintain all work areas to acceptable standards and to transport all solid waste off the properties and dispose of according to federal, state, and local requirements for solid waste. All debris and solid waste material shall be removed and legally disposed of at an upland site. All costs associated with disposal of debris or trash shall be the responsibility of the Contractor.

18.13 CHEMICAL WASTE: Chemical waste shall be stored in corrosion-resistant containers, removed from the work area, and disposed of in accordance with federal, state, and local regulations.

18.14 OTHER WASTE: Discarded materials, other than those which can be included in the solid waste category, shall be handled as directed by the County or the Engineer.

18.15 PROTECTION OF WATER RESOURCES: The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Monitoring of all water resource areas affected by construction activities shall be the responsibility of the Contractor. The Contractor shall not discharge or permit discharge into canals, waterways, ditches, etc., fuels, oils bitumens, garbage, sewage, or other materials which may be harmful to fish, wildlife, or vegetation, or that may be detrimental to outdoor recreation. The Contractor shall be responsible for investigating and complying with all applicable federal, state, and local laws and regulations governing pollution of waters. All work under this Contract shall be performed in such a manner that objectionable conditions will not be created in water through or adjacent to the Project areas.

18.16 AIR RESOURCE PROTECTION: The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of air resources. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing he specified construction shall be in strict accordance with the applicable air pollution standards of the State of Florida and all federal emission and performance laws and standards.

18.17 DUST AND NOISE CONTROL: The Contractor shall be required to maintain all access roads, ingress routes, egress routes, and all other work areas within or outside of the Project boundaries free from dust which would cause a hazard or nuisance to others. All equipment used on this work shall be equipped with satisfactory mufflers and other noise abatement devises. The Contractor shall conduct his operations so as to comply with all Federal, State, and Local laws pertaining to noise. The use of horns, whistles, and back-up alarms shall be held to the minimum necessary to ensure as quiet an operation as possible while maintaining safety on the job site.

18.18 FISH AND WILDLIFE RESOURCE PROTECTION: The Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife.

18.19 SEA TURTLE MONITORING: Any signs of sea turtle activity observed by the Contractor within the Project area shall be reported immediately to the County and the Engineer.

18.20 PAYMENT: No separate or direct payment will be made for the items covered by this section of the Specifications. All costs associated with the execution of the items covered by this Section of the Specifications shall be considered incidental to and included in the applicable Contract unit and lump sum prices for construction.

APPENDIX A

Geotechnical Data

Geotechnical Engineering Report

JIGGS LANDING

6106 - 63RD STREET EAST

Bradenton, Florida

September 26, 2012

Terracon Project No. H4125055

Prepared for:
CPH Engineers
Sarasota, Florida

Prepared by:
Terracon Consultants, Inc.
Tampa, FL

September 26, 2012

Terracon

CPH Engineers, Inc.
3277A Fruitville Road, Suite 2
Sarasota, FL 34237

Attn: Mr. Nathan Kragt, P.E.
P: 941-365-4771
E: nkragt@cphengineers.com

Re: Geotechnical Engineering Report
Jiggs Landing
6106 63rd Street East
Bradenton, Manatee County, Florida
Terracon Project No: H4125055

Dear Mr. Kragt:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. These services were performed in general accordance with our proposal number PH4120188 dated July 26, 2012. This geotechnical engineering report presents the results of the subsurface exploration and provides geotechnical recommendations concerning the soil conditions encountered and their impact on construction progress and structure performance.

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,
Terracon Consultants, Inc.

Stephen C. Knauss, P.E., D.GE
Senior Project Engineer
FL Registration No. 28202

CRAIG M. ANSTETT LICENSE No. 60850 STATE OF FLORIDA PROFESSIONAL ENGINEER

Craig M. Anstett, P.E.
Regional Manager, Principal
FL Registration No. 60850

Copies to: 1 via e-mail

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EXECUTIVE SUMMARY

A geotechnical engineering report has been completed for Jiggs Landing located off of Braden River Road in Bradenton, Manatee County, Florida as shown on the Topographic Vicinity Map included as Exhibit A-1 in Appendix A. More specifically the site is located at 6106 63rd Street East. As proposed, one soil boring, designated B-1, was performed to a depth of approximately 12 feet below the existing ground surface adjacent to the existing boat ramp. The following geotechnical considerations were identified:

- **Site Soils:** Sand (SP) was found from the ground surface to a depth of 8 feet and then clay with sand (CL) was encountered the termination of the boring at about 12 feet. The sands were generally found to be medium dense and the clay with sand was found to be very stiff to hard.

- **Groundwater:** Groundwater was measured to be about 1.3 feet below the existing ground surface.

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
JIGGS LANDING
BRADENTON, MANATEE COUNTY, FLORIDA

Terracon Project No. H4125055
September 26, 2012

1.0 INTRODUCTION

A geotechnical engineering report has been completed for Jiggs Landing located off of Braden River Road in Bradenton, Manatee County, Florida as shown on the Topographic Vicinity Map included as Exhibit A-1 in Appendix A. More specifically the site is located at 6106 - 63rd Street East. As proposed, one soil boring, designated B-1, was performed to a depth of approximately 12 feet below the existing ground surface adjacent to the existing boat ramp. The boring location was moved slightly to the north to avoid a tree that obstructed the drill rig mast. The surface elevation at the boring location was approximately 1 ½ feet above the lake level so the boring was advanced to an approximate depth of 12 feet instead of the planned depth of 10 feet. The Log of the boring along with a Boring Location Plan (Exhibit A-4) are included in Appendix A of this report. A description of the field exploration procedures (Exhibit A-5) is included in Appendix A.

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

- subsurface soil conditions
- groundwater conditions

2.0 PROJECT INFORMATION

2.1 Project Description

ITEM	DESCRIPTION
Structures	Concrete Boat Ramp
Building construction	N/A
Pavement Loading	Trucks and boat trailers.
Grading	Minimal if any (assumed)

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	Existing Jiggs Landing – 6106 - 63rd Street East in Bradenton, Florida.
Existing improvements	A concrete boat ramp is present.
Current ground cover	Concrete ramp with grass covering on east side of ramp with some trees near the edge of the lake.
Existing topography	The USGS quadrangle map Lorraine, Florida, dated 1987, depicts the area sloping downward gently to south and west towards Ward Lake. Contour elevations indicate the ground surface elevation at the site to be approximately +5 feet as referenced to the National Geodetic Vertical Datum (NGVD 1929).

3.0 SUBSURFACE CONDITIONS

3.1 USDA – NRCS Soil Survey

The Web Soil Survey, as maintained by the United States Department of Agriculture (USDA), Soil Conservation Service (SCS; later renamed the Natural Resource Conservation Service - NRCS), identifies Wabasso fine sand in the vicinity of the subject site.

Wabasso fine sand typically consists of fine sand to a depth of 37 inches. From 37 to 65 inches sandy clay loam is typically encountered. Below that the soils consist of fine sand to the depth described, 80 inches. The seasonal high groundwater level is described as 6 to 18 inches below the ground surface.

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. Boundaries between adjacent soil types on the Soil Survey maps are approximate. A copy of the soil survey map is included as Exhibit A-2 in Appendix A and a detailed soil description is included as Exhibit A-3 in Appendix A.

3.2 Typical Profile

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

Description	Approximate Depth to Bottom of Stratum	Material Encountered	Consistency/Density
Stratum 1	8 feet	Fine Sand (SP)	Medium dense (10 to 15 bpf)[1]
Stratum 2	11.3	Clay with sand (CL)	Very stiff to Hard (19 bpf to 50/5")[1]

[1] Range of Standard Penetration Test (SPT) resistance values or "N-values", blows per foot.

Conditions encountered at the boring location are indicated on the individual boring log. 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 the boring can be found on the boring log in Appendix A of this report.

3.3 Groundwater

The boring was monitored while drilling for the presence and level of groundwater. The water level was observed at the completion of the boring. During the subsurface exploration, the groundwater level at the boring location was measured to be 1.3 feet below the existing ground surface. Based on the location of the site, the groundwater level will be dependent upon the water levels in the Braden River and Ward Lake and thus may change during the course of a day.

The water level observation provides an approximate indication of the groundwater condition existing at the time the boring was drilled. It should be recognized that fluctuations of the groundwater table may occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the boring was performed. Groundwater level during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring log. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

4.1 Geotechnical Considerations

The boring revealed sandy soils, consisting of medium dense poorly graded fine sand (SP) to a depth of 8 feet. Deleterious materials such as organic soils, soft clays or silts, and/or debris were not encountered within the boring. As such, it is not anticipated that deleterious material such as those previously noted will not affect the construction progress or structure performance. However, it is possible that conditions in the lake are different than those encountered in our boring. It is expected that the uppermost soils in the lake are less dense than encountered in our boring.

The recommendations contained in this report are based upon the results of data presented herein, engineering analyses, and our current understanding of the proposed project.

4.2 Earthwork

Initial site work will likely be minimal but should include stripping of any vegetation and/or topsoil, any concrete slabs and otherwise unsuitable materials from below the proposed construction areas. Any unsuitable material should be disposed off-site.

Once stripping has been completed, the uplands portion of the subgrade should be proof-rolled utilizing a vibratory roller. The purpose of the proof-rolling is to not only detect areas of weak or loose soils, but also to compact the loose soils in the upper couple feet. The vibratory drum roller should have a minimum static weight of 10,000 pounds. The proof-roll should continue until the exposed subgrade has achieved at least 95 percent of the material's maximum dry density as determined by the Modified Proctor Test (ASTM D1557). Prior to proof-rolling, the subgrade soils should be moisture conditioned to within ±3 percent of the optimum moisture content. Proof-rolling aids in providing a firm base for compaction of new fill and delineating soft or disturbed areas that may exist at or near the exposed subgrade level. Proof-rolling should be performed in the presence of a Terracon representative to aid in evaluating unstable subgrade areas. Unstable areas observed at this time should be improved as recommended by the engineer based on field conditions and typically includes scarification and re-compaction or by undercutting and replacement with suitable compacted fill.

Any underground utilities that will not be used in the new construction should be removed and replaced by compacted fill as noted below. If they are not to be removed then they should be filled with an inert material to eliminate voids under the new construction.

Once the exposed subgrade has been compacted, fill materials required can be placed and compacted in lifts not exceeding 12 inches in loose thickness. Unless otherwise specified, new

fill materials required at the site should consist of approved materials, free of organic matter and debris. The fill should be non-plastic, with a fines content of less than 12 percent. The maximum particle size should not exceed 2 inches.

Engineered fill should meet the following material property requirements:

Fill Type	USCS Classification	Acceptable Location for Placement
General [1]	SP, SP-SM, SP-SC or GP, GP-GM (fines content < 12 percent, maximum particle size < 2 inches, organic content < 5 percent)	All locations and elevations

1. The soils of Stratum 1 are suitable for use as fill.

4.2.1 Compaction Requirements

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 1½ inches in a 4- to 6-inch lift.
Minimum Compaction Requirements	The upper one foot of upland subgrade should be compacted to at least 95 percent of the maximum dry density as determined by the Modified Proctor Test (ASTM D-1557).
Moisture Content [1]	Within ±3 percent of optimum moisture content as determined by the Modified Proctor test, at the time of placement and compaction
Minimum Testing Frequency	Two field density tests per lift.

[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 the compaction requirements are achieved.

5.0 GENERAL COMMENTS

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

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

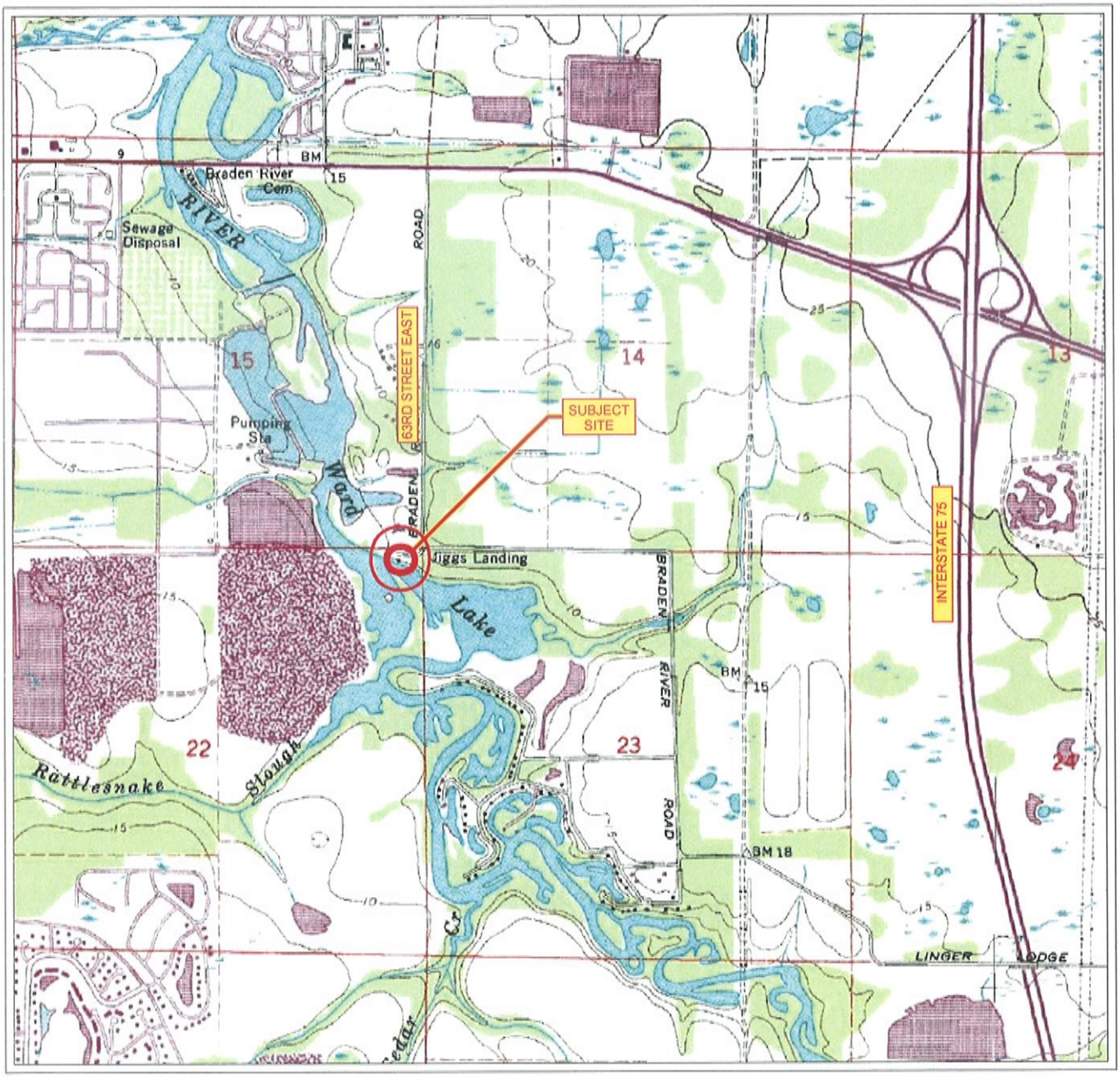
this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately 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, 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, either expressed 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 Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX A
FIELD EXPLORATION

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



SCALE 1" = 2000'

KILOMETERS 1 .5 0 1 2

MILES 1000 0 1000 2000

FEET 1 .5 0 1

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

SECTION: 22
TOWNSHIP: 35 SOUTH
RANGE: 18 EAST

LORRAINE, FLORIDA
ISSUED: 1987
7.5 MINUTE SERIES (QUADRANGLE)

Project Mngr:	CMA
Drawn By:	TMB
Checked By:	CMA
Approved By:	CMA

Project No.	H4125055
Scale:	AS SHOWN
File No.	H4125055
Date:	09-26-12

Terracon
Consulting Engineers and Scientists
504 E. TYLER STREET TAMPA, FLORIDA 33602
PH. (813) 221-0050 FAX. (813) 221-0051

TOPOGRAPHIC VICINITY MAP
GEOTECHNICAL ENGINEERING REPORT
JIGGS LANDING
6106 63RD STREET EAST
BRADENTON, MANATEE COUNTY, FLORIDA

EXHIBIT
A-1

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SCALE 1" = 2000'

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

U.S.D.A. SOIL SURVEY FOR MANATEE COUNTY, FLORIDA
ISSUED: JULY 2012

SECTION: 22
TOWNSHIP: 35 SOUTH
RANGE: 18 EAST

SOIL LEGEND	
48	WABASSO FINE SAND

N

Project Mngr:	CMA
Drawn By:	TMB
Checked By:	CMA
Approved By:	CMA

Project No.	H4125055
Scale:	AS SHOWN
File No.	H4125055
Date:	09-26-12

Terracon
Consulting Engineers and Scientists
504 E. TYLER STREET TAMPA, FLORIDA 33602
PH. (813) 221-0050 FAX. (813) 221-0051

SOIL SURVEY MAP
GEOTECHNICAL ENGINEERING REPORT
JIGGS LANDING
6106 63RD STREET EAST
BRADENTON, MANATEE COUNTY, FLORIDA

EXHIBIT
A-2

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Soil Survey Descriptions

48 – Wabasso fine sand – Wabasso fine sand is a nearly level and somewhat poorly drained soil. It is found on flatwoods on marine terraces. Slopes are 0 to 2 percent. Typically, this soil consists of fine sand to about 37 inches. Below that depth to about 65 inches, the soil is sandy clay loam. Below that depth to the depth described, the soil is fine sand. In unimproved areas the seasonal high groundwater level is generally 6 to 18 inches below the ground surface. The available water capacity is low.

N

LEGEND

APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

Project Mngr:	CMA
Drawn By:	TMB
Checked By:	CMA
Approved By:	CMA

Project No.	H4125055
Scale:	N.T.S.
File No.	H4125055
Date:	09-26-12

Terracon
Consulting Engineers and Scientists
504 E. TYLER STREET TAMPA, FLORIDA 33602
PH. (813) 221-0050 FAX. (813) 221-0051

BORING LOCATION PLAN

GEOTECHNICAL ENGINEERING REPORT
JIGGS LANDING
6106 63RD STREET EAST
BRADENTON, MANATEE COUNTY, FLORIDA

EXHIBIT
A-4

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Field Exploration Description

The field exploration consisted of performing one SPT boring (Boring B-1) to a depth of approximately 12 feet adjacent to the existing boat ramp. The boring location was laid out at the project site at the location indicated on the attached diagram. The boring location is approximate and was measured by pacing distances and estimating right angles. The location of the boring should be considered accurate only to the degree implied by the means and methods used to define it.

The SPT soil boring was drilled with a rotary drilling rig equipped with a drop weight hammer. The borehole was 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 boring were sealed in glass jars to reduce moisture loss, and then the jars were taken to our laboratory for further observation and classification. Upon completion, the borehole was backfilled with cuttings.

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

BORING LOG NO. B-1

PROJECT: Jiggs Landing

CLIENT: CPH Engineers
Sarasota, Florida

SITE: 6106 63rd Street East
Bradenton, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 / DEPTH	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (psi)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	Percent Fines
	POORLY GRADED SAND (SP), dark gray, medium dense		▽		2-6-4-5 N=10							
	2.5											
	POORLY GRADED SAND (SP), dark brown, medium dense				4-5-7-10 N=12							
	6.0	5			3-7-7-8 N=14							
	POORLY GRADED SAND (SP), grayish-brown, medium dense				3-7-8-9 N=15							
	8.0											
	LEAN CLAY WITH SAND (CL), light brown to tan, moderate cementation, very stiff to hard, with trace small phosphate nodules				2-8-11-8 N=19							
	11.4	10			11-40-50/5" N=50/5"							
	Boring Refusal at 11.42 Feet	15										
		20										
		25										

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

Hammer Type: Rope and Cathead

Advancement Method:
Rotary Wash

Abandonment Method:

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

▽

NODARSE
A Terracon Company
504 East Tyler Street
Tampa, Florida

Boring Started: 9/18/2012 | Boring Completed: 9/18/2012

Drill Rig: Truck Mounted CME 45 | Driller: RS

Project No.: H4125055 | Exhibit A-6

APPENDIX B
SUPPORTING DOCUMENTS

Laboratory Testing

During the field exploration, a portion of each recovered sample was sealed in a glass 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 B.

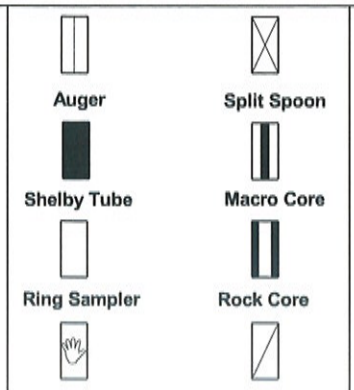
Based on the visual classifications, it was decided that laboratory testing was not warranted to allow us to provide recommendations for construction on this site.

APPENDIX C
SUPPORTING DOCUMENTS

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL

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
(b/f)	Standard Penetration Test (blows per foot)
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

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 (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance			
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength, Qu, psf**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

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

Terracon

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]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey 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]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K,L,M,N]
			Liquid limit - not dried			Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K,L,M,P]
			Liquid limit - not dried			Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				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] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 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 ≥ 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 ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 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.

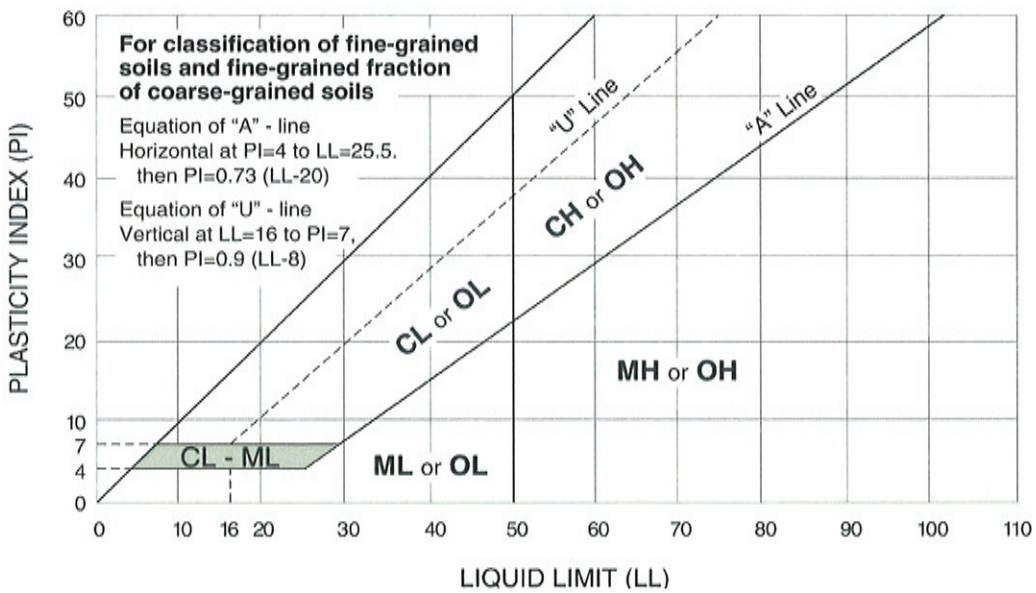


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Exhibit C-2

APPENDIX B

Permits

- SWFWMD
- ACOE

Southwest Florida Water Management District
2379 Broad Street, Brooksville, Florida 34604-6899
(352) 796-7211 or 1-800-423-1476 (FL only)
SUNCOM 628-4150 TDD only 1-800-231-6103 (FL only)
On the Internet at: WaterMatters.org

An Equal Opportunity Employer

Bartow Service Office
170 Century Boulevard
Bartow, Florida 33830-7700
(863) 534-1448 or
1-800-492-7862 (FL only)

Sarasota Service Office
6750 Fruitville Road
Sarasota, Florida 34240-9711
(941) 377-3722 or
1-800-320-3503 (FL only)

Tampa Service Office
7601 Highway 301 North
Tampa, Florida 33637-6759
(813) 985-7481 or
1-800-836-0797 (FL only)

November 07, 2013

Manatee County
Attn: Charles Hunsicker
415 10th Street West
Bradenton, FL 34205

Subject: **Consolidated Notice of Intended Agency Action**
ERP Individual Construction Major Modification and State-Owned Submerged Lands
Letter of Consent

B.O.T. File No:	N/A
SOV Record No:	40122.0
Project Name:	Jiggs Landing Boat Ramp Improvements
App ID/Permit No:	685278 / 43034511.003
County:	MANATEE
Sec/Twp/Rge:	S15/T35S/R18E, S22/T35S/R18E

Dear Permittee(s):

Your Environmental Resource Permit modification has been approved contingent upon no objection to the District's action being received by the District within the time frames described in the enclosed Notice of

If approved construction plans are part of the permit, construction must be in accordance with these plans. These drawings are available for viewing or downloading through the District's Application and Permit Search Tools located at www.WaterMatters.org/permits.

The District's action in this matter only becomes closed to future legal challenges from members of the public if such persons have been properly notified of the District's action and no person objects to the District's action within the prescribed period of time following the notification. The District does not publish notices of intended agency action. If you wish to limit the time within which a person who does not receive actual written notice from the District may request an administrative hearing regarding this action, you are strongly encouraged to publish, at your own expense, a notice of intended agency action in the legal advertisement section of a newspaper of general circulation in the county or counties where the activity will occur. Publishing notice of intended agency action will close the window for filing a petition for hearing. Legal requirements and instructions for publishing notice of intended agency action, as well as a noticing form that can be used is available from the District's website at www.WaterMatters.org/permits/noticing. If you publish notice of intended agency action, a copy of the affidavit of publishing provided by the newspaper should be sent to the District's Tampa Service Office, for retention in the File of Record for this agency action.

If you have questions, please contact Rob McDaniel, at the Tampa Service Office, extension 2039. For assistance with environmental concerns, please contact Jeff Glas, extension 2148.

Sincerely,

Michelle K. Hopkins, P.E.
Bureau Chief
Environmental Resource Permit Bureau
Regulation Division

Enclosures: Approved Permit w/Conditions Attached
Statement of Completion
Notice of Authorization to Commence Construction
Notice of Rights
cc: U. S. Army Corps of Engineers
Nathan Kragt P.E., CPH, Inc.

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
CONSOLIDATED ENVIRONMENTAL RESOURCE PERMIT (ERP) AND
STATE-OWNED SUBMERGED LAND AUTHORIZATION (SL)
INDIVIDUAL CONSTRUCTION MAJOR MODIFICATION
PERMIT NO. 43034511.003
AND
STATE-OWNED SUBMERGED LANDS LETTER OF CONSENT

EXPIRATION DATE: **November 07, 2018** **PERMIT ISSUE DATE:** **November 07, 2013**
SL EXPIRATION DATE:

This permit is issued under the provisions of Chapter 373, Florida Statutes, (F.S.), and the Rules contained in Chapter 62-330, Florida Administrative Code, (F.A.C.). The permit authorizes the Permittee to proceed with the construction of a surface water management system in accordance with the information outlined herein and shown by the application, approved drawings, plans, specifications, and other documents, attached hereto and kept on file at the Southwest Florida Water Management District (District). Unless otherwise stated by permit specific condition, permit issuance constitutes certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341. All construction, operation and maintenance of the surface water management system authorized by this permit shall occur in compliance with Florida Statutes and Administrative Code and the conditions of this permit.

Authorization is granted to use state-owned submerged lands as outlined herein and shown by the application, approved drawings, plans, and other documents attached hereto and kept on file at the District under the provisions of Chapters 253 and 258, F.S., and Chapters 18-20 and 18-21, F.A.C.,as well as the policies of the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees). This approval does not disclaim any title interests that the Board of Trustees may have in the project site. Any subsequent authorizations by the Board of Trustees or its designated agents may contain conditions necessary to satisfy the fiduciary responsibilities of the Board of Trustees as well as other applicable statutory or rule requirements implemented by the Department of Environmental Protection's Division of State Lands or other governmental agencies authorized by Florida Statutes.

PROJECT NAME: Jiggs Landing Boat Ramp Improvements

GRANTED TO: Manatee County
Attn: Charles Hunsicker
415 10th Street West
Bradenton, FL 34205

OTHER PERMITTEES: N/A

ABSTRACT: This permit is for the modification of a surface water system authorized under Environmental Resource Permit (ERP) No. 44034511.001. Existing shell and rock parking and driveway surfaces will be replaced with concrete pavement and the existing boat ramp is to be replaced in-kind. A new aluminum ramp and floating dock will be added. No impacts to water quality, quantity attenuation, or floodplain encroachment are expected to occur as a result of the proposed activity. The project is located on Braden River Road, south of State Road 70, in Manatee County. Information regarding the wetlands and/or surface waters is stated below and on the permitted construction drawings for the project.

OP. & MAIN. ENTITY: Manatee County

OTHER OP. & MAIN. ENTITY: N/A

COUNTY: MANATEE

WATERBODY NAME: WARD LAKE

AQUATIC PRESERVE: Non Applicable

SEC/TWP/RGE: S15/T35S/R18E, S22/T35S/R18E

TOTAL ACRES OWNED OR UNDER CONTROL:	7.50
PROJECT SIZE:	2.50 Acres
LAND USE:	Government
DATE APPLICATION FILED:	August 13, 2013
AMENDED DATE:	N/A

I. Water Quantity/Quality

Water Quality/Quantity Comment:
The project area will continue to drain to the stormwater management system permitted and transferred to operations under ERP No. 44034511.001.
A mixing zone is not required.
A variance is not required.

II. 100-Year Floodplain

Encroachment (Acre-Feet of fill)	Compensation (Acre-Feet of excavation)	Compensation Type	Encroachment Result* (feet)
0.00	0.00	No Encroachment	N/A

*Depth of change in flood stage (level) over existing receiving water stage resulting from floodplain encroachment caused by a project that claims Minimal Impact type of compensation.

III. Environmental Considerations

Wetland/Other Surface Water Information

Wetland/Other Surface Water Name	Total Acres	Not Impacted Acres	Permanent Impacts		Temporary Impacts	
			Acres	Functional Loss*	Acres	Functional Loss*
Ward Lake	0.27	0.21	0.03	0.00	0.03	0.00
Total:	**0.27**	**0.21**	**0.03**	**0.00**	**0.03**	**0.00**

*** For impacts that do not require mitigation, their functional loss is not included.**

Wetland/Other Surface Water Comments:
Wetlands are not located within the project area for this ERP; however, there are 0.27 acre of other surface water features, consisting of 0.27 acre of Lake Ward (FLUCCS 521) also known as Bill Evers Reservoir, located within the project area. Permanent filling and shading impacts to 0.03 acre of the project surface waters will occur for construction of improvements to an existing boat ramp, extension of an existing seawall, and expansion of an existing tender dock providing temporary moorage for vessels using the boat ramp. Temporary impacts to water quality within 0.03 acre of surface waters are proposed to occur during the construction phase of the project. The temporary water quality impacts are limited to the immediate work area and are contained within turbidity barriers.

Mitigation Information

Mitigation Comments:
Wetland mitigation will not be required for permanent filling and shading impacts impacts to 0.03 acre of Lake Ward pursuant to Section 10.2.2. of the Applicants Handbook Volume I (A.H.V.I.) for Environmental Resource Permit Applications. Under this Section, wetland mitigation is not required for impacts that have been determined to be de minimis to fish, wildlife and listed species.

IV. State-Owned Submerged Lands

Activity	Preempted Area	Dredged	Shoreline Length (Lin. Ft.)
Letter of Consent	6808		1418
Totals:	6808		1418

Total Slips: 2

Comments: Existing and proposed pre-emptive structures together qualify for Letter of Consent authorization.

Specific Conditions

1. If the ownership of the project area covered by the subject permit is divided, with someone other than the Permittee becoming the owner of part of the project area, this permit shall terminate, pursuant to Rule 40D-1.6105, F.A.C. In such situations, each land owner shall obtain a permit (which may be a modification of this permit) for the land owned by that person. This condition shall not apply to the division and sale of lots or units in residential subdivisions or condominiums.

2. The Permittee shall retain the design engineer, or other professional engineer registered in Florida, to conduct on-site observations of construction and assist with the as-built certification requirements of this project. The Permittee shall inform the District in writing of the name, address and phone number of the professional engineer so employed. This information shall be submitted prior to construction.

3. Wetland buffers shall remain in an undisturbed condition except for approved drainage facility construction/maintenance unless prior approval is received from the Southwest Florida Water Management District.

4. The following boundaries, as shown on the approved construction drawings, shall be clearly delineated on the site prior to initial clearing or grading activities:

   wetland and surface water areas

   wetland buffers

   limits of approved wetland impacts

   The delineation shall endure throughout the construction period and be readily discernible to construction and District personnel.

5. This modification, Construction Permit No. 43034511.003, amends the previously issued Construction Permit No. 44034511.001 and adds conditions. All other original permit conditions remain in effect.

6. If limestone bedrock is encountered during construction of the surface water management system, the District must be notified and construction in the affected area shall cease.

7. The Permittee shall notify the District of any sinkhole development in the surface water management system within 48 hours of discovery and must submit a detailed sinkhole evaluation and repair plan for approval by the District within 30 days of discovery.

8. The Permitted Plan Set for this project includes the set received by the District on October 11, 2013.

9. District staff must be notified in advance of any proposed construction dewatering. If the dewatering activity is likely to result in offsite discharge or sediment transport into wetlands or surface waters, a written dewatering plan must either have been submitted and approved with the permit application or submitted to the District as a permit prior to the dewatering event as a permit modification. A water use permit may be required prior to any use exceeding the thresholds in Chapter 40D-2, F.A.C.

10. Off-site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

11. The permittee shall complete construction of all aspects of the surface water management system, including wetland compensation (grading, mulching, planting), water quality treatment features, and discharge control facilities prior to beneficial occupancy or use of the development being served by this system.

12. The following shall be properly abandoned and/or removed in accordance with the applicable regulations:

    a. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed well contractor.
    b. Any existing septic tanks on site shall be abandoned at the beginning of construction.
    c. Any existing fuel storage tanks and fuel pumps shall be removed at the beginning of construction

13. All surface water management systems shall be operated to conserve water in order to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property and to minimize dewatering of offsite property.

14. This permit is valid only for the specific processes, operations and designs indicated on the approved drawings or exhibits submitted in support of the permit application. Any substantial deviation from the approved drawings, exhibits, specifications or permit conditions, including construction within the total land area but outside the approved project area(s), may constitute grounds for revocation or enforcement action by the District, unless a modification has been applied for and approved. Examples of substantial deviations include excavation of ponds, ditches or sump areas deeper than shown on the approved plans.

15. A mixing zone for turbidity is granted with the following size and configuration constraint(s):
    The mixing zone shall extend no further than a semicircle with a radius of 150 feet from any points of turbidity generation resulting from the proposed construction, pursuant to rule 62-4.244(5)(c), F.A.C.

16. Monitoring for turbidity shall be conducted for the duration of the project. Sampling will commence prior to initiation of any dredging or filling activities. Samples shall be taken every **4** hours during construction activities as described below.

    A minimum of **1** sampling site shall be established within the mixing zones. The first site will be located at the mixing zone boundary down-current of the turbidity source within the most visible plume. This site will be used to collect the Compliance Samples (CS).
    Samples shall be collected from surface and mid-depth. Mid-depth samples are sufficient in water that is less than five feet deep. Sampling will be restricted to the axis of the visible plume. Samples will be collected at the intersection of the mixing zone boundary and a line parallel with the water current and extending from the source of turbidity if a plume is not visible.

    Background samples shall be collected at a minimum of one site. The sample(s) will be collected at surface and mid-depth. The background site(s) will be marked by temporary buoys and shall be maintained for the duration of the sampling program; these sites shall not be changed without specific written authorization by the District.

Samples shall be collected with a Kemmerer, Van Dorn or a similar sampler that is designed to collect in situ water samples. Samples shall be analyzed immediately after collection with a turbidimeter that produces results in Nephelometric measurements. The field sample results shall be accurately recorded to the precision capabilities (decimal place) of the instrument. Field turbidimeter results shall be rounded to the next whole number (ex. 15.23 NTUs shall be recorded; however the results shall be interpreted as 16.00 NTUs).

17. The permittee shall comply with the following Quality Assurance/ Quality Control (QA/QC) requirements:

a. The instrument shall be calibrated each morning and each time the instrument is turned on, and recalibrated every four hours thereafter.

b. Calibrations shall be performed against a blank, and at least one formazin or gel-type standard. The standard value shall be in the same range as the sample readings.

c. Calibration procedures shall be recorded in a permanent QA/QC logbook, and copies shall be submitted with the data.

18. Turbidity monitoring reports shall be submitted to the District each Monday following project commencement. The reports shall include the permittee's name and permit number, and a cover page that states: "This information is being provided in partial fulfillment of the monitoring requirements in Permit No. 43034511.003." Failure to submit reports in a timely manner shall constitute a violation of the permit and shall be grounds for revocation.

Monitoring data shall contain the following information:

a. Permit number

b. Dates of sampling and analysis

c. A statement describing the methods used in collection and analysis of the samples

d. A map showing the sampling locations, along with the latitude and longitude of the sampling locations

e. Copies of the QA/QC log, and

f. A statement by the individual responsible for implementation of the sampling program certifying the authenticity, precision and accuracy of the data

Monitoring reports shall also include the following information for each sample that is taken:

a. Time of day samples were taken

b. Depth of water body

c. Depth of sample

d. Tidal stage and/or direction of flow, and

e. Antecedent weather conditions, including wind direction and velocity at the time the sample was taken

19. Turbidity levels outside the mixing zone described in this permit shall not exceed 29 NTU's above background. If monitoring reveals turbidity levels outside of the mixing zone are greater than or equal to 29 NTU's above background the permittee shall take the following measures:

a. Immediately cease all work contributing to the water quality violation.

b. Stabilize exposed soils contributing to the violation. Modify work procedures responsible for the violation, install additional turbidity containment devices, repair non-functioning turbidity containment devices; and

c. Increase monitoring frequency to every two hours until turbidity levels no longer exceed 29 NTU's above background. Interim samples collected following the violation(s) shall be collected in the same manner and locations as the routine monitoring. Construction activities may not resume until the turbidity levels meet the above water quality standards.

d. Immediately report turbidity violations to the District. The report shall include the description of the corrective actions being taken or proposed to be taken. The report shall be made to the Department as soon as normal business hours resume if violation(s) are noted after normal business hours, on holidays, or on weekends. A copy of the monitoring data sheets, which indicate violation(s), shall be forwarded immediately to the Department.

Failure to report violation(s) or to follow corrective procedures before resuming work shall constitute grounds for permit revocation and may subject the permittee to formal enforcement action.

20. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at 850.245.6333 or 800.847.7278, as well as the appropriate permitting agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statutes.

GENERAL CONDITIONS

1. The general conditions attached hereto as Exhibit "A" are hereby incorporated into this permit by reference and the Permittee shall comply with them.

PROPRIETARY GENERAL CONDITIONS

1. The general conditions attached hereto as Exhibit "B" are hereby incorporated by reference and the Permittee shall comply with them.

Michelle K. Hopkins, P.E.

Authorized Signature

EXHIBIT A

GENERAL CONDITIONS:

1 The following general conditions are binding on all individual permits issued under this chapter, except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate, project-specific conditions.

a. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C., or the permit may be revoked and the permittee may be subject to enforcement action.

b. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

c. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007)*, and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008)*, which are both incorporated by reference in subparagraph 62-330.050(8)(b)5, F.A.C., unless a projectspecific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

d. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice,"[effective date], incorporated by reference herein (<http://www.flrules.org/Gateway/reference.asp?No=Ref-02505>), indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.

e. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

f. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:

1. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex - "Construction Completion and Inspection Certification for Activities Associated with a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or

2. For all other activities - "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].

3. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

g. If the final operation and maintenance entity is a third party:

1. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction

needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.

2. Within 30 days of submittal of the as- built certification, the permittee shall submit “Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity” [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

h. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

i. This permit does not:

1. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;

2. Convey to the permittee or create in the permittee any interest in real property;

3. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or

4. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

j. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

k. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

l. The permittee shall notify the Agency in writing:

1. Immediately if any previously submitted information is discovered to be inaccurate; and

2. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

m. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

n. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification

shall be provided in accordance with Section 872.05, F.S. (2012).

o. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

p. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

q. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

r. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

2. In addition to those general conditions in subsection (1) above, the Agency shall impose any additional project-specific special conditions necessary to assure the permitted activities will not be harmful to the water resources, as set forth in Rules 62-330.301 and 62-330.302, F.A.C., Volumes I and II, as applicable, and the rules incorporated by reference in this chapter.

EXHIBIT B

PROPRIETARY GENERAL CONDITIONS

1. Authorizations are valid only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use shall constitute a violation. Violation of the authorization shall result in suspension or revocation of the grantee's use of the state-owned submerged land unless cured to the satisfaction of the Board.

2. Authorizations convey no title to state-owned submerged land or water column, nor do they constitute recognition or acknowledgment of any other person's title to such land or water.

3. Authorizations may be modified, suspended or revoked in accordance with their terms or the remedies provided in Sections 253.04 and 258.46, F.S., or Chapter 18-14, FAC.

4. Structures or activities shall be constructed and used to avoid or minimize adverse impacts to state-owned submerged lands and resources.

5. Construction, use, or operation of the structure or activity shall not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, FAC.

6. Structures or activities shall not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity shall be modified in accordance with the court's decision.

7. Structures or activities shall not create a navigational hazard.

8. Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of Rule 18-21.005, FAC., within one year, of a structure damaged in a discrete event such as a storm, flood, accident, or fire.

9. Structures or activities shall be constructed, operated, and maintained solely for water dependent purposes, or for non-water dependent activities authorized under paragraph 18-21.004 (1)(f), F.A.C., or any other applicable law.

SOUTHWEST FLORIDA
WATER MANAGEMENT DISTRICT

NOTICE OF
AUTHORIZATION
TO COMMENCE CONSTRUCTION

Jiggs Landing Boat Ramp Improvements
PROJECT NAME

Government
PROJECT TYPE

MANATEE
COUNTY

S15/T35S/R18E, S22/T35S/R18E
SEC(S)/TWP(S)/RGE(S)

Manatee County
PERMITTEE

APPLICATION ID/PERMIT NO: 685278 / 43034511.003

DATE ISSUED: November 07, 2013

Michelle K. Hopkins, P.E.
Issuing Authority

THIS NOTICE SHOULD BE CONSPICUOUSLY DISPLAYED AT THE SITE OF THE WORK

Notice of Rights

ADMINISTRATIVE HEARING

1. You or any person whose substantial interests are or may be affected by the District's intended or proposed action may request an administrative hearing on that action by filing a written petition in accordance with Sections 120.569 and 120.57, Florida Statutes (F.S.), Uniform Rules of Procedure Chapter 28-106, Florida Administrative Code (F.A.C.) and District Rule 40D-1.1010, F.A.C. Unless otherwise provided by law, a petition for administrative hearing must be filed with (received by) the District within 21 days of receipt of written notice of agency action. "Written notice" means either actual written notice, or newspaper publication of notice, that the District has taken or intends to take agency action. "Receipt of written notice" is deemed to be the fifth day after the date on which actual notice is deposited in the United States mail, if notice is mailed to you, or the date that actual notice is issued, if sent to you by electronic mail or delivered to you, or the date that notice is published in a newspaper, for those persons to whom the District does not provide actual notice.

2. Pursuant to Subsection 373.427(2)(c), F.S., for notices of intended or proposed agency action on a consolidated application for an environmental resource permit and use of state-owned submerged lands concurrently reviewed by the District, a petition for administrative hearing must be filed with (received by) the District within 14 days of receipt of written notice.

3. Pursuant to Rule 62-532.430, F.A.C., for notices of intent to deny a well construction permit, a petition for administrative hearing must be filed with (received by) the District within 30 days of receipt of written notice of intent to deny.

4. Any person who receives written notice of an agency decision and who fails to file a written request for a hearing within 21 days of receipt or other period as required by law waives the right to request a hearing on such matters.

5. Mediation pursuant to Section 120.573, F.S., to settle an administrative dispute regarding District intended or proposed action is not available prior to the filing of a petition for hearing.

6. A request or petition for administrative hearing must comply with the requirements set forth in Chapter 28-106, F.A.C. A request or petition for a hearing must: (1) explain how the substantial interests of each person requesting the hearing will be affected by the District's intended action or proposed action, (2) state all material facts disputed by the person requesting the hearing or state that there are no material facts in dispute, and (3) otherwise comply with Rules 28-106.201 and 28-106.301, F.A.C. Chapter 28-106, F.A.C. can be viewed at www.flrules.org or at the District's website at www.WaterMatters.org/permits/rules.

7. A petition for administrative hearing is deemed filed upon receipt of the complete petition by the District Agency Clerk at the District's Tampa Service Office during normal business hours, which are 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding District holidays. Filings with the District Agency Clerk may be made by mail, hand-delivery or facsimile transfer (fax). The District does not accept petitions for administrative hearing by electronic mail. Mailed filings must be addressed to, and hand-delivered filings must be delivered to, the Agency Clerk, Southwest Florida Water Management District, 7601 Highway 301 North,Tampa,FL 33637-6759. Faxed filings must be transmitted to the District Agency Clerk at (813) 987-6746. Any petition not received during normal business hours shall be filed as of 8:00 a.m. on the next business day. The District's acceptance of faxed petitions for filing is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation, available for viewing at www.WaterMatters.org/about.

JUDICIAL REVIEW

1. Pursuant to Sections 120.60(3) and 120.68, F.S., a party who is adversely affected by District action may seek judicial review of the District's action. Judicial review shall be sought in the Fifth District Court of Appeal or in the appellate district where a party resides or as otherwise provided by law.

2. All proceedings shall be instituted by filing an original notice of appeal with the District Agency Clerk within 30 days after the rendition of the order being appealed, and a copy of the notice of appeal, accompanied by any filing fees prescribed by law, with the clerk of the court, in accordance with Rules 9. 110 and 9.190 of the Florida Rules of Appellate Procedure (Fla. R. App. P.). Pursuant to Fla. R. App. P. 9.020(h), an order is rendered when a signed written order is filed with the clerk of the lower tribunal.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
10117 PRINCESS PALM AVENUE, SUITE 120
TAMPA, FLORIDA 33610

October 3, 2014

REPLY TO ATTENTION OF

Regulatory Division
South Permits Branch
Tampa Permits Section
SAJ-2009-02710(NW-MEP)

Manatee County Natural Resources
c/o Charles Hunsicker, Director
415 10th Street West
Bradenton, Florida 34205

Dear Mr. Hunsicker:

The U.S. Army Corps of Engineers (Corps) assigned your application for a Department of the Army permit, which the Corps received on May 6, 2014, the file number SAJ-2009-02710(NW-MEP). A review of the information and drawings provided indicates that the work consists of; 1) the expansion of a public boat ramp that resulted in fill being placed in approximately 533 square feet of Corps jurisdictional waters; 2) stabilizing and repairing the concrete panels of the boat ramp; 3) extending an existing seawall by approximately 9 ft to block parking lot runoff from scouring the soils along the sides of the boat ramp; and 4) filling the depression at the boat ramp base. The project is located within Ward Lake at Jiggs Landing Park, 6106 63rd Street East, Bradenton, in Section 15 & 22, Township 35 south, Range 18 east, Manatee County, Florida.

Your project, as depicted on the enclosed drawings, is authorized by Nationwide Permit (NWP) Numbers 3 and 36. In addition, project specific conditions have been enclosed. This verification is valid until **March 18, 2017**. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have 12 months from the date of the modification or revocation of the NWP to complete the activity under the present terms and conditions of this nationwide permit. Please access the U.S. Army Corps of Engineers' (Corps) Jacksonville District's Regulatory Internet page to access Internet links to view the Final Nationwide Permits, Federal Register Vol. 77, dated February 21, 2012, specifically pages 10270 – 10290, the Corrections to the Final Nationwide Permits, Federal Register 77, March 19, 2012, and the List of Regional Conditions. The Internet page address is:

http://www.saj.usace.army.mil/Missions/Regulatory.aspx

Please be aware this Internet address is case sensitive and should be entered as it appears above. Once there you will need to click on “Source Book”; and, then click on “Nationwide Permits.” These files contain the description of the Nationwide Permit authorization, the Nationwide Permit general conditions, and the regional conditions, which apply specifically to this verification for NWP 3 and NWP 36. Enclosed is a list of the six General Conditions, which apply to all Department of the Army authorizations. You must comply with all of the special and general conditions and any project specific condition of this authorization or you may be subject to enforcement action. In the event you have not completed construction of your project within the specified time limit, a separate application or re-verification may be required.

The following special conditions are included with this verification:

1. Within 60 days of completion of the work authorized, the attached *Self-Certification Statement of Compliance* must be completed and submitted to the U.S. Army Corps of Engineers. Mail the completed form to the Regulatory Division, Special Projects and Enforcement Branch, 10117 Princess Palm Avenue, Suite 120, Tampa, Florida 33610.

2. The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structures or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

3. Cultural Resources/Historic Properties:

a. No structure or work shall adversely affect impact or disturb properties listed in the *National Register of Historic Places* (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic

Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition ; and if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist and from the Corps.

4. Prior to the initiation of any work authorized by this permit, the Permittee shall install erosion control measures along the perimeter of all work areas to prevent the displacement of fill material outside the work area into waters of the United States. Immediately after completion of the final grading of the land surface, all slopes, land surfaces, and filled areas shall be stabilized using sod, degradable mats, barriers, or a combination of similar stabilizing materials to prevent erosion. The erosion control measures shall remain in place and be maintained until all authorized work is completed and the work areas are stabilized.

5. The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

Pursuant to the Determination of Navigability, Manatee River and Its Tributaries, dated March 27, 1987, Ward Lake is not jurisdictional under Section 10 of the Rivers and Harbors Act. The construction of a new aluminum ramp and floating dock as

depicted in the attached drawings will therefore not require a Corps permit. Ward Lake remains jurisdictional under Section 404 of the CWA.

This letter of authorization does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP, please contact me by telephone at 813-769-7065.

Thank you for your cooperation with our permit program. The Corps Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to complete our automated Customer Service Survey at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Your input is appreciated – favorable or otherwise.

Sincerely,

Mark E. Peterson
Project Manager

Enclosures:
General Conditions
Transfer Request
Self-Certification Statement of Compliance
Drawings (10 pages)

Copy Furnished:
David A. Landers, P.E., CPH, Inc. (dlanders@cphcorp.com)

bcc:
CESAJ-RD-PE

GENERAL CONDITIONS
33 CFR PART 320-330

1. The time limit for completing the work authorized ends on **March 18, 2017**.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort of if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow a representative from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2009-02710(NW-MEP)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019.

_____ _____

(TRANSFEREE-SIGNATURE) **(SUBDIVISION)**

_____ _____ _____

(DATE) **(LOT)** **(BLOCK)**

_____

(STREET ADDRESS)

_____

(NAME-PRINTED)

_____

_____

(MAILING ADDRESS)

_____

(CITY, STATE, ZIP CODE)

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

Permit Number: SAJ-2009-02710

Permittee's Name & Address (please print or type):_____

_____

_____

Telephone Number:_____

Location of the Work:_____

_____

Date Work Started:_____ Date Work Completed:_____

PROPERTY IS INACCESSIBLE WITHOUT PRIOR NOTIFICATION: YES _____ NO_____

TO SCHEDULE AN INSPECTION PLEASE CONTACT _____ AT _____

Description of the Work (e.g. bank stabilization, residential or commercial filling, docks, dredging,
etc.):_____

_____

_____

Acreage or Square Feet of Impacts to Waters of the United States: _____

Describe Mitigation completed (if applicable): _____

_____

Describe any Deviations from Permit (attach drawing(s) depicting the deviations):

_____

_____

****

I certify that all work, and mitigation (if applicable) was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

_____
Signature of Permittee

_____
Date

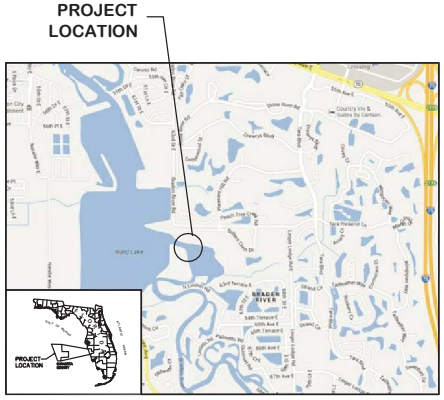
PERMIT DRAWINGS
JIGGS LANDING BOAT RAMP
BRADENTON, FLORIDA
22-35S-18E

Prepared For:

MANATEE COUNTY
1112 MANATEE AVE W
BRADENTON, FL 34205

GENERAL NOTES

1. JIGGS LANDING BOAT RAMP ADDRESS: 6106 63RD STREET E, BRADENTON, FL
2. TOPOGRAPHIC SURVEY COMPLETED ON JUNE 2013 BY CPH
3. ELEVATIONS ARE BASED ON NGVD 29 DATUM. BEANCHMARKS # MCO BM 87-29-05, ELEVATION = 11.028' NGVD 29 AND #MCO BM 8-2-04, ELEVATION =10.591 NGVD 29.
4. HAVING CONSULTED THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 120153 0365 C, EFFECTIVE DATE JULY 15, 1992, MANATEE COUNTY, THE SUBJECT PROPERTY APPEARS TO LIE IN ZONE AE, SITE TO LIE ALONG CROSS SECTION K, AND THEREFORE THE BASE FLOOD WATER SURFACE ELEVATION IS 9.3' NGVD '29 AND WAS BASED ON FLOODWAY DATA - BRADEN RIVER, LOMR CASE NO. 04-04-357P-120153, EFFECTIVE MAY 8, 2005 THIS DETERMINATION WAS BASED ON A GRAPHIC INTERPOLATION OF SAID MAP AND NOT ON ACTUAL FIELD MEASUREMENT EXISTING CONDITIONS PLAN



VICINITY MAP

DRAWING INDEX

1	COVER SHEET
2	EXISTING CONDITIONS PLAN
3	SITE PLAN
4	GRADING PLAN
5	LONGITUDINAL SECTION
6	CROSS SECTIONS
S1	STRUCTURAL PLAN
S2-S4	STRUCTURAL DETAILS

LEGEND

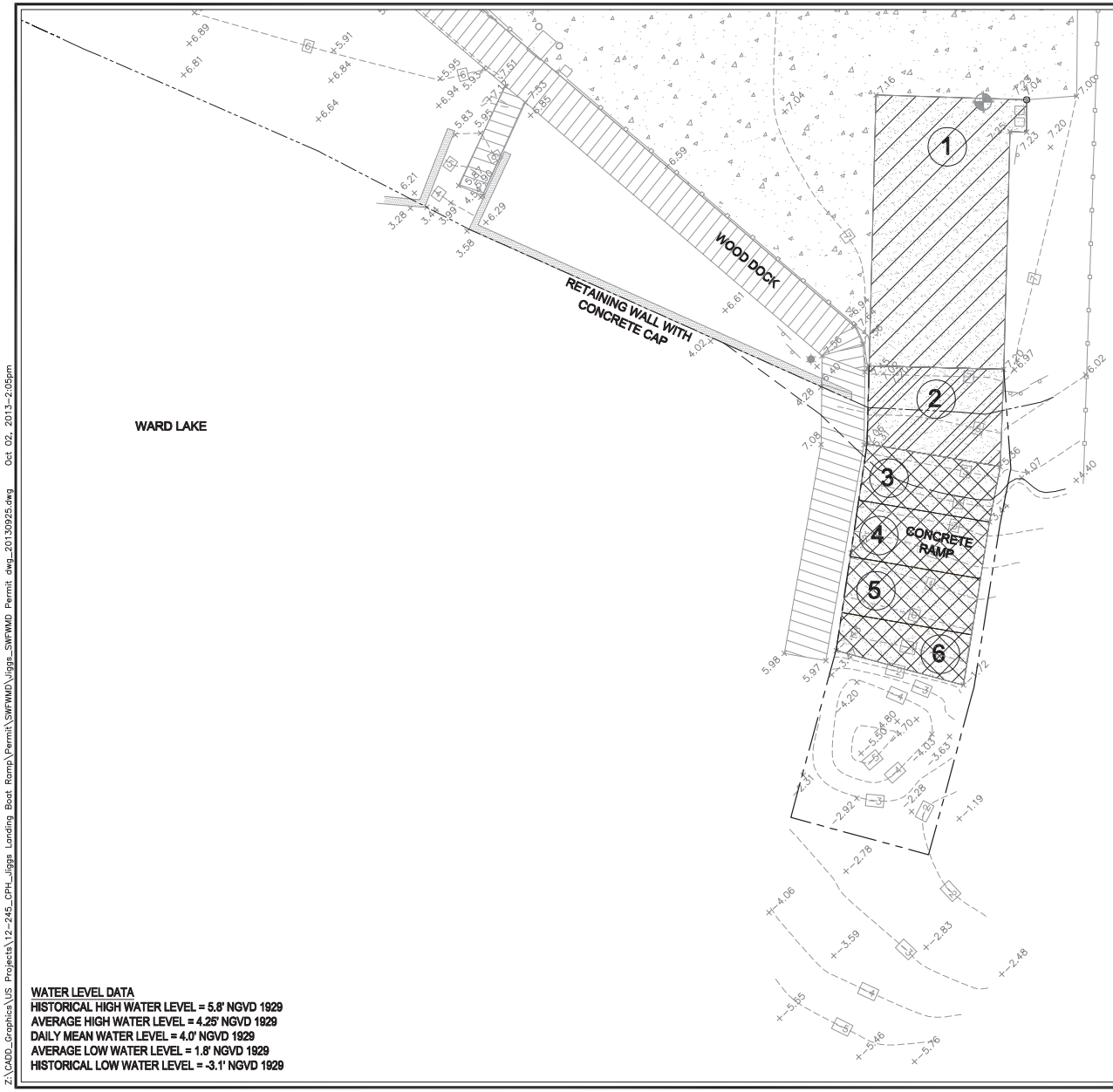
- CAST -IN- PLACE CONCRETE
- PRE-FABRICATED CONCRETE PANELS (10 IN THICK)
- ARTICULATING CONCRETE BLOCK MATTRESS
- FILL AREA
- FORMED CONCRETE SLAB - FLAT SECTION (ASSUMED 10 IN THICK)
- FORMED CONCRETE SLAB - SLOPED SECTION (10 IN THICK)
- CENTER LINE
- EXISTING CONTOURS
- FLOATING TURBIDITY BARRIER
- TEMPORARY COFFER DAM
- WETLAND LINE
- SAFE UPLAND LINE
- 2+00 BASELINE STATIONS
- EXISTING ELEVATION
- -0.1 PROPOSPED ELEVATION

Prepared By:

Erickson Consulting Engineers
7201 Delainey Court
Sarasota FL, 34240
941-373-6460

Date: October, 2013

Project No.: 12-245



Ramp Section	Description
1	Flat, formed concrete ramp section; approximately 25 ft x50 ft; thickness assumed to be 10 in.
2	Sloped, formed concrete ramp section; nominally 25 ft x 16.5 ft; 10 in. thick.
3	Sloped, pre-fabricated concrete panel; approximately 25 ft by 10.5 ft; 10 in. thick.
4	Sloped, pre-fabricated concrete panel; approximately 25 ft by 10.5 ft; 10 in. thick.
5	Sloped, pre-fabricated concrete panel; approximately 25 ft by 10.5 ft; 10 in. thick.
6	Sloped, pre-fabricated concrete panel; nominally 25 ft by 8 ft; 10 in. thick.

LEGEND

- EXISTING CONTOURS
- EXISTING SPOT ELEVATION
- FORMED CONCRETE SLAB - FLAT SECTION (ASSUMED 10 IN THICK)
- FORMED CONCRETE SLAB - SLOPED SECTION (10 IN THICK)
- PRE-FABRICATED CONCRETE PANELS (10 IN THICK)
- WETLAND LINE
- SAFE UPLAND LINE

WATER LEVEL DATA
HISTORICAL HIGH WATER LEVEL = 5.8' NGVD 1929
AVERAGE HIGH WATER LEVEL = 4.25' NGVD 1929
DAILY MEAN WATER LEVEL = 4.0' NGVD 1929
AVERAGE LOW WATER LEVEL = 1.8' NGVD 1929
HISTORICAL LOW WATER LEVEL = -3.1' NGVD 1929

Signature
Karyn M. Erickson
Professional Engineer #41897

REMARKS
REV. No. 1 | DATE 10/02/13 | DRAWN BY AS | CHKD BY KE | Response to SWFWMD RAI #1

DESIGNED BC | DRAWN AS | CHECKED KE
DATE: 07-12-2013
JOB NO. 12-245
SCALE: AS NOTED

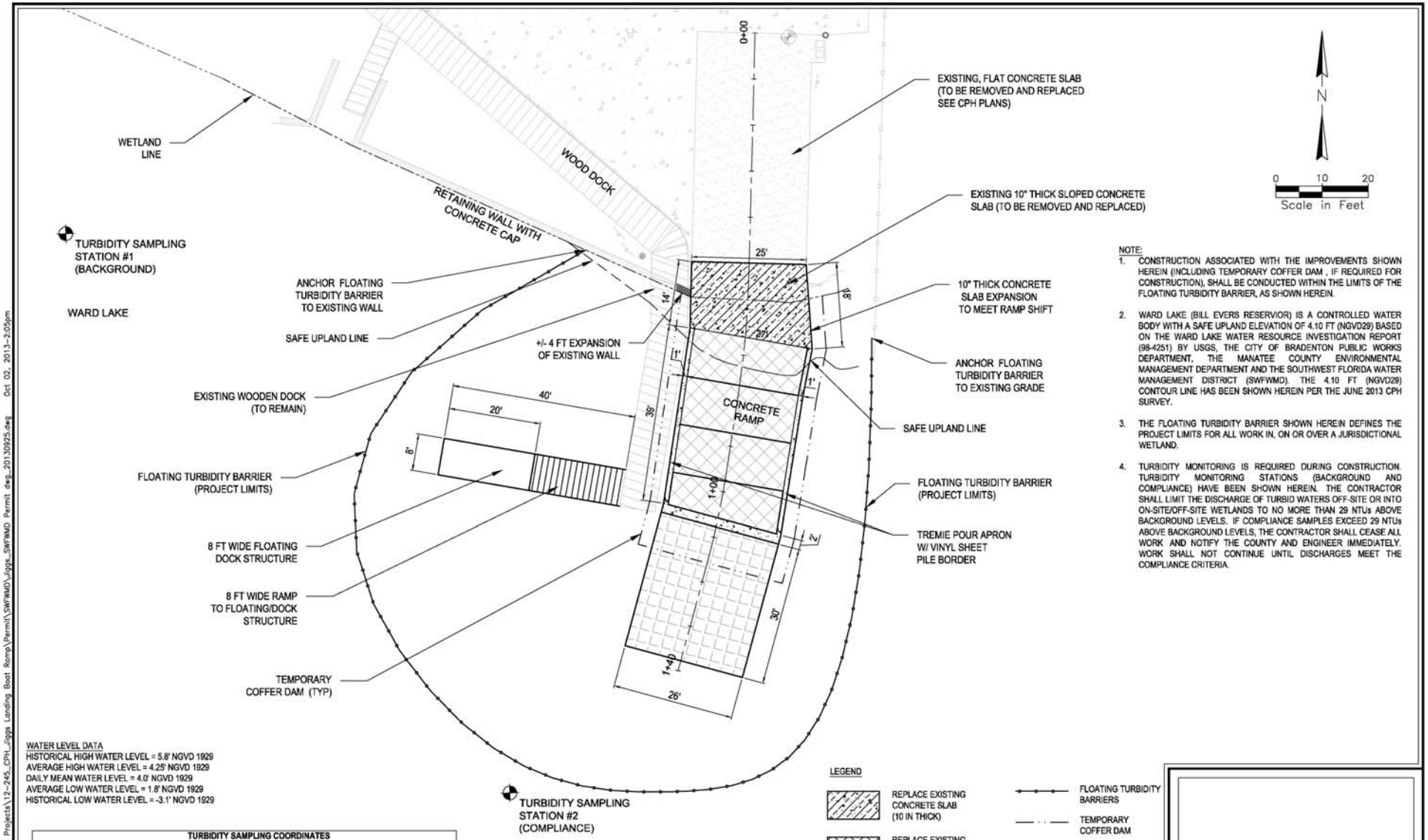
JIGGS LANDING BOAT RAMP IMPROVEMENTS
MANATEE COUNTY
BRADENTON, FLORIDA

EXISTING CONDITIONS PLAN

Erickson Consulting Engineers, Inc.
7201 Delainey Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER 2
SHEET 2 OF 10

Z:\CADD_Graphics\US_Projects\12-245_CPH_Jiggs_Landing_Boat_Ramp\Permit\SWFWMD\Jiggs_SWFWMD_Permit_dwg_20130925.dwg Oct 02, 2013-2:05pm



NOTE:
1. CONSTRUCTION ASSOCIATED WITH THE IMPROVEMENTS SHOWN HEREIN (INCLUDING TEMPORARY COFFER DAM , IF REQUIRED FOR CONSTRUCTION), SHALL BE CONDUCTED WITHIN THE LIMITS OF THE FLOATING TURBIDITY BARRIER, AS SHOWN HEREIN.
2. WARD LAKE (BILL EVERS RESERVIOR) IS A CONTROLLED WATER BODY WITH A SAFE UPLAND ELEVATION OF 4.10 FT (NGVD29) BASED ON THE WARD LAKE WATER RESOURCE INVESTIGATION REPORT (98-4251) BY USGS, THE CITY OF BRADENTON PUBLIC WORKS DEPARTMENT, THE MANATEE COUNTY ENVIRONMENTAL MANAGEMENT DEPARTMENT AND THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD). THE 4.10 FT (NGVD29) CONTOUR LINE HAS BEEN SHOWN HEREIN PER THE JUNE 2013 CPH SURVEY.
3. THE FLOATING TURBIDITY BARRIER SHOWN HEREIN DEFINES THE PROJECT LIMITS FOR ALL WORK IN, ON OR OVER A JURISDICTIONAL WETLAND.
4. TURBIDITY MONITORING IS REQUIRED DURING CONSTRUCTION. TURBIDITY MONITORING STATIONS (BACKGROUND AND COMPLIANCE) HAVE BEEN SHOWN HEREIN. THE CONTRACTOR SHALL LIMIT THE DISCHARGE OF TURBID WATERS OFF-SITE OR INTO ON-SITE/OFF-SITE WETLANDS TO NO MORE THAN 29 NTUs ABOVE BACKGROUND LEVELS. IF COMPLIANCE SAMPLES EXCEED 29 NTUs ABOVE BACKGROUND LEVELS, THE CONTRACTOR SHALL CEASE ALL WORK AND NOTIFY THE COUNTY AND ENGINEER IMMEDIATELY. WORK SHALL NOT CONTINUE UNTIL DISCHARGES MEET THE COMPLIANCE CRITERIA.

WATER LEVEL DATA
HISTORICAL HIGH WATER LEVEL = 5.8' NGVD 1929
AVERAGE HIGH WATER LEVEL = 4.25' NGVD 1929
DAILY MEAN WATER LEVEL = 4.0' NGVD 1929
AVERAGE LOW WATER LEVEL = 1.8' NGVD 1929
HISTORICAL LOW WATER LEVEL = -3.1' NGVD 1929

TURBIDITY SAMPLING COORDINATES				
STATION #	FLORIDA WEST (NAD83 HARN)		WGS84	
	NORTHING	EASTING	LATITUDE	LONGITUDE
1	1126483.5498	499961.7870	27.431755	-82.481178
2	1128362.2382	500058.1717	27.431585	-82.481268

LEGEND
- REPLACE EXISTING CONCRETE SLAB (10 IN THICK)
- REPLACE EXISTING PRE-FABRICATED CONCRETE PANELS (10 IN THICK)
- ARTICULATING CONCRETE BLOCK MATTRESS
- FLOATING TURBIDITY BARRIERS
- TEMPORARY COFFER DAM
- WETLAND LINE
- SAFE UPLAND LINE
- TURBIDITY SAMPLING STATION

Signature
Koryn M. Erickson
Professional Engineer #41897

REMARKS: Response to SWFWMD RAI #1

REV No.	DATE	DRAWN BY	CHKD BY
1	10/02/13	AS	SC

DESIGNED SC | DRAWN AS | CHECKED KE
DATE: 07-12-2013
JOB NO. 12-245
SCALE: AS NOTED

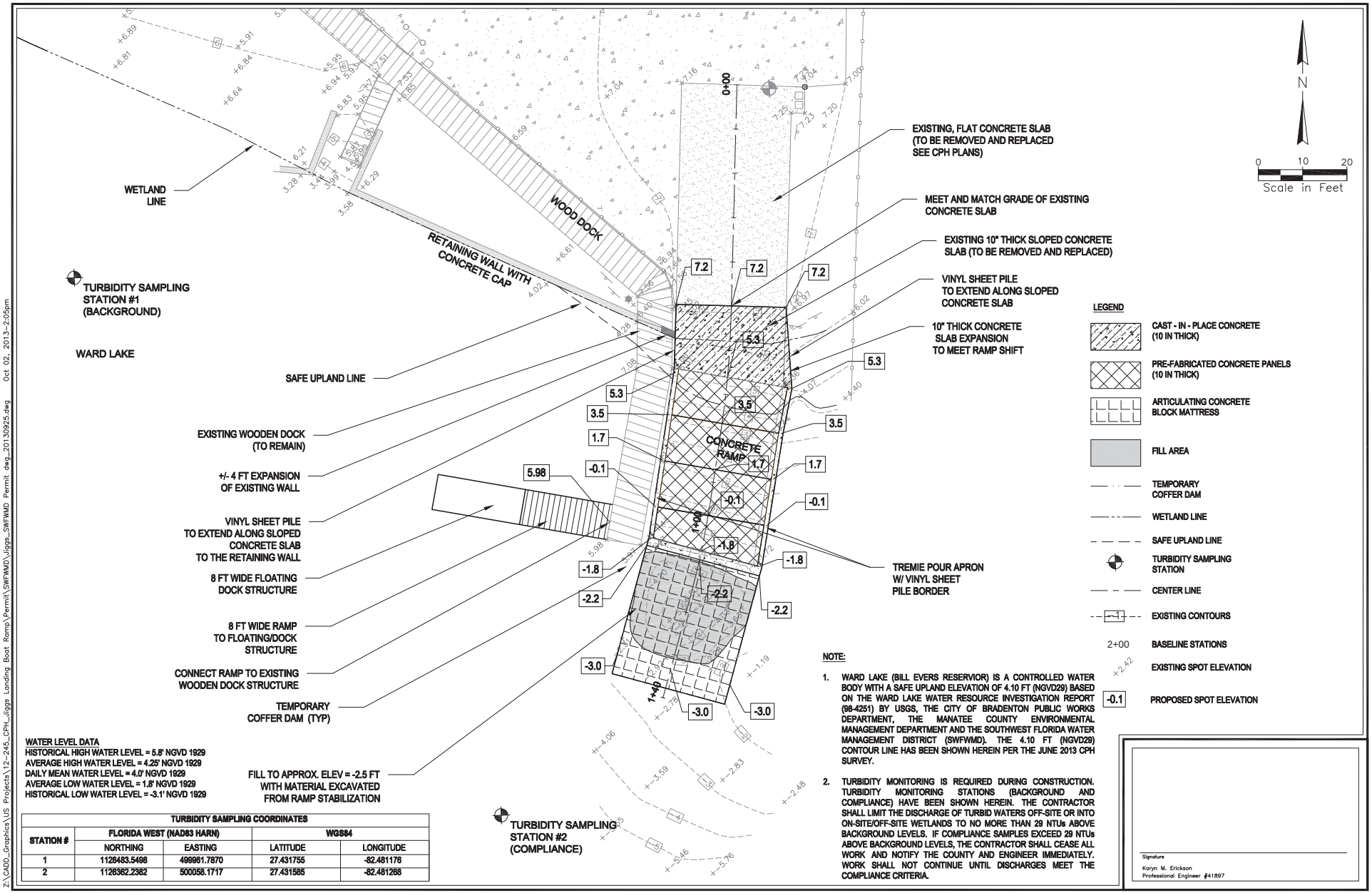
JIGGS LANDING BOAT RAMP IMPROVEMENTS
MANATEE COUNTY
BRADENTON, FLORIDA

SITE PLAN

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER 3
SHEET 3 OF 10

Z:\CADD_Graphics\JS Projects\12-245_CPH_Jigg Landing Boat Ramp\Permit\SWFWMD\Jigg_SWFWMD Permit dwg_20130925.dwg Oct 02, 2013 - 2:05pm



LEGEND

- CAST - IN - PLACE CONCRETE (10 IN THICK)
- PRE-FABRICATED CONCRETE PANELS (10 IN THICK)
- ARTICULATING CONCRETE BLOCK MATTRESS
- FILL AREA
- TEMPORARY COFFER DAM
- WETLAND LINE
- SAFE UPLAND LINE
- TURBIDITY SAMPLING STATION
- CENTER LINE
- EXISTING CONTOURS
- 2+00 BASELINE STATIONS
- +2.42 EXISTING SPOT ELEVATION
- -0.1 PROPOSED SPOT ELEVATION

WATER LEVEL DATA
HISTORICAL HIGH WATER LEVEL = 5.8' NGVD 1929
AVERAGE HIGH WATER LEVEL = 4.25' NGVD 1929
DAILY MEAN WATER LEVEL = 4.0' NGVD 1929
AVERAGE LOW WATER LEVEL = 1.8' NGVD 1929
HISTORICAL LOW WATER LEVEL = -3.1' NGVD 1929

TURBIDITY SAMPLING COORDINATES				
STATION #	FLORIDA WEST (NAD83 HARN)		WGS84	
	NORTHING	EASTING	LATITUDE	LONGITUDE
1	1126483.5498	499961.7870	27.431755	-82.481176
2	1126362.2382	500058.1717	27.431585	-82.481268

NOTE:

1. WARD LAKE (BILL EVERS RESERVIOR) IS A CONTROLLED WATER BODY WITH A SAFE UPLAND ELEVATION OF 4.10 FT (NGVD29) BASED ON THE WARD LAKE WATER RESOURCE INVESTIGATION REPORT (98-4251) BY USGS, THE CITY OF BRADENTON PUBLIC WORKS DEPARTMENT, THE MANATEE COUNTY ENVIRONMENTAL MANAGEMENT DEPARTMENT AND THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD). THE 4.10 FT (NGVD29) CONTOUR LINE HAS BEEN SHOWN HEREIN PER THE JUNE 2013 CPH SURVEY.
2. TURBIDITY MONITORING IS REQUIRED DURING CONSTRUCTION. TURBIDITY MONITORING STATIONS (BACKGROUND AND COMPLIANCE) HAVE BEEN SHOWN HEREIN. THE CONTRACTOR SHALL LIMIT THE DISCHARGE OF TURBID WATERS OFF-SITE OR INTO ON-SITE/OFF-SITE WETLANDS TO NO MORE THAN 29 NTUs ABOVE BACKGROUND LEVELS. IF COMPLIANCE SAMPLES EXCEED 29 NTUs ABOVE BACKGROUND LEVELS, THE CONTRACTOR SHALL CEASE ALL WORK AND NOTIFY THE COUNTY AND ENGINEER IMMEDIATELY. WORK SHALL NOT CONTINUE UNTIL DISCHARGES MEET THE COMPLIANCE CRITERIA.

Signature
Karyn M. Erickson
Professional Engineer #41897

REMARKS: Response to SWFWMD RAI #1
REV. No. 1 | DATE 10/02/13 | DRAWN BY AS | CHKD BY BC
DESIGNED BC | DRAWN AS | CHECKED KE | DATE: 07-12-2013 | JOB NO. 12-245 | SCALE: AS NOTED

JIGGS LANDING BOAT RAMP IMPROVEMENTS
MANATEE COUNTY
BRADENTON, FLORIDA

GRADING PLAN

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER 4
SHEET 4 OF 10

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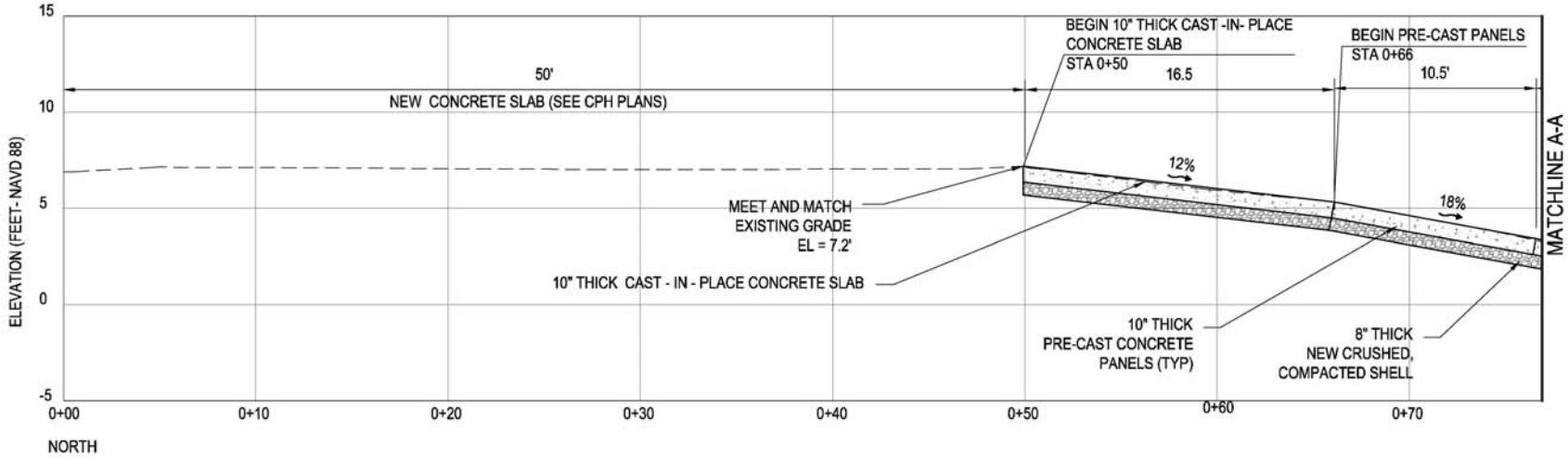

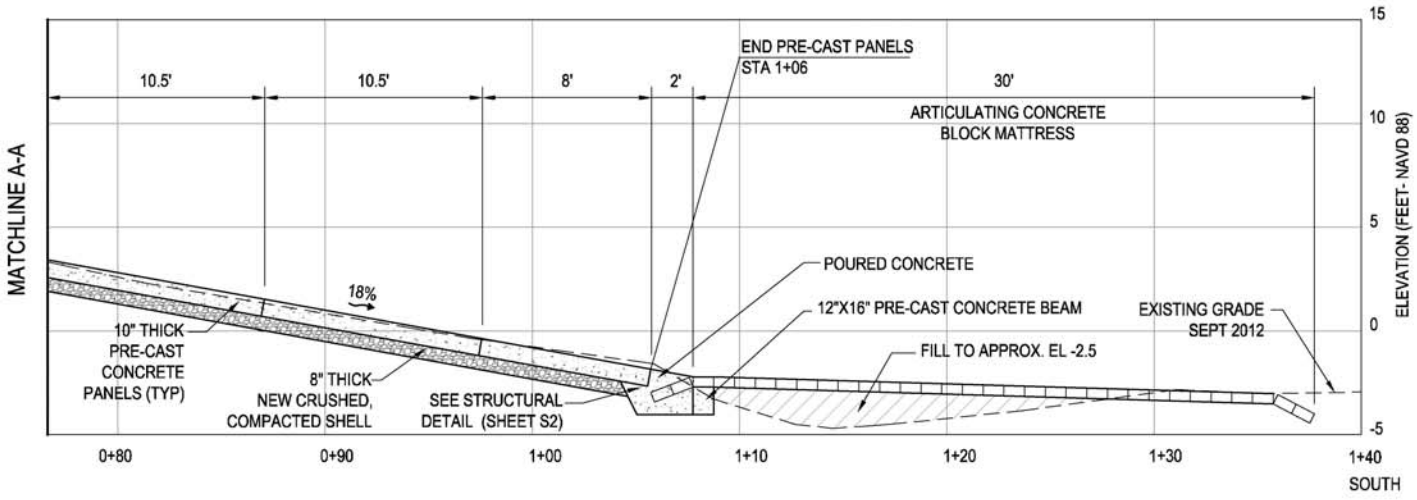

JIGGS LANDING BOAT RAMP
LONGITUDINAL SECTION
SCALE 1" = 6' (H)
1" = 6' (V)

WATER LEVEL DATA
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Koryn M. Erickson
Professional Engineer #41897

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MANATEE COUNTY
BRADENTON, FLORIDA

LONGITUDINAL SECTION

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DRAWING NUMBER 5
SHEET 5 OF 10

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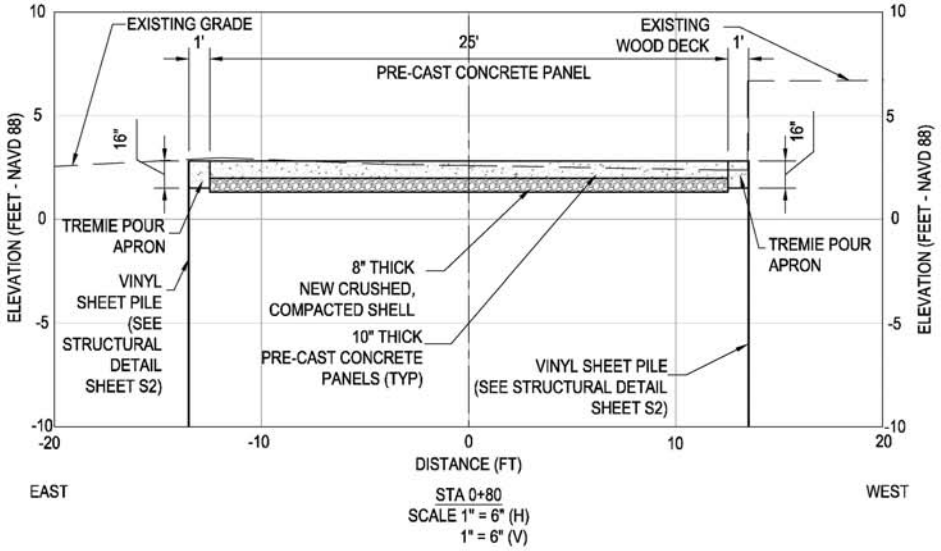

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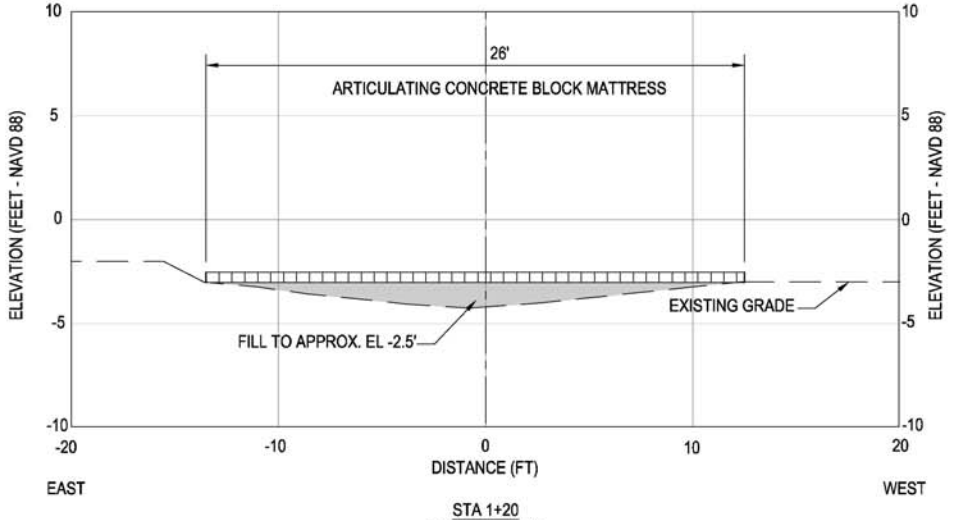
1" = 6" (V)



STA 1+20
SCALE 1" = 6" (H)
1" = 6" (V)

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AVERAGE HIGH WATER LEVEL = 4.25' NGVD 1929
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Professional Engineer #41897

REMARKS
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MANATEE COUNTY
BRADENTON, FLORIDA

CROSS SECTIONS

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Sarasota, FL 32420
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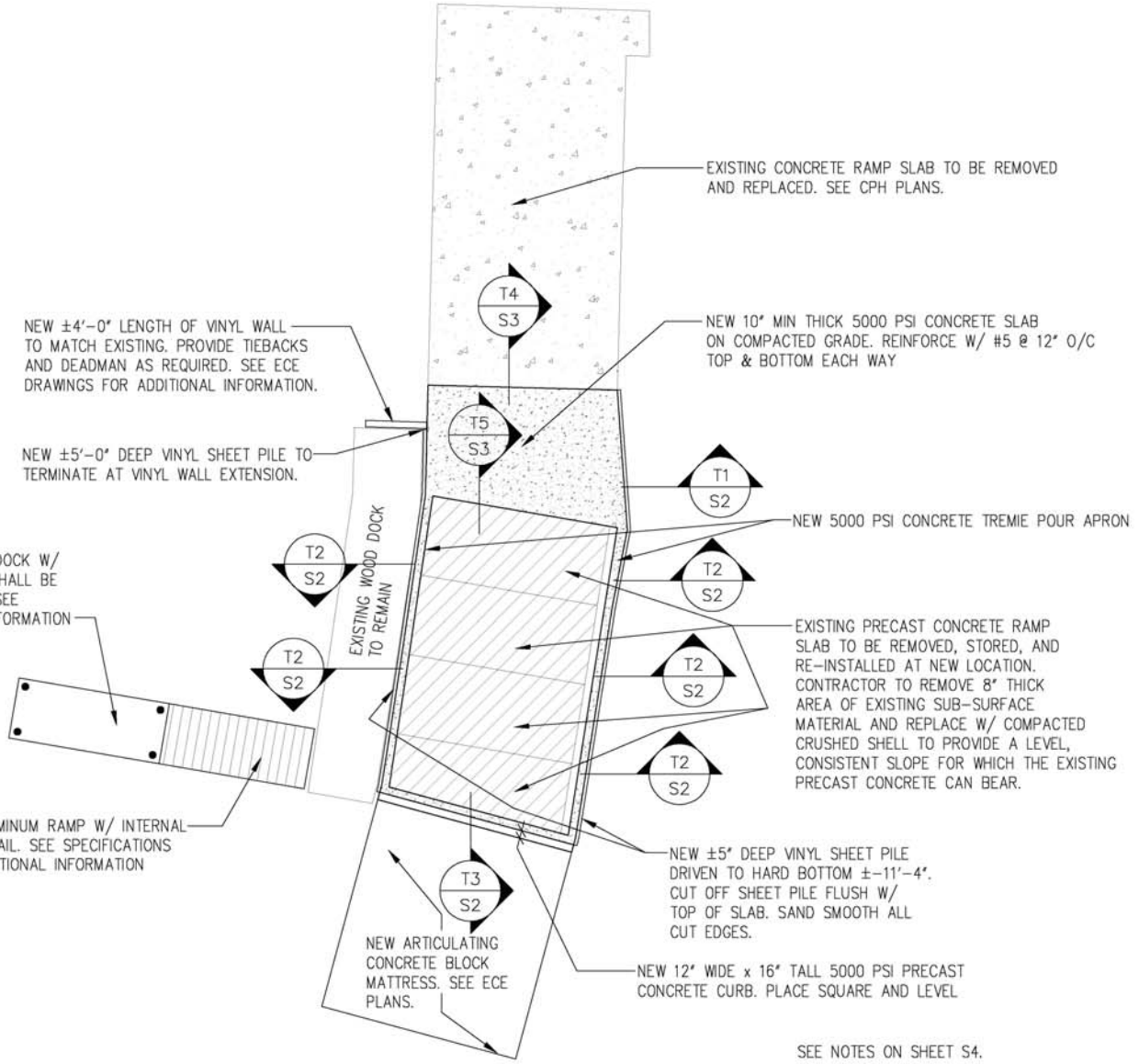
DRAWING NUMBER
6
SHEET 6 OF 10



STIRLING & WILBUR
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email: cad@stirlingwilbur.com

Signature Date

BRIAN STIRLING, P.E.
PROFESSIONAL ENGINEER # 34927

JIGGS LANDING BOAT RAMP IMPROVEMENTS
MANATEE COUNTY
BRADENTON, FLORIDA

STRUCTURAL SITE PLAN

REV No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/02/13	AS	BC	Response to SWFWMD RAI #1

DESIGNED BC | DRAWN AS | CHECKED AZ
DATE: 07-12-2013
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S1
SHEET 7 OF 10

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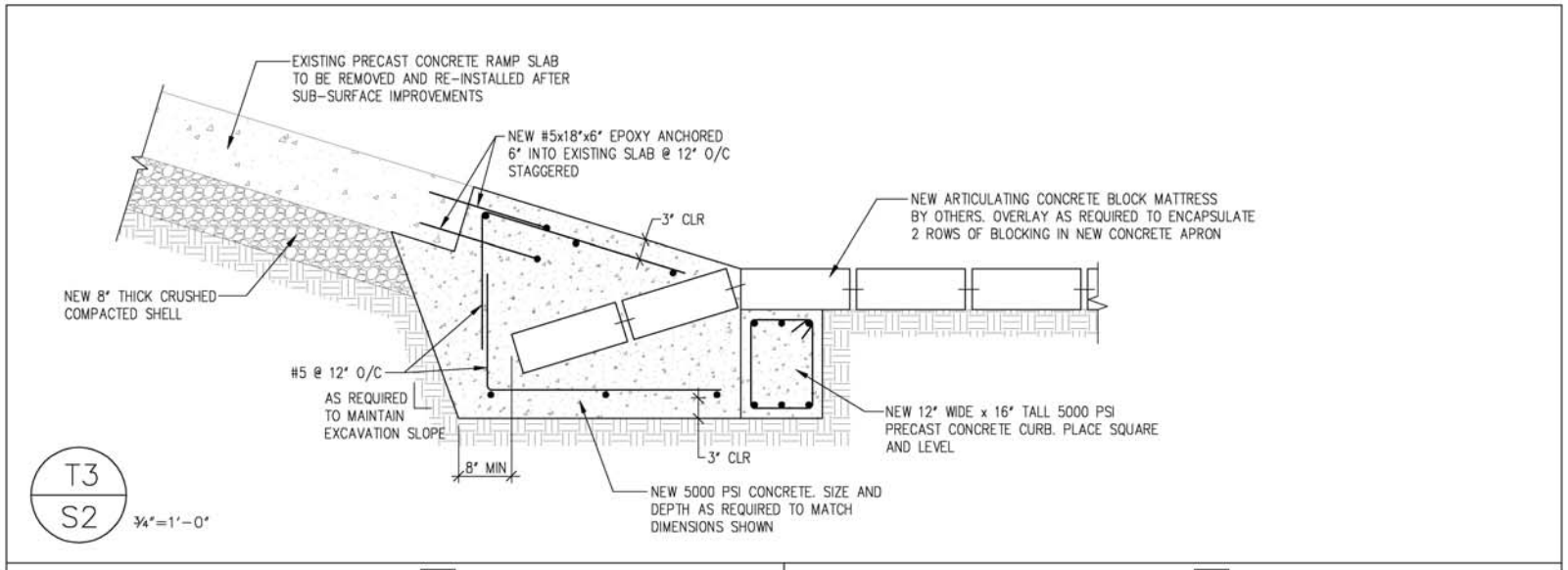

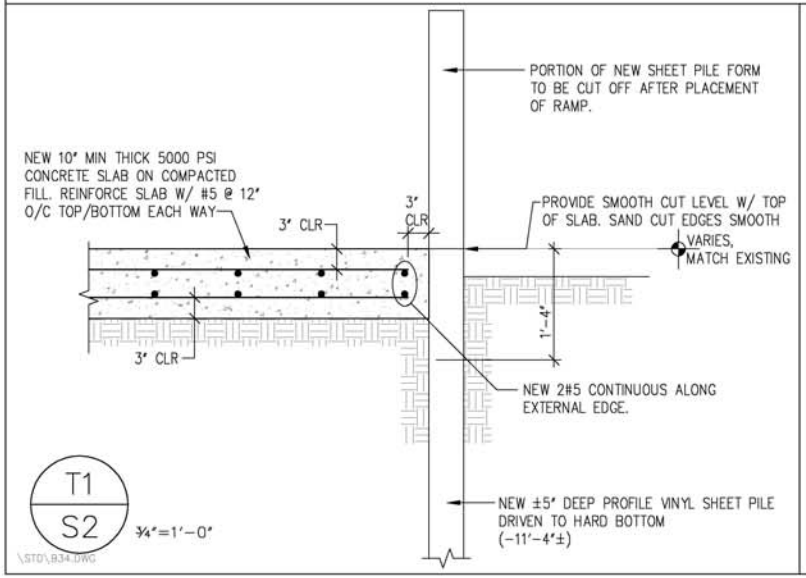

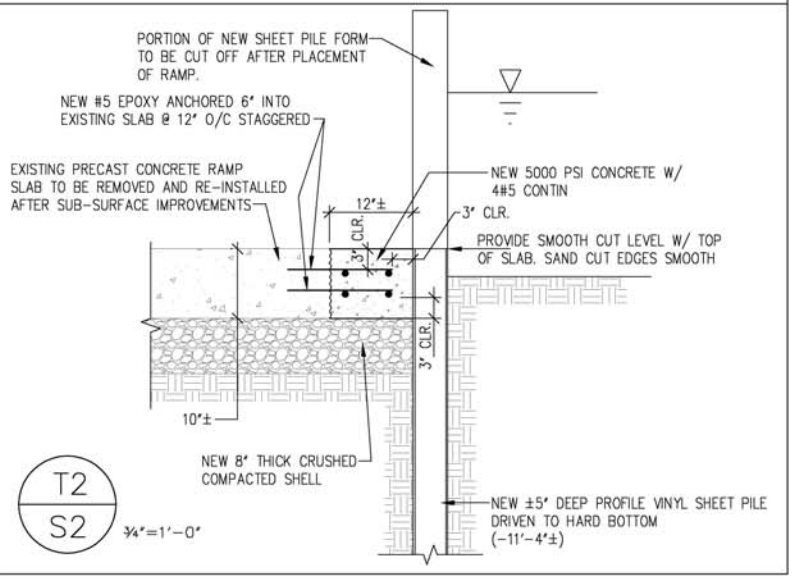

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Signature Date

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REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	10/02/13	KS	BC	Response to SAFWMD RAI #1

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SCALE: AS NOTED

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MANATEE COUNTY
BRADENTON, FLORIDA

STRUCTURAL SITE PLAN

Erickson Consulting Engineers, Inc.
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DRAWING NUMBER
S2
SHEET 8 OF 10

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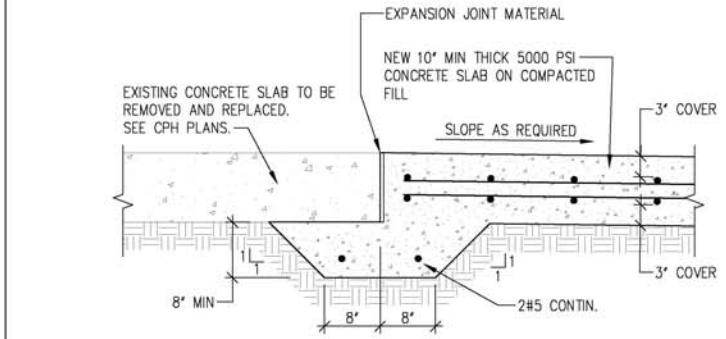

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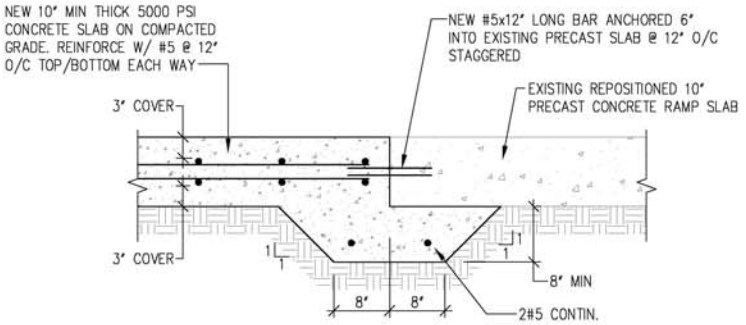

T5 / S3 ¾"=1'-0"

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Signature Date

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JIGGS LANDING BOAT RAMP IMPROVEMENTS
MANATEE COUNTY
BRADENTON, FLORIDA

STRUCTURAL SITE PLAN

Erickson Consulting Engineers, Inc.
7201 Delaney Court
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GENERAL NOTES

DESIGN:

1. THE STRUCTURE DESCRIBED ON THE STRUCTURAL DRAWINGS HAS BEEN DESIGNED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2010 EDITION.

GENERAL:

1. ALL DIMENSIONS, OTHER THAN PURELY STRUCTURAL DIMENSIONS SHOWN ON THE STRUCTURAL DRAWINGS MUST BE CHECKED AGAINST THE ON SITE CONDITIONS. REPORT ANY DISCREPANCIES TO THE ENGINEER OF RECORD PRIOR TO PROCEEDING WITH THE WORK.
2. DO NOT SCALE THE DRAWINGS.
3. NO PROVISION HAS BEEN MADE IN THE STRUCTURAL DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE STRUCTURAL DRAWINGS, THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION, THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.
4. ALL CODES AND STANDARDS REFERRED TO ARE LATEST EDITIONS INCLUDING LATEST REVISIONS AND ADDENDA
5. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING COMPONENTS, NOTED DISTRESSED AREAS, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF THE PREPARATION OF THE PLANS, BUT DO NOT PURPORT TO BE ABSOLUTELY CORRECT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS AND DIMENSIONS OF ALL COMPONENTS. THE CONTRACTOR SHALL ALSO ESTABLISH EXISTING UTILITIES, STRUCTURES, AND OTHER FEATURES AFFECTING THIS WORK PRIOR TO PROCEEDING.
6. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING DEMOLITION PHASE AS TO ENSURE THAT THE FOUNDATIONS AND SLABS OF THE STRUCTURES AND SLABS TO REMAIN, ARE NOT UNDERMINED OR THAT THE SOIL SUPPORT IS NOT COMPROMISED. REFER TO PLANS OF EXISTING STRUCTURES IN "GOVERNMENT'S" POSSESSION FOR MORE INFORMATION.
7. REMOVE AND LEGALLY DISPOSE ALL DEMOLITION DEBRIS TO AN APPROVED SITE.
8. ENGINEER MUST BE CONTACTED 48 HOURS PRIOR TO EACH POUR OF ANY STRUCTURAL CONCRETE.
9. **DO NOT DISPOSE OF ANY MATERIALS INTO THE WATER.**

FOUNDATIONS:

1. BACK FILLING AND COMPACTION:
   A. BACK FILL ONLY WITH APPROVED MATERIAL. FOLLOW BACK FILLING RECOMMENDATIONS OF THE GEOTECHNICAL CONSULTANT IN THE ABSENCE OF SUCH INFORMATION, AND UNLESS NOTED OTHERWISE, BACK FILL IN 8" (MAX.) HIGH LIFTS, COMPACTED TO A MINIMUM OF 98% STANDARD PROCTOR DRY DENSITY. CONTRACTOR SHALL SUBMIT PROPOSED FILL AND DRAINAGE MATERIAL FOR REVIEW BY ENGINEER PRIOR TO COMMENCEMENT OF PROJECT.

CONCRETE NOTES

GENERAL

1. ALL CONCRETE MATERIALS BATCHING AND WORKMANSHIP SHALL CONFORM TO THE FOLLOWING:
   ACI 304 CONCRETE PLACED UNDER WATER
   ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.
   ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
   ASTM C94 READY MIX CONCRETE

MATERIALS:

1. CONCRETE MINIMUM COMPRESSIVE STRENGTH(S) FOR CONCRETE SHALL BE AS NOTED ON THE STRUCTURAL PLANS, SLUMP 4" +/- 1" WITH A MAXIMUM WATER-TO-CEMENT RATIO OF 0.35, (5,000 PSI), 046 (3000 PSI). PROVIDE FLY ASH SUBSTITUTION TO 20% OF CEMENT CONTENT, ADD 50 LBS OF SILICA FUME PER CUBIC YARD OF MATERIAL. IN ALL CONCRETE PROVIDE A HIGH RANGE WATER REDUCING ADMIXTURE CONFORMING TO ASTM C260; ALL OTHER ADMIXTURES SHALL CONFORM TO ASTM C494 AND SHALL BE USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. ADD CORROSION INHIBITOR ADMIXTURE PER MANUFACTURER'S RECOMMENDATIONS.
2. SUBMIT MIX DESIGN(S) FOR REVIEW BY THE ENGINEER OF RECORD A MINIMUM OF 7 DAYS PRIOR TO INITIAL CONCRETE POUR.
3. ALL MILD REINFORCEMENT SHALL BE MMFX 2 REBAR (ASTM A615 GRADE 75 AND ASTM A1035-04).

EXECUTION:

1. REINFORCING STEEL SHALL BE DETAILED, FABRICATED, PLACED AND SUPPORTED TO CONFORM WITH THE ACI DETAILING MANUAL. ACI SP-66.
2. MINIMUM REINFORCING STEEL LAP SPLICE LENGTH, UNLESS NOTED OTHERWISE, IS 36X BAR DIAMETER.
3. POUR STRUCTURAL CONCRETE WITHIN THE FOLLOWING TOLERANCES
   VARIATION FROM PLUMB: 1/4" IN 10'-0".
   VARIATION FROM LEVEL IN TOPS OF SLABS, AND BEAM: 1/8" IN 10'-0".
4. INSERTS, SLEEVES, CONDUITS, FASTENERS, ETC, WHERE REQUIRED BY THE DOCUMENTS, SHALL BE INSTALLED SO AS NOT TO IMPAIR THE INTEGRITY OF THE STRUCTURE, AND IN A MANNER WHICH WILL NOT REQUIRE THE BENDING, CUTTING OR DISPLACEMENT OF THE REINFORCEMENT.
5. FOR READY MIX CONCRETE THE MAXIMUM TIME PERMITTED BETWEEN BATCHING AND DEPOSITING THE FORM WORK IS 90 MINUTES, CONCRETE NOT PLACED WITHIN THIS TIME LIMIT SHALL BE REJECTED.
6. THE ADDITION OF MIX WATER AT THE SITE TO INCREASE THE CONCRETE SLUMP SHALL NOT BE ALLOWED AND SHALL BE CAUSE FOR REJECTION OF THAT BATCH OF CONCRETE.
7. OPENINGS OR FASTENERS REQUIRED AFTER CONCRETE PLACEMENT SHALL BE INSTALLED ONLY WITH THE APPROVAL OF THE ENGINEER.
8. PLACEMENT OF CONCRETE TO BE POURED BELOW WATER SHALL BE COORDINATED WITH MAXIMUM LOW TIDE PERMISSIBLE.
9. SUBMIT SHOP DRAWINGS FOR REINFORCEMENT DETAILING, BENDING, AND PLACING OF CONCRETE REINFORCEMENT.
10. FOR ALL CONCRETE SURFACES WHERE LEGS OF SUPPORT DEVICES ARE IN CONTACT WITH FORMS, PROVIDE SUPPORTS WITH LEGS THAT ARE STAINLESS STEEL (CRSI, CLASS2).
11. ALL CONCRETE SHALL BE WET CURED FOR A MINIMUM OF 3 DAYS.
12. PROVIDE CONCRETE TESTING OF CONCRETE MATERIAL CONFIRMING DESIGN STRENGTHS.
13. PROVIDE ¼" DEEP x ¼" WIDE GROOVES IN RAMP SLAB AT ½" O/C. TEXTURE IS A MINIMUM PROFILE. CONTRACTOR TO PROVIDE MEANS AND METHODS OF TEXTURE INSTALLATION W/ BID.

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Signature Date

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PROFESSIONAL ENGINEER # 34927

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JIGGS LANDING BOAT RAMP IMPROVEMENTS
MANATEE COUNTY
BRADENTON, FLORIDA

STRUCTURAL SITE PLAN

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