INVITATION FOR BID
IFB 16-2806OV
NORTH COQUINA BOAT RAMP IMPROVEMENTS AND PARKING LOT EXPANSION
1343 GULF DRIVE SOUTH (SR789)
CITY OF BRADENTON BEACH
MANATEE COUNTY, FL

Manatee County, a political subdivision of the State of Florida, (hereinafter "Owner") 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 Owner's needs, an Information Conference will be held at: **2:30 PM on October 7, 2016** at the **Manatee County Administration Building, 1112 Manatee Avenue West, Suite 803, Purchaing Conference Room, Bradenton, FL**. Attendance is not mandatory, but is highly encouraged.

DEADLINE FOR CLARIFICATION REQUESTS: **5:00 PM on October 13, 2016**
Reference Bid Article A.06

BID OPENING TIME AND DATE DUE: **3:30 PM on October 27, 2016**

FOR INFORMATION CONTACT:

Olga Valcic, CPPB, Contract Specialist
(941) 749-3055
olga.valcich@mymanatee.org
Manatee County Financial Management Department
Purchasing Division

AUTHORIZED FOR RELEASE: MN

Table of Contents
IFB 16-2806OV

Section A Information to Bidders A-1-16
Section B Scope of Work B-1-2
Section C Bid Summary C-1-2
Bid Form ..... Bid Form 1-5
Mailing Label 1
Section D Insurance and Bonding Requirements D-1-7

Attachments:
Attachment A Bidder's Questionnaire 1-3
Attachment B Public Contracting & Environmental Crimes Certification 1-2
Attachment C The Florida Trench Safety Act 1
Attachment D ePayables Application 1
Attachment E Vendor Certification Regarding Scrutinized Companies Lists 1
Plan Set (dated **March 29, 2016**)… ..... **52** pages
Project Manual / Specifications dated January 15, 2016, updated March 15, 2016…363 pages

Construction Agreement for Stipulated Sum 1-9
Table of Contents for General Conditions ..... i-vi
General Conditions of the Construction Agreement ..... GC 1-44

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 Owner 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/copies (marked Copy)** of your **signed bid** shall be submitted in one **sealed** package, clearly marked on the outside **"Sealed Bid #16-2806OV, North Coquina Boat Ramp Improvements and Parking Lot Expansion, 1343 Gulf Drive South (SR 789), City of Bradenton Beach, Manatee County FL"** along with your company name.

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

Manatee County Purchasing Division
1112 Manatee Avenue West, Suite 803
Bradenton, Florida 34205
Sealed Bid #16-2806OV, North Coquina Boat Ramp Improvements and Parking Lot Expansion, 1343 Gulf Drive South (SR789), City of Bradenton Beach, Manatee County, FL.

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 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. Owner 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 Project Site(s) to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the Work; (c) consider federal, state, and local codes, laws, and regulations that may affect costs, progress, performance, or furnishing of the Work; (d) study and carefully correlate bidder's observations with the IFB documents; and (e) notify Owner 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 Project Site(s) or otherwise which may affect cost, progress, performance or furnishing of the Work and which bidder deems necessary to determine his bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the IFB documents. Owner will provide each bidder access to the site(s) to conduct such explorations and tests.

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

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

A.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 Owner in evaluating the request to modify the IFB documents. Owner 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. Owner shall not be responsible for oral interpretations given by any Owner employee, representative, or others.

5:00 PM on October 13, 2016 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, Owner 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 CONFIDENTIALITY OF SECURITY RELATED RECORDS

(a) Pursuant to Florida Statutes § 119.071(3), the following records (hereinafter referred to collectively as "the Confidential Security Records") are confidential and exempt from the disclosure requirements of Florida Statutes § 119.07(1):

1. A Security System Plan or portion thereof for any property owned by or leased to the County or any privately owned or leased property held by the County.

2. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by the County.

3. Building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout or structural elements of an attractions and recreation facility, entertainment or resort complex, industrial complex, retail and service development, office development, or hotel or motel development in the possession of, submitted to the County.

(b) Contractor/Vendor agrees that it shall not, as a result of a public records request or for any other reason disclose the contents of, or release or provide copies of the Confidential Security Records to any other party absent the express written authorization of the County's Property Management Director or to comply with a court order requiring such release or disclosure. To the extent Contractor/Vendor receives a request for such records, it shall immediately contact the County's designated Contract Manager who shall coordinate the County's response to the request. Notwithstanding the foregoing, the Contractor/Vendor may

1. Disclose or release Security System Plans to:

(A) The property owner or leaseholder; or
(B) Another state or federal agency to prevent, detect, guard against, respond to, investigate, or manage the consequences of any attempted or actual act of terrorism, or to prosecute those persons who are responsible for such attempts or acts.

2. Disclose or release building plans, blueprints, schematic drawings, and diagrams, including draft, preliminary, and final formats, which depict the internal layout and structural elements of a building, arena, stadium, water treatment facility, or other structure owned or operated by the County:

(A) To another governmental entity if disclosure is necessary for the

receiving entity to perform its duties and responsibilities;
(B) To a licensed architect, engineer, or contractor who is performing work on or related to the building, arena, stadium, water treatment facility, or other structure owned or operated by the County and is contractually bound by the Contractor/Vendor to comply with this Article/Section; or
(C) Upon a showing of good cause before a court of competent jurisdiction.

(c) For purposes of this Article/Section, the term "Security System Plan" includes all:

1. Records, information, photographs, audio and visual presentations, schematic diagrams, surveys, recommendations, or consultations or portions thereof relating directly to the physical security of the facility or revealing security systems;
2. Threat assessments conducted by any agency or any private entity;
3. Threat response plans;
4. Emergency evacuation plans;
5. Sheltering arrangements; or
6. Manuals for security personnel, emergency equipment, or security training.

A.08 LOBBYING

After the issuance of any IFB, prospective bidders or their agents, representatives or persons acting at the request of such bidder shall not contact, communicate with or discuss any matter relating to the 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 copying such persons on all written communication, including email correspondence. This requirement begins with the issuance of an IFB and ends upon execution of the final 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.09 UNBALANCED BIDDING PROHIBITED

Owner recognizes that large and/or complex projects will often result in a variety of methods, sources, and prices. However, where in the opinion of Owner 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 Owner 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. Owner 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.10 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 Owner 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. Owner 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.11 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.12 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 Owner.

A.13 BID EXPENSES

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

A.14 RESERVED RIGHTS

Owner reserves the right to accept or reject any and/or all bids, to waive irregularities and technicalities, and to request resubmission. Also, Owner 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 Owner. Any sole response received by the first submission date may or may not be rejected by Owner depending on available competition and current needs of Owner. 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 Owner.

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, Owner reserves the right to make such investigation as it deems necessary to determine the ability of any bidder to furnish the service requested. Information Owner 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.15 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.16 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.17 CODE OF ETHICS

With respect to this bid, if any bidder violates, directly or indirectly, the ethics provisions of the Manatee County Procurement Ordinance and/or Florida criminal or civil laws related to public procurement, including but not limited to Chapter 112, Part III, Code of Ethics for Public Officers and Employees, Florida Statutes, 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 Owner 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.18 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES

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

Statutes, for CATEGORY TWO for a period of thirty-six (36) months following the date of being placed on the convicted list.

In addition, the Manatee County Code of Laws prohibits the award of any bid to any person or entity who/which has, within the past five (5) years, been convicted of, or admitted to in court or sworn to under oath, a public entity crime or of any environmental law that, in the reasonable opinion of the 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 Owner 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 Owner. 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.19 SCRUTINIZED COMPANIES

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

A.20 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.21 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 Owner. (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).

A.22 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 Owner.

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.23 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.24 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.

The Contractor shall be responsible for the payment of taxes of any kind and character, including, but not limited to sales, consumer, use, and other similar taxes payable on account of the work performed and materials furnished under the award in accordance with the laws and Regulations of the place of the project which are applicable during the performance of the work. Nothing herein shall affect the bidder's normal tax liability.

A.25 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.26 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 Owner's sole discretion, be deemed a material breach of the resulting Agreement, and shall constitute grounds for Owner's immediate termination of the resulting Agreement.

A.27 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 Owner harmless from loss on account thereof, including costs and attorney's fees.

A.28 AMERICANS WITH DISABILITIES ACT

Owner does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of Owner'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.29 EQUAL EMPLOYMENT OPPORTUNITY

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, Owner 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.30 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.31 MATHEMATICAL ERRORS

Bid Forms without mathematical formulas:
In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s) the extension totals will prevail. In the event the dollar amount for contract contingency is omitted, it will be added to the total price of the bid.

Bid Forms with mathematical formulas:
Interactive Bid Forms that contain mathematical formulas may be used for automating lengthy and complex bid forms. In the event these forms are used and a multiplication/extension error(s) is discovered, the unit price entered by the vendor shall

prevail. The vendor shall assume the responsibility and accuracy of the information input in the bid form and therefore shall verify that the calculations are correct before submitting their bid.

Regardless of which type of bid form is used, all bids shall be reviewed mathematically and corrected, if necessary, using these standards, prior to additional evaluation.

A.32 SUBCONTRACTORS

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

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

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

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

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

If County has reasonable objection to any subcontractor, the County may request the successful bidder to submit an acceptable substitute without an increase in contract sum or contract time.

If successful bidder declines to make any such substitution, the County may award the resulting agreement to the next lowest qualified bidder that proposes to use acceptable subcontractors, who County does not make written objection to. In the event the successful bidder declines to make any such substitution post award, the County may exercise its right to terminate the agreement.

The successful bidder shall maintain sole responsibility for the actions of its employees and subcontractors. New employees brought in after contract award shall follow the same requirement stated above for the life of the contract.

A.33 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, Owner 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 Owner rejects all bids and concurrently notices its intent to reissue the solicitation, the rejected bids are exempt from public disclosure until such time as Owner provides notice of an intended decision concerning the reissued solicitation or until Owner withdraws the reissued solicitation. A bid is not exempt for longer than twelve (12) months after the initial notice rejecting all bids.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT OWNER'S CUSTODIAN OF PUBLIC RECORDS AT: (941) 742-5845, debbie.scaccianoce@mymanatee.org, Attn: Records Manager, 1112 Manatee Ave W., Bradenton, FL 34205.

Pursuant to Florida Statutes 119.0701, to the extent CONTRACTOR is performing services on behalf of the COUNTY, contractor must:

a. Keep and maintain public records required by public agency to perform the service.

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

c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.

d. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, the contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor keeps and maintains public records upon completion of the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

A.34 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 Owner** 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 Owner of any changes affecting same.

A.35 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 Owner to provide timely notification of quotation, bid and proposal opportunities to your business.

A.36 ENVIRONMENTAL SUSTAINABILITY

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.

Bidders shall acknowledge whether or not their organization has an environmental sustainability initiative by checking the appropriate box on the bid form. In addition, the bidder shall submit a summary of their environmental sustainability initiative along with their bid. This information will be used as a determining factor in the award decision when all other evaluative factors, including local preference policies are otherwise equal.

A.37 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, CONSTRUCTION AGREEMENT FOR STIPULATED SUM, AND GENERAL CONDITIONS OF THE CONSTRUCTION AGREEMENT, 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 at North Coquina includes Boat Ramp Improvements and Parking Lot Expansion. Successful Bidder shall be responsible for the removal and disposal of existing gravel and concrete, removal and replacement of existing boat ramp and seawall, and installation of the following: concrete parking area, wood dock and pilings, aluminum floating ramp and dock, concrete block mattress, cast-in-place concrete, concrete sidewalk, sodding and striping.

Location of Work: 1343 Gulf Drive South (SR789)
City of Bradenton Beach
Manatee County, FL

Successful Bidder shall 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.

All fees and permits for the permanent construction that are required by the controlling agencies or authorities, including fees for the review of Contract Documents prior to construction, will be procured by the Owner. Other licenses and 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 Successful Bidder.

Successful Bidder shall repair, replace or otherwise settle with the Owner, if damage to property or existing facilities occurs, including damage to pavements, utilities, lawns, structures, etc.

B.02 COMPLETION OF WORK

The Work will be completed and ready for final inspection within the specified calendar days from the date the Contract Time commences to run. One bid shall be considered, **based** on **180 calendar days**. **Only one award shall be made.**

B.03 LIQUIDATED DAMAGES

If the successful bidder fails to achieve Substantial Completion of the Work within the Contract Time and as otherwise required by the Contract Documents, the Owner shall be entitled to retain or recover from the successful bidder, as liquidated damages and not as a penalty, the sum of **$1,584.00 per calendar day**, commencing upon the first day following expiration of the Contract Time and continuing until the actual date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable estimate of damages the Owner will incur as a result of delayed completion of the Work. The Owner may deduct liquidated damages as described in this paragraph from any unpaid amounts then or thereafter due the successful bidder under this Agreement.

Any liquidated damages not so deducted from any unpaid amounts due the successful bidder shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at the maximum allowable rate.

B.04 CONTRACT CONTINGENCY WORK

Contract contingency is a monetary allowance used solely at Owner'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 Owner 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 Sum and Contract Time, and adding bid items not previously contemplated that change the initial scope of Work.

END OF SECTION B

SECTION C
BID SUMMARY

C.01 MINIMUM QUALIFICATIONS OF BIDDERS

No person who is not certified or registered as **General Contractor** pursuant to Chapter 489, Florida Statutes, on the day the bid is submitted, and who has continuously held that certification or registration for a period of at least five (5) 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 Section 489.119(2), Florida Statutes, 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 five (5) 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 Section 489.119, Florida Statutes, and that Qualifying Agent has been the same Qualifying Agent of the bidder for a period of at least five (5) 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 **OR** lowest Total Offer with Bid Alternate for the requirements listed on the Bid Form for the Work as set forth in this Invitation for Bid

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 Owner's satisfaction within the prescribed time.

The bidder must submit a bid for bid items 2.01 through 3.02 and the sum of these items will be considered the Total Offer.

The bidder shall also submit a Lump Sum price for Bid Alternate 4.01, Storage Building.

One bid shall be considered based on 180 calendar days. Only one award shall be made.

NOTE: Inspection of the site is a pre-requisite to be considered for award of this bid.

In evaluating bids, Owner 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. Owner 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

BID FORM

For: IFB#16-2806OV
North Coquina Boat Ramp Improvements and Parking Lot Expansion
1343 Gulf Drive South (SR 789)
City of Bradenton Beach
Manatee County, FL

Total Offer: $_____
Total Offer with Bid Alternate: $_____
Based on a completion time of 180 calendar days

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

One (1) schedule for completion of the Work shall be considered. The bid for completion by the specified stated time shall be offered as a separate "total offer". Only one award shall be made.

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: _____

A bid bond, certified check, or cashier's check in the amount of 5% of the total bid offer is attached herein.

I, _____ **on** [date(s)] _____ **attest that I have visited the project site(s) to familiarize myself with the full scope of work required for the bid.**

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: _____

BID FORM (SUBMIT IN DUPLICATE)
IFB16-2806OV
NORTH COQUINA BOAT RAMP IMPROVEMENTS, MANATEE COUNTY
BASED ON A COMPLETION TIME OF 180 CALENDAR DAYS

Bid Item No.	Description	Estimated Quantity	Unit	Unit Price	Total
2.01	MOBILIZATION	1	LS	$	$
2.02	MAINTENANCE OF TRAFFIC	1	LS	$	$
2.03	SURVEY AND CONTROL LAYOUT BY CONTRACTOR	1	LS	$	$
2.04	AS-BUILT SURVEY	1	LS	$	$
2.05	PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION	1	LS	$	$
2.06	REMOVE AND DISPOSE OF EXISTING SITE ITEMS (Lighting, dumpsters, fencing, signage, gates, posts)	1	LS	$	$
2.07	REMOVE AND DISPOSE OF EXISTING TREES (8 Inch and Greater)	58	EA	$	$
2.08	CLEARING AND GRUBBING	1	LS	$	$
2.09	GRADING AND FILL	1	LS	$	$
2.10	STORMWATER POND OUTFALL, INCL RIP-RAP, SKIMMER, CONCRETE	1	LS	$	$
2.11	PAVEMENT CEMENT CONCRETE AND BASE (6-INCH THICK MIN., 4000 PSI), INCLUDING WWR AND 12" STABLIZED BASE	6,625	SY	$	$
2.12	CONCRETE SIDEWALK ONSITE (4-INCH THICK MIN., 3000 PSI), AND 6" BASE	140	SY	$	$
2.13	CONCRETE SIDEWALK OFFSITE (FDOT INDEX 310, 6" THICK)	140	SY	$	$
2.14	COMPACTED SHELL DRIVE	420	SY	$	$
2.15	WASHED SHELL - 4" THICK	146	SY	$	$
2.16	FDOT DRIVEWAY	288	SY	$	$

BIDDER:_____

AUTHORIZED SIGNATURE:_____

BID FORM (SUBMIT IN DUPLICATE)
IFB16-2806OV
NORTH COQUINA BOAT RAMP IMPROVEMENTS, MANATEE COUNTY
BASED ON A COMPLETION TIME OF 180 CALENDAR DAYS

2.17	PIPE, WATER, 2-INCH PE, SDR 9	145	LF	$	$
2.18	PIPE, WATER, 1-INCH PE, SDR 9	680	LF	$	$
2.19	2-INCH WATER CONNECTION (INCL. DISINFECTION AND TESTING)	1	LS	$	$
2.20	1.5-INCH WATER METER AND BACKFLOW ASSEMBLY	1	EA	$	$
2.21	RPZ AND HOSE BIB (FOR STORAGE BUILDING	1	EA	$	$
2.22	FITTINGS (D.I.), WATER	1	LS	$	$
2.23	6' TALL CHAIN LINK FENCES	155	LF	$	$
2.24	10' WIDE CHAIN LINK ACCESS	5	EA	$	$
2.25	TYPE AB CURB AND GUTTER	46	LF	$	$
2.26	TYPE D CURB	22	LF	$	$
2.27	WOODEN POST	190	EA	$	$
2.28	POST / ROPE	380	LF	$	$
2.29	PIPE GUARDRAIL ON SEAWALL	270	LF	$	$
2.30	WHEEL STOPS (NEW	44	EA	$	$
2.31	BOLLARD (GALVANIZED STEEL, PAINTED)	8	EA	$	$
2.32	BOLLARD (PVC, PAINTED)	4	EA	$	$
2.33	SIGNAGE	1	LS	$	$
2.34	BENCH	1	EA	$	$
2.35	DETECTABLE WARNING	8	EA	$	$
2.36	TRAFFIC STRIPES AND MARKINGS	1	LS	$	$
2.37	FISH CLEANING STATION	2	EA	$	$

BIDDER:_____

AUTHORIZED SIGNATURE:_____

BID FORM (SUBMIT IN DUPLICATE)
IFB16-2806OV
NORTH COQUINA BOAT RAMP IMPROVEMENTS, MANATEE COUNTY
BASED ON A COMPLETION TIME OF 180 CALENDAR DAYS

2.38	BOAT RAMP SIGN	1	EA	$	$
2.39	ELECTRIC SERVICE, SITE LIGHTING AND SIGNAGE, INCL. METER	1	LS	$	$
2.40	LIGHTING ASSEMBLY (INCLUDING FIXTURE, BASE, CONDUIT, WIRES)	5	EA	$	$
2.41	TREES, CABBAGE PALMS	14	EA	$	$
2.42	SHRUBS, ALL	1	LS	$	$
2.43	GROUNDCOVER, ALL	1	LS	$	$
2.44	SODDING	5,160	SY	$	$
2.45	STOCKPILE DREDGE MATERIAL ONSITE	430	CY	$	$
2.46	REMOVE AND DISPOSE OF EXISTING BOAT RAMP ITEMS (BOAT RAMP, CONCRETE SEAWALL, DEADMEN, TIEBACKS, WOOD DOCK FACILITY INCLUDING SUPPORTS AND PILES)	1	LS	$	$
2.47	EXCAVATION (FOR BOAT RAMP, DOCKS & WATER-SIDE BOAT RAMP APPROACH)	430	CY	$	$
2.48	CONCRETE SEAWALL PANEL (INCLUDING CONCRETE CAP, GEOTEXTILE)	270	LF	$	$
2.49	FILL, CLEAN (BEHIND SEA)	170	CY	$	$
2.50	SOUTH SEAWALL CONCRETE DEADMAN, 10-INCH THICK, 3000 PSI (FOR SEAWALL)	8	EA	$	$
2.51	NORTH SEAWALL CONCRETE DEADMAN, 10-INCH THICK, 3000 PSI (FOR SEAWALL)	1	EA	$	$
2.52	STEEL TIEBACK SYSTEM (304 SS BAR IN PVC CONDUIT) (FOR SEAWALL)	15	EA	$	$
2.53	CONCRETE, 8.25-INCH THICK, 5000 PSI (STEEL REINFORCED) (RAMP)	405	SY	$	$
2.54	AGGREGATE, 12-INCH THICK, #57 STONE (BELOW RAMP)	405	SY	$	$
2.55	CONCRETE PANEL(AT BASE OF RAMP)	47	LF	$	$

BIDDER:_____

AUTHORIZED SIGNATURE:_____

BID FORM (SUBMIT IN DUPLICATE)
IFB16-2806OV
NORTH COQUINA BOAT RAMP IMPROVEMENTS, MANATEE COUNTY
BASED ON A COMPLETION TIME OF 180 CALENDAR DAYS

2.56	WOOD DOCK (5 FT. WIDE- TIMBER FRAME STRUCTURE WITH COMPOSITE DECKING)	237	LF	$	$
2.57	FLOATING DOCK, ALUMINUM (INCLUDING 4' X 20' GANGWAY, 5' X 25' FLOATING DOCK, AND HANDRAIL	1	LS	$	$
2.58	CONCRETE PILE, PRE-STRESSED 12-INCH X 12-INCH, 5000 PSI (FOR DOCK)	48	EA	$	$
3.01	ALLOWANCE (TESTING) As Stipulated in Specifications Section 01120)				$10,000.00
3.02	CONTRACT CONTINGENCY (Used only with County Approval (10%)	10	%		$
	TOTAL BID OFFER WITH CONTRACT CONTINGENCY (Bid Items 2.01 through 3.02) (BASED ON 180 CALENDAR DAY COMPLETION)				**$**
4.00	**BID ALTERNATE ITEM 4.01**				
4.01	STORAGE BUILDING, (780 SF) DETACHED AT THE NORTH SIDE OF THE PROPERTY IN ACCORDANCE WITH SPECIFICATION SHEETS LOCATED WITHIN THE PLAN SET (SHEET A901, A902 AND A903).	1	LS	$	**$**
	TOTAL BID OFFER WITH BID ALTERNATE ITEM 4.01 (BASED ON 180 CALENDAR DAY COMPLETION)				$

BIDDER:_____

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:

BIDDER: _____

INVITATION FOR BID No.: IFB#16-2806OV

BID TITLE: North Coquina Boat Ramp Improvements and Parking Lot Expansion, 1343 Gulf Drive South (SR 789), City of Bradenton Beach, Manatee County, FL

Bid Location: Manatee County Administration Building, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205.

DUE DATE/TIME:

SECTION D
(IFB 16-2806OV)
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 Owner, 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; $ 2,000,000 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:	$ 100,000 single limit per occurrence
4. ☒ Worker's Compensation:	Statutory Limits of Chapter 440, Florida Statutes, 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 $ _____ (to be completed by Risk Manager) 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 shall 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, Owner 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 Owner of these additional waivers.* h. ☐ U.S. Longshoreman's and Harborworker's Act 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 5% of the total offer of the bid. Bid bond shall be submitted with the bid and shall include project name, location, and / or address and project number. In lieu of the bond, the contractor may file an alternative form of security in the amount of 5% of the total offer, in the form of a money order, a certified check, a cashier's check, or an irrevocable letter of credit.
7. ☒ Payment and Performance Bond:	Payment and Performance Bond shall be submitted by bidder for 100% of the award amount and shall be presented to Manatee County within ten (10) calendar days of issuance of the notice of intent to award.

Reviewed by Risk: Linda R. Klasing

INSURANCE REQUIREMENTS

The amounts and types of insurance coverage shall conform to the minimum requirements set forth in this 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 Owner 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 Owner or to any workers, suppliers, material men or employees in relation to the resulting Agreement.

Builder's Risk Coverage. The successful bidder shall procure and maintain during the entire course of the Work a builder's risk policy, completed value form, insured to provide coverage on an all risk basis, including coverage for off-site stored materials and including coverage for theft. This coverage shall not be lapsed or cancelled because of partial Acceptance by the Owner prior to final Acceptance of the Project. Successful bidder shall recommend to Owner any additions to the Project Costs resulting from any casualty described in Article XII General Conditions of the Construction Agreement, including those costs, expenses and other charges (including normal and ordinary compensation to the successful bidder) necessary for reconstruction of the Project substantially in accordance with the Project Plans and Specifications. The nature, level and type of builder's risk coverage (including completed value or replacement cost coverage) shall be determined by Owner through insurers selected by successful bidder and approved by Owner.

Excess Policy or Umbrella. An excess policy or umbrella may be used to cover limits over and above Commercial General Liability.

Subcontractor's Public Liability and Property Damage Insurance. The successful bidder shall require each Subcontractor to procure and maintain during the term of the subcontract, insurance of the type specified above, or insure the activities of Subcontractors in its policy, as approved by Owner prior to performance of any services. The levels of coverage as set forth in the table above may be adjusted to require a reduced level of coverage consistent with the scope of Work to be provided by that particular Subcontractor. Any reduction in the levels of insurance coverage required by the successful bidder's standard form of subcontract shall be approved by the Owner.

Waiver of Subrogation. Owner and successful bidder waive against each other and the Owner's separate Vendors, Contractors, Design Consultants, Subcontractors agents and employees of each and all of them, all damages covered by property insurance provided herein, except such rights as they may have to the proceeds of such insurance. The successful bidder and Owner shall, where appropriate, require similar waivers of subrogation from the Owner's separate Vendors, Design Consultants and Subcontractors and shall require each of them to include similar waivers in their contracts.

Worker's Compensation Insurance. The successful bidder shall procure and maintain during the term of the Contract Documents, workers' compensation insurance for all its employees connected with the Work and shall require all Subcontractors similarly to provide workers' compensation insurance for all their employees unless such employees are covered by the protection afforded by successful bidder. Such insurance shall comply with the Florida Workers' Compensation Law. The successful bidder shall provide adequate insurance, satisfactory to Owner, for the protection of employees not otherwise protected.

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 a rating of "A-" or better by Best's Key Guide, latest edition, and are deemed acceptable to Owner 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, and shall remain in effect for at least two (2) years after the termination of the Contract Documents.

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 Owner 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 Owner with such renewal certificate(s) shall be considered justification for Owner to terminate any and all Agreements.

d. Agrees that bidder and/or its insurance carrier shall provide thirty (30) days written notice to Owner of policy cancellation or non-renewal on the part of the insurance carrier or the successful bidder. Successful bidder shall also notify Owner, 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, Owner 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 Owner for such costs within thirty (30) days after demand, Owner has the right to offset these costs from any amount due successful bidder under this Agreement or any other agreement between Owner and successful bidder. Owner 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 Owner 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.

h. The payment of deductibles for insurance required of the successful bidder by the Contract Documents shall be the sole responsibility of the successful bidder.

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 16-2806OV, North Coquina Boat Ramp Improvements
   and Parking Lot Expansion, 1343 Gulf Drive South (SR789)
   City of Bradenton Beach, Manatee County, FL
   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: Olga Valcich, CPPB, Contract Specialist

BONDING REQUIREMENTS

Bid Bond/Certified Check. By submitting a bid to this IFB, 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 Owner enters into an Agreement with a bidder, or if Owner rejects any and/or all bids, accompanying bond will be promptly returned.

Payment and Performance Bonds. Prior to commencing Work, the successful bidder shall obtain, for the benefit of and directed to Owner, a Payment and Performance Bond satisfying the requirements of Section 255.05, Florida Statutes, covering the faithful performance by the successful bidder of its obligation under the Contract Documents, including but not limited to the construction of the Project on the Project Site and the payment and obligations arising thereunder, including all payments to Subcontractors, laborers, and materialmen. The surety selected by the successful bidder to provide the Payment and Performance Bond shall be approved by Owner prior to issuance of such Bond, which approval shall not be unreasonably withheld or delayed provided that surety is rated A- or better by Best's Key Guide, latest edition.

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 Section 255.05, Florida Statutes, and must not contain notice, demand or other terms and conditions, including informal pre-claim meetings, not provided for in Section 255.05, Florida Statutes.

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 Owner. Surety shall be rated as "A-" or better by Best's Key Guide, latest edition. The attorney-in-fact who signs the bonds must file with the bonds, a certificate and effective dated copy of power-of-attorney. Payment and Performance 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 Section 255.05(1)(b), Florida Statutes, prior to commencing Work, the successful bidder shall be responsible and bear all costs associated to record the Payment and Performance 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 Section 255.05(1)(b), Florida Statutes, Owner will make no payment to the successful bidder until the successful bidder has complied with this paragraph.

Furnishing Payment and Performance Bonds shall be requisite to execution of an Agreement with Owner. Said Payment and Performance 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. Owner 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 Owner 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 Owner, thereafter, to enforce those provisions.

BIDDER'S INSURANCE STATEMENT

THE UNDERSIGNED hereto have read and understand the aforementioned insurance requirements of this IFB and note that the evidence of insurability shall be required within ten (10) days from the date of notice of intent to award.

Bidder Name: _____ Date: _____

Bidder's Signature: _____

Print Name: _____

Insurance Agency: _____

Agent Name: _____ Agent Phone: _____

Please return this completed and signed statement with your bid.

ATTACHMENT A
IFB16-2806-OV

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 a

   _____

   Is this firm in bankruptcy? _____

6. Attach a list of projects where this specific type of Work was performed and the dollar value of the project (s). Attach separate sheet if necessary.

BIDDER: _____

AUTHORIZED SIGNATURE: _____

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

_____

_____

_____

7. 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.

_____

_____

_____

8. 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.

_____

_____

_____

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

_____

_____

_____

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

_____

_____

_____

BIDDER: _____

AUTHORIZED SIGNATURE: _____

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

_____

_____

_____

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

_____

_____

_____

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

_____

_____

_____

14. 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: _____

AUTHORIZED SIGNATURE: _____

ATTACHMENT B

PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

SWORN STATEMENT PURSUANT TO ARTICLE V,
MANATEE COUNTY PROCUREMENT CODE

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS.

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

_____
[Print individual's name and title]

____ for _____[Print name of entity submitting sworn statement]

whose business address is _____

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

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

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

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

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

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

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

(Continued)

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

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

_____
[Signature]

STATE OF 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.

ATTACHMENT C

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. 16-2806-OV**
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 Owner 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: _____

Angelina M. Colonneso
CLERK OF THE CIRCUIT COURT AND COMPTROLLER OF MANATEE COUNTY

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

ATTACHMENT D: 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_____

Return completed form to:

Via email to: lori.bryan@manateeclerk.com

Via fax to: (941) 741-4011

Via mail:

PO Box 1000

Bradenton, Fl 34206

Revised: September 30, 2015

Attachment E

VENDOR CERTIFICATION REGARDING
SCRUTINIZED COMPANIES LISTS

I am agent authorized by the company responding to this solicitation to make the following certification: I hereby certify that the company has reviewed Florida Statutes § 287.135, and that after such review, the company is not prohibited by the terms of that statute from entering into an agreement with Manatee County for the commodities and/or services which are the subject of this solicitation. I further acknowledge that my submission of a false certification may subject me and/or my company to civil penalties, attorney's fees, and/or costs.

Vendor Name:_____

Vendor FEIN:_____

Address:_____

City:_____ State:_____ Zip:_____

Certified by:_____

Who is authorized to sign on behalf of the company listed above.

Authorized Signature:_____

Print
Name:_____

Title:_____

Date:_____

PROJECT MANUAL

NORTH COQUINA BOAT RAMP IMPROVEMENTS

MANATEE COUNTY

CPH Job No. M13110

January 15, 2016
Updated
March 15, 2016

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

BID FORM

(Submit in Triplicate)

3/15/2016

Section 00300

(IFB) #XX-XXXX-XX

NORTH COQUINA BOAT RAMP IMPROVEMENTS

ESTIMATED CONSTRUCTION TIME: 180 DAYS

ITEM NO.	DESCRIPTION	UNITS	QTY.	UNIT PRICE ($)	EXTENDED PRICE ($)
				CPH, Inc. Drawings and Section 01270 Specification	
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 Dispose of Exist. Site Items (Lighting, dumpsters, fencing, signage, gates, posts)	LS	1		$ -
2.07	Remove and Dispose of, Exist. Trees (8-Inch and Greater)	EA	58		$ -
2.08	Clearing and Grubbing	LS	1		$ -
2.09	Grading and Fill	LS	1		$ -
2.10	Stormwater Pond Outfall, incl rip-rap, skimmer, concrete	LS	1		$ -
2.11	Pavement Cement Concrete and Base (6-Inch Thick Min., 4000 PSI), including WWR and 12" Base	SY	6625		$ -
2.12	Concrete Sidewalk onsite (4-Inch Thick Min., 3000 PSI), and 6" Base	SY	140		$ -
2.13	Concrete Sidewalk offsite (FDOT index 310, 6" thick)	SY	140		$ -
2.14	Compacted Shell Drive	SY	420		$ -
2.15	Washed Shell - 4" thick	SY	146		$ -
2.16	FDOT Driveway	SY	288		$ -
2.17	Pipe, Water, 2-Inch PE, SDR 9	LF	145		$ -
2.18	Pipe, Water, 1-Inch PE, SDR 9	LF	680		$ -
2.19	2-Inch Water Connection (Incl. Disinfection and Testing)	LS	1		$ -
2.20	1.5-Inch Water Meter and Backflow Assembly	EA	1		$ -
2.21	RPZ and Hose Bib (for storage building)	EA	1		$ -
2.22	Fittings (D.I.), Water	LS	1		$ -
2.23	6' tall chain link fence	LF	155		$ -
2.24	10' wide chain link access	EA	5		$ -
2.25	Type AB Curb and Gutter	LF	46		$ -
2.26	Type D Curb	LF	22		$ -
2.27	Wooden Post	EA	190		$ -
2.28	Post / Rope	LF	380		$ -
2.29	Pipe guardrail on seawall	LF	270		$ -
2.30	Wheel Stops (new)	EA	44		$ -
2.31	Bollard (Galvanized Steel, Painted)	EA	8		$ -
2.32	Bollard (PVC, Painted)	EA	4		$ -
2.33	Signage	LS	1		$ -
2.34	Bench	EA	1		$ -
2.35	Detectable Warning	EA	8		$ -
2.36	Traffic Stripes and Markings	LS	1		$ -
2.37	Fish Cleaning Station	EA	2		$ -
2.38	Boat Ramp Sign	EA	1		$ -
2.39	Electric Service, site lighting and signage, incl meter	LS	1		$ -
2.40	Lighting Assembly (including Fixture, Base, Conduit, Wires)	EA	5		$ -
2.41	Trees, cabbage palms	EA	14		$ -
2.42	Shrubs, all	LS	1		$ -
2.43	Groundcover, all	LS	1		$ -
2.44	Sodding	SY	5160		$ -
2.45	Stockpile Dredge Material onsite	CY	430		$ -
2.46	Remove and Dispose of Exist. Boat Ramp Items (Boat Ramp, Concrete Seawall, Deadmen, Tiebacks, Wood Dock Facility Including Supports and Piles)	LS	1		$ -
2.47	Excavation (for Boat Ramp, Docks & Water-Side Boat Ramp Approach)	CY	430		$ -
2.48	Concrete Seawall Panel (Including Concrete Cap, Geotextile)	LF	270		$ -
2.49	Fill, Clean (behind Seawall)	CY	170		$ -
2.50	South Seawall Concrete Deadman, 10-Inch Thick, 3000 PSI (for Seawall)	EA	8		$ -
2.51	North Seawall Concrete Deadman, 10-Inch Thick, 3000 PSI (for Seawall)	EA	1		$ -
2.52	Steel Tieback System (304 SS Bar in PVC Conduit) (for Seawall)	EA	15		$ -
2.53	Concrete, 8.25-Inch Thick, 5000 PSI (Steel Reinforced) (Ramp)	SY	405		$ -
2.54	Aggregate, 12-Inch Thick, #57 Stone (Below Ramp)	SY	405		$ -
2.55	Concrete Panel (at Base of Ramp)	LF	47		$ -
2.56	Wood Dock (5 ft Wide - Timber Frame Structure with Composite Decking)	LF	237		$ -
2.57	Floating Dock, Aluminum (including 4' x 20' Gangway, 5' x 25' Floating Dock, and Handrail)	LS	1		$ -
2.58	Concrete Pile, Pre-stressed 12-Inch x 12-Inch, 5000 PSI (for Dock)	EA	48		$ -
	Intentionally Left Blank				
	SUBTOTAL				$ -
	Intentionally Left Blank				
3.01	Discretionary Funds (Testing)	LS	1	$ 10,000.00	$ 10,000.00
3.02	Discretionary Funds (10% Contingency)	LS	1		$ -
	TOTAL				$ 10,000.00
4.00	Bid As Alternative				
4.01	Storage Building	LS	1		$ -
4.02	Item	LS	0	$ -	$ -
4.03	Item	LS	0	$ -	$ -
	TOTAL				$ 10,000.00

BIDDER (FIRM NAME)_____

AUTHORIZED SIGNATURE:_____

PROJECT MANUAL INDEX

NORTH COQUINA BOAT RAMP IMPROVEMENTS

Bidding Requirements, Contract Forms, and Conditions of the Contract

00001	Project Manual Cover Page	00001-1
00010	Project Manual Index	00010-1 - 00010-2

Division 1 - General Requirements

01110	Summary of Work	01110-1 - 01110-2
01120	Allowance	01120-1
01153	Change Order Procedures	01153-1 – 01153-4
01270	Measurement and Payment	01270-1 - 01270-16
01310	Administrative Requirements	01310-1 - 01310-3
01315	Preconstruction Video	01315-1 - 01315-4
01320	Project Completion Schedule	01320-1
01410	Regulatory Requirements	01410-1 - 01410-2
01415	Stormwater Pollution Prevention / NPDES Requirements	01415-1 - 01415-9
01420	References	01420-1 - 01420-2
01425	FDOT Standards Reference	01425-1 - 01425-2
01450	Quality Control	01450-1 - 01450-3
01520	Temporary Facilities and Controls	01520-1 - 01520-4
01550	Maintenance of Traffic	01550-1 - 01550-2
01630	Product Selection and Substitution Procedures	01630-1 - 01630-2
01770	Contract Closeout	01770-1 - 01770-2
01780	Record Drawings	01780-1 - 01780-3

Division 2 - Site Construction

02220	Site Demolition	02220-1 - 02220-4
02230	Site Preparation	02230-1 - 02230-4
02240	Dewatering	02240-1 - 02240-3
02310	Finish Grading	02310-1 - 02310-2
02315	Excavation and Fill	02315-1 - 02315-7
02320	Trenching, Bedding and Backfilling	02320-1 - 02320-8
02370	Erosion and Sedimentation Control	02370-1 - 02370-3
02510	Water Distribution Systems	02510-1 - 02510-27
02710	Stabilized Subgrade	02710-1 - 02710-4
02910	Landscaping	02910-1 - 02910-6
02920	Grassing	02920-1 - 02920-5
02955	Cleaning and Flushing of Underground Piping	02955-1 - 02955-2

Division 3 - Concrete

03100	Concrete Forms	03100-1 - 03100-03
03150	Concrete Accessories	03150-1 - 03150-03
03200	Concrete Reinforcement	03200-1 - 03200-03

03300 Cast-in-Place Concrete 03300-1 - 03300-12
03400 Precast Concrete 03400-1 - 03400-03

Division 13 - Special Construction

13000 Boat Ramp 13000-1 - 13000-44

Appendices

A. Geotechnical Data

B. Permits

C. Construction Plans

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 replacement of existing boat ramp and seawall, and installation of the following: concrete parking area, wood dock and pilings, aluminum floating ramp and dock, 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 Included

Include in the Contract Sum the allowance stated in the Contract Documents.

1.02 RELATED REQUIREMENTS

Conditions of the Contract.

1.03 CONTINGENCY ALLOWANCE

Include in the Contract, limiting amount contingency allowances as follows:

Testing laboratory allowance:

Allow the limiting amount of: **$10,000.00**

General allowance.

Amount as defined by the County.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION

3.01 GENERAL

The Testing Lab 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 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.

Upon award of the contract the Contractor shall, at the earliest possible date, obtain and submit proposals for testing services to the Engineer for approval. The General Allowance shall be used as necessary to pay for unforeseen utility conflict resolutions, utility repair work, or other work not within the original scope of work as bid, such work to be performed only at the direction, and with the authorization of, the Owner.

At the closeout of contract, monies remaining in the Contingency Allowance will be credited to the Owner.

END OF SECTION

SECTION 01153

CHANGE ORDER PROCEDURES

PART 1 GENERAL

1.01 DEFINITION

A. Change Order: A written order signed by the Owner, the Architect/Engineer and the Contractor authorizing a change in the Project Plans and/or Specifications and, if necessary, a corresponding adjustment in the Contract Sum and/or Contract Time, pursuant to Article V of the General Conditions of the Construction Agreement.

B. Administrative Change Adjustment: Minor change order under 10% of project cost or 20% time, does not have to be Board approved.

C. Field Directive: A written order issued by Owner which orders minor changes in the Work not involving a change in Contract Time, to be paid from the Owner's contingency funds.

D. Field Order: Minor change to contract work that does not require adjustment of contract sum or expected date of completion.

1.02 REQUIREMENTS INCLUDED

A. The Contractor shall promptly implement change order procedures:

1. Provide full written data required to evaluate changes.
2. Maintain detailed records of work done on a time-and-material/force account basis.
3. Provide full documentation to County on request.

B. The Contractor shall designate a member of the Contractor's organization who:

1. Is authorized to accept changes to the Work.
2. Is responsible for informing others in the Contractor's employ of the authorized changes into the Work.

1.03 PRELIMINARY PROCEDURES

A. Project Manager may initiate changes by submitting a Request to Contractor. Request will include:

1. Detailed description of the change, products, costs and location of the change in the Project.
2. Supplementary or revised Drawings and Specifications.
3. The projected time extension for making the change.

4. A specified period of time during which the requested price will be considered valid.
5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.

B. Contractor may initiate changes by submitting a written notice to the Project Manager, containing:

1. Description of the proposed changes.
2. Statement of the reason for making the changes.
3. Statement of the effect on the Contract Sum and the Contract Time.
4. Statement of the effect on the work of separate contractors.
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

1.04 FIELD ORDER CHANGE

A. In lieu of a Change Order, the Project Manager may issue a Field Order for the Contractor to proceed with additional work within the original intent of the Project.

B. Field Order will describe changes in the work, with attachments of backup information to define details of the change.

C. Contractor must sign and date the Field Order to indicate agreement with the terms therein.

1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

A. Support each quotation for a lump sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow the County to evaluate the quotation.

B. On request, provide additional data to support time and cost computations:

1. Labor required.
2. Equipment required.
3. Products required.
   a. Recommended source of purchase and unit cost.
   b. Quantities required.
4. Taxes, insurance and bonds.
5. Credit for work deleted from Contract, similarly documented.
6. Overhead and profit.
7. Justification for any change in Contract Time.

C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal.

1. Name of the County's authorized agent who ordered the work and date of the order.
2. Date and time work was performed and by whom.
3. Time record, summary of hours work and hourly rates paid.
4. Receipts and invoices for:
   a. Equipment used, listing dates and time of use.
   b. Products used, listing of quantities.
   c. Subcontracts.

1.06 PREPARATION OF CHANGE ORDERS

A. Project Manager will prepare each Change Order.

B. Change Order will describe changes in the Work, both additions and deletions, with attachments as necessary to define details of the change.

C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

1.07 LUMP SUM/FIXED PRICE CHANGE ORDER

A. Project Manager initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by the Contractor, or requests from the County, or both.

B. Once the form has been completed, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to County for approval. The County will distribute executed copies after approval by the Board of County Commissioners.

1.08 UNIT PRICE CHANGE ORDER

A. Contents of Change Orders will be based on, either:

1. County's definition of the scope of the required changes.
2. Contractor's Proposal for a change, as approved by the County.
3. Survey of completed work.

B. The amounts of the unit prices to be:

1. Those stated in the Agreement.
2. Those mutually agreed upon between County and Contractor.

1.09 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

A. Refer to Article V.5.6 of the General Conditions of the Construction Agreement.

1.10 CORRELATION WITH CONTRACTOR'S SUBMITTALS

A. Periodically revise Schedule of Values and Application for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.

B. Periodically revise the Construction Schedule to reflect each change in Contract Time. Revise sub schedules to show changes for other items of work affected by the changes.

C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

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 directed in 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.

9/20/16

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 directed in 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 directed in the construction plans and the specifications.

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, floating turbidity barriers, filter bags, construction entrance, 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 (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 Dispose of, Exist. Site Items (Lighting, dumpsters, fencing, signage, gates, posts)

A. Work Includes:

Removing and disposing of all existing site items, as needed to complete the proposed project, and as directed in the Construction Plans. The existing items to be removed, and disposed of are the following items: Lighting, dumpsters, fencing, signage, gates, posts, ramp, shell parking, concrete, concrete seawall, deadmen, tiebacks and wood dock facility, along with any other items as required to complete the project. 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.

2.07 Remove and Dispose of, Exist. Trees (8-Inch and Greater)

A. Work Includes:

The contractor's unit price shall include compensation for all labor, materials, and equipment required to **Remove and Dispose of, Exist. Trees (8-Inch and Greater)**, in accordance with the plans and specifications, or as directed by the Engineer, including but not limited to, tree removal, removing and hauling away and disposal off-site of removed material. This bid item applies to all trees which are greater than 8-INCH in diameter. Trees less than 8-INCH in diameter, shall be included within the Bid Item, "CLEARING AND GRUBBING".

B. Unit of measurement is Each (EA), tree removed.

2.08 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.

2.09 Grading and Fill

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.

2.10 Stormwater Pond Outfall

A. Work Includes:

Constructing stormwater pond outfall, to include rip rap, fiberglass skimmers, concrete slab and posts.

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

2.11 Pavement Cement Concrete and Base (6-Inch Thick Min., 4000 PSI), including WWR, with 12" Stabilized Base. Refer to Construction Plans.

A. Work Includes:

Forming, placing, finishing and curing new concrete parking area, and saw-cutting joints, as directed in the construction plans and specifications.

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

2.12 Concrete Sidewalk Onsite

A. Work Includes:

Forming, placing, finishing and curing new concrete sidewalk, including ADA ramps, and saw-cutting joints, 4" thick 3000 PSI concrete with 6" stabilized subgrade, as directed in the construction plans and specifications.

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

2.13 Concrete Sidewalk Offsite, 6" thick

A. Work Includes:

Forming, placing, finishing and curing new concrete sidewalk, including ADA ramps, and saw-cutting joints, per FDOT Index 310, as directed in the construction plans and specifications. Concrete sidewalk shall be 6" thick.

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

2.14 Compacted Shell Drive

A. Work Includes:

Placing and finishing of compacted shell drive, 6" compacted shell base material with 12" subgrade.

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

2.15 Washed Shell

A. Work Includes:

Placing and finishing of washed shell (1" to 3" shell), minimum thickness of 4" depth. Shell material sample shall be provided to the Owner for approval.

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

2.16 FDOT Driveway

A. Work Includes:

Asphalt paving within FDOT right of way, per FDOT requirements, superpave asphalt with limerock base and stabilized subgrade, as directed in the construction plans and specifications.

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

2.17 Pipe, Water, 2-Inch PE, SDR 9

A. Work Includes:

Furnish and Install, the necessary water line, 2-Inch Polyethylene (PE), SDR 9, for the proposed site, as directed in the construction plans and specifications.

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

2.18 Pipe, Water, 1-Inch PE, SDR 9

A. Work Includes:

Furnish and Install, the necessary water line, 1-Inch Polyethylene (PE), SDR 9, for the proposed site, as directed in the construction plans and specifications.

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

2.19 2-Inch Water Connection (Incl. Disinfection and Testing)

A. Work Includes:

Furnish and provide, all labor, equipment, and materials necessary so that the water line connection can be connected and operational from the existing main to the site, as directed in the construction plans and specifications. Included within this pay item, is all necessary disinfection and testing activities.

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

2.20 1.5-Inch Water Meter and Backflow Assembly

A. Work Includes:

Furnish and Install, all labor, equipment, and materials necessary so that the water meter and backflow assembly can be connected and operational from the existing main to the site, as directed in the Construction Plans and specifications.

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

2.21 RPZ and Hose Bib (for storage building)

A. Work Includes:

Furnish and Install, all labor, equipment, and materials necessary to install a ½" RPZ and Hose Bib at the storage building, as directed in the Construction Plans and specifications.

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

2.22 Fittings (D.I.), Water

A. Work Includes:

Furnish and Install, the necessary ductile iron water fittings and restraining joints for the proposed water line connections throughout the site, as directed in the construction plans and specifications.

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

2.23 6' tall chain link fence

A. Work Includes:

Furnish and Install, chain link fence, as directed in the Construction Plans and Specifications.

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

2.24 10' wide chain link access

A. Work Includes:

Furnish and Install, chain link fence gates (two 5' gates), as directed in the Construction Plans and Specifications.

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

2.25 Type AB Curb and Gutter

A. Work Includes:

Furnish and Install, the necessary Curb and Gutter, Concrete, Type AB, for the proposed site, as directed in the construction plans and specifications.

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

2.26 Type D Curb

A. Work Includes:

Furnish and Install, the necessary Curb, Concrete, Type "D", for the proposed site, as directed in the construction plans and specifications.

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

2.27 Wooden Post

A. Work Includes:

Furnish and Install, the wooden Post, as directed in the Construction Plans and Specifications.

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

2.28 Rope / Post

A. Work Includes:

Furnish and Install, the Rope and Post, as directed in the Construction Plans and Specifications.

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

2.29 Pipe guardrail on seawall

A. Work Includes:

Furnish and Install, gurardrail, as directed in the Construction Plans and Specifications.

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

2.30 Wheel Stops (new)

A. Work Includes:

Furnish and Install, concrete wheels stops, for the proposed site, as directed in the construction plans and specifications.

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

2.31 Bollard (Galvanized Steel, Painted)

A. Work Includes:

Furnish and Install, the galvanized steel bollards for the proposed site, as directed in the construction plans and specifications. Contractor shall coordinate with Owner on paint color.

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

2.32 Bollard (PVC, Painted)

A. Work Includes:

Furnish and Install, the PVC bollards for the proposed site, as directed in the construction plans and specifications. Contractor shall coordinate with Owner on paint color.

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

2.33 Signage

A. Work Includes:

Furnish and Install, new Sign plates, posts, hardware, accessories, and foundations, as directed in the construction plans and the Specifications.

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

2.34 Bench

A. Work Includes:

Furnish and Install, a 6 foot long bench, as directed in the construction plans and the Specifications. Contractor shall submit shop drawings to the Owner for approval.

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

2.35 Detectable Warning

A. Furnish and install, new detectable warning surface per FDOT specifications, as directed in the construction drawings.

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

2.36 Traffic Stripes and Markings

A. Work Includes

Permanent double stripped pavement marking installation in areas where new paving occurs. New markings to tie to existing markings as directed in the construction plans and specifications.

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

2.37 Fish Cleaning Station, Siltech, including aluminum bracket and hardware (See Plans), Incl Drainage

A. Furnish and Install, Fish Cleaning Station, Siltech, including aluminum bracket and hardware, along with drainage modifications, as directed in the construction plans and Specifications.

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

2.38 Boat Ramp Sign

A. Furnish and Install, Boat Ramp Sign, as directed in the construction plans and Specifications.

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

2.39 Electric Service, site lighting and signage, incl meter

A. Furnish and Install, site electrical components to include extension of electric service onsite, new electrical meter and other components needed for the site lighting and signage, as directed in the construction plans and Specifications.

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

2.40 Lighting Assembly (including Fixture, Base, Conduit, Wires)

A. Work Includes:

Installing Light Fixture and Base. The Contractor shall be responsible for required electrical connections, new conduit, and new wires, as requiredas directed in the construction plans and the specifications.

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

2.41 Trees, Cabbage palms

A. Work Includes:

Install cabbage palm trees, as directed in the construction plans and specifications. Work shall include stabilization and watering as required to establish.

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

2.42 Shrubs, All

C. Work Includes:

Install Cocoplum and Sea Grapes, as directed in the construction plans and specifications. Work shall include stabilization and watering as required to establish.

D. Unit of measurement is Lump Sum (LS), installed and accepted.

2.43 Groundcover, All

E. Work Includes:

Install Dune Sunflower, Sand Cordgrass, Saltmeadow Cordgrass, and Sea Oxeye Daisy, as directed in the construction plans and specifications. Work shall include stabilization and watering as required to establish.

F. Unit of measurement is Lump Sum (LS), installed and accepted.

2.44 Sodding

G. Work Includes:

Install Sodding, as directed in the construction plans and specifications.

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

2.45 Stockpile Dredge Material

A. Work Includes:

Remove dredge material, temporarily stockpile onsite to dewater until optimal moisture content is achieved, and then placement of material, in lifts, as shown on the Construction Plans.

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

2.46 Remove and Dispose of Existing Site Items (Boat Ramp, Concrete Seawall, Deadmen, Tiebacks, Wood Dock Facility Including Supports and Piles)

A. Work Includes:

Removing and disposing of all existing site items as needed to complete the proposed project and as directed in the Construction Plans. The existing items to be removed, and disposed of include but are not limited to: boat ramp, concrete seawall, deadmen, tiebacks, wood dock facility including supports and piles, along with any other items as required to complete the project. 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.

2.47 Excavation (for Boat Ramp, Docks & Water-Side Boat Ramp Approach)

A. Work Includes:

All labor, equipment and performing of operations in connection with excavation of approximately 12 inches of subsurface material under the existing concrete ramp footprint, excavation within the ramp expansion footprint as shown in the Construction Drawings, and excavation near the dock structures and within the water-side boat ramp approach as shown in the Construction Drawings.

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

2.48 Concrete Seawall Panel (Including Concrete Cap, Geotextile)

A. Work Includes:

Furnishing all labor, equipment, dewatering, shoring, supplies and material, etc; and performing all operations in connection with the installation of the reinforced concrete panel seawall with filter fabric and reinforced concrete cap as shown on the Construction Drawings and described herein.

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

2.49 Fill, Clean (behind Seawall)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) of performing all operations in connection with the importation, placement, and grading of fill as shown on the Construction Drawings and described herein. The work to be performed under this section includes the procurement, transportation and placement of #250 sand to the lines and grades shown on the Construction Drawings.

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

2.50 South Seawall Concrete Deadman, 10-Inch Thick, 3000 PSI (for Seawall)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations in connection with the installation of the reinforced concrete deadmen as shown on the Construction Drawings and described herein.

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

2.51 North Seawall Concrete Deadman, 10-Inch Thick, 3000 PSI (for Seawall)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations in connection with the installation of the reinforced concrete deadmen as shown on the Construction Drawings and described herein.

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

2.52 Steel Tieback System (304 SS Bar in PVC Conduit) (for Seawall)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations in connection with the installation of the steel tiebacks associated with the seawall construction as shown on the Construction Drawings and described herein.

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

2.53 Concrete, 8.25-Inch Thick, 5000 PSI (Steel reinforced) (Ramp)

A. Work Includes:

All labor and equipment and performing of operations in connection with installation of the cost-in-place reinforced concrete boat ramp slab in accordance with the base-aggregate grades and dimensions as shown in the Construction Drawings.

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

2.54 Aggregate, 12-Inch Thick, #57 Stone (Below Ramp)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) of performing all operations in connection with the importation, placement, and grading of fill as shown on the Construction Drawings and described herein. The work to be performed under this section includes the procurement, transportation and placement of #57 stone aggregate to the lines and grades shown on the Construction Drawings.

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

2.55 Concrete Panel (at Base of Ramp)

A. Work Includes:

(i) furnishing all labor, equipment, dewatering, supplies and material; and (ii) performing all operations in connection with the installation of the reinforced concrete panel seawall at the seaward base of the concrete boat ramp as shown on the Construction Drawings and described herein.

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

2.56 Wood Dock (5 ft Wide – Timber Frame Structure with Composite Decking)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations connection with construction and installation of a pressure treated dock structure with composite decking as shown in the Construction Drawings.

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

2.57 Floating Dock, Aluminum (including 4' x 20' Gangway, 5' x 25' Floating Dock, and Handrail)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations connection with construction and installation of a pre-manufactured aluminum floating dock, and an aluminum ramp (gangway) with handrail as shown in the Construction Drawings.

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

2.58 Concrete Pile, Pre-Stressed 12-Inch x 12-Inch, 5000 PSI (for Dock)

A. Work Includes:

(i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations connection with construction and installation of pre-stressed concrete piles associated with support of the wood dock structure as shown in the Construction Drawings.

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

PART 3

3.01 Allowance Funds (Testing)

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

3.02 Discretionary Funds (10% Contingency)

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

PART 4

4.01 Bid As Alternate – Storage Building

A. Work includes:

Install Storage Building 780 SF detached structure at the north side of the property that has been elevated above the flood plain elevation in accordance with Specification Sheets located within Plan Set Sheet A901, A902, and A903.

B. Unit of measurement is Lump Sum (LS) 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. Contractor shall submit a NOI for permit coverage.

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. FDEP Permit: 41-0319897-003
2. FDOT Permit: Pending
3. ACOE Permit: SAJ-2014-02969 (LP-CMW)

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:	2.15 Ac
Total Area Impacted by Construction:	2.15 Ac
Existing Site Soils:	Sandy / Shell
Drainage Area Contributing to Each Discharge Point:	2.15 Ac
Latitude and Longitude of Project Location:	27.4973 Lat, -82.7024 Long
MS4 Operator Name:	Manatee County
Receiving Waters:	Anna Marie Sound, Class II OFW

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 As-Built 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.

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.

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

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.

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 02510

WATER DISTRIBUTION SYSTEMS

PART 1 GENERAL

1.01 Section Includes

A. Piping, fittings, valves, and hydrants for public drinking water distribution systems

B. Testing and disinfection

1.02 Related Sections

A. Section 02320 - Trenching, Bedding and Backfilling

B. Section 02955 - Cleaning and Flushing Of Underground Piping

1.03 References

A. American Water Works Association (AWWA) and American National Standards Institute (ANSI) latest edition:

1. ANSI/AWWA C104/A21.4 - Cement Mortar Lining for Ductile Iron Pipe and Fittings for Water
2. ANSI/AWWA C105/A21.5 - Polyethylene Encasement for Ductile Iron Pipe Systems
3. ANSI/AWWA C110/A21.10 - Ductile Iron and Gray Iron Fittings, 3 Inch Through 48 Inch, for Water
4. ANSI/AWWA C111/A21.11 - Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings
5. ANSI/AWWA C115/A21.15 - Flanged Ductile Iron Pipe with Ductile Iron or Gray Iron Threaded Fittings
6. ANSI/AWWA C150/A21.50 - Thickness Design of Ductile Iron Pipe
7. ANSI/AWWA C151/A21.51 - Ductile Iron Pipe, Centrifugally Cast, for Water
8. ANSI/AWWA C153/A21.53 - Compact Ductile Iron Fittings for Water Service
9. AWWA C502 - Dry Barrel Fire Hydrants
10. AWWA C504 - Rubber Seated Butterfly Valves
11. AWWA C508 - Swing Check Valves for Waterworks Service, 2 Inch Through 24 inch
12. AWWA C509 - Resilient Seated Gate Valves for Water Supply Service
13. AWWA C515 - Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service
14. AWWA C518 - Dual Disc Swing Check Valves for Waterworks Service
15. AWWA C550 - Protective Epoxy Interior Coatings for Valves and Hydrants

16. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances
17. AWWA C605 - Underground Installation of PVC Pipe and Fittings for Water
18. AWWA C651 - Disinfecting Water Mains
19. AWWA C800 - Underground Service Line Valves and Fittings
20. AWWA C900 - PVC Pressure Pipe, and Fabricated Fittings, 4 Inch Through 12 Inch, for Water Distribution
21. AWWA C901 - Polyethylene Pressure Pipe and Tubing, ½ Inch Through 3 Inch for Water Service
22. AWWA C905 - PVC Pressure Pipe and Fabricated Fittings, 14 Inch Through 48 Inch
23. AWWA C906 - Polyethylene Pressure Pipe and Fittings, 4 Inch Through 63 Inch for Water Distribution and Transmission
24. AWWA M23 - PVC Pipe Design and Installation Manual

B. American Society for Testing and Materials (ASTM) latest edition:

1. ASTM A307 - Carbon Steel Bolts and Studs
2. ASTM A536 - Ductile Iron Castings
3. ASTM D1784 - Rigid PVC Compounds and CPVC Compounds
4. ASTM D2000 - Classification System for Rubber Products in Automotive Applications
5. ASTM F1674 - Test Method for Joint Restraint Products for Use with PVC Pipe
6. ASTM F2164 - Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure

1.04 Submittals

A. Product data for gaskets, pipe, joints, joint restraint, fittings, valves, coatings.

B. Product data for all locate wire, tape, markers, warning tape

C. Submit certification documenting that all pipe and fittings used to convey potable water shall conform to one of the following standards:

1. NSF International Standard 61 (Drinking Water System Components);
2. Section 6 of NSF International Standard 14 (Plastics Piping System Components and Related Materials); or
3. Food and Drug Administration's Regulations for indirect food additives as contained in 21 CFR Parts 174 through 189.

D. Piping specialties and installation details.

E. Product data and painting schedule for field applied paint and coatings.

F. Final coat paint colors.

G. Proposed sequence of operation for disinfection and testing, manner of filling and flushing units, source and quality of water to be used, and proposed discharge locations.

1.05 Quality Assurance

A. Chlorination and dechlorination shall be performed by competent individuals knowledgeable and experienced in the operation of the necessary application and safety equipment in accordance with applicable Federal, State and Local laws and regulations.

B. Samples of water shall be collected and tested by a State Certified Testing Laboratory.

C. The contractor installing the underground fire protection piping shall hold a class I, II, or V level certification as issued by the State of Florida, as required by FS 633.021(15).

1.06 Product Delivery, Storage, and Handling

Exercise care in transporting and handling pipe and fittings in order to avoid damage to materials or coatings. Lifting shall be by hoist or on skids when hand lifting is not feasible. Dropping shall not be permitted. Store pipe as recommended by the manufacturer. Damaged pipe and fittings shall be replaced.

PART 2 PRODUCTS

2.01 Ductile Iron Pipe

A. Buried pipe shall conform with ANSI/AWWA C150/A21.50 and C151/ A21.51, and shall have a minimum working pressure of 150 psi. Buried pipe shall comply with the following pressure class (PC) designations unless otherwise indicated on the Drawings:

1. 12 inch diameter and smaller = PC 350
2. 14 inch through 24 inch diameter = PC 250
3. 30 inch through 64 inch diameter = PC 200

B. Exposed pipe 4 inches and larger shall be flanged and shall conform with AWWA/ANSI C115/A21.15, and shall have a minimum working pressure of 150 psi. Flanged pipe shall comply with the following thickness class (TC) designations unless otherwise indicated on the Drawings:

1. 4 inch diameter = TC 54
2. 6 inch through 24 inch diameter = TC 53

C. All flanges shall be class 125, and shall be fully machine faced after being screwed tightly on the pipe. Bolts and nut shall conform to ASTM A307, Grade B.

2.02 Fittings for Ductile Iron and PVC Pipe

A. Fittings shall be manufactured of ductile iron, conforming to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53.

B. All full body (C110/A21.10) fittings shall be pressure rated to 250 psi, minimum. All compact fittings (C153/A21.53) shall be pressure rated to 350 psi, minimum.

C. Fitting joints shall be compatible with the type of pipe in use or specified, e.g., flange fittings for flange pipe and mechanical joint for mechanical joint pipe and push-on joint pipe.

2.03 Linings and Coatings for Ductile Iron Pipe and Fittings

A. Interior lining shall be standard thickness cement mortar lining and bituminous seal coat, conforming to ANSI/AWWA C104/A21.4.

B. Exterior coating for buried pipe and fittings shall be a petroleum asphaltic coating in accordance with ANSI/AWWA C110/A21.10.

C. All exposed pipe and fittings shall be painted with a three coat system. The first coat shall be primer, 2.5-3.5 mil Dry Film Thickness (DFT) Tnemec Series 135 ChemBuild or approved equal; the intermediate coat shall be 4.0-10.0 mil DFT Tnemec Color Hi-Build Epoxoline II Series N69 or approved equal, and the final coat shall be 2.0-3.0 mil DFT Tnemec EnduraShield Series 73 or approved equal. The final coat paint color shall be as selected by the local utility.

2.04 Joints for Ductile Iron Pipe and Fittings

A. Mechanical and push-on joints shall be rubber gasketed, conforming to ANSI/AWWA C111/A21.11. Mechanical joint bolts and nuts shall conform to ASTM A307, Grade B. Ductile iron glands shall be provided with ductile iron pipe.

B. Lubricants other than that furnished by the pipe manufacturer with the pipe shall not be used.

2.05 Restrained Joints for Ductile Iron Pipe and Fittings

A. Restrained joints for ductile iron pipe bell joints shall be American Fast Grip Gasket, McWane Sure Grip 350 Gasket, U.S. Pipe Field Lok 350 Gasket, or EBAA Iron Mega Lug Series 1100HD.

B. Restrained joints for ductile iron pipe and fitting mechanical joints shall be EBAA Iron Mega Lug Series 1100, Star Grip Series 3000, or Tyler Union Tuf-Grip Series TLD.

C. Locking bell joint restraint shall be American Flex Ring Joint, American Lok-Ring Joint, or U.S. Pipe TR-Flex.

D. Pipe joints shall be restrained upstream and downstream of fittings in accordance with the manufacturer's requirements or the table shown in the Drawings, whichever is greater.

2.06 PVC Pressure Pipe

A. Pipe 4 inch through 12 inch diameter shall conform to AWWA C900.

B. Pipe 14 inch through 30 inch diameter shall conform to AWWA C905.

C. Pipe shall conform to ASTM D1784, Type I, Grade I, 4000 psi design stress, and shall be National Sanitation Federation (NSF) approved.

D. Water main pipe shall be class 235 (DR18), fire mains shall be class 305 (DR 14). All pipe shall contain markings on each section showing conformance to the above specifications.

E. PVC pipes shall be color coded blue and stenciled (0.75-inch lettering on the pipe in at least three areas per pipe section) "Potable Water Main".

2.07 PVC Pressure Pipe Joints

A. Joints shall be rubber gasketed conforming to AWWA C900 or C905

B. The bell shall be integral with the pipe and of equal or greater pressure rating. The bell of pipe and fittings using push-on joints shall have an integral groove to retain the gasket in place.

C. Provide adapters as required to join PVC pipe to pipe, fittings and equipment of other materials.

2.08 Restrained Joints for PVC Pressure Pipe

A. Restrained joints for PVC pipe mechanical joints shall be Tyler Union Series 2000 Tuf Grip TLP, JCM Sur-Grip Bell Restrainer, Ford Uni-Flange Series 1500 Circle Lock, or EBAA Iron Mega Lug Series 2000PV.

B. Restrained joints for PVC pipe push on joints shall be EBAA Iron Mega Lug Series 1500 or Series 1600 (C900 PVC), Series 2800 (C905 PVC), Ford Uni-Flange Series 1390, or Smith-Blair Bell-Lok Series 165.

C. Pipe joints shall be restrained upstream and downstream of fittings in accordance with the manufacturer's requirements or the table shown in the Drawings, whichever is greater.

2.09 Polyethylene Pipe and Fittings (4 Inches and Larger)

A. Polyethylene pipe and fittings shall be in accordance with AWWA C906, standard code designation standard code designation PE 3408. Pipe 4-30 inch diameter shall be DR11, PC 160. The manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements. The pipe sizing shall be in accordance with Ductile Iron Sizing System (DIOD). Pipe using the newer ASTM designations for the material is acceptable, provided it is stamped "PE3408/PE4710 - AWWA C906" or "PE3408/PE3608/PE4710 - AWWA C906".

B. Polyethylene mechanical joint adapters and flange adapters shall be manufactured in accordance with AWWA C906. Mechanical joint adapters shall be fitted with gland rings pressure rated equal to or greater than the mating pipe, and shall be made with sufficient through-bore length to be clamped in a heat fusion joining machine without the use of sub-end holder. The sealing surface of the flange adapter shall be machined with a series of small v-shaped grooves to provide gastketless sealing, or to restrain the gasket against blow-out.

C. Below grade HDPE pipe terminations shall be fitted with a mechanical joint adapter kit that will enable the HDPE pipe to be joined with mechanical joint fittings. The adapter shall be AWWA compliant, and the pressure rating for the adapter shall match the pressure rating for the HDPE pipe. Mechanical Joint adapter kits shall be manufactured in standard DIPS sizes for connecting DIPS sized polyethylene pipe to mechanical joint fittings and shall contain a HDPE anchor fitting, stainless steel reinforcing collar, AWWA C110 ductile iron gland ring, gasket and extra length T-bolts.

D. Back-Up Rings and Flange Bolts. Flange adapters shall be fitted with lap joint flanges pressure rated equal to or greater than the mating pipe. The lap joint flange bore shall be chamfered or radiused to provide clearance to the flange adapter radius. Flange bolts and nuts shall be grade 2 or higher.

E. All polyethylene pipe shall be black, and shall contain a continuous blue colored stripe, 2 inches wide, located at no greater than 90 degree intervals around the pipe.

2.10 Polyethylene (PE) Pressure Pipe and Tubing, Joints and Fittings (½ Inch through 3 inch)

A. Polyethylene pipe and tubing used for service lines ½-3 inch diameter shall be blue polyethylene in accordance with AWWA C901, standard code designation PE 4710, SDR 9 (outside diameter based dimension ratio), 250 psi. Pipe and fittings shall be NSF approved for the usage to which they are to be applied.

B. Joints in SDR-PR PE pipe shall be butt heat fusion or socket heat fusion type.

C. Fittings shall be manufactured of the same material as the pipe and shall be of the same DR.

D. Provide adapters as required to join PE pipe-to-pipe, fittings and equipment of other materials.

2.11 Service Saddles

Service saddles shall meet the requirements of AWWA C800 and shall consist of epoxy coated ductile iron bodies in accordance with ASTM A536, with double stainless steel straps, bolts, washers and nuts. Stainless steel shall be Type 304, and nuts are to be Teflon coated. The ductile iron body is to be fusion bonded nylon coated, minimum thickness 12 mils, outlet of saddle is to have NPT threads. Service saddles shall be manufactured by Ford, Mueller, or Smith-Blair.

2.12 Tapping Sleeves

Tapping sleeves are to be 18-8 type 304 stainless steel and stainless steel outlet, as manufactured by JCM or approved equal.

2.13 Polyethylene Encasement

A. Provide virgin polyethylene encasement in conformance with AWWA C105/A21.5. Polyethylene to be Type I, Grade E-1, 0.4 maximum flow rate, 1200 psi minimum tensile strength, 300 percent minimum elongation, 800 volt/mil thickness minimum dielectric strength.

B. Polyethylene material shall have a minimum nominal thickness of .008 inch (8 mils). The minus tolerance on thickness shall not exceed 10 percent of the nominal thickness.

2.14 General Valve Requirements

A. Unless otherwise indicated or specified, all valves two inches and smaller shall be all brass or bronze; valves over two inches shall be iron body, fully bronze or bronze mounted.

B. Where required for satisfactory operation of valves, provide valve operators, extension stems, stem guides, cast iron valve boxes, floor boxes, handwheels, operator stands, position indicators, and other valve appurtenances. Extension stems shall be complete with guide bearings, wrench nut, and tee handle wrench. All machinery stuffing boxes shall be packed with material selected for the service intended. Maintain all packing until final acceptance by the Owner.

C. Manufacturer's name, service, and pressure marking shall be cast into the body.

D. Valve operators shall be sized for operation at the pressure and flow conditions required for proper operation.

E. Extension stems shall be provided for all valves in buried locations and in other locations where indicated on the Drawings.

F. Extension stems shall be fabricated from solid steel shafting not smaller in diameter than the stem of the valve or from galvanized steel pipe having an

internal diameter not smaller than the diameter of the valve stem. Stem couplings shall be both threaded and keyed to the coupled stems and shall be of standard design and construction. Pipe couplings will not be acceptable.

G. Stems for buried valves shall extend to within 6 inches of the surface of the ground. Each extension stem shall be connected to the valve operator with a suitable universal joint type coupling. All connections shall be pinned. Each extension stem shall be provided with spacers which will center the stem in a valve box having an inside diameter of approximately 5 inches, and shall be equipped with a standard AWWA wrench nut as described in AWWA C500, except where handwheels are indicated.

2.15 Linings and Coatings for Valves

A. Exterior coating on buried valves shall be rust inhibiting epoxy primer, followed by a coal tar epoxy, total minimum dry film thickness of 16 mils, applied at the factory. Exterior coating of exposed valves shall be factory applied rust inhibiting epoxy primer, minimum 3 mils dry film thickness.

B. After installation, exterior surfaces shall be painted with a two coat system. The first coat (intermediate coat) shall be 4.0-10.0 mil DFT Tnemec Color Hi-Build Epoxoline II Series N69 or approved equal, and the final coat shall be 2.0-3.0 mil DFT Tnemec EnduraShield Series 73 or approved equal. The final coat paint color shall be as selected by the local utility.

C. The interior of valves with a cast iron or ductile iron body shall be coated with an epoxy protective coating meeting NSF International Standard 61 and AWWA C550.

2.16 Gate Valves

A. Gate valves 3 inches and larger shall be resilient wedge gate valves, conforming to AWWA C509 or AWWA C515. The valves shall be iron body, cast iron fully encapsulated molded rubber wedge complying with ASTM D2000, non-rising stem with O-ring seals. Valves shall open counterclockwise. Resilient wedge to be US Food and Drug Administration approved for potable water and have an EPDM visible marking.

B. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.

C. All valves will have 250 psig working pressure and a 500 psi static test pressure. The valves shall be non-rising stems and the stem material shall be 18-8 stainless steel, Type 304, ANSI 420/ASTM A276 with no measurable level of lead content. Valves shall have two upper o-ring seals on the stem above the thrust collar and at least one o-ring seal below the collar so designed to allow for replacement of the upper o-rings with the valve under full operating pressure. Valves shall have thrust washers located above and below the thrust collar to insure a smooth frictionless operation.

D. All valves shall have a 2 inch ductile iron wrench nut with direction of valve operation clearly visible when looking down on the nut. Hold down nut or bolt shall be Type 316 stainless steel. All exterior bonnet and thrust collar fasteners, whether recessed or exposed, are to be Type 316 Stainless Steel and marked by type.

E. The waterway seat area will be smooth without ridges or cavities and valves will have full size bore throughout the flow-way. All valves will be hydrostatically pressure tested prior to shipment in accordance with AWWA C509 and are to be covered by the manufacturers Ten Year Limited Warranty from date of purchase by the end user.

F. The resilient sealing mechanism shall provide zero leakage at test and normal working pressure when installed with the line flow from either direction.

G. Gate valves larger than 12 inches shall be resilient seated and shall include either spur gear actuators (for valves to be installed in a vertical position) or bevel gear and side actuators (for valves to be installed in a horizontal position).

H. Standard gate valves 2½ inches and smaller shall be Class 150 bronze gate valves by Powell Valves or approved equal.

I. Gate valves 3"-12" shall be American Flow Control Series 2500, Clow Series F-6100, or Mueller Series A-2360.

J. Gate Valves large than 12 inches shall be American Flow Control Series 2500 or Mueller Series A-2361.

2.17 Tapping Valves

Tapping valves shall be resilient seated gate valves and shall conform to the requirements of AWWA C509. Tapping Valves shall be American Flow Control Series 2500, Clow Series F-6100, or Mueller Series A2361.

2.18 Butterfly Valves

A. Butterfly valves shall meet or exceed the design strength, testing and performance requirements of AWWA C504, Class 150.

B. Valve body shall be mechanical joint end type valve constructed of cast iron or ductile iron.

C. Disc shall be one piece cast design with no external ribs transverse to flow. Disc shall be cast iron or ductile iron.

D. The resilient seat shall mate with a 304 or 316 stainless steel surface.

E. Valve seats for valves 14 inch diameter and larger shall be mechanically retained, and may be installed on either the body or disc. O-ring seats on valve discs are unacceptable. Seats for valves 14 inch diameter and larger shall be fully field replaceable without the use of special tools.

F. Operators of the enclosed traveling-nut type shall be provided unless otherwise indicated.

G. Valve shafts shall be one piece extended completely through the disc or stub shafts extending 1½ times the shaft diameter into the disc. Valve shaft diameter shall be as required by AWWA C504. Valve shafts shall be 304 or 316 stainless steel. Disc to stem connections or turned down portions of shafts shall be designed to transmit shaft torque equivalent to 75% of the required shaft diameter. Bushings shall be of reinforced Teflon, luberized bronze, or stainless steel. Seals may be preloaded by packing gland mechanism.

H. Manual valve operators shall be designed to hold the valve disc in any intermediate position between fully opened and fully closed without creeping or fluttering. The operator shall be capable of transmitting sufficient torque to open or close each valve under the most adverse operating conditions. An indicating arrow shall be provided to give full closed, full open, or intermediate disc position indicators.

I. Valves shall be Mueller Lineseal III, Kennedy BFV Style 4500, Clow 1450, or DeZurik BAW.

2.19 Air Release Valves

A. Air release valves along the below grade water transmission main shall be single body combination air release valves designed to release large quantities of air at start up, admit air on shut down and release air in operation. All parts shall be NSF 61 certified.

B. Air release valves shall be made of a reinforced nylon body, foamed polypropylene float, NBR 70 O-ring and reinforced nylon base.

C. Air release valves shall be capable of withstanding operating pressures of 150 psi.

D. Valves shall be ARI D-040 or Vent-o-Mat Series RBX DN50.

2.20 Swing Check Valves

A. Below grade buried swing check valves shall be ductile iron body, with rubber encapsulated ductile iron reversible disc, resilient seated disc, full flow area, and shall conform to AWWA C508. Valves shall be pressure rated at a minimum of 250 PSI working pressure.

B. Below grade non-buried or above grade swing check valves shall be iron body, bronze mounted, with rubber faced disc, Class 125 flanged ends, removable inspection cover, O-ring sealed stuffing box, with an external weighted lever, and shall conform to AWWA C508.

C. Acceptable manufacturers: Kennedy, M&H or Mueller.

2.21 Corporation Stops

Corporation stops shall be 1 inch, 1½ inch or 2 inch brass ball type, equipped with connections suitable for service piping. Conformance with AWWA C800 and C901 is required. Corporation stops shall be Ford FB1000 or McDonald 4701B-22.

2.22 Curb Stops

Curb stops shall be manufactured of 85-5-5-5 bronze conforming to ASTM B62. Conformance with AWWA C800 and C901 Is required. Curb stops at meters shall be sized to match the meter size. Curb stops shall be ball type reduced type Ford B11-333W or McDonald 6101W. Curb stops at meters shall be ball type compression Ford B43-342W, B43-777W or McDonald 6100MW-22.

2.23 Valve Boxes

A. All buried valves shall be provided with adjustable valve boxes approximately 5 inches in diameter and shall be heavy duty traffic rated.

B. Valve boxes shall be cast iron. Valve box lids shall be cast iron H-20 load rated.

C. Valve boxes shall be of sufficient length to operate all valves buried in the ground. Valve boxes shall consist of base, center section, and top section with cover. All valve box extensions shall be cast iron.

D. Valve box lids in paved areas shall be lockable.

E. Valve boxes located in unpaved areas shall be Slip Type design to permit movement of the top section without transmitting forces onto the valve body.

F. Valve boxes shall have valve box covers with the inscription "WATER" cast thereon.

G. All valve box covers shall be painted with a three coat system. The first coat shall be primer, 2.5-3.5 mil Dry Film Thickness (DFT) Tnemec Series 135 ChemBuild or approved equal; the intermediate coat shall be 4.0-10.0 mil DFT Tnemec Color Hi-Build Epoxoline II Series N69 or approved equal, and the final coat shall be 2.0-3.0 mil DFT Tnemec EnduraShield Series 73 or approved equal. The final coat paint color shall be Ultra Blue No. 124A or as approved by the local utility.

H. Acceptable manufacturers: Tyler Union, Sigma Corporation, Star Pipe Products.

2.24 Curb Boxes

Boxes for curb stops shall be manufactured of heavy cast iron and shall be of the telescopic type with a tar base enamel coating inside and outside. Base of curb boxes shall be Minneapolis type. Covers for curb boxes shall be marked "Water".

2.25 ARV Enclosures

A. Enclosures for air release valves shall be polyethylene with stainless steel hardware, and shall be provided with a tamper proof locking device. Enclosures shall be as manufactured by Water Plus Corporation (model 131632) or approved equal.

B. Enclosure color shall be blue.

2.26 Hydrants

A. Hydrants shall conform to AWWA C502 and shall be furnished complete with wrench and other appurtenances. Manufacturer's certification of compliance with AWWA C502 and tests listed therein will be required.

B. All hydrants shall be of breakable type, with the breakable section located slightly above the finish ground line. Hydrants shall contain two 2½ inch hose connections and one 4½ inch steamer connections with national standard fire hose coupling screw threads, 5¼ inch valve opening, 6 inch diameter mechanical joint inlet, 1½ inch pentagon operating nut. The hydrants shall open counterclockwise.

C. All hydrants shall be painted with a three coat system. The first coat shall be primer, 2.5-3.5 mil Dry Film Thickness (DFT) Tnemec Series 135 ChemBuild or approved equal; the intermediate coat shall be 4.0-10.0 mil DFT Tnemec Color Hi-Build Epoxoline II Series N69 or approved equal, and the final coat shall be 2.0-3.0 mil DFT Tnemec EnduraShield Series 73 or approved equal. The final coat paint color shall be as selected by the local utility.

D. Hydrants shall be Mueller Centurion (Traffic model A-423), American-Darling B-84-B, Kennedy K-81A, or Clow Medallion F-2545.

2.27 Line Stops

A. Line stops shall consist of a line stop fitting, stopping plug/valve, blind flange for installation after stop is completed, and 1-inch equalization/purge fitting.

B. The line stop fitting shall be fabricated steel with 12 mil (minimum) epoxy coating.

C. All hardware and accessories shall be 304 Stainless Steel.

D. The blind flange shall be ductile iron conforming to ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53.

E. Provide additional pipe restraining in the vicinity of the line stop for preventing pipe movement due to any unbalanced forces created by the line stop installation and removal.

2.28 Electronic Marker Balls

A. Marker balls shall consist of a passive device capable of reflecting a specifically designated repulse frequency tuned to the utility being installed.

B. Balls shall be four inches in diameter with a high density polyethylene shell and shall be color coded blue (potable water).

C. Balls shall be as manufactured by 3M or Omni.

2.29 Pipeline Identification Tape

A. Identification tape shall be an inert plastic film specifically formulated for prolonged underground use. Minimum thickness 4 mils, width 6 inches, letter size 1 inch. Lettering shall be continuous.

B. Tape shall be the standard product of a manufacturer regularly engaged in the supply of this tape. Provide tape with adhesive backing for attachment to pipe.

C. Identification tape shall be color coded blue with black lettering "POTABLE WATER MAIN".

2.30 Pipeline Warning Tape

Warning tape shall be 6 inch wide vinyl continuous tape, for identification and warning purposes. It shall be color coded blue with black lettering “CAUTION: WATER MAIN BURIED BELOW”.

2.31 Locating Wire

Locating wire shall be color-coded 10 gage continuous insulated wire. Color coding shall be blue.

2.32 Disinfection and Dechlorination System

A. Sizing and selection of disinfection system, disinfection equipment, disinfection system piping, and appurtenances is the responsibility of the Contractor.

B. All equipment used in disinfection work shall be in proper working condition, and shall be adequate for the specified work.

C. Provide equipment and feed system for chlorinating agent that is appropriate to the chlorinating agent and the piping to be disinfected. Also provide equipment and feed system for dechlorinating agent that is appropriate to the dechlorinating agent and the piping to be dechlorinated.

D. Disconnect and remove equipment, piping, and appurtenances after the water mains have been successfully disinfected and dechlorinated, bacteriological testing has been completed, and water mains have been approved for connection to the existing water distribution system.

PART 3 EXECUTION

3.01 General Installation Requirements

A. All lengths of pipe shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.

B. Cut all pipe and drill all holes that may be necessary. Cut sections of pipe shall be reamed or filed to remove all burrs. The pipe interior and joints shall be thoroughly cleaned before being installed and kept clean during construction.

C. All changes in direction shall be made with fittings or approved joint deflection. Bending of pipe, except copper and polyethylene, is prohibited. Joint deflection shall not exceed 75 percent of the manufacturer's recommended maximum deflection.

D. Any transition from one pipe size to another shall be made with a reducing fitting. Reducing bushings are prohibited except where specifically indicated on the Drawings or approved by the Engineer.

E. Make adequate provision for expansion and contraction of piping.

F. Trenching, bedding and backfilling shall be in accordance with Section 02320.

G. Valves shall be installed in all pipe ahead of appliances and equipment not furnished with stops, and elsewhere as required for proper control and isolation of sections of systems for maintenance purposes.

H. Minimum cover over pipe shall be 36 inches.

3.02 Concrete Cradles and Encasement

Concrete cradles and encasement shall be as indicated on the Drawings, or as directed by the Engineer. All concrete cradles and anchors shall be of Class B concrete.

3.03 Separation of Non-Potable and Potable Water Lines

A. The horizontal separation between water mains and sanitary sewer, storm sewer, wastewater force mains, stormwater force mains, reclaimed water mains and onsite sewage treatment and disposal systems shall be in accordance with the following:

1. The outside of water mains shall be a minimum of three feet from the outside of any existing or proposed storm sewer, stormwater force main, vacuum type sanitary sewer and reclaimed water main.
2. The outside of water mains shall be a minimum of six feet from the outside of any existing or proposed gravity sanitary sewer and wastewater force main. The minimum horizontal separation distance between the outside of water mains and the outside of gravity sanitary sewers can be reduced to three feet where the bottom of the water main is at least six inches above the top of the sewer.
3. The outside of water mains shall be a minimum of ten feet from all parts of any existing or proposed onsite sewage treatment and disposal system such as septic tanks, drainfields, and grease traps. Onsite sewage treatment and disposal systems do not include package sewage treatment facilities and public wastewater treatment facilities.

B. The vertical separation between water mains and sanitary and storm sewer, wastewater or stormwater force mains, and reclaimed water mains shall be in accordance with the following:

1. Wherever possible, water mains shall cross over existing or proposed gravity sanitary sewer, vacuum type sanitary sewer, and storm sewer, so the outside of the water main is at least six inches above the outside of the sewer. Where it is not possible for the water main to cross over existing or proposed gravity sanitary sewer, vacuum type sanitary sewer, and storm sewer, then the water main can cross under these types of pipeline systems provided the outside of the water main is at least 12 inches below the outside of the pipeline. At the crossing, the proposed pipe joints shall be arranged so that all water main joints are at least three feet from vacuum type sanitary sewer or storm sewer joints, and at least six feet from gravity sanitary sewer joints.
2. Wherever possible, water mains shall cross over existing or proposed reclaimed water mains, wastewater force mains and stormwater force mains. Whether the water main crosses over or under these types of pipeline systems, the outside of the water main shall be at least 12 inches from the outside of the existing or proposed reclaimed water main, wastewater force main and stormwater force main. At the crossing, the proposed pipe joints shall be arranged so that all water main joints are at least three feet from reclaimed water main joints and stormwater force main joints, and at least six feet from the joints of wastewater force mains.

C. No water main shall pass through or come in contact with any part of a sanitary sewer manhole.

D. The following are acceptable alternative construction features to be considered for cost evaluation with no guarantee they will be approved for implementation where it is not possible to meet the separation requirements. Exceptions from meeting the pipe separation requirements, without mitigation, shall be allowed only by FDEP if technical or economic justifications for each exception provided by the Engineer are acceptable to FDEP and are only to be implemented upon receipt of expressed written consent from the Engineer and approval from FDEP on a case by case basis. All possible measures to achieve compliance with the pipe separation requirements shall be considered first along with design changes to meet the requirements before the Engineer submits a justification of an exception to FDEP for approval. Implementation of these measures without the expressed written consent of the Engineer and approval by FDEP could result in the requirement that the installed unapproved measures be removed and replaced at no cost to the Owner.

1. Where a water main is less than the required minimum horizontal distance from another pipeline or where a water main crosses another pipeline and joints in the water main are less than the minimum required distance between the joints in the other pipeline:

   a. Use of pressure rated pipe conforming to AWWA standards for a gravity or vacuum type pipeline.
   b. Use of welded, fused, or otherwise restrained joints for either pipeline.
   c. Use of watertight casing pipe or concrete encasement at least four inches thick for either pipe.

2. Where a water main is less than three feet horizontally from another pipeline or where a water main crosses another pipeline less than the required minimum separation:

   a. Use of pipe or casing pipe, having high impact strength (at least equal to 0.25 inch thick ductile iron pipe), or concrete encasement at least four inches thick for the water main and for the other pipeline if the other pipeline coveys wastewater or reclaimed water.

3.04 Plugs

A. Installed piping systems shall be temporarily plugged at the end of each day's work, or other interruption to progress on a given line. Plugging shall be adequate to prevent entry of small animals or persons into the pipe or the entrance or insertion of deleterious materials.

B. Standard plugs shall be inserted into all dead-end pipes, tees, or crosses; spigot ends shall be capped; flanged and mechanical joint ends shall have blind flanges of metal.

C. Plugs installed for pressure testing shall be blind flanges fully secured and blocked to withstand the test pressure.

D. Where plugging is required because of contract division or phasing for later connection, the ends of such lines shall be equipped with a permanent type plug or blind flange. Installation or removal of such plugging shall be considered incidental to the work.

3.05 Ductile Iron Pipe

A. Mechanical joints: install according to the manufacturer's specifications. Socket and gasket shall be clean and gasket shall be properly centered before joint is made.

B. Push-On Type Joints: Remove any foreign matter in the gasket seat, wipe gasket clean, flex and place in socket. Apply thin film of lubricant to inside surface of gasket. Complete joint assembly by forcing the plain end of the entering pipe past the gasket until it makes contact with the bottom of the socket.

C. Flanged Joints: Bolt flanged joints with care so there is no restraint on the opposite end of the piece, which would prevent pressure from being evenly and uniformly applied upon the gasket. The pipe or fitting must be free to move in any direction while bolting. Gradually tighten bolts, each in turn, at a uniform rate of gasket compression around the entire flange.

3.06 O-Ring Type Push-On Joints for PVC Pipe

A. Clean the pipe end and the bell thoroughly. Insert O-Ring gasket, making certain it is properly oriented. Lubricate the spigot well with an approved lubricant; do not lubricate the bell or O-ring. Insert the spigot end of the pipe carefully into the bell until the reference mark on the spigot is flush with the bell.

B. Field cut pipe shall be beveled, have all burrs removed, and shall have a reference mark applied the correct distance from the end.

3.07 Butt Heat Fusion Joints for PE (Polyethylene) Pipe

A. Equipment for butt heat fusion joints shall be as recommended by the pipe manufacturer.

B. Carefully face pipe ends and check for squareness prior to heating ends. Apply clamps as necessary to match outside pipe end diameters. Follow the pipe manufacturer's recommendations concerning temperature, melt time, heat soak times, and joining time. Maintain joining pressure until pipe has cooled to a temperature of 150-160 degrees F. Handle pipe carefully until joint has returned to ambient temperature. Inspect all joints carefully for any irregularities; cut out and re-do all defective joints.

3.08 Socket Heat Fusion for PE (Polyethylene) Pipe

A. Equipment for socket heat fusion shall be as recommended by the pipe manufacturer.

B. Bevel the pipe end and remove burrs before making joint. Clean heating tool thoroughly and, if tool is not Teflon coated, spray with a silicone release solution. Heat tool to the temperature recommended by the pipe manufacturer. Place both pipe and fitting on the tool until the correct degree of melt is achieved. Remove pipe and fitting from the tool simultaneously and insert the pipe squarely into the fitting; do not turn pipe or fitting during insertion. Avoid any movement of the joint for 10 to 15 seconds. Handle pipe carefully until the joint has returned to ambient temperature.

3.09 Polyethylene Pipe Joining (4 Inches and Larger Pipe)

A. Joints between plain end pipes and fittings shall be made by butt fusion, and joints between the main and saddle branch fittings shall be made using saddle fusion using only procedures that are recommended by the pipe and fitting manufacturer. The Contractor shall ensure that persons making heat fusion joints have received training in the manufacturer's recommended procedure. The Contractor shall maintain records of trained personnel, and shall certify that training was received not more than 12 months before commencing construction. External and internal beads shall not be removed.

B. Upon request, the manufacturer shall provide training in the manufacturer's recommended butt fusion and saddle fusion procedures to the Contractor's installation personnel, and to inspectors representing the Owner.

C. Mechanical joints are only allowed where joining polyethylene pipe to another material. Mechanical couplings shall be fully pressure rated and fully thrust restrained such that when installed in accordance with manufacturer's recommendations, a longitudinal load applied to the mechanical coupling will cause the pipe to yield before the mechanical coupling disjoins. External joint restraints shall not be used in lieu of fully restrained mechanical couplings. Mechanical joints and flange connections shall be installed in accordance with the manufacturer's recommended procedure. Flange faces shall be centered and aligned to each other before assembling and tightening bolts. In no case shall the flange bolts be used to draw the flanges into alignment. Bolt threads shall be lubricated, and flat washers shall be fitted under the flange nuts. Bolts shall be evenly tightened according to the tightening pattern and torque step recommendations of the manufacturer. At least 1 hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and torque step recommendations of the manufacturer. The final tightening torque shall be 100 ft-lbs or less as recommended by the manufacturer.

D. Branch connections to the main shall be made with saddle fittings or tees. Polyethylene saddle fittings shall be saddled fused to the main pipe per Heat Fusion Joining.

3.10 Polyethylene Encasement Installation

A. Install polyethylene encasement in accordance with ANSI/AWWA C105/A21.5.

B. Polyethylene encasement is to be installed on all ductile iron pipe and fittings within 10 feet of gas mains.

C. Cut polyethylene to a length approximately two feet longer than the length of the pipe section. Slip around the pipe, centering it to provide a one-foot overlap and 1 foot overlay on each adjacent pipe section, bunching it accordion fashion lengthwise until it clears the pipe ends. Place a six-inch length of pressure sensitive waterproof tape at approximately three-foot intervals along the pipe length, securing the cut edge of polyethylene sheet.

D. After assembling the pipe joint, make the overlap of the polyethylene tube. Pull the bunched polyethylene from the preceding length of pipe, slip it over the end of the new length of pipe and secure in place. Then slip the end of the polyethylene from the new pipe section over the end of the first wrap until it overlaps the joint at the end of the preceding length of pipe. Secure the overlap in place. Take up the slack width to make a snug, but not tight, fit along the barrel of the pipe, securing a fold at quarter points.

E. Repair any rips, punctures, or other damage to the polyethylene with pressure sensitive waterproof tape or with a short length of polyethylene tube cut open, wrapped around the pipe, and secured in place. Proceed with installation of the next section of pipe in the same manner.

F. Where polyethylene wrapped pipe joins a pipe that is not wrapped, extend the polyethylene tube to cover the unwrapped pipe a distance of at least two feet. Secure the end with circumferential turns of tape.

3.11 Buried and Exposed Valves

A. Buried valves 6 inch diameter and larger shall be set on a foundation of solid concrete or stone not less than 8 inches thick nor less than one cubic foot in volume. Foundations shall be set on firmly compacted ground.

B. The height of the valve and its supporting foundation shall conform to the height of the connecting pipe. Valves shall be set in a vertical position, except where indicated on the Drawings or as determined in the field to require a horizontal installation as determined by the Engineer and Owner. Where valves are required to be installed in a horizontal position, provide with a bevel gear side actuator.

C. Exposed valves shall be installed in a vertical position wherever possible. Unless otherwise indicated or directed by the Engineer, valve stems shall never be below a horizontal position.

D. Open and close each valve observing full operation prior to installing successive lengths of pipe.

3.12 Air Release Valves

Air release valves shall be placed at high points of the pipeline to permit escape of trapped air. The valve size, location and method of installation shall be indicated on the Drawings or as directed by the Engineer.

3.13 Valve Boxes and Curb Boxes

A. Boxes shall rest on the valve and shall be adjusted so that the cover may be set flush with paving; in areas without paving, set the cover as directed by the Engineer. Boxes shall be set to allow equal movement above and below finish grade.

B. The base of the box shall be centered over the valve, and the top of the base section shall be approximately on line with the nut on top of the valve stem. The entire assembly shall be plumb.

3.14 Hydrants

A. Blue pavement reflectors (cat eyes) shall be placed in the centerline of the driving lane directly in front of the fire hydrant.

B. All hydrants shall be inspected in the field upon delivery to the job to insure proper operation before installation.

C. There shall be no trees, shrubs, or landscaping planted around the fire hydrants or in areas designated as fire lanes.

D. Final field location of all hydrants shall be as approved by the utility. All hydrants shall be located no less than three feet (3') and no more than eight feet (8') from back of curb of the adjacent roadway, or seven (7) feet from the edge of pavement, and no less than five (5) feet from any physical feature which may obstruct access or view of any hydrant unless otherwise approved by the utility.

E. Hydrants shall be plumb and shall be set so that the lowest hose connection is, at least, eighteen (18) inches above the surrounding finished grade.

F. Combustible construction cannot occur until proper documentation has been submitted to the local fire marshal. Documentation shall show that hydrants have been installed, tested, and are in proper working order.

G. New or relocated fire hydrants shall be located such that the underground drain (weep hole) is at least:

1. Three feet from any existing or proposed storm sewer, stormwater force main, reclaimed water main, or vacuum type sanitary sewer.

2. Six feet from any existing or proposed gravity sanitary sewer and wastewater force main.
3. Ten feet from any onsite sewage treatment and disposal system such as septic tanks, drainfields, and grease traps. Onsite sewage treatment and disposal systems do not include package sewage treatment facilities and public wastewater treatment facilities.

3.15 Line Stops

A. Line stops shall be completed while the water system is pressurized.

B. A concrete encasement shall be poured for pipe support at the point of line stop.

C. Provide additional pipe restraining in the vicinity of the line stop for preventing pipe movement due to any unbalanced forces created by the line stop.

3.16 Electronic Marker Balls

A. Electronic markers shall be furnished and installed so that a marker **will** be located at one hundred foot (100') intervals along the pipeline length. Markers shall also be placed at all valves, changes in direction, tees, or other points of connection and as directed by the Engineer.

B. Marker balls shall be placed in a position directly above the pipe and hand backfilled one foot above the ball to prevent damage or movement during subsequent backfilling. Depth of burial shall not be less than 1.5 feet nor more than 2 feet.

3.17 Installation of Identification and Warning Tape

A. Install identification tape on all pipelines. Place tape as follows:

1. 2 inch through 8 inch diameter pipe - center along top half of pipe
2. 10 inch through 18 inch diameter pipe - place along both sides of the top half of pipe
3. 20 inch diameter and larger pipe - place on both sides of top half of pipe with a third strip centered along top half of pipe

B. Place tape from joint to joint on every section of pipe.

C. Install warning tape along all pipelines. Install 2 feet above pipe, minimum of 1 foot below grade.

3.18 Locator Wire

A. Install locator wire along all pressurized pipelines 2 inch diameter and larger.

B. Terminate locator wires at top of the valve box with 12 inches of extra wire.

C. Test the locate wire for continuity and submit report documenting the continuity testing. Repair or replace locate wire at failed test locations as directed by Owner.

3.19 Testing General Requirements

A. Hydrostatic testing shall be in accordance with AWWA C600 (Ductile iron water mains), AWWA C605 (PVC water mains) and ASTM F2164 (polyethylene water mains).

B. Test procedures and method of disposal of water shall be approved by the Engineer. All tests shall be made in the presence of the Engineer and utility. Preliminary tests made by the Contractor without being observed by the Engineer will not be accepted. Notify the Engineer and the utility companies at least 48 hours before any work is to be inspected or tested.

C. All defects in piping systems shall be repaired and/or replaced and retested until acceptable. Repairs shall be made to the standard of quality specified for the entire system.

D. Sections of the system may be tested separately, but any defect which may develop in a section previously tested and accepted shall be promptly corrected and retested. Pressure tests shall be made between valves to demonstrate ability of valves to sustain pressure.

E. Provide all necessary test equipment. Increments on gages used for pressure pipe testing shall be of scaled to the nearest 1 psi. Gages, pumps, and hoses shall be in good working order with no noticeable leaks.

F. Tests for any exposed piping shall be made before covering and insulation is placed.

G. The pressure and leakage test for buried piping shall be made after all jointing operations are completed and restraints have been in place at least seven days. Lines tested before backfill is in place shall be retested after compacted backfill is placed.

H. All service connections to water mains shall be completed prior to testing.

I. Sections of piping between valves and other short sections of line may be isolated for testing. If shorter sections are tested, test plugs or bulkheads required at the ends of the test section shall be furnished and installed by Contractor, together with all anchors, braces, and other devices required to withstand the hydrostatic pressure without imposing any thrust on the pipe line. Contractor shall be solely responsible for any damage that results from the failure of test plugs or supports.

J. All items including valves and controls shall be given a thorough test. The entire system shall be operated for two days to prove compatibility of equipment and to

achieve proper adjustment for operation. Valves, pipes, tanks, and other items that are non-operating or occasional-operating shall be tested for ability to meet design criteria.

3.20 Sequence of Testing and Disinfection

A. The sequence of testing and disinfection shall be as follows:

1. Conduct pressure and leakage testing.
2. Perform flushing in accordance with Section 02955.
3. Disinfect the water main, including valves and fittings
4. Dechlorinate and flush after disinfection.

3.21 Pressure and Leakage Testing (PVC and DI Mains)

A. Piping shall be slowly filled with water and all air expelled. Care shall be taken that all air valves are installed and open in the section being filled, and that the rate of filling does not exceed the venting capacity of the air valves.

B. Apply hydrostatic test pressure of 150 psi (water mains), or 200 psi (fire mains) for 10 minutes and for such additional period necessary for the Engineer to complete the inspection of the line under test. Do not exceed pipe manufacturer's suggested time duration at the test pressure. If defects are noted, repairs shall be made and the test repeated until all parts of the line withstand the test pressure.

C. Apply leakage test pressure of 150 psi (water mains), or 200 psi (fire mains). Maintain pressure at a maximum variation of 5 percent during the entire leakage test. The duration of the leakage test shall be two hours minimum, and for such additional time necessary for the Engineer to complete inspection of the section of line under test. Leakage measurements shall not be started until a constant test pressure has been established. The line leakage shall be measured by means of a water meter installed on the supply side of the pressure pump.

D. No leakage is allowed in exposed piping, buried piping with flanged, threaded, or welded joints or buried non-potable piping in conflict with potable water lines.

E. The testing allowance shall be defined as the quantity of water that must be applied to the pipe section being tested to maintain a pressure within 5 psi of the specified hydrostatic test pressure. No installation will be accepted if the quantity of makeup water is greater than that determined by the following formula:

$$L = \frac{S \times D \times P^{0.5}}{148{,}000}$$

L = Testing Allowance (quantity of makeup water) in gallons per hour
S = Length of line being tested, in feet
D = Nominal internal diameter (in inches) of the pipe.

P = The average test pressure during the pressure test, in pounds per square inch (gauge) This actual pressure shall be determined by finding the difference between the average elevation of all tested pipe joints and the elevation of the pressure gauge and adding the difference in elevation head to the authorized test pressure.

F. All leaks shall be repaired by removing and replacing defective pipe and joints with pipe and joints free of defects, after which the lines shall be retested. Such repair and retesting shall be done until the lines pass the specified retest.

G. All apparent leaks discovered within one year from the date of final acceptance of the work by the Owner shall be located and repaired by Contractor, regardless of the total line leakage rate.

3.22 Pressure and Leakage Testing (Polyethylene Mains)

A. Conduct hydrostatic pressure testing of installed polyethylene pipe in accordance with ASTM F2164 and as indicated herein.

B. Piping shall be slowly filled with water and all air expelled. Care shall be taken that all air valves are installed and open in the section being filled, and that the rate of filling does not exceed the venting capacity of the air valves.

C. Subject pipeline to be tested to a 4 hour expansion phase prior to commencing leakage testing. Pipeline expansion shall be accomplished by applying hydrostatic test pressure of 150 psi (water mains), or 200 psi (fire mains). In order to compensate for the initial expansion of the pipeline, add sufficient make-up water at hourly intervals to return to the required test pressure. At the end of the fourth hour, the test phase is to commence.

D. At the conclusion of the fourth hour of the expansion phase, fill the pipeline again with makeup water to return to the test pressure. The test phase shall consist of a two hour or three hour pressure test, as required by the Engineer. At the end of the test phase, measure the amount of makeup water required to return to the test pressure. The pipeline passes the pressure test if the makeup water required does not exceed the following:

Nominal Pipe Size (In)	Allowable Makeup Water (Gallons / 100 Ft Of Pipeline)	
	Two Hour Test	Three Hour Test
2	0.11	0.19
4	0.25	0.4
6	0.6	0.9
8	1.0	1.5
10	1.3	2.1
12	2.3	3.4
16	3.3	5.0
18	4.3	6.5
20	5.5	8.0

Nominal Pipe Size (In)	Allowable Makeup Water (Gallons / 100 Ft Of Pipeline)	
	Two Hour Test	Three Hour Test
24	8.9	13.3
28	11.1	16.8

D. If any defects or leaks are revealed, they should be corrected and the pipeline retested after a minimum 24 hour recuperation period between tests. Total testing conducted on a section of pipeline shall not exceed 8 hours within a 24 hour period.

E. All apparent leaks discovered within one year from the date of final acceptance of the work by the Owner shall be located and repaired by Contractor, regardless of the total line leakage rate.

3.23 Fire Hydrant Testing

The Contractor shall provide a post-construction fire flow test witnessed and approved by the Engineer and the Utility. Hydrants shall deliver a minimum of 1250 gpm with a residual pressure of 20 psi.

3.24 Disinfection General Requirements

A. Disinfect all water mains, including all valves and fittings.

B. All disinfection work shall be acceptable to FDEP and the State Department of Health. If any requirements of this Section are in conflict with requirements of the authority for disinfection, those of the authority shall govern. The water main disinfection and bacteriological sampling and methods of disinfection for all water containment devices and piping systems shall conform to AWWA C651.

C. All valves and appurtenances shall be operated while the line or unit is being disinfected to insure that all surfaces of the valves are disinfected. Valves shall be manipulated to keep the strong chlorine solution and/or contaminated water from flowing into units that have been previously chlorinated and/or flushed.

3.25 Disinfection

A. Direct chlorine feed is preferred for disinfection. Use of high-test calcium hypochlorite or the tablet method of disinfection must be approved by the Engineer and must be in accordance with AWWA procedures.

B. Granular calcium hypochlorite shall be prepared as a water mixture before introduction into the unit. The dry powder shall first be made into a paste and then thinned to approximately a one percent chlorine solution. To prepare a one percent chlorine solution, add one pound of calcium hypochlorite (65-70 percent available Cl_2) to 7½ gallons of water.

C. Chlorinating agent shall be applied at the supply end of the unit being disinfected. For pipes, disinfectant shall be applied through a corporation cock installed in the top of the pipe.

D. Water shall be introduced at a controlled rate in order to regulate the chlorine dosage. The rate of chlorine mixture flow shall be proportioned to the rate of water entering the unit so the chlorine dose applied shall produce at least 25 mg/L chlorine residual after a period of 24 hours. If the total residual has decreased below 25 mg/L, the system may be required to be rechlorinated if required by the Engineer.

E. Operate valves and other appurtenances during disinfection to assure sterilizing mixture is dispersed into all parts of system being disinfected.

F. Upon approval by the Engineer and Owner, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its lengths shows upon test, a free chlorine residual of no more than 4 mg/L. The flushing activity shall be conducted in such a manner as to avoid any soil erosion or localized flooding.

G. The discharge locations for the chlorinated water shall be approved by the Owner. Neutralize the chlorine residual by means of a reducing agent in accordance with AWWA C651.

3.26 Bacteriological Sampling and Testing

A. Samples of water shall be collected by a representative of a State Certified Testing Laboratory with a representative of the Owner present.

B. Sample locations shall be along every 1200 feet of new main, plus one from each end of the line and at least one from each branch. The sample points must have a brass non-threaded smooth-nosed downward spouted hose bib mounted on a rigid stand pipe at least three feet above the finish grade. Warning tags shall be attached to each sample point.

C. After flushing, water samples collected on two successive days from the treated piping system at the approved sample points shall show acceptable bacteriological results. All bacteriological testing shall be performed by a State Certified Laboratory contracted by the Contractor. Proper chain of custody procedures must be followed and samples shall only be collected by certified laboratory personnel.

D. Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination and dechlorination procedure and bacteriological testing shall be repeated by the Contractor until satisfactory results are obtained.

E. Copies of all testing results and all related correspondence from the testing lab shall be submitted to the Engineer and Owner.

3.27 Placing the Water Main Into Service

The water main can only be placed into service once clearance is received from FDEP, followed by approval by the Utility and Owner. Remove temporary sampling points following the Owner's approval to place the water main in service. Provide a permanent cap or plug at each temporary bacteriological sampling point location.

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 02910

LANDSCAPING

PART 1 GENERAL

1.01 Section Includes

Materials, installation, maintenance of trees, ground cover, and shrubs

1.02 Related Sections

Section 02920 - Grassing

1.03 General Requirements

A. Furnish all labor, materials, equipment, and incidentals required to install trees, ground cover, and shrubs, to place accessory planting materials and to maintain and guarantee all planted areas, in areas as shown on the Drawings. All work shall be in strict adherence with sound nursery practice and shall include maintenance and watering of all the work of this Contract until final completion and acceptance by the Owner.

B. The landscaping shall be performed by a subcontractor who is fully experienced in projects of this scope and whose main business is landscaping. The subcontractor shall be subject to the approval of the Engineer.

C. Provide under this Section all landscaping appurtenances as shown on the landscaping drawings and specifications.

1.04 Submittals

A. Submit to the Engineer for approval, complete written maintenance instructions for each type of plant furnished under the Contract.

B. Submit representative samples of any or all of required accessory planting materials as ordered by the Engineer.

C. All trees, shrubs and 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.

1.05 Warranty

The life and satisfactory condition of all plant material planted shall be guaranteed by the Contractor for a minimum of one calendar year. Guarantee shall include complete

replacement with material of the same kind and size as in the original work if not in a healthy condition, as determined by the Engineer, at the end of the warranty period.

1.06 Maintenance

A. Plant material maintenance shall begin when planting operations start and shall extend until final acceptance of the work.

B. Maintain all plant materials under this Contract to the satisfaction of the Engineer. Maintenance shall include necessary watering, cultivation, weeding, pruning, spraying, tightening and repair to guy wires, removal of dead material, resetting, and other work required to conform with referenced standards and accepted nursery standards as approved.

C. Plant materials which are in a tilted or in a leaning position shall be properly righted

D. After final acceptance by the Owner and until 120 days after acceptance of all plantings, the landscaping subcontractor shall make monthly inspections of materials and report in writing to the Engineer the conditions of the plants and the necessary requirements to keep the plants in a healthy growing condition.

PART 2 PRODUCTS

2.01 Materials

A. Plant species and size shall conform to those indicated in the Plant List and in plant locations shown on the Drawings. All plants shall be Florida Grade No. 1, or better.

B. Plants shall be sound, healthy, vigorous, free from plant diseases, insects, pest, or their eggs, and shall have healthy normal root systems. Plants shall be nursery grown stock, freshly dug. No heeled in, cold storage or collected stock will be acceptable.

C. Shape and Form:

1. Plant material shall be symmetrical, typical for the variety and species, and shall conform to the measurements specified in the Plant List.
2. Plants used where symmetry is required shall be matched as nearly as possible.
3. Plants shall not be pruned prior to delivery except as authorized.
4. All plants shall have been transplanted or root pruned at least once in the past 3 years.
5. Unless otherwise noted, street trees shall be free of branches up to 6 feet, with the single leader well branched, and with straight trunks.
6. Shrubs shall have been twice transplanted, have fully developed root systems, be heavily canned with foliage to base, fulfill dimensions required, and be typical of the species.

7. Ground covers shall have sturdy fibrous root systems and shall be heavily leafed.

D. Measurement: The height and/or width of trees shall be measured from the ground or across the normal spread of branches with the plants in their normal position. The measurement shall not include the immediate terminal growth.

E. Substitutions in plant species or size shall be made only with the written approval of the Engineer.

F. Ground cover plants shall be planted in beds which receive 4 inches of approved topsoil, thoroughly disced into the soil. The finished surface, compacted and settled, shall conform generally with and at all points to the required grade. Plants shall be spaced as shown, and in accordance with the best practices of the trade.

G. Planting Soil:

1. Soil for backfilling around plants and planting beds shall be a good grade of garden loam as approved. Soil shall be free of heavy clay, coarse sand, stones, lumps, sticks or other foreign material. The soil shall not be delivered or used in a muddy condition.
2. The soil shall be taken from ground that has never been stripped. There shall be a slight acid reaction to the soil with no excess of calcium or carbonate. The soil shall be free from excess weeds or other objectionable material.
3. Soil for trees and shrubs shall be delivered in a loose, friable condition. All trees should average approximately 1 cubic yard per tree. There will be 4-inches of planting soil in ground cover areas and 1/8 cubic yard per shrub or vine.
4. No marl shall be used in ground cover planting beds.

H. Any required landscaping stone shall be inert, nonleaching material as specified on the Drawings. Provide physical samples for approval before purchase. No crushed limerock shall be used.

PART 3 EXECUTION

3.01 Planting Procedures

A. Plant Locations: All plants shall be located as shown on the Drawings, to dimensions if shown, to scale if not dimensioned. Large areas or beds shall be scaled and the plants spaced evenly. Approval by the Engineer is required before any plants are installed.

B. Tree Staking: All tree staking and bracing shall be included herein in accordance with sound nursery practice and shall generally be in accordance with the details shown. Furnish all materials required for staking and bracing as approved.

C. Tree Pits: Pits for trees shall be at least 2 feet greater in diameter than the specified diameter of the ball. Pits shall be of sufficient depth to allow a 6-inch layer of planting soil under the ball when it is set to grade. Bottom of pit shall be loosened prior to backfilling. Other specifications for tree pits shall be as shown on the plans.

D. Digging and Handling:

1. Plants shall be handled at all times so that roots or balls are adequately protected from sun or drying winds. Tops or roots of plants allowed to dry out will be rejected.
2. Balled or burlapped plants shall be moved with firm, natural balls of soil, not less than 1-foot diameter of ball to every 1-inch caliper of trunk, and a depth of not less than 2/3 of ball diameter. No plant shall be accepted when the ball of earth surrounding its roots has been cracked or broken. All trees, except palm and seedling pines, shall be dug with ball and burlapped. Root pruning shall have been done a minimum of four weeks before planting at the job.
3. Bare root plants shall be dug with spread of root and of sufficient depth to ensure full recovery of the plant.

E. When balled and burlapped plants are set, planting soil shall be carefully tamped under and around the base of the balls to prevent voids. All burlap, rope, wires, etc., shall be removed from the sides and tops of balls, but no burlap shall be pulled from underneath. Roots of bare rooted plants shall be properly spread out and planting soil carefully worked in among them.

F. Before plants are backfilled with planting soil, fertilizer tables, Agriform 20-10-5 or equal, shall be placed in each pit. Provide three tablets for each tree and one for each shrub or vine.

G. All plants shall be set straight or plumb, in locations shown on the Drawings. Except as otherwise specified, plants shall be planted in pits and shall be set at such level that, after settlement, they bear the same relation of the finished grade or surrounding ground as they bore to the grade of the soil from which they are taken.

H. Pruning shall be carefully done by experienced plantsmen. Prune immediately upon acceptance by the Owner, including any broken branches, thinning all small branches and tipping back main branches (except main leaders).

I. Excess soil and debris shall be disposed of off the project site unless ordered stockpiled by the Engineer.

3.02 Obstructions Below Ground

A. If underground construction utilities or obstructions are encountered in excavation of the planting areas, or pits, other locations for the plant material may be selected by the Engineer.

B. Such changes shall be done without additional compensation.

3.03 Tree and Plant Protection

A. The Contractor shall remove only those trees selected for removal by the Engineer. Prior to removal of said trees, the Contractor shall obtain a tree removal permit, if required. All other trees in the vicinity of the work shall be protected against damage by the Contractor until all work under the Contract has been completed.

B. Consult with the Engineer, and remove agreed-on roots and branches which interfere with construction. Employ qualified tree surgeon to remove, and to treat cuts.

C. Provide temporary barriers to the height of six feet (6-foot/0-inches), around each, or around each group of trees and plants.

D. Protect root zones of trees and plants:

1. Do not allow vehicular traffic or parking.
2. Do not store materials or products.
3. Prevent dumping of refuse or chemically injurious materials or liquids.
4. Prevent puddling or continuous running water.

E. Carefully supervise excavating, grading and filling, and subsequent construction operations, to prevent damage.

F. In case of inadvertent damage to any tree, by the Contractor or any of his subcontractors or employees, the Contractor shall provide replacement of each size tree with a new tree of acceptable type, size and quality, subject in each case to the approval of the Owner.

G. Completely remove barricades, including foundations, when construction has progressed to the point that they are no longer needed, and when approved by the Engineer.

H. Clean and repair damage caused by installation, fill and grade the areas of the site to required elevations and slopes, and clean the area.

3.04 Replacement

A. At the end of the warranty period, any plant required under this Contract that is dead or not in satisfactory growth as determined by the Engineer shall be removed. Plants replaced shall be guaranteed for 90 days after date of replacement.

B. Replacement of plants necessary during the guarantee period shall be the responsibility of the Contractor, except for possible replacements of plants

resulting from removal, vandalism, acts of neglect on the part of others, or acts of God.

C. All replacements shall be plants of the same kind and size as specified in the landscape drawings. They shall be furnished and planted as herein specified. The cost shall be the responsibility of the Contractor.

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 Common Bermuda.

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 02955

CLEANING AND FLUSHING OF UNDERGROUND PIPING

PART 1 GENERAL

1.01 Section Includes

Water transmission main flushing and cleaning.

1.02 Related Sections

A. Section 02510 - Water Distribution Systems

B. Section 02511 - Raw Water Transmission Systems

C. Section 02512 - Reclaimed Water Distribution Systems

D. Section 02535 - Sanitary Sewer Force Main Systems

1.03 References

A. American Water Works Association (AWWA) and American National Standards Institute (ANSI) latest edition:

1. AWWA C651 - Disinfecting Water Mains

1.04 Submittals

Proposed points of connection to water sources.

PART 2 PRODUCTS

2.01 Water Source For Flushing

A. The following water sources can be used for flushing of the main:

1. Existing potable water service onsite

B. Provide all temporary jumpers and taps for connecting the water source to the water main to be flushed.

C. Provide proposed tap locations to the utility for approval prior to placement of taps.

D. Potable water provided by the utility shall be metered and all meter and usage fees shall be paid by the Contractor. Where, in the determination of the utility it is

not practical to meter the flushing water, the water volume must be estimated by the Contractor by an approved methodology before the flushing begins.

PART 3 EXECUTION

3.01 General

A. The system shall be thoroughly cleaned of all material, sand, grit, gravel, stones, fluids, construction debris, and other items that can generally be construed as foreign material and that would not be found in a properly cleaned system.

B. Clean the installed water transmission main piping system by conducting a full bore flush.

3.02 Flushing of Pipeline

A. Conduct full diameter flushing of pipeline in sections in order to remove any solids or contaminated material that may have become lodged in the pipe.

B. Obtain a minimum flushing velocity of 2.5 feet per second per AWWA C651.

C. All taps required for flushing and the temporary or permanent release of air as needed for flushing shall be provided by the Contractor.

D. The following Table is from AWWA C651 (Table 3) and is provided as a guideline as to the number of taps or fire hydrant outlets needed to meet the minimum flushing rate based on 40 psi residual pressure. Note that the number of taps and hydrant connections shown is for reference only and may not address all field conditions that could result in the need for additional taps or hydrant connections in order to achieve 2.5 feet per second flow.

MINIMUM FLUSHING RATE					
Pipe Dia. (In)	Flow Rate For Flushing (GPM)	Number of Taps			Number of 2½" Fire Hydrant Outlets
		1"	1½"	2"	
4	100	1	-	-	1
6	200	-	1	-	1
8	400	-	2	1	1
10	600	-	3	2	1
12	900	-	-	3	2
16	1600	-	-	4	2
20	2500	-	-	7	4

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.

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.

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

SPECIFICATION 13000
BOAT RAMP

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 installation of the Seawall, Boat Ramp, and Docks at the North Coquina Boat Ramp facility in Bradenton Beach, Manatee County and 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: North Coquina Boat Ramp, located at 2652 Gulf Drive, Bradenton Beach, is approximately 1,200 feet south of the intersection of Gulf Drive S and 13th Street S (Section 09, Township 35 S, Range 16 E in Manatee County). The project to improve the existing North Coquina Boat Ramp will include the removal of the existing seawall, docks and boat ramp. Approximately 267 ft. of concrete seawall will be constructed, the boat ramp will be widened and replaced, and approximately 1,525 sq. ft. of accessory docks will be installed. To accomplish the additions and improvements, approximately 427 CY of material will be excavated within the expanded boat ramp and within the boat ramp approach and 4 trees will be relocated.

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 (North Coquina Boat Ramp) by Erickson Consulting Engineers, Inc. dated January 2016

B. Construction Drawings (North Coquina Boat Ramp) by Stirling and Wilbur Engineering Group, Inc., dated January 2016

C. "Geotech Exploration for North Coquina Boat Ramp, Gulf Drive, Bradenton Beach, Manatee County, Florida", Ardaman and Associates, Inc., dated February 2014

D. Topographic and Bathymetric Survey of North Coquina Boat Ramp, ZNS Engineering, dated July 2013

E. Project Permits
   1. FDEP Environmental Resource Permit (ERP) No. 41-0319897-003 (Exp. 03/11/20)
   2. Tree Removal Permit (to be obtained by Manatee County)
   3. NPDS 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)
   4. Permits for removal and Transport of Debris/Excavated Material (to be obtained by the Contractor)

F. OSHA Standards for Construction

G. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, 2015 Edition (hereafter referred to as FDOT 2015) 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 Technical Specifications 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 Contractor shall submit to the County and Engineer for approval, a Construction Work Plan at the pre-construction meeting. The Work Plan shall include at a minimum:

- Letter Appointing the Project Superintendent;
- Demolition plan for the removal of existing concrete debris;
- Specific equipment and installation procedures for each of the component parts of the Work including but not limited to the sequence, equipment, materials and methods and a listing of personnel experienced in the installation of similar Work;
- List of Sub-Contractors;
- Construction Sequencing Plan to maintain public access to and use of the site during construction as well as on-site maintenance of traffic;
- Written discussion and shop drawings describing the geometry, orientation, methods for transport and placement of material, installation methods and sequence. The drawings shall show complete dimensioned layout of all components of the Work;
- Material and equipment delivery schedules;
- Critical Path Schedule;
- Dewatering and Turbidity Control Plan;

- Details of the Contractor's Quality Control Plan for furnishing and installation of the seawall including surveys, testing, and tolerance control;
- Details of the Contractor's Environmental Protection Plan;
- Description of measures to protect existing structures and vegetation outside of the Work limits.
- All manufacturer's shop drawings, product literature, and specifications for material(s) utilized to construct the seawall and related components. Shop drawings shall give complete information necessary for fabrication of component parts of the system including the complete dimensioned layout of the seawall; and
- 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 Contractor shall submit to the County and Engineer for approval, a Site Access Plan at the pre-construction meeting. 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 (i.e., vegetation, sidewalks, barriers, fences, utilities, etc.);
- Itemized list of restoration efforts of disturbed site features; 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: 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.

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:

A. Contractor shall submit the shop drawings to Engineer for approval. The Engineer shall be allowed ten (10) working days for review and approval.

B. No materials shall be ordered until such drawings have been approved by the Engineer.

C. All materials proposed by the Contractor are subject to approval by the Engineer.

D. Approval by 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 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.

E. 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.

F. Any details not sufficiently shown on the Construction Drawings will be furnished to the Contractor by the Engineer upon request.

5.8 QA/QC PLAN:

A. The Contractor shall also prepare and submit at the pre-construction meeting, a Quality Assurance and Quality Control (QA/QC) Plan including the 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:

- Procedures, quantities, staking and surveys;
- Correct alignment and location of the seawall, docks, and boat ramp components;
- 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 layout and alignment of the seawall.

B. The Work Plan and Shop Drawings are subject to approval by the Engineer.

5.9 ENVIRONMENTAL PROTECTION PLAN: The Contractor shall submit a written Environmental protection Plan to the County and the Engineer for approval. The Environmental Protection Plan shall include, but not be limited to, the following:

- Turbidity Monitoring and Control Plan.

- Environmental monitoring plans for the protection of air, land, water resources and noise prevention.
- Procedures to be implemented in order to provide environmental protection and to comply with applicable laws and regulations. The Contractor shall provide written assurance that immediate action will be taken to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in the Environmental Protection Plan.
- The Contractor shall prepare drawings showing locations of proposed temporary excavations or embankments for haul roads, material storage areas, sanitary facilities and stockpiles of debris or spoil materials. The plan shall include the measures to be taken for flagging and marking the limits of use areas.
- The Contractor shall identify the person responsible for implementing the Environmental Protection Plan. The Contractor's responsible person shall have the responsibility and authority to act for the Contractor in all environmental protection matters and shall report directly to the Contractor's top management.

5.10 HURRICANE AND SEVERE STORM PLAN:

A. The project area is subject to tropical storms and hurricanes from June through November and to windy and rainy weather, including severe electrical storms and other sudden and locally severe meteorological occurrences during any time of the year. The Contractor shall maintain full-time monitoring of the available local marine weather broadcasts and avail themselves of such other local and international 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 operations.

B. At the pre-construction meeting, the Contractor shall submit a written Hurricane and Severe Storm Plan to the Engineer and County. The Hurricane and Severe Storm Plan shall include but not be limited to the following:
   - Types of storms anticipated (winter storm, hurricane and tornado).
   - Time intervals before storms when action will be taken and details of the actions to be taken.
   - List of the equipment to be used on the job and its ability to handle adverse weather.
   - Methods of securing equipment not to be removed.
   - Plan of evacuation to include interim measures (i.e., immediate reaction plans to be taken for all storm occurrences, particularly sudden/flash storms).

5.11 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.

5.12 ADDITIONAL PERMITS REQUIRED TO PERFORM WORK: The County has obtained joint ERP from FDEP 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, seawall and ramp structures)
- NPDES Construction Generic Permit

5.13 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 #2.04 - As-Built Survey".

6.0 CONSTRUCTION SURVEY AND STAKEOUT

6.1 LAYOUT OF WORK AND PRECONSTRUCTION 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 #2.03–Survey and Control Layout by Contractor".

7.0 PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION (WATER-SIDE WORK)

7.1 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 Standard Specification 104.

A. 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.

7.2 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 Gulf effluent discharges associated with dewatering activities meets state water quality standards. The standards for discharging water to the Gulf 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.

7.3 MEASUREMENT: Prevention, Control, Abatement of Erosion and Water Pollution shall be in accordance with FDOT Standard Specification 104.

7.4 PAYMENT: Payment for the work specified under this section shall be included in the unit price bid for "Item #2.05 – Prevention, Control, Abatement of Erosion and Water Pollution".

8.0 EXCAVATION

8.1 SCOPE: The work to be performed under this section includes all labor, equipment and performing of operations in connection with excavation of approximately 12 inches of subsurface material under the existing concrete ramp footprint, excavation within the ramp expansion footprint as shown in the Construction Drawings, and excavation near the dock structures and within the water-side boat ramp approach as shown in the Construction Drawings.

8.2 GENERAL:

A. Excavation shall be in accordance with FDOT Standard Specification 120.

B. Excavation of the water-side boat ramp approach shall be performed in accordance with the approved work plans and requirements specified herein as shown on the Construction Drawings. Excavation shall be conducted using mechanical means as approved by the Engineer.

C. 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.

D. The Contractor shall notify the County and the Engineer of any misplaced material within one (1) day of occurrence.

E. For water-side excavation, if rock, rubble or debris are encountered, the Contractor shall immediately notify the Engineer verbally. The Contractor is responsible for obtaining any additional geotechnical information that he may require to make a sound estimate before constructing the project.

F. For water-based excavation equipment, lighting shall meet all government and navigation safety requirements. The Contractor shall display lights on vessels moored within the boat ramp approach and/or nearby navigation channels.

G. Should the Contractor, during the progress of the over-water work, lose, dump, throw overboard, sink or misplace any material, equipment or appliance which, in the opinion of the Engineer, may be dangerous to or obstruct navigation or is in violation of local, state or federal laws, the Contractor shall recover and remove the same with the utmost dispatch. The Contractor shall give immediate notice, with description and location of such obstructions, to the Engineer and the County, and, when required, shall mark or buoy such obstructions until the same are removed. Should the Contractor refuse, neglect, or delay compliance with the above requirements, such obstructions may be removed by the County, and the cost of such removal may be deducted from any money due or to become due to the Contractors, or may be recovered under bond.

8.3 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.

C. All water-side boat ramp approach excavation shall be performed within the limits of the permitted channel as indicated on the Construction Drawings.

D. The Contractor shall not excavate beyond the designated horizontal and vertical limits shown on the Construction Drawings.

E. Contractor shall, have maintain and use depth recorder capable of determining the water-side excavation depths at all time for each piece of water-side excavation equipment. Vertical accuracy for water-side excavation depth monitoring shall be +/- 1.0 ft, and referenced to NAVD 88 vertical datum.

F. For water-side excavation the lower excavation limit is defined by an elevation labeled on the Drawings. To achieve these excavation limits, the sediment material may be removed and disturbed to a depth of one (1) ft below the stated excavation limit. This one (1) ft buffer zone ("overdredge allowance") is established to allow for unintentional disturbance of sediment below the excavation limit.

G. For water-side excavation, 3:1 (H:V) side slopes are assumed within the excavation limits identified in the Construction Drawings.

H. For water-side excavation, impacts to submerged aquatic vegetation (SAV), unless specifically identified in the Construction Drawings, are prohibited. The Contractor shall not moor vessels or excavate within areas where SAVs are present.

8.4 DISPOSAL:

A. 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.

B. For water-side excavation, the contractor shall convey the material from the over-water excavation area to land for disposal in the manner identified in the Engineer approved work plan.

C. Excavation material shall be cordoned off on-site for on-site re-use and/or disposal using silt fencing and within the areas identified on the Construction Drawings.

8.5 MEASUREMENT:

A. Measurement of land-based excavation shall be in accordance with FDOT Standard Specification 120.

B. The County will not pay for material excavated from areas not authorized under this Contract. Excavation in such areas is in violation of the permits for this work and may result in Contractor fines. If it is determined that the Contractor has excavated outside of the approved excavation areas (water-side and land-side) or below the allowable limit of dredging, the quantity of material excavated will be computed and subtracted from the pay quantity.

C. For water-based excavation, an acceptance or "pay" survey shall be conducted by a professional surveyor licensed in the State of Florida.

D. Water-based excavation quantity measurements shall be based on the pre-construction surveys and the post-construction surveys of the water-side excavation areas. The Contractor shall use a professional surveyor licensed in the State of Florida to establish horizontal and vertical control from the site monumentation prior to the commencement of water-base excavation activities.

E. The basis of measurement of quantities for payment shall be the comparison of the pre-construction surveys, as shown in the Construction Drawings, and the post-construction acceptance surveys of the water-based excavation areas.

F. A box cut will be allowed to achieve the 3H to 1V side slopes along the water-based excavation area provided that the amount of additional cut is equal to or greater than the amount of undercut. No payment shall be made for material dredged beyond the water-side excavation limits identified in the Construction Drawings.

8.6 PAYMENT: Work specified under this section shall be included in the unit price bid for "Item #2.46 Excavation (for Boat Ramp, Docks & Water-Side Boat Ramp Approach".

9.0 CONCRETE BOAT RAMP

9.1 SCOPE: The work performed under this section includes all labor, equipment and performing of operations in connection with installation of the cast-in-place concrete slab in accordance with the base aggregates, grades, and dimensions as shown on the Construction Drawings.

9.2 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. All work performed under this section shall confirm to Section 11 (Cast-In-Place and Pre-Cast Concrete Specifications) as identified herein.

C. 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 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.

D. Submit mix design(s) for review by the Engineer of Record a minimum of 7 days prior to initial concrete pour.

E. A mild reinforcement shall be MMFX 2 Rebar (ASTM A615 Grade 75 and ASTM A1035-04).

F. Reinforcing steel shall be detailed, fabricated, placed and supported to conform with the ACI detailing manual, ACI SP-66.

G. Minimum reinforcing steel lap splice length, unless noted otherwise on construction drawings, is 36X bar diameter.

H. 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"

I. Insert 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.

J. For ready mix concrete, the maximum time permitted between batching and depositing within the form work is 90 minutes, concrete not placed within this time limit shall be rejected.

K. 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.

L. Openings for fasteners required after concrete placement shall be installed only with the approval of the Engineer of Record.

M. Placement of concrete to be poured below water shall be coordinated with the maximum low tide possible.

N. Submit shop drawings for reinforcement detailing, bending, and placing of concrete reinforcement.

O. 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).

P. All concrete shall be wet cured for a minimum of 3 days.

Q. Provide concrete testing of concrete material confirming design strengths.

9.4 MEASUREMENT: Measurement of ramp installation shall be computed for payment based on cubic yards (CY) of steel reinforced concrete installed.

9.5 PAYMENT: Work specified under this section shall be included in the unit price bid for "Item #2.52 – Concrete, 8.25-Inch Thick, 5000 PSI (Steel Reinforced) (Ramp)".

10.0 SEAWALL

10.1 SCOPE: The work to be performed under this section includes (i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations in connection with the installation of the reinforced concrete panel seawall with filter fabric, reinforced concrete cap, steel tiebacks and deadmen as shown on the Construction Drawings and described herein.

10.2 LAYOUT OF WORK: The Construction Drawings identify stations along the seawall centerline and at each inflection point. The Contractor shall place a stake at each inflection point and at 50 ft intervals along straight sections at a minimum. The construction staking for the seawall shall be inspected and approved by the Engineer prior to commencing construction of the seawall.

10.3 GENERAL: All dimensions, other than purely structural dimensions shown on the structural drawings, must be checked against the onsite conditions. Report any discrepancies to the Engineer prior to proceeding with the work.

10.4 SHOP DRAWINGS AND SUBMITTALS:

A. At the pre-construction meeting, the Contractor shall submit to the County and Engineer for approval, product data for each type of product indicated in the specifications and the Construction Drawings. The Contractor shall submit to the County and Engineer for approval accurate shop drawings detailing all structural components as detailed in Section 11.0 (Cast-In-Place Concrete Specifications).

B. Contractor shall submit shop drawings to Engineer for approval. The Engineer shall be allowed ten (10) working days for review and approval.

C. No pre-cast concrete panels shall be ordered until such shop drawings have been approved by the Engineer.

D. Approval by 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 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.

E. 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.

F. Any details not sufficiently show on the Construction Drawings will be furnished to the Contractor by the Engineer upon request.

10.5 MATERIALS: Shall be in accordance with Section 14 (Cast-In-Place and Pre-Cast Concrete Specifications) and the Construction Drawings.

10.6 INSTALLATION:

A. The Contractor shall adhere to the following installation tolerances:

1) Concrete Sheet Pile: Out of place plumbness – 1/8" in 4"

2) Concrete Sheet Pile: In plane plumbness – interlock separation 1/2" minimum

3) Straightness of Concrete Sheet Pile Line: 1/4" in 4"

4) To of Sheet Pile Elevation: +/- 1/2"

B. The Contractor shall ascertain the location of any utilities that pass through the area in which the panels are to be driven, and shall protect same during installation of the panels.

C. The Contractor shall submit a complete list and description of seawall installation equipment at the pre-construction meeting. All equipment shall be free from defect and subject to Engineer review and approval prior to and during the placement of the concrete panels. If a piece of equipment becomes damaged or in need of repair, which, in the opinion of the Engineer, may cause damage to and/or incorrect placement of the seawall panels, the Contractor shall not use that piece of equipment or repair that piece of equipment immediately.

D. Concrete panels shall be carefully inspected and located as shown on the drawings, in accordance with approved shop drawings, driven in a plumb position and each panel shall be interlocked with adjoining panels for its entire length. The Contractor shall drive all concrete seawall panels true to line and shall provide suitable temporary guides to ensure that the panels are driven in correct

alignment. All panels shall be installed to depths shown on the drawings and shall extend to the elevations indicated for the tops of the panels.

E. Concrete panels shall be installed by approved methods in such a manner as not to subject the panels to damage and to insure proper interlocking throughout the length of the seawall.

F. The Contractor's panel installation records shall be submitted daily to the County and the Engineer as part of the Quality Control Report.

G. Installation of concrete seawall panels shall be in accordance with the Construction Drawings and Section 11.0 (Cast-In-Place and Pre-Cast Concrete Specifications). If a conflict exists, Construction Drawings shall take precedence over Technical Specifications. As part of the Work Plan, the Contractor shall provide a plan for erosion control to protect the embankment following removal of existing panels prior to installation of the new panels. The plan shall outline, at a minimum, the time lag between removal of the existing panels and installation of the new panel, methods to stabilize the embankment and the anticipated number of panels to be removed/replaced per day. The plan is to be submitted for review and approval by the Engineer and County.

10.7 REINFORCED CONCRETE CAP: The installation of the concrete cap shall be in accordance with the Construction Drawings and Section 11.0 (Cast-In-Place And Pre-Cast Concrete Specifications). Upon approval of the concrete seawall 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 panels and shall commence at either the northerly or southerly terminus and proceed in a continuous manner unless otherwise approved by the Engineer.

10.8 REINFORCED CONCRETE DEADMEN: The installation of the concrete deadmen shall be in accordance with the Construction Drawings and Section 11.0 (Cast-In-Place And Pre-Cast Concrete Specifications). Upon approval of the concrete seawall panel installation by the Engineer and County, the Contractor shall construct the concrete deadmen to the elevations and dimensions as shown on the Construction Drawings. The concrete deadmen shall be constructed concurrently with the concrete cap and shall commence at the northerly or southerly terminus and proceed in a continuous manner unless otherwise approved by the Engineer.

10.9 STEEL TIEBACK:

A. INSTALLATION: Upon approval of the concrete seawall panel installation by the Engineer and County, the Contractor shall install the steel tiebacks to the elevations and dimensions as shown on the Construction Drawings. The steel tiebacks shall be constructed concurrently with the concrete cap and the concrete deadmen and shall proceed in a continuous manner unless otherwise approved by the Engineer.

B. MATERIAL: The tieback shall be new 304 S.S. (65 ksi min allowable yield) manufactured to the diameter and constructed to the dimensions and lines shown on the Construction Drawings.

C. CONDUIT: Each tieback shall be enclosed in Type I, Grade I, Schedule 40 PVC conduit conforming to Section 948 of FDOT "Standard Specifications for Road & Bridge Construction, 2015" as shown in the Construction Drawings. Grease used to coat the tieback rod shall meet the requirements of Section 3.2.5 of the Post Tensioning Institute Specification for Unbounded Single Strand Tendons per Section Section 451 of FDOT "Standard Specifications for Road & Bridge Construction, 2015".

10.10 P-T COATING:

A. The Contractor shall comply with Post Tensioning Institute (PTI) Specification for Unbonded Single Strand Tendons, Section 2.4 (Second Edition, December 2000).

B. P-T Coating – Material used to protect against corrosion and reduce friction between pre-stressing steel and sheathing.

C. The P-T Coating shall have the following properties:
- Provide corrosion Protection to the pre-stressing steel;
- Provide lubrication between the strand and sheathing;
- Resist flow within anticipated temperature range of exposure;
- Provide continuous non-brittle coating at lowest anticipated temperature of exposure;
- Be chemically stable and nonreactive with pre-stressing steel, reinforcing steel, sheathing material and concrete.

D. The P-T coating shall be a compound with appropriate moisture displacing and corrosion inhibiting properties as specified in PTI Specification for Unbonded Single Strand Tendons, Section 2.4.4 (Second Edition, December 2000).

E. The minimum weight of the P-T coating on the pre-stressing strand shall be no less than 2.5 lb (1.14 kg) per 100 ft (30.5 m) for 0.5 in (12.7 mm) diameter strand, and 3.0 lb (1.36 kg) per 100 ft (30.5 m) for 0.6 in (15.25 mm) diameter strand. Minimum coating weights for other strand sizes may be determined by linear extrapolation. The coating material shall completely fill the annular space between the strand and sheathing. The coating shall extend over the entire tendon length.

F. The P-T Coating shall satisfy the requirements listed in Table 1 of PTI Specification for Unbonded Single Strand Tendons, Section 2.4 (Second Edition, December 2000).

10.11 SEAWALL AS-BUILT DRAWINGS:

A. Red-lined as-built drawings must be maintained onsite at all times denoting the seawall components installed to-date.

B. The Contractor shall be required to submit a certified as-built drawing upon project completion showing the topography and positions of all seawall components installed. A plan view along with profiles at each cross-section shown on the Construction Drawings shall be provided. The as-built drawing shall be submitted on 24x36 inch sheets to a scale approved by the Engineer. The Contractor shall be required to submit four (4) certified hard-copies of the as-built drawing in addition to the electronic CAD file in .dwg format.

10.12 MEASUREMENT: The total installed concrete seawall shall be computed for payment based on linear feet of install concrete panel seawall, concrete cap, tieback and deadmen, as defined in the Construction Drawings.

10.13 PAYMENT: Work specified under this section shall be included in the unit price bid for "Item #2.47 – Concrete Seawall Panel (Including Concrete Cap, Geotextile)", "Item #2.49 – South Seawall Concrete Deadman, 10-Inch Thick, 3000 PSI (for Seawall)", "Item #2.50 – North Seawall Concrete Deadman, 10-Inch Thick, 3000 PSI (for Seawall)", "Item #2.51 – Steel Tieback System (304 SS Bar in PVC Conduit) (for Seawall)" and "Item #2.54 – Concrete Panel (at Base of Ramp)" .

11.0 CAST-IN-PLACE AND PRE-CAST CONCRETE SPECIFICATIONS

11.1 SUMMARY:

A. This Section specifies cast-in place and pre-cast concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1) Concrete Wall Cap;

2) Concrete Wall Panels; and

3) Deadmen.

11.2 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.

11.3 SUBMITTALS:

A. Product Data: For each type of product indicated.

B. 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.

C. 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.

D. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

E. Material Test Reports: Required for aggregates, from a qualified testing agency, indicating compliance with the requirements specified on 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.

H. Minutes of preinstallation conference.

11.4 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.

F. Preinstallation Conference:

1) Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

- Contractor's superintendent;

- Independent testing agency responsible for concrete design mixtures;
- Ready-mix concrete manufacturer; and
- Concrete subcontractor.

2) Review curing procedures, construction contraction and isolation joints, and joint-filler strips, forms and form removal limitations, steel reinforcement installation, concrete repair procedures, and concrete protection.

11.5 DELIVERY, STORAGE, AND HANDLING: For steel reinforcement, deliver, store, and handle steel reinforcement to prevent bending and damage.

11.6 MANUFACTURERS:

A. In other articles under Section 11.0 where titles below introduce lists, the following requirements apply to product selection:

1) Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2) Products: Subject to compliance with requirement, provide one of the products specified.

3) Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

4) Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

11.7 FORM-FACING MATERIALS

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.

2. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

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.

   1) Formulate form-release agent with rust inhibitor for steel form-facing materials.

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.

   1) Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.

   2) Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.

11.8 STEEL REINFORCEMENT

1) Reinforcing Bars: All mild reinforcement shall be MMFX 2 rebar (ASTM A615, Grade 75 and ASTM A1035-04).

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.

3) Reinforcing steel shall be detailed, fabricated, placed and supported to conform with the ACI Detailing Manual. ACI SP-66.

4) Minimum reinforcing steel lap splice length, unless otherwise noted, is 36X bar diameter.

11.9 REINFORCEMENT ACCESSORIES

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:

2) For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 2 stainless-steel bar supports.

11.10 CONCRETE MATERIALS

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

2) 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 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.

3) Submit mix design(s) for review by the engineer of record a mini9mum of 7 days prior to initial concrete pour.

4) Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

    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.

5) Silica Fume: ASTM C 1240, amorphous silica.

6) 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.

    1) Maximum Coarse-Aggregate Size: 3/4 inch nominal.

    2) Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

7) Water: ASTM C 94 and potable.

11.11 ADMIXTURES

1) Air-Entraining Admixture: ASTM C 260.

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.

    1) Water-Reducing Admixture: ASTM C 494/C 494M, Type A.

    2) Retarding Admixture: ASTM C 494/C 494M, Type B.

    3) Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

    4) High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

    5) High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.

    6) Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

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.

    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.

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.

11.12 CURING MATERIALS

1) Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

2) Water: Potable.

11.13 RELATED MATERIALS

1) Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

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:

3) Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

11.14 REPAIR MATERIALS

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.

- Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

- Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.

- Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.

- Compressive Strength: Not less than 4000 psi at 28 days when tested according to ASTM C 109/C 109M.

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.

- Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.

- Primer: Product of topping manufacturer recommended for substrate, conditions, and application.

- Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.

- Compressive Strength: Not less than **5000 psi for concrete ramp, concrete seawall panels and associated cap** and not less than **3000 psi for concrete deadmen** (seawall tieback system) at 28 days when tested according to ASTM C 109/C 109M.

11.15 CONCRETE MIXTURES, GENERAL

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.

   - Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

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.

3) Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

4) Admixtures: Use admixtures according to manufacturer's written instructions.

   - Use high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

   - Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

   - 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.

   - Use corrosion-inhibiting admixture in concrete mixtures where indicated.

11.16 CONCRETE MIXTURES FOR BUILDING ELEMENTS: See plan notes for specific mixtures.

11.17 FABRICATING REINFORCEMENT: Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

11.18 CONCRETE MIXING

1) Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information.

   - 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.

11.19 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.

11.20 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.

11.21 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.

11.22 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.

11.23 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.

C. 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.

D. 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.

E. 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.

F. 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.

G. 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.

H. 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"

I. Inserts, sleeves, conduits, fasteners, etc., where required by the construction documents, shall be install 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.

J. 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.

K. 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.

L. Openings for fasteners required after concrete placement shall be installed only with the approval of the engineer.

M. Placement of concrete to be poured below water shall be coordinated with maximum low tide possible.

N. Submit shop drawings for reinforcement detailing, bending, and placing of concrete reinforcement.

O. 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).

P. All concrete shall be wet cured for a minimum of 3 days.

Q. Provide concrete testing of concrete material confirming design strengths.

11.24 FINISHING FORMED SURFACES

A. 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.

1) Apply to concrete surfaces exposed to public view.

11.25 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.

11.26 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.

11.27 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.

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.

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.

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.

11.28 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:
1) Steel reinforcement placement.
2) Steel reinforcement welding.
3) Headed bolts and studs.
4) Verification of use of required design mixture.
5) Concrete placement, including conveying and depositing.
6) Curing procedures and maintenance of curing temperature.
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.

11.29 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.

12.0 GEOTEXTILE FILTER FABRIC MATERIAL AND INSTALLATION

12.1 SCOPE:

A. The work to be performed under this section includes (i) furnishing all labor, equipment, supplies and material; and (ii) of performing all operations in connection with the installation of the geotextile filter fabric as shown on the Construction Drawings and described herein. The work to be performed under this section includes the procurement and installation of filter fabric to the lines shown on the Construction Drawings

B. The Contractor shall not be permitted to commence installation of filter fabric until receipt of the Engineer's final approval of the seawall panels and reinforced concrete cap construction.

12.2 SUBMITTAL: Contractor to provide shop drawings for Engineer approval indicating method for filter fabric tie-in to seawall structure.

12.3 MATERIAL:

A. The plastic filter fabric (geotextile) shall be a woven fabric that will allow the passage of water and conform to FDOT Section 985 and Index No. 199 Design Standards for Mechanical Stabilized Retaining Walls, US 203 (Woven).

B. Unless restricted in the plans or specifications, the geotextile fabric shall be a woven fabric consisting of long-chain polymeric filaments or yarns such as polypropylene, polyethylene, polyester, polyamides or polyvinylidene chloride formed into a stable network such that the filaments or yarns retain their relative position to each other. The base plastic shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration due to ultra-violet light (except for subsurface and stabilization classification), heat exposure and potential chemically damaging environment. The fabric shall be free of any treatment which may significantly alter its physical properties. The edges of the fabric shall be selvaged or otherwise finished to prevent the outer yarn from pulling away from the fabric. The fabric shall meet the physical requirements specified in the Construction Drawings.

C. Overlaps of filter fabric material shall be 5 ft minimum or as specified in the Construction Drawings.

12.4 DELIVERY, STORAGE AND HANDLING:

A. Geotextiles labeling, shipment, and storage shall follow ASTM D4873. Product labels shall clearly show the manufacturer or supplier name, style name, and roll number.

B. Each geotextile roll shall be wrapped with a material that will protect the geotextile from damage due to shipment, water, sunlight, and contaminants.

C. During storage, geotextile rolls shall be elevated off the ground and adequately covered to protect them from the following: site construction damage, precipitation, extended ultraviolet radiation including sunlight, chemicals that are strong acids or strong bases, flames including welding sparks, excess temperatures, and any other environmental conditions that may damage the physical property values of the geotextile.

12.5 INSTALLATION:

A. Place the fabric in the manner and locations as shown on the construction drawings, in accordance with the manufacturer's directions, and as specified in these Specifications. Place the fabric on areas with an uniform slope that are reasonably smooth, free from mounds and windrows, and free of any debris or projections which might damage the fabric.

B. Loosely lay the material. Do not stretch the material. Replace or repair any fabric damaged or displaced before or during placement of overlying layers to the satisfaction of the Engineer and at no expense to the County.

C. Schedule work so that covering the fabric with the specified material does not exceed the manufacturer's recommendations for exposure to ultraviolet light or five days, whichever is less. If the Engineer determines the exposure time was exceeded, the Contractor shall replace the fabric at no expense to the County.

D. Subsurface Drainage: Place the fabric to provide a minimum 10 foot overlap at each joint, as shown on the construction drawings. Do not drop the filter material from heights greater than 3 feet.

E. Stabilization and Reinforcement: Overlap adjacent strips of fabric a minimum of 2 feet or as specified on the construction drawings.

12.6 MEASUREMENT: The quantities of geotextile material installed shall be computed for payment based on square yard of installed geotextile material including seams, overlaps, and wastage.

12.7 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 IMPORTED FILL (#250 SAND AND #57 STONE AGGREGATE)

13.1 SCOPE:

11.29.1 The work to be performed under this section includes (i) furnishing all labor, equipment, supplies and material; and (ii) of performing all operations in connection with the importation, placement, and grading of fill as shown on the Construction Drawings and described herein. The work to be performed under this section includes the procurement, transportation and placement of #250 sand and #57 stone aggregate to the lines and grades shown on the Construction Drawings.

11.29.2 The Contractor shall not be permitted to commence imported fill activities until receipt of the Engineer's final approval of the seawall panels and reinforced concrete cap construction.

13.2 MATERIAL (#250 SAND):

A. The Contractor is required to provide debris and rock-free #250 sand. The material shall be clean, washed, non-organic, cohesion-less, free of deleterious substances, and free of elongated or flat particles which are susceptible to degradation.

B. The source of sand shall be proposed by the Contractor and approved by the Engineer to ensure compliance with these specifications.

C. The fill material used for the project shall be stockpiled and cordoned off at the sand mine prior to transport to the project site. The Engineer shall perform periodic visual assessments and quantitative laboratory testing on samples at the mine and at the project site to ensure compliance with the sand criteria as outlined herein. The Engineer's presence at the sand mine and/or the project site do not relieve the Contractor of the responsibility to provide material in accordance with these specifications.

D. Excess sand or sand not meeting the sediment criteria outlined herein will not be paid for and shall be removed from the site at the Contractor's expense.

13.3 MATERIAL (#57 STONE): Bedding stone for concrete ramp shall be #57 coarse aggregate stone or other material approved by the Engineer.

13.4 PLACEMENT OF FILL:

A. All fill (sand and stone) shall be transported to and deposited within the lines, grades, and cross-sections shown on the Construction Drawings. The Contractor shall stake the layout of fill placement for approval by the Engineer prior to commencement of fill placement.

B. The Engineer reserves the right to vary the extents or grade of the fill from the lines and grades shown on the Construction Drawings due to changes in site conditions.

C. Prior to placement of fill, the Contractor shall remove from the Work site all trash, snags, 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 at the expense of the Contractor.

D. The Contractor shall place a minimum of 12" of #250 sand landward of the newly constructed seawall in all locations.

E. The maximum vertical tolerance above the template is +0.25 ft with no lower vertical tolerance. Any material placed above this tolerance may be left in place at the discretion of the Engineer. The Contractor will not be paid for more than one hundred and five percent (105%) of the required material volume unless otherwise directed by the Engineer.

F. Sand shall be compacted to a minimum of 95% standard proctor compaction rate.

G. If any fill material is deposited other than in places designated or approved, the Contractor may be required to remove such misplaced material and redeposit it as directed by the Engineer or County, at the Contractor's expense.

13.5 AS-BUILT SURVEYS AND DRAWINGS: The Contractor shall be responsible for performing a post-construction (as-built) survey following the fill placement activities. The post-construction survey shall be performed at each cross-section provided in the Construction Plans. The profile surveys shall be conducted using differential leveling techniques and extend a minimum of 20 ft beyond the fill extents and as directed by the Engineer. All topographic features shall be detailed by the surveys including the seawall, top of slope, bottom of slope, and concrete slabs/concrete sidewalks. On smoothly sloping sections, a maximum of approximately 1 ft vertical difference is allowable between adjacent points. All level loops shall close to within 0.05 ft. All profiles shall be measured along the azimuths specified on the Construction Drawings.

13.6 MEASUREMENT: The quantity of imported fill shall be computed on the basis of cubic yards of material placed and compacted as identified in the Construction Drawings.

13.7 PAYMENT: Work specified under this section shall be included in the unit price bid for "Item #2.48 – Fill, Clean (behind Seawall)" and "Item #2.53 - Aggregate, 12-Inch Thick, #57 Stone (Below Ramp)".

14 DOCKS, GANGWAY AND ASSOCIATED HANDRAILS

14.1 SCOPE:

A. The work to be performed under this section includes (i) furnishing all labor, equipment, supplies and material; and (ii) performing all operations connection with construction and installation of a pressure treated dock structure with composite decking, a pre-manufactured aluminum floating dock, and an aluminum ramp (gangway) with handrail as shown in the Construction Drawings.

B. The Contractor shall not be permitted to commence pressure treated dock, aluminum floating dock, aluminum handrail or aluminum ramp installation activities until receipt of the Engineer's final approval of the seawall panels and reinforced concrete cap construction.

14.2 PRESSURE TREATED DOCK STRUCTURE WITH COMPOSITE DECKING:

A. MATERIAL:

1. The piles shall be precast pre-stressed concrete piles manufactured to the dimensions as shown in the Construction drawings.

2. The framing, including the stringers, bracing, blocking and headers for the stationary dock structures shall be made of Pressure Treated Southern Pine and constructed to the dimensions as shown on the Construction Drawings.
3. The composite decking shall be Lumberlock decking with the dimensions shown on the Construction Drawings.
4. Connections, materials and workmanship shall be in strict accordance with Chapter 17, Wood Construction, of the most recent standard building code and the Timber Construction Manual by the National Forest Products Association (NFPA) or Southern Pine Inspection Bureau (SPIB). Moisture content shall not be more than 19% at the time of incorporation into structure.
5. All stringer material shall be #1 southern pine framing (unless noted otherwise), as described in the SPIB grading rules.
6. All reference standards for wood product treatments shall be the latest published version unless otherwise specified
7. Process for preservative treatment shall be in conformance with the American Wood Preserver's Association (AWPA) Standards C2-90, C9-91, and C18-91.
8. The purchase, inspection, and handling of all new wood material shall be in conformance with the applicable sections of the AWPA Standards M1, M2, and M4, Latest Edition.
9. The Contractor shall provide a letter(s) from an experienced inspector(s) qualified in the respective field, that the wood products, preservatives, and treatment meet the specifications and that the methods and facilities of the production conform to the applicable AWPA Standards of recommended practice.
10. An inspector's tag/stamp shall be required on each piece of accepted material when said material arrives on site. The tag/stamp shall be placed on those pieces conforming to all stages of processing. The inspection tag/stamp shall remain on material, as a minimum, until Engineer of Record has verified material.
11. Step-by-step work sheets are required for use in recording preservative analysis and retention assays. Refer to Section 7.0 of AWPA Standard M2 for more information.
12. All comments within the AWPA standards stated as an option shall be interpreted by the Contractor as a specific requirement of these documents.
13. Brands shall be in accordance with AWPA M6 and shall be placed clearly and permanently on each stringer. Members shall be branded at a minimum of 6'-0" on center.
14. Treated material shall not be dragged along the ground.
15. Prior to use, treated material shall be stacked on treated or non-decaying skids of such dimensions and so arranged as to support the material without producing noticeable distortion.
16. All treated material shall be stockpiled in such a manner so that there is air space beneath the material.
17. Storage areas shall be free of debris, decayed wood or dry vegetation (fire hazard) and shall have sufficient drainage to prevent wood products from being subjected to standing water.
18. All cuts, holes, and injuries of the surface of treated material shall be field-protected by thoroughly saturating all areas with a field-treating solution prior to erection and placement of fasteners.
19. Copper naphtenate solutions shall be used as field treatments. The preservative solution shall be prepared by blending copper naphtenate preservative meeting AWPA Standard P9. The solution shall contain a minimum of 2% copper metal.

20. All unused bore holes and nail holes shall be poured full of preservative and plugged with tight-fitting treated plugs of the same material.
21. All dimensions shown on the plan shall be field verified prior to fabrication/erection.
22. All fastener holes shall be pre-drilled and treated prior to installation of fasteners.

B. PRESSURE TREATED DOCK STRUCTURE INSTALLATION:

1. Install the concrete piles to the lines, spacing and elevations provided in the Construction Drawings. The deck framing shall be constructed of Pressure Treated Southern Pine to the elevations and lines shown on the Construction Drawings. The dock shall be constructed using hardware/fasteners of type and size shown on the Construction Drawings. Voids shall be created in the precast concrete piles to accommodate thru-bolts shall be filled with a urethane sealant.
2. Contractor shall submit complete details and specifications of the proposed piles and a written statement describing the equipment to be used to the Engineer for review.
3. Install piles to depth as shown on the Construction Drawings.
4. A representative from Ardaman and Associates shall be present during pile installation to provide the necessary engineering documentation of pile capacities. No structural concrete shall be poured at piles where documentation has not been submitted to the structural engineer for review.
5. The Contractor shall adhere to the following installation tolerances:
   a) Concrete Pile: Out of plane plumbness = 1/8" in 4'.
   b) Concrete Pile: In plane plumbness – interlock separation = ½" maximum
   c) Straightness of Concrete Line = 1/4" in 4'.
   d) Top of Pile Elevation = +/- 1/2".

14.3 ALUMINUM FLOATING DOCK:

A. DESCRIPTION: Aluminum floating dock structure shall be 5 ft wide by 25 ft long. The Contractor shall furnish all labor, materials, equipment, transportation and incidentals required to procure, assemble and install the aluminum gangway complete, as shown on the Construction Drawings, to include bolts, nuts, washers, hinges and any and all other hardware required to construct and install the floating dock structure in accordance with these specifications and as shown on the Construction Drawings.

B. SUBMITTALS: Contractor shall submit the manufacturer's product data sheets and shop drawings to the Engineer of Record for review and approval prior to installation.

C. FREEBOARD:

1. Floating docks shall provide the freeboard under the loading conditions listed below, with no more than 1" loss of freeboard after one year of service.
2. (DL Condition) Floatation shall maintain a freeboard of 24" under combined dock dead load and supported gangway dead load.
3. (DL + ULL Condition) Floatation shall maintain a minimum freeboard of 12" under the dead load condition plus a 50 PSF uniformly distributed dock live load and a supported gangway live load of 50 PSF.
4. Dock shall provide the necessary floatation without coming into contact with the mud-line during MLW as indicated on the plans.
5. The floatation units shall be designed to maintain their desired buoyance and freeboard even

if structurally damaged.

D. Dock modules shall be designed so the section will neither rack nor twist in torsion under extreme design conditions. This system shall allow easy connection and disconnection between individual dock modules with two independent hinges per joint no greater than ¼ the dock width. Hinges shall be pinned using a bolt and lock nut.

E. MATERIALS:
1. The frame shall be aluminum TG/MIG welded by AWS certified welders.
2. The material shall be 6061 T6 & 6063 T52 aluminum components.
3. Decking shall be aluminum cross knurled and slip resistant.
4. Floatation shall be encasement type with EPS foam fill and shall meet or exceed industry standards.
5. Floatation shall have a minimum 50 PSF load capability for buoyance.
6. All applicable fasteners shall be stainless steel.
7. Full length 'D' shaped rub rails shall be installed continuously around the exterior upper edge of the floating dock structure. Fender strips shall be black vinyl with ultraviolet inhibitors.
8. Cleats shall be aluminum alloy 10" 'S' type and shall be thru bolted.
9. Pile guides shall be fabricated from steel conforming to ASTM A36 and shall be hot-dip galvanized after fabrication with a minimum coating of 2 ounces per square foot. Guides for piles shall be roller type.
10. Floating dock units shall be so designed and constructed to prevent deterioration from petroleum products and detergents.

F. UTILITIES: Provisions shall be made for carriage of domestic fresh water and electrical utilities through raceways under the deck.

G. INSTALLATION:
1. Floating dock units shall be carefully unloaded and kept in orderly piles or stacks until launched in water.
2. The main walkway shall be securely tied to avoid wind damage until permanent connections to piles are made.
3. Wherever possible, parts shall be mounted so that they can be removed and replaced without interference from, injury to, or removal of other parts.
4. The Contractor shall provide a qualified representative at the job site during the assembly, installation, and anchorage of the floating modular units.

H. SYSTEM GUARANTEE: If the system is maintained in accordance with the operation and maintenance manual to be provided by the Contractor it shall be guaranteed by the Contractor for workmanship and materials for a one-year period from the date of the completion installation and shall be also guaranteed to perform without damage against a documented storm wave of up to 4.63 feet in height. The Contractor will submit to the County a certificate stamped by a notary public licensed in the State of Florida certifying the system is in accordance with these requirements.

14.4 ALUMINUM GANGWAY WITH HANDRAIL:

A. DESCRIPTION: Aluminum gangway shall be 5 ft wide by 20 ft long, leading from the stationary, pressure treated dock structure to the aluminum floating dock. The Contractor shall furnish all labor,

materials, equipment, transportation and incidentals required to procure, assemble and install the aluminum gangway complete, as shown on the Construction Drawings, to include bolts, nuts, washers, hinges and any and all other hardware required to construct the gangway ramp in accordance with these specifications and as shown on the Construction Drawings.

B. SUBMITTALS: Contractor shall submit the manufacturer's product data sheets and shop drawings to the Engineer of Record for review and approval prior to installation.

C. DESIGN REQUIREMENTS:

1. The aluminum gangway shall be designed to meet the following criteria:
   a) Live Load – The gangway shall be capable of sustaining a minimum uniformly distributed live load of 50 pounds per square foot (psf).
   b) Deflection – The gangway shall be limited to a maximum deflection of L/240.
   c) Handrails shall conform to the standards set forth in ASCE 7-02 4.4.2.
   d) Truss elements of the gangway shall be situated such that the angle from the vertical is limited to no less than 30 degrees and no more than 35 degrees.
   e) All gangways shall be constructed using similar shaped members; rectangular tubes for the bottom chords, and round tubes for the top chords and truss elements; none shall exceed 1.2 in. thickness. The diameter of round tubes shall not exceed 5 in.
   f) The gangway shall be ADA compliant, to include, but not limited to, the following requirements:
      i. Edge protection shall be installed at the based of the waling surface along each rail. The protection shall be no less than 4 in. in height and shall not interfere with the walking surface itself. Refer to ADAAG (Americans with Disabilities Act Accessibility Guidelines) Section 405.9.1 or 405.9.2 for additional details.
      ii. Barriers to protect the safety of disabled passengers and service animals shall be installed along the length of the gangway railings in the form of cable and fork connections. The cable shall be installed in accordance with the Contract Documents and tensioned to 800 lb.
      iii. The decking design shall ensure that no water will accumulate on walking surfaces. Opening in the deck shall be perpendicular to the walking surface, and decking shall be slip resistant.
      iv. Transition plates from the gangway to the surface shall be designed for a minimum of 100 psf and the leading edge shall not extend more than 1.4 in. from the deck. Any transition plate specified in the Construction Drawings that is greater than 24 in. long shall have edge protection.
2. The manufacturer shall fabricate the gangways to the sizes specified within the Construction Drawings. Specifically, the dimensions and structural members noted as "exact" shall be used in the design and fabrication of the ramp. These dimensions are required to meet criteria independent of the gangways for transitions, and structural recesses. Any conflicts between the Construction Documents and the fabricator's design intent shall be rectified with the Engineer prior to producing shop drawings. The remainder of the structural members that are not labeled "exact" may be adjusted in accordance with the fabricator's practice.

D. MATERIALS:

1. The frame shall be aluminum TG/MIG welded by AWS certified welders.

2. The material shall be 6061 T6 & 6063 T52 aluminum components.
3. Decking shall be aluminum cross knurled and slip resistant.
4. Connection shall be full length piano type hinge with bulkhead attachment plate.
5. Aluminum railing shall be truss type.
6. UHMW rollers shall be installed at the floating dock connection.
7. All applicable fasteners shall be stainless steel.

14.5 MEASUREMENT: The aluminum dock, gangway and associated handrails shall be computed for payment based on the number of pre-fabricated units installed of each as specified in the Construction Drawings.

14.6 PAYMENT: Work specified under this section shall be included in the unit price bid for "Item #2.55 – Wood Dock (5 ft Wide – Timber Frame Structure with Composite Decking", "Item #2.56 – Floating Dock, Aluminum (including 4' x 20' Gangway, 5' x 25' Floating Dock, and Handrail)", and "Item #2.57 – Concrete Pile, Pre-stressed 12-inch x 12-inch, 5000 PSI (for Dock)".

15.0 ENVIRONMENTAL PROTECTION

15.1 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.

15.2 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 any 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.

15.3 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.

15.4 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.

15.5 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.

15.6 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.

15.7 EROSION, DEWATERING AND TURBIDITY CONTROL: Dewatering and the control of water shall be in accordance with Section 7.0 of these Specifications.

15.8 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.

15.9 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.

15.10 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.

15.11 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.

15.12 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.

15.13 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.

15.14 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.

15.15 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.

15.16 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.

15.17 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.

15.18 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.

15.19 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.

15.20 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.

END OF SECTION

APPENDIX A

Geotechnical Data

- Ardaman & Associates, Inc.
  Report Dated February 12, 2014

GEOTECH EXPLORATION FOR
"NORTH COQUINA BOAT RAMP"
GULF DRIVE,
BRADENTON BEACH,
MANATEE COUNTY, FLORIDA

Ardaman & Associates, Inc.

OFFICES

FLORIDA

Orlando, 8008 S. Orange Avenue, Orlando, Florida 32809, Phone (407) 855-3860
Bartow, 1525 Centennial Drive, Bartow, Florida 33830, Phone (863) 533-0858
Cocoa, 1300 N. Cocoa Boulevard, Cocoa, Florida 32922, Phone (321) 632-2503
Fort Myers, 9970 Bavaria Road, Fort Myers, Florida 33913, Phone (239) 768-6600
Miami, 2608 W. 84th Street, Hialeah, Florida, 33016, Phone (305) 825-2683
Port St. Lucie, 460 NW Concourse Place, Unit #1, Port St. Lucie, Florida 34986-2248, Phone (772) 878-0072
Sarasota, 78 Sarasota Center Boulevard, Sarasota, Florida 34240, Phone (941) 922-3526
Tallahassee, 3175 West Tharpe Street, Tallahassee, Florida 32303, Phone (850) 576-6131
Tampa, 3925 Coconut Palm Drive, Suite 115, Tampa, Florida 33619, Phone (813) 620-3389
West Palm Beach, 2511 Westgate Avenue, Suite 10, West Palm Beach, Florida 33409, Phone (561) 687-8200

LOUISIANA

Alexandria, 3609 MacLee Drive, Alexandria, Louisiana 71302, Phone (318) 443-2888
Baton Rouge, 316 Highlandia Drive, Baton Rouge, Louisiana 70810, Phone (225) 752-4790
Monroe, 1122 Hayes Street, Monroe, Louisiana 71292, Phone (318) 387-4103
New Orleans, 1305 Distributors Row, Suite 1, Jefferson, Louisiana 70123, Phone (504) 835-2593
Shreveport, 7222 Greenwood Road, Shreveport, Louisiana 71119, Phone (318) 636-3723

MEMBERS:
A.S.F.E.
American Concrete Institute
American Society for Testing and Materials
Florida Institute of Consulting Engineers

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

February 12, 2014
File No. 11-7419

TO: CPH Engineers, Inc.
3277A Fruitville Road, Suite 2
Sarasota, FL 34237-6410

Attention: Joshua Bryant, P.E.

SUBJECT: Geotechnical Exploration for "North Coquina Boat Ramp," Gulf Drive, Bradenton Beach, Manatee County, Florida

---

Dear Mr. Bryant:

As authorized by your Purchase Order No. 4793, our firm has completed explorations and analysis of the subsurface soil and water table conditions at the subject site. This report will present the results of our exploration and our recommendations.

This report was prepared for the exclusive use of CPH Engineers, Inc., and their consultants, for specific application to the subject site, in accordance with generally-accepted engineering practices.

We appreciate the opportunity to be of your service. Please contact our office when we may be of further service or should you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.
Certificate of Authorization No. 5950

2/12/14

Jerry H. Kuehn, P.E.
Senior Project Engineer
Fl License. No. 35557

Gary H. Schmidt, P.E.
Vice President
Fl License No. 12305

JHK/GHS:ly

78 Sarasota Center Boulevard, Sarasota, Florida 34240 Phone (941) 922-3526 FAX (941) 922-6743
Louisiana: Alexandria, Baton Rouge, Monroe, New Orleans, Shreveport
Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, W. Palm Beach

TABLE OF CONTENTS

1.0 SCOPE 1

2.0 FIELD EXPLORATION 1
- 2.1 Subsurface Soil Borings 1
- 2.2 Permeability Tests 2

3.0 LABORATORY TESTING 2

4.0 HYDROLOGIC LITERATURE REVIEW 2
- 4.1 Water Table Definitions 2
- 4.2 Review of USDA-NRCS Soil Survey 4

5.0 ANALYSES AND RECOMMENDATIONS 5
- 5.1 Building Foundations 5
- 5.2 Pavement Design 8
- 5.3 Seasonal High Water Table 8
- 5.4 Stormwater Retention Areas 9
- 5.5 Seawalls 9

6.0 CLOSURE 11

APPENDICES
- I SOIL BORING, SAMPLING AND TEST METHODS
- II IN SITU PERMEABILITY TEST RESULTS

FIGURES
- 1 TEST LOCATION PLAN AND SOIL PROFILES

1.0 SCOPE

The scope of our services has included the following items:

1. Performing four (4) Standard Penetration Test borings, two (2) hand borings and two (2) in situ permeability tests, to determine the nature of the subsurface soils and existing water table levels.

2. Reviewing each soil sample obtained in our field exploration program by a geotechnical engineer in the laboratory for further investigation, classification and assignment of laboratory tests.

3. Analyzing the existing subsurface soil and drainage conditions to:
   a. prepare building foundation and pavement design recommendations,
   b. estimate the seasonal high water table and
   c. assess the soils relative to seawall and stormwater retention pond design.

4. Preparing this report to document the results of our field exploration program, engineering analyses and recommendations.

2.0 FIELD EXPLORATION

Our field exploration program included conducting four (4) Standard Penetration Test (SPT) borings, two (2) hand auger borings, installing one (1) piezometer, performing in situ permeability tests in the piezometer and performing one (1) air-entry permeameter test.

The test locations are shown on the attached Figure 1. The test borings were located in the field by visual reckoning to available site landmarks. Test boring locations should be considered accurate only to the degree implied by the method used. Should more accurate locations be required, a registered land surveyor should be retained.

2.1 Subsurface Soil Borings

The SPT and hand auger borings were performed to determine the existing water table and subsurface soil conditions to a maximum depth of 30 feet below the existing ground surface. The methods and equipment used in the borings are described in Appendix I of this report.

The soil profiles and water table depths encountered at the time of this exploration are shown on the graphical soil profiles (boring logs) on Figure 1, except that the soil profile at the air-entry permeameter test location is shown on Plate 1 of Appendix II. The soil descriptions shown on the soil boring logs are based upon the Unified Soil Classification System (ASTM D-2487).

2.2 Permeability Tests

To provide a means of performing in situ horizontal permeability tests, a temporary piezometer was installed at the location of Boring No. 5. A graphic depiction of the piezometer and in situ permeability test results are shown on Figure 1. The in situ permeability test was performed by the constant-head method, which is described in Appendix I. The test results indicate a saturated horizontal hydraulic conductivity (k_{hs}) of 4.9 feet/day for the soils within the collection zone of the piezometer.

An in situ vertical permeability test was performed by the air-entry permeameter test method, which is described in Appendix I of this report. The soil profile at the test location (No. 6) and the test results are shown on Plate 1 in Appendix II. The test results indicate an unsaturated vertical hydraulic conductivity (k_{vu}) of 4.3 feet/day for the "pale brown fine sand with shell" near the ground surface.

3.0 LABORATORY TESTING

Samples obtained during our field exploration program were thoroughly examined in our laboratory to obtain an accurate definition of the soil profile. Routine soil classification tests were not deemed necessary. Based upon visual classification procedures, the soils have been classified in general compliance with the Unified Soil Classification System (ASTM D-2487) by a geotechnical engineer.

One (1) Limerock Bearing Ratio (LBR) test was performed on a sample of the surface soil from location No. 4. The test results are included in Appendix II and indicated an LBR value of 104, a maximum dry density of 116 pounds per cubic foot (pcf) and an optimum moisture content of 11 percent (%). The test results and sieve analysis of the sample are included in Appendix II.

4.0 HYDROLOGIC LITERATURE REVIEW

We have reviewed pertinent published literature on surficial soil and hydrologic conditions at and near the site. A discussion of this is presented below, plus a summary of water table definitions.

4.1 Water Table Definitions

The site vicinity is underlain by the unconfined surficial aquifer system, which consists primarily of relatively permeable, sandy sediments overlying an aquiclude that exists at some depth below the

ground surface. This aquiclude hydraulically separates the surficial aquifer from the deeper artesian aquifer systems.

The water table in the surficial aquifer generally occurs within a few to several feet below the ground surface. The water table is defined as the surface at which the fluid pressure in the pores of the porous medium (i.e. soil) is equal to atmospheric pressure. The water table level is revealed by the level at which water stands in a shallow open hole (or well) which penetrates into the surficial deposits just deep enough to encounter standing water in the bottom.

Under natural conditions, the water table aquifer is recharged primarily by rainfall and discharges primarily by evapotranspiration and by lateral seepage to surface waters (streams, ditches, etc.). Seasonal variations in rainfall and evapotranspiration cause the water table to fluctuate. The seasonal high water table is the highest level that is reached during the year. Of course, the seasonal high water table varies from year to year, primarily due to rainfall variations from year to year.

For a typical year in Manatee County, over 60% of the annual rainfall occurs during the four months of June through September. During this period, the water table gradually rises to its highest level, which typically occurs in August to September. During the relatively dry portion of the year (from October to May), the water table recedes to lower levels, typically reaching the lowest level in May.

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), defines the seasonal high water table as the highest level of a saturated zone in the soil in most years. This definition refers to a saturated zone, rather than the true water table, which is defined above. Due to capillary rise, the saturated zone may extend a few to several inches above the water table. This is because the capillary zone is a saturated zone above the water table where the fluid (pore water) pressure is less than atmospheric pressure. Therefore, water from the capillary zone will not flow into a borehole which penetrates the aquifer. Only in the area below the water table, where the pore water pressure is greater than atmospheric pressure, will the water flow into an open borehole. The height of capillary rise is generally less than six inches

above the water table in most of the surficial sandy soils typical of the area, but may be greater if the surficial soils are more silty or clayey. The seasonal high water table may, therefore, be somewhat lower than that reported in the NRCS soil surveys.

In the NRCS soil surveys, a range of seasonal high water tables is listed for each of the defined surficial soil types. The water table is estimated to be at or above this level for at least one month during most years. These estimates are based mainly on evidence of a saturated zone (grayish colors or mottles) and are generally applicable to an undrained soil condition (i.e. no artificial drainage).

The Southwest Florida Water Management District (SWFWMD) defines the seasonal high water table as the elevation to which the water table can be expected to rise during a normal wet season. For the purpose of designing stormwater management systems, it is our objective to estimate the seasonal high water table as the elevation the water table is expected to be at or above for no more than a few (approximately two to four) weeks during a year of average climatic conditions. Our estimated seasonal high water tables for the site will be presented later in this report.

4.2 Review of USDA-NRCS Soil Survey

The United States Department of Agriculture, Natural Resources Conservation Service (NRCS) "Soil Survey of Manatee County, Florida" (issued 1983) indicates the predominant surficial soil type on the site to be "Canaveral sand, organic substratum," but possibly transitioning to "Canaveral fine sand, 0 to 5 percent slopes" near the west edge of the site or "Canaveral sand, filled" near the south end of the site. The NRCS indicates the seasonal high water table to be at a depth in the range of 1.0 to 3.0 feet below the ground surface for "Canaveral sand, filled" and for "Canaveral fine sand, 0 to 5 percent slopes;" and in the range of 2.5 to 5.0 feet below the ground surface for "Canaveral sand, organic substratum." Our site-specific estimates of the seasonal high water table will be presented in Section 5.3 of this report.

5.0 ANALYSES AND RECOMMENDATIONS

5.1 Building Foundations

Standard Penetration Test boring No. 1 was performed within a proposed restroom building area. We understand that the proposed building will be a one-story structure and supported upon a pile foundation.

Foundations for the proposed structure may be designed utilizing either augered cast-in-place concrete or prestressed concrete piles. We typically recommend that piles be installed so that the pile toe is at least 8 to 10 feet below the scour elevation (or below sea level if the scour elevation is not known). Deeper piles, however, will generally have greater load capacities. The following design criteria may be utilized:

Pile Size & Type	Pile Toe Embedment (below existing grade)	Allowable Compressive Capacity	Allowable Tensile Capacity
14" diameter ACIP	20 feet	17 tons	3.5 tons
12" x 12" PSC	17 to 20 feet	32 tons	4 tons

ACIP = augered cast-in-place concrete PSC = prestressed concrete

Should the Department of Environmental Protection or design professionals require a pile toe embedment depth different from the above, we must be given the opportunity to review their requirements, since they may impact our recommendations. Should the Department of Environmental Protection or design professionals require a pile cap bottom (top of pile) more than 3.0 feet below the existing ground surface, the pile capacities may be reduced since there will be less side area to develop frictional resistance. In this case, we must be given an opportunity to review the situation and estimate new pile capacities based on the reduced pile lengths.

Augered Cast-In-Place Concrete Piles

The successful auger cast pile installation will depend upon the expertise of the contractor and the techniques used. While the installation of piles can be monitored to determine that the piles are installed in general accordance with specifications, it is not possible to make an absolute determination of actual pile capacity based upon installation activities as with driven piles.

A representative of Ardaman & Associates, Inc. should be present during pile installation to provide the necessary engineering documentation. Documentation would include information relative to pile penetration, condition of hole prior to concrete placement, the amount of concrete injected and the type of reinforcement used. Concrete quality control is also essential and should include field slump tests and compressive strength determinations. We have included a sample auger injected concrete pile specification as Appendix II of this report. This specification is made as a guide to the design professionals and we recommend that part of it be incorporated into the project specifications. In order to penetrate the overlying clays, it will be necessary for the auger pile contractor to provide equipment with sufficient torque and dead weight. We recommend a minimum torque of 25,000 ft-lbs and a minimum dead weight (including the drive motor and auger) of 5,000 lbs plus another 1,000 lbs if the auger flight exceeds 20 feet.

Driven Prestressed Concrete Piles

In order to achieve the desired penetration, it will be necessary to pre-auger or pre-drill the surficial sand and shell. This will prevent over-stressing of the piles during the pile installation procedure and reduce vibrations resulting from the pile installation process. Jetting or washing should not be permitted as this may substantially reduce pile capacity. The piles should be driven at least the final 3.0 feet with a hammer capable of developing at least 15,000 ft-lbs of driving energy. The piles should be spaced so that they are no closer to each other than 3.0 feet on center. A driving resistance analysis, in accordance with Standard Building Code recommendations, should be conducted to confirm the estimated pile capacities. A representative of Ardaman & Associates, Inc. should be present during pile installation to provide the necessary documentation.

Pre-augering as described above will also reduce surface vibrations during pile driving. Depending upon the distance between the pile driving activities and adjacent structures, vibrations may still be a concern, however. To minimize risks, the client may wish to perform a pre-condition survey of adjacent residences, prior to the beginning of pile driving. Monitoring of actual vibration amplitudes and frequencies can also be performed during driving of the first few piles and of piles nearest to the adjacent structures.

Soil Preparation for Slabs On Grade

The soils encountered at the subject site are well suited to support ground-floor slabs on grade. Assuming that the soils are prepared in accordance with the soil preparation recommendations of this report, settlement after the slab is poured should be negligible and less than that of the pile foundations.

The following soil preparation recommendations are made as a guide to the design professionals, parts of which should be incorporated into the project's general specifications:

1. Prior to construction of the pile foundations, the building area plus a margin of at least 5.0 feet outside building perimeter lines, should be cleared and grubbed of all surface vegetation and organic debris.

2. After construction of the pile foundations, pile caps and grade beams, any excavations required to construct these shall be backfilled with fill consisting of clean fine sands containing no more than 10% passing the No. 200 sieve, and having a Unified Soil Classification (ASTM D-2487) of "SP" or "SP-SM." The fill shall be placed in level lifts not exceeding 12 inches loose thickness and compacted to produce a density of at least 95% of Modified Proctor (ASTM D-1557) maximum density. Extreme care should be used when vibratory compaction is used next to existing structures. A representative of Ardaman & Associates should be present during initial compaction efforts.

3. After testing to verify that the desired compaction has been achieved per Item No. 2, above, any additional fill required to raise the building area to the floor subgrade elevation shall consist of clean fine sands containing no more than 10% passing the No. 200 sieve, and having a Unified Soil Classification (ASTM D-2487) of "SP" or "SP-SM." This fill shall be placed in level lifts not exceeding 12 inches loose thickness and compacted with the equipment described above. Each lift should be compacted to at least 95% of Modified Proctor maximum density prior to the placement of subsequent lifts. If fill is placed inside partially completed walls or other structural elements, extreme care should be exercised to avoid damage to these.

4. A geotechnical engineer or his representative from Ardaman & Associates, Inc., Sarasota office, should inspect and test each layer of backfill and fill to verify compliance with the above recommendations.

5.2 Pavement Design

Laboratory test results indicate the "shell" surface at Boring No. 4 to have an LBR value of 104, which would indicate a barely adequate pavement base material, but a generally good pavement subgrade, if adequately compacted. As requested, we have prepared recommendations for a concrete pavement. We recommend that the following design criteria be incorporated into the project general specifications.

Remove the existing shell and stockpile for reuse. Undercut the subgrade to a depth of six inches below the proposed bottom of concrete. Use the stockpiled shell to construct a minimum six inch thick subgrade. Place the shell and add water as necessary to increase the moisture content to at least 10% prior to compaction. The water should be mixed with the shell to produce a uniform moisture content throughout the six-inch thickness. After moisture conditioning, compact to at least 98% of Modified Proctor maximum density (ASHTO T-180).

The concrete pavement should be 4,000 psi concrete and at least six inches thick. Reinforcement steel should be #4 rebar sufficient to serve as temperature steel, but no greater than 12-inch spacing in both directions. Cut control joints as soon as initial set occurs, at a spacing of 12 to 15 feet both ways. Keep the concrete surface wet during curing to reduce shrinkage.

5.3 Seasonal High Water Table

The seasonal high water table was estimated at selected test locations, based upon our review of the NRCS Soil Survey and our field explorations. The existing water table and estimated seasonal high water table for Boring Nos. 5 and 6 are summarized in the following table.

Boring No.	Existing Water Table Depth (feet)	Seasonal High Water Table Depth (feet)
5	4.9	3.0
6	3.4	2.5

5.4 Stormwater Retention Areas

In addition to the seasonal high water table, the following parameters for the surficial aquifer have also been derived from the results of our field explorations:

Saturated horizontal hydraulic conductivity (khs) =	4.9 feet/day
Unsaturated vertical hydraulic conductivity (kvu) =	4.3 feet/day
Effective bottom of surficial aquifer =	11 feet (below existing grade)

The data above and elsewhere in this report could be used to perform groundwater mounding analyses for the proposed retention area, such as by the MODRET or PONDS computer programs. If you wish for Ardaman & Associates to perform this analysis, please contact our office for additional information.

5.5 Seawalls

Boring Nos. 2 and 3 were performed adjacent to the existing seawalls to provide subsurface soil information for use in the design to seawall renovations. This section includes recommended soil parameters for use in design and general recommendations for the design and construction.

A slightly cemented to cemented silt was encountered at a depth of approximately 15 feet at both borings. Concrete panels or sheet piles may be difficult to install through this stratum. The most cost-effective design may, therefore, be one that has a panel/pile depth no greater than 15 feet. If the panels or piles need to be deeper for stability, the soils below this depth may need to be pre-drilled prior to installation. The size and spacing of the predrilling will depend upon the contractor's procedures and equipment, and may need to be adjusted in the field during construction.

Based upon the laboratory test data, soil classifications and SPT 'N" values, the internal friction angle, cohesion, saturated unit weights and lateral earth pressure coefficients can be estimated for the soils encountered at the site. These are listed in the following table.

Depth (feet)	Unified Soil Classification	Average SPT N-value	Saturated Weight (pcf)	Bouyant Unit Weight (pcf)	Internal Friction Angle (degrees)	Cohesion (ksf)	Active Earth Pressure Coef.	Passive Earth Pressure Coef.	At-Rest Earth Pressure Coef. *
0 - 10	SP	8	118	56	29	0	0.35	2.9	1.0 - 1.5
10 - 15	SP	2	109	47	27	0	0.38	2.7	1.0 - 1.5
15 - 17	ML	For design, use same values as the 17' - 20' layer, below							
17 - 20	SP	27	129	67	34	0	0.28	3.5	1.0 - 1.5

* For compacted sand backfill in at-rest condition. Use 0.5 for loosely dumped sand backfill.

The values listed in the table are for the soils in their in situ condition. If backfill is to be placed next to the seawall, these values may not be relevant. For a clean, well compacted, granular (sand) backfill, we recommend an internal friction angle of 32° and a saturated unit weight of 125 pcf. The active (0.31) and passive (3.3) earth pressure coefficients corresponding to this friction angle should, therefore, also be used for this backfill.

A cantilever seawall may be designed using active and passive pressure distributions, supplemented with the lateral pressures induced by compaction of the backfill. Compaction induced stresses vary with the type and weight of the compactor used during construction, as well as how near the compactor is permitted to the face of the wall. At this time, we recommend that self-propelled (heavy) compactors be allowed to operate no closer than 3 feet from the inside face of the wall. Soil compaction adjacent to the wall should be performed using small, hand operated compactors.

The seawall should also be designed to withstand any hydrostatic pressures from the groundwater table. We recommend that a drainage system be installed on the inside face of the wall to minimize hydrostatic pressure.

Methods of construction, such as augering or other methods which disturb the subsurface soils, may reduce the internal friction angle of the soils immediately surrounding the structure. In general, we recommend that internal friction angles greater than 34° (and their corresponding lateral earth pressures coefficients) be used only where there will be no significant disturbance of the soils during construction.

6.0 CLOSURE

The analyses and recommendations submitted in this report are based upon the results of subsurface borings performed at the locations indicated on the attached Figure 1. This report does not reflect any variations which may occur between the borings. While the borings are representative of the subsurface conditions at the respective locations and for their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered.

The boring logs and related information are based upon the driller's logs and visual examination of selected samples in the laboratory. The delineation between soil types shown on the logs is approximate, and the description represents our interpretation of the subsurface conditions at the designated boring location on the particular date drilled. The absence of a water table listed on a boring log does not indicate that the water table is not within the boring depth, unless expressly stated so.

APPENDIX I

SOIL BORING, SAMPLING & TEST METHODS

SOIL BORING, SAMPLING AND TESTING METHODS

Standard Penetration Test

The Standard Penetration Test (SPT) is a widely accepted method of in situ testing of foundation soils (ASTM D-1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load. The following tables relate N-values to a qualitative description of soil density and, for cohesive soils, an approximate unconfined compressive strength (Qu):

Cohesionless Soils:

N-Value	Description
0 to 4	Very loose
4 to 10	Loose
10 to 30	Medium dense
30 to 50	Dense
Above 50	Very dense

Cohesive Soils:

N-Value	Description	Qu (ton/ft^2)
0 to 2	Very soft	Below 1/4
2 to 4	Soft	1/4 to 1/2
4 to 8	Medium stiff	1/2 to 1
8 to 15	Stiff	1 to 2
15 to 30	Very stiff	2 to 4
Above 30	Hard	Above 4

The tests are usually performed at 5-foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from each sampling interval and from every different stratum are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. After thorough examination and testing of the samples, the samples are discarded unless prior arrangements have been made. After completion of a test boring, the hole is kept open until a steady state groundwater level is recorded. The hole is then sealed, if necessary, and backfilled.

A hammer with an automatic drop release (auto-hammer) is sometimes used. In this case, a correction factor is applied to the raw blow counts, since the energy efficiency of the auto-hammer is greater than that of the safety hammer. Based upon calibration of the auto-hammer (per ASTM D4633) and standard practice, we use a multiplier of 1.24 to correct the auto-hammer blow counts to equivalent safety hammer "N" values.

Hand Auger Borings

Hand auger borings are used, if soil conditions are favorable, when the soil strata are to be determined within a shallow (approximately 5 to 9 feet) depth or when access is not available to power drilling equipment. A 3-inch diameter, hand bucket auger with a cutting head is simultaneously turned and pressed into the ground. The bucket auger is retrieved to the surface at approximately 6-inch intervals and its contents emptied for inspection. The soil sample so obtained is classified and representative samples put in bags or jars and transported to the laboratory for further classification and testing.

Laboratory Test Methods

Soil samples returned to our laboratory are examined by a geotechnical engineer or geotechnician to obtain more accurate descriptions of the soil strata. Laboratory testing is performed on selected samples as deemed necessary to aid in soil classification and to further define engineering properties of the soils. The test results are presented on the soil boring logs at the depths at which the respective sample was recovered, except that grain size distributions or selected other test results may be presented on separate tables, figures or plates as described in this report. The soil descriptions shown on the logs are based upon a visual-manual classification procedure in general accordance with the Unified Soil Classification System (ASTM D-2488-84) and standard practice. Following is a list of abbreviations which may be used on the boring logs or elsewhere in this report.

-200 - Fines Content (percent passing the No. 200 sieve); ASTM D1140
DD - Dry Density of Undisturbed Sample; ASTM D2937
Gs - Specific Gravity of Soil; ASTM D854
k - Hydraulic Conductivity (Coefficient of Permeability)
LL - Liquid Limit; ASTM D423
OC - Organic Content; ASTM D2974
pH - pH of Soil; ASTM D2976
PI - Plasticity Index (LL-PL); ASTM D424
PL - Plastic Limit; ASTM D424
Qp - Unconfined Compressive Strength by Pocket Penetrometer;
Qu - Unconfined Compressive Strength; ASTM D2166 (soil), D7012 (rock)
SL - Shrinkage Limit; ASTM D427
ST - Splitting Tensile Strength; ASTM D3967 (rock)
USCS - Unified Soil Classification System; ASTM D2487, D2488
w - Water (Moisture) Content; ASTM D2216

Soil Classifications

The soil descriptions presented on the soil boring logs are based upon the Unified Soil Classification System (USCS), which is the generally accepted method (ASTM D-2487 and D-2488) for classifying soils for engineering purposes. The following modifiers are the most commonly used in the descriptions.

For Sands:	Modifier	Fines, Sand or Gravel Content*
	with silt or with clay	5% to 12% fines
	silty or clayey	12% to 50% fines
	with gravel or with shell	15% to 50% gravel or shell

For Silts or Clays:	Modifier	Fines, Sand or Gravel Content*
	with sand	15% to 30% sand and gravel; and % sand > % gravel
	sandy	30% to 50% sand and gravel; and % sand > % gravel
	with gravel	15% to 30% sand and gravel; and % sand < % gravel
	gravelly	30% to 50% sand and gravel; and % sand < % gravel

* may be determined by laboratory testing or estimated by visual/manual procedures. Fines content is the combined silt and clay content, or the percent passing the No. 200 sieve.

Other soil classification standards may be used, depending on the project requirements. The AASHTO classification system is commonly used for highway design purposes and the USDA soil textural classifications are commonly used for septic (on-site sewage disposal) system design purposes.

Air-Entry Permeameter Test

The air-entry permeameter is used to determine the vertical hydraulic conductivity (k) of in situ soils above the water table. The device and test procedures were developed by Mr. Herman Bouwer of the U.S. Water Conservation Laboratory.

The device is capable of determining the pressure head at the wetted front as the water infiltrates the soil, so the hydraulic gradient can be determined at any time during the test. This allows the test to be performed much more quickly and with less volume of water than required for most infiltration tests, as a stabilized flow condition (constant hydraulic gradient) is not necessary in order to determine hydraulic conductivity.

The test actually measures unsaturated hydraulic conductivity, since some air is entrapped in the soil during the test. Research indicates that saturated hydraulic conductivity is equal to approximately two times (2x) the unsaturated hydraulic conductivity measured by the test. The Aresaturated@ hydraulic conductivity listed as the test result is the saturated hydraulic conductivity, calculated base upon this factor. The unsaturated vertical hydraulic conductivity is, therefore, one-half the reported Aresaturated@ hydraulic conductivity.

Bouwer, Herman (1966), "Rapid Field Measurement of Air-Entry Value and Hydraulic Conductivity of Soil as Significant Parameters in flow System Analysis," Water Resources Research, vol. 2, pp. 729-738.

In Situ Permeability Test In Piezometers and Monitor Wells (Falling-Head Method)

After allowing the water level within the piezometer (PZ) or monitor well (MW) to stabilize, in situ permeability tests were performed. These tests are used to determine the horizontal or vertical (depending upon the PZ/MW geometry) hydraulic conductivity (k) of the soils below the water table and within the collection zone of the PZ/MW. In general, horizontal permeability tests are performed within PZ/MW's having a collection zone (screened or filter-packed interval) that is long relative to its diameter. Vertical permeability tests are generally performed within a PZ that consists of an open-bottom casing, without a screened section, driven into the soil at the test depth.

The test is performed by either rapidly filling the PZ/MW casing with clear water to create a rise of the water level, or by rapidly removing a volume of water with a bailer or pump to create a drop of the water level within the casing. The latter is also known as a "slug test," referring to the removal of a "slug" of water from the casing. In the case of an environmental water quality monitoring well, the "slug test" would be performed as it does not involve the addition of foreign water to the MW.

The recovery (rise or fall) of the water level is then measured versus time, using either an electronic tape measure or an electronic pressure transducer probe with digital output and/or data logger. This water level data and PZ/MW dimension data is then used to calculate the horizontal or vertical "k" based upon the methods of Hvorslev (1951) or Bouwer and Rice (1976).

Hvorslev, M.J. (1951), "Time Lag and Soil Permeability in Groundwater Observations," U.S. Army Corps of Engineers, Waterways Experiment Station Bulletin 36, Vicksburg, Mississippi.

Bouwer, H., and Rice, R. C. (1976), AA Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells,@ Water Resource Res., Vol 12, No. 3, pp.423-428.

Kruseman, G.P., de Ridder, N.A. (1990), Analysis and Evaluation of Pumping Test Data, Second Edition, International Institute for Land Reclamation Improvement, The Netherlands, pp 244 - 247.

Butler, Jr., James J., (1998), The Design, Performance and Analysis of Slug Tests, Lewis Publishers, Boca Raton, pp 105 - 109.

Andreyev, Nicholas E., and Wiseman, Lee P., (1989), Stormwater Retention Pond Infiltration Analysis in Unconfined Aquifers, Southwest Florida Water Management District, pp 3-7 - 3-9.

In Situ Permeability Test In Piezometers and Monitor Wells (Constant-Head Method)

After allowing the water level within the piezometer (PZ) or monitor well (MW) to stabilize, in situ permeability tests were performed. These tests are used to determine the horizontal or vertical (depending upon the PZ/MW geometry) hydraulic conductivity (k) of the soils below the water table and within the collection zone of the PZ/MW. In general, horizontal permeability tests are performed within PZ/MW's having a collection zone (screened or filter-packed interval) that is long relative to its diameter. Vertical permeability tests are generally performed within a PZ that consists of an open-bottom casing, without a screened section, driven into the soil at the test depth.

The test is performed by filling the PZ/MW casing with clear water and measuring the flow rate required to maintain a constant water level near the top of the PZ/MW casing. The test is continued until the flow rate becomes constant. The water level, flow rate and PZ/MW dimension data are then used to calculate the horizontal or vertical "k."

If the collection zone is entirely below the water table, "k" is calculated based upon the methods of Hvorslev (1951). If the collection zone is partially or entirely above the water table, "k" is calculated based upon the methods of the U.S.B.R. (1977) or Zanger (1953), depending upon test and water table conditions.

The horizontal permeability test geometry and procedure are very similar to the "constant head open-hole test" described in SWFWMD (1988) for exfiltration trench design. The hydraulic conductivity (k) calculated as described in the preceding paragraph is "k" as defined by Darcy's Law (Q=kia) and is not equivalent to the SWFWMD exfiltration trench hydraulic conductivity (K), however. The SWFWMD exfiltration trench "K" is actually a conductance (or leakance) factor and should only be applied accordingly.

Hvorslev, M.J. (1951), "Time Lag and Soil Permeability in Groundwater Observations," U.S. Army Corps of Engineers, Waterways Experiment Station Bulletin 36, Vicksburg, Mississippi.

Southwest Florida Water Management District (1988), "Management and Storage of Surface Waters - Permit Information Manual," Vol. I., SWFWMD, Brooksville, Florida.

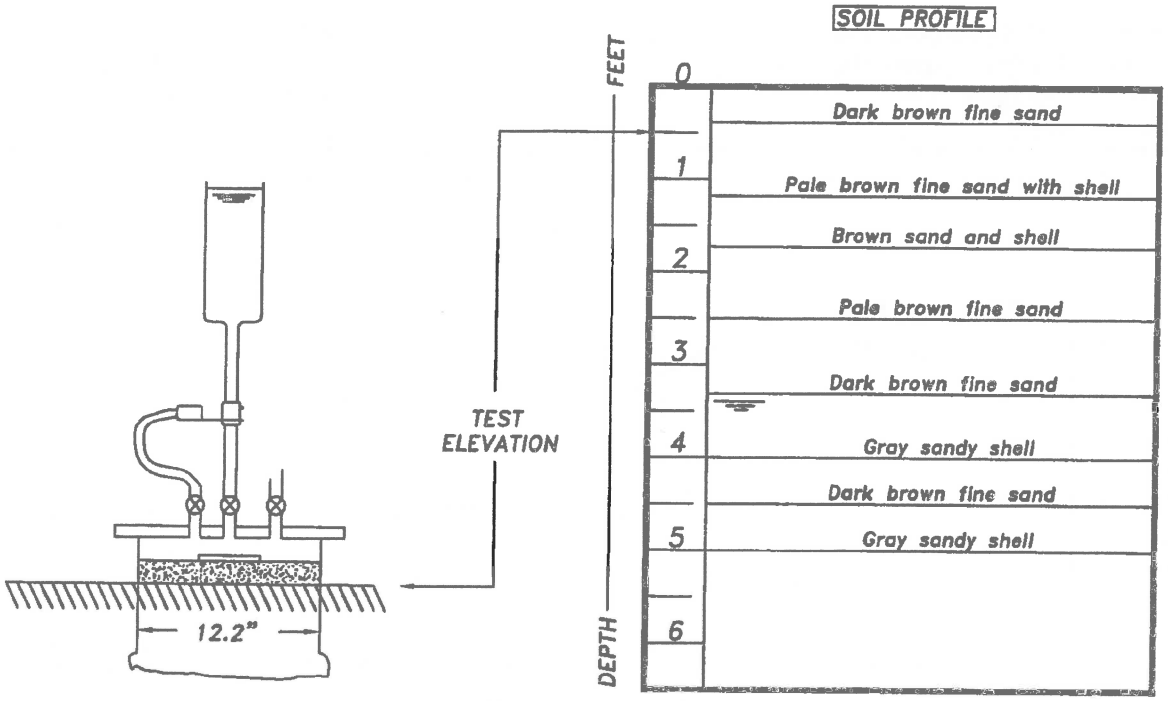
U.S. Bureau of Reclamation (1977), Ground Water Manual, U.S. Government Printing Office, Washington D.C.

Zanger, C.N. (1953), "Theory and Problems of Water Percolation," U.S. Bureau of Reclamation, Engineering Nomograph No. 8.

APPENDIX II

PLATES

AIR-ENTRY PERMEAMETER



"RESATURATED" VERTICAL HYDRAULIC CONDUCTIVITY, kvr = 3.0E-03 cm/sec.
= 8.6 feet/day

"UNSATURATED" VERTICAL HYDRAULIC CONDUCTIVITY, kvu = 1.5E-03 cm/sec.
= 4.3 feet/day

EXISTING GROUNDWATER TABLE

TEST DATE 1/22/2014 TEST LOCATION 6

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

North Coquina Boat Ramp
Gulf Drive, Bradenton Beach
Manatee County, Florida

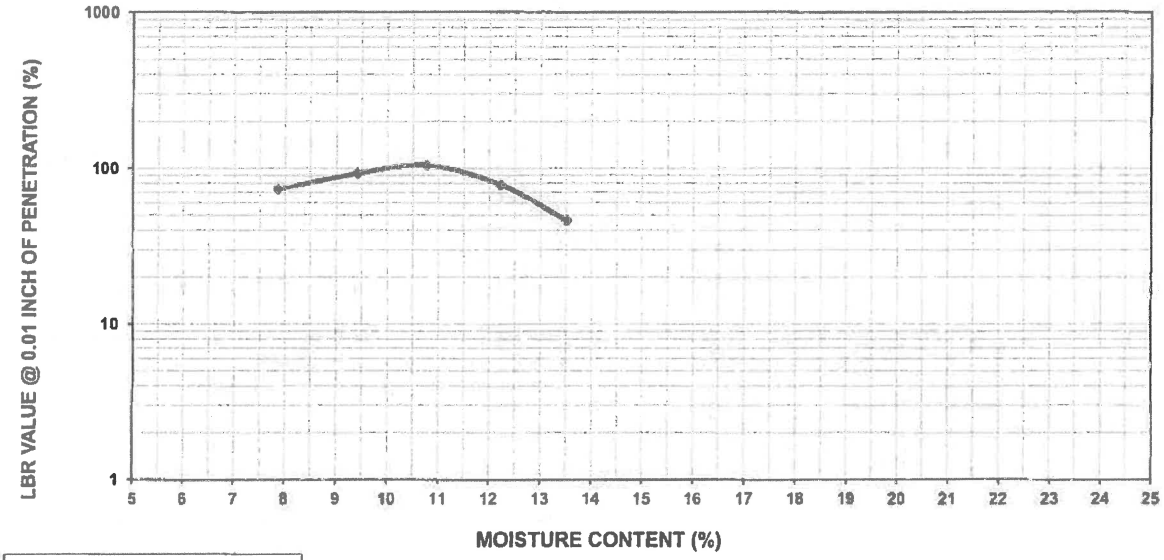
DRAWN BY: KGS	CHECKED BY:	DATE: 2/10/14
FILE NO. 11-7419	APPROVED BY:	PLATE: 1

Ardaman & Associates, Inc.

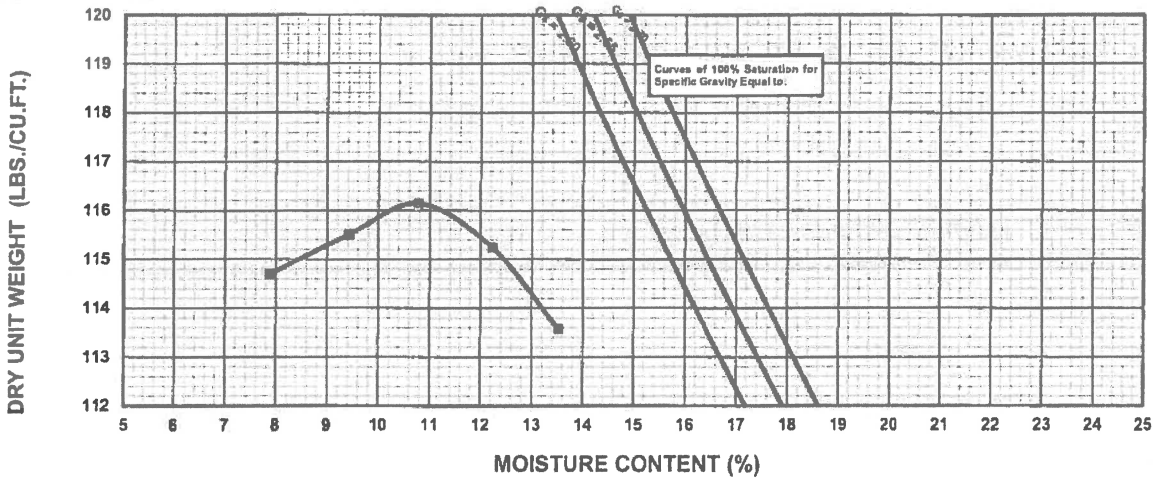
Ardaman & Associates, Inc.
78 Sarasota Center Boulevard
Sarasota, FL 34240
Phone 941-922-3526
FAX 941-922-6743

LIMEROCK BEARING RATIO TEST

Project Name:	North Coquina Boat Ramp	**File No.:**	11-7419
Project Location:	Gulf Drive, Bradenton Beach, Florida	**Report No.:**	NA
Client Name:	CPH Engineers, Inc.	**Report Date:**	1/28/2014
Distribution:	Client		



LBR Value (%): 104



Maximum Dry Density (lb/ft^3): 116

Optimum Moisture Content (%): 11

Date Sampled:	1/22/2014	**Date Molded:**	1/24/2014	**Lab Sample No.:**	5035
Sampled By:	Mark Ochs	**Date Tested:**	1/27/2014	**Tested By:**	Chris Oberhoff

Sample Description: Light gray fine sand with shell

Sample Location[1]**:** Soil boring No. 4

Proposed Use: Subbase

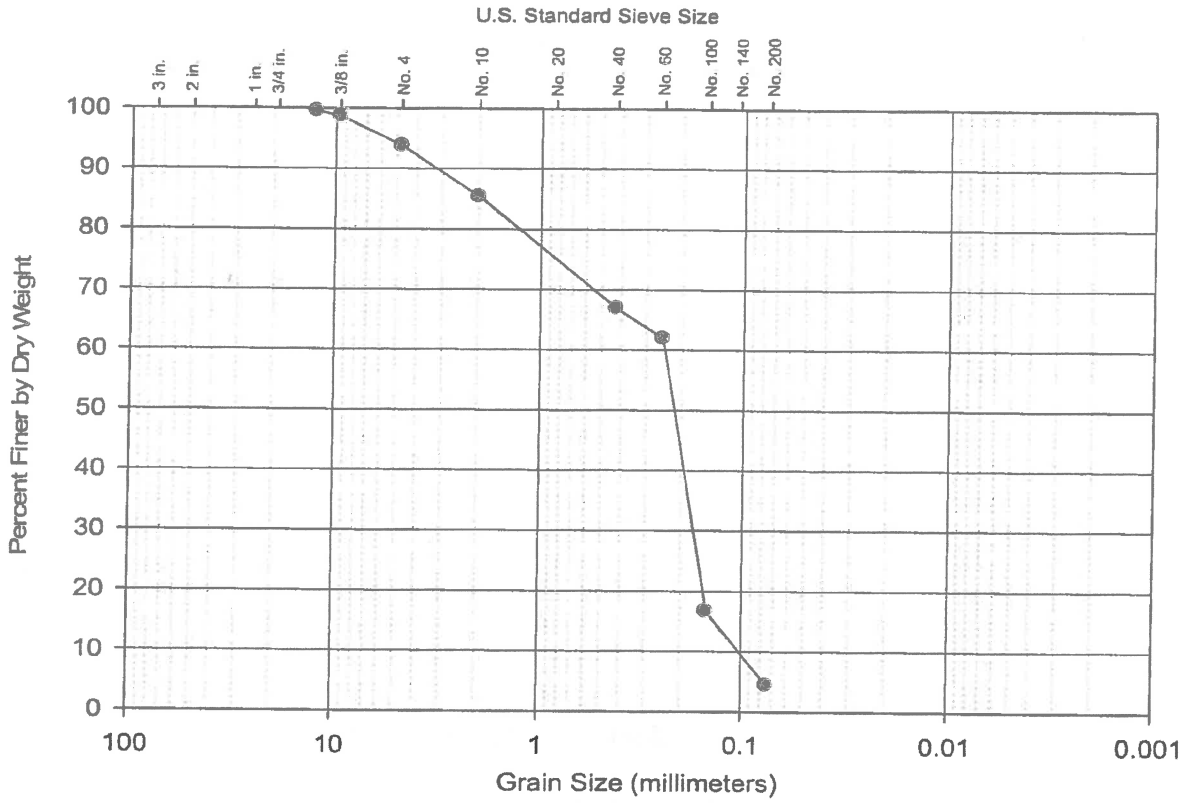
[1] Sampling conducted in general accordance with FM 1-T 002.

Our letters and reports are for the exclusive use of the client to whom they are addressed and shall not be reproduced except in full without the approval of the testing laboratory. The use of our name must receive our written approval. Our letters and reports apply only to the sample tested and/or inspected and are not indicative of the quantities of apparently indentical or similar products

Florida Certificate of Authorization No. 00005950

Jerry H. Kuehn, P.E.
Florida License No. 35557

GRAIN SIZE DISTRIBUTION CURVE



Gravel		Sand			Silt	Clay
Coarse	Fine	Coarse	Medium	Fine		

SAMPLE DATA:

Report No.: NA

Sampling Date: 1/22/14

Soil Description: Light gray fine sand with shell

SIEVE ANALYSIS:

Sieve Size	Percent Finer
1/2 in.	99.6
3/8 in.	98.7
No. 4	93.8
No. 10	85.4
No. 40	66.9
No. 60	61.9
No. 100	16.7
No. 200	4.4

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

North Coquina Boat Ramp
Gulf Drive
Bradenton Beach, Florida

DRAWN BY: MA	CHECKED BY: JHK	DATE: 2/10/14
FILE NO. 11-7419	APPROVED BY:	PLATE

APPENDIX III

GUIDELINE SPECIFICATION FOR AUGERED CAST-IN-PLACE CONCRETE PILES

SPECIFICATIONS FOR AUGERED CAST-IN-PLACE CONCRETE PILES

A. General

This phase of the contract includes auger-injected concrete piles. These piles are to be installed and load-tested as per plans and specifications. The contractor performing the work shall have a minimum of ten (10) years of experience installation of auger cast piles.

1. Cast-In-Place Piles: A continuous-flight, hollow-shaft auger shall be rotated into the ground to the specified pile depth. Cement mortar shall then be injected through the auger shaft, as the auger is being withdrawn In such a way as to exert removing pressure on the withdrawing earth filled auger, as well as lateral pressure on the soil surrounding the grout-filled pile hole.

2. Cement Grout shall consist of a mixture of Portland cement, flyash, retarder, sand, and water so proportioned and mixed as to produce a mortar capable of maintaining the solids in suspension without appreciable water gain, and which may be pumped without difficulty. The strength of the grout shall be determined by three-inch diameter, six-inch high test samples. Two-inch mortar cubes shall not be allowed.

B. Materials

1. Portland cement shall conform to Federal Specifications SS-C192 for cements, Portland, or current ASTM Standards, Designation C-150.

2. Flyash shall conform to commercial grade.

3. Water shall be fresh, clean, and free from injurious amounts of sewage, oil, acid, alkali, slate or organic matter.

4. Other admixtures may include Pozzolith #8, or other similar approved retarders.

5. Fine aggregate shall meet the requirements of current ASTM standards, Designation C-33, except as to grading.

Sand grading shall be reasonably consistent, and shall conform to the following requirements, as delivered to the grout mixer:

U.S. Standard Sieve	Cumulative Percent by Weight: Passing	Retained
8	100	0
16	95 - 100	1 - 5
30	55 - 80	20 - 45
50	30 - 55	45 - 70
100	10 - 30	70 - 90
200	0 - 10	90 - 100

The sand shall have a fineness modulus of not less than 1.30, nor more than 2.10. The fineness modulus is defined as the total divided by 100 of the percentages retained on the U.S. Standard Sieve Nos. 16, 30, 50 and 100

C. Location of Piles

Piles shall be located as shown on drawings or as otherwise directed by the Engineer. Pile centers shall be located to an accuracy of plus or minus three inches.

D. Mixing and Pumping of Cement Grout

Only approved mixing and pumping equipment shall be used in the preparation and handling of cement grout. A screen no larger than one-quarter inch mesh shall be used between the mixer and the agitator. All oil or other rust inhibitors shall be removed from the mixing drums, stirring mechanisms and other portions of the equipment in contact with the grout before the mixers are used.

All materials shall be accurately measured by volume as they are fed to the mixer. The order of placing the materials in the mixer shall be as follows: (1) water, (2) fluidifier, and (3) other solids in order of increasing particle size.

The quantity of water used shall be such as to produce a mortar having a consistency of not less than twenty-one seconds when tested with a three-quarter diameter nozzle cone. Time of mixing shall not be less than one minute.

E. Pile Installation

1. All piles will be augered to a minimum tip elevation, as shown in the design drawings.

2. All piles shall be installed under the observation of the Soils Engineer. Piles installed in his absence will be rejected.

3. The piling contractor shall be responsible to furnish the reinforcing steel and proper installation as shown in plans and drawings. All reinforcing shall be installed after the pile is formed, but no later than fifteen minutes after the removal of auger and filling of the pile cavity.

4. Pile cut-off may be accomplished by removing fresh grout from the top of the pile, or by cutting off to final cut-off point at any time after initial set has occurred.

5. Piles within the same pile cap shall not be installed until initial set has occurred in all previously-installed piles. In no case is the next pile in the same cap to be installed until a four-hour period has elapsed. The initial set/four-hour period will also apply to piles installed in other areas where piles are closer than 6.0 feet from a previously-installed pile.

F. Reinforcing Steel

The piling contractor shall be responsible to furnish the reinforcing steel and proper installation, as shown in plans and drawings. The reinforcing shall be installed after the pile is formed, but no later than fifteen minutes after the removal of auger and filling of the pile cavity. Suitable spreaders shall be installed to assure positioning of the steel in the pile.

G. Inspection

No piles shall be installed by the Contractor unless the representative of the Soils Engineer is present. The piling contractor shall comply with the directions of the Engineer and make available all data, information and other pertinent items upon his request. The Engineer shall have the authority to reject any and all piles or materials that do not meet the requirements of the above specifications.

H. Preparation of Grout Test Specimens

The pile contractor shall engage an Engineering Testing Laboratory to make and break 4-inch diameter by 8-inch high test cylinders of the cement grout used. A set of four (4) cylinders shall be taken from the bypass line of the grout pump when the auger is out of the ground or prior to commencement of pumping.

Test samples shall not be taken from the pressure line during forming of the pile. If directed by the Engineer, they may be taken from the discharge of the mixing batch. The test samples shall be broken at: one sample at seven days and two samples at twenty-eight days, with one reserve sample. The frequency of sampling will be one set per every 5 hours of production, but no less than one set for each day of installation. The distribution of the test reports shall be according to the general specifications.

I. Load Testing

Compression or tension tests, when required, shall be test loaded to a minimum of two (2) times the design load. The test procedures shall be coordinated by the Contractor through Ardaman & Associates, Inc., Sarasota Office.

J. Records, Control and Survey

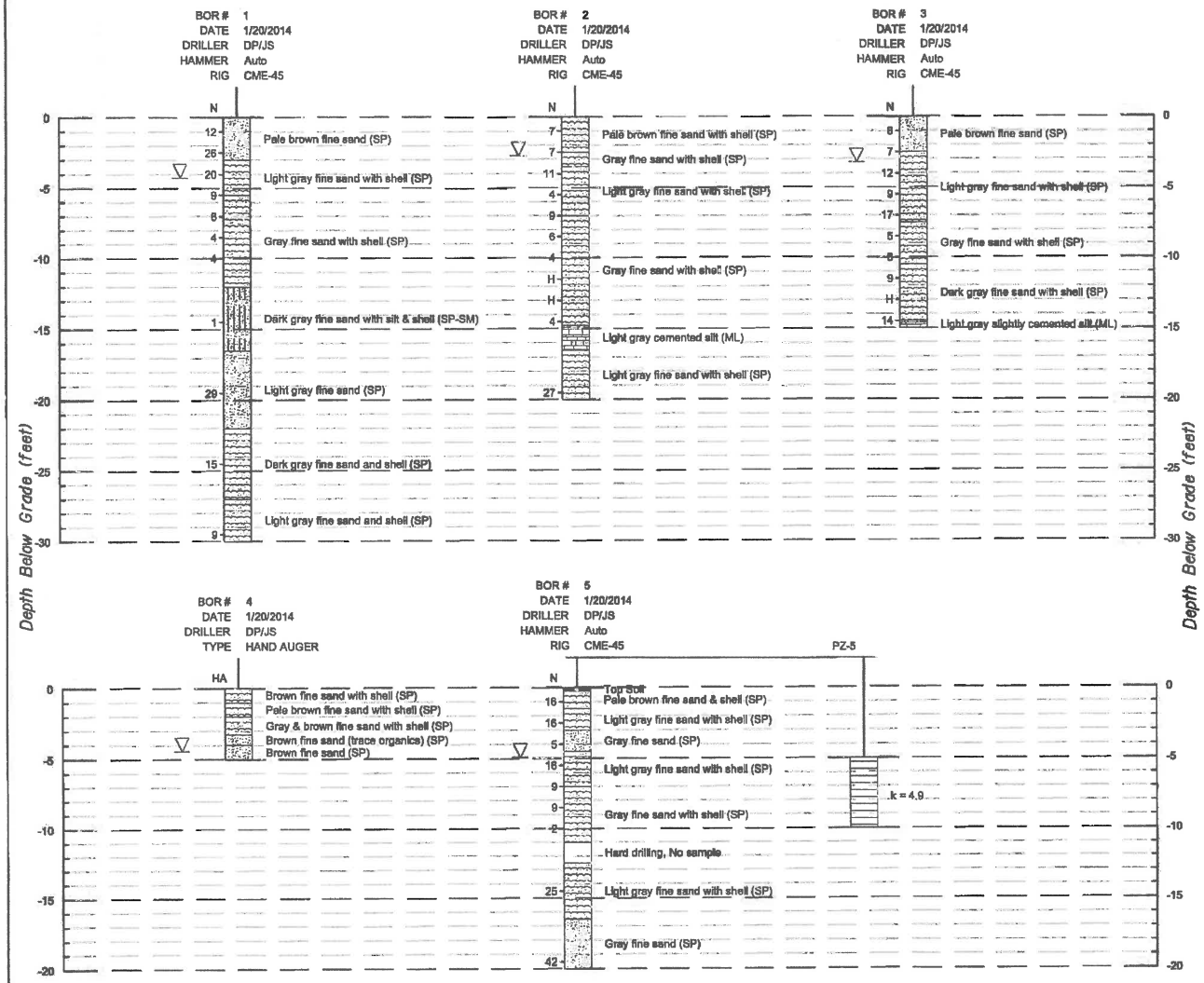
Complete records of each pile installation shall be obtained under the direction of the Soils Engineer to be retained by the Owner. The records shall include length, theoretical volume and actual volume of grout pumped. The location and elevation of the top of each pile will be determined by a registered surveyor.

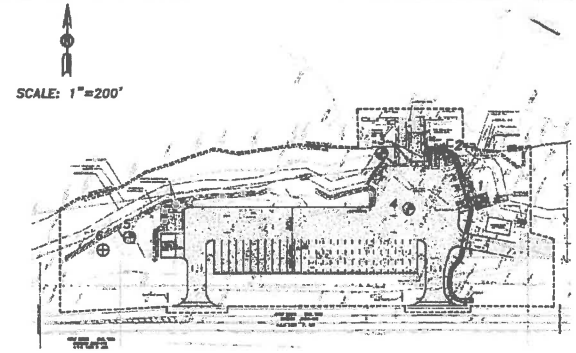
K. Site and Soil Inspection

The complete soil boring logs and analyses of the subsurface soil conditions prepared by Ardaman & Associates, Inc., Soil Engineers, are available. The piling contractor is urged to acquaint himself with the report and the configurations of the underlying soil

strata prior to preparing his bid.

Any data concerning subsurface soil conditions is provided for the Contractor=s information only. If the Contractor desires to obtain additional site information at his own expense, he may take borings or soundings, install test piles, or dig test pits on the site of the work. Permission for admission to the property must first be obtained from the Owner.





⊕ TEST BORING LOCATION

⊕ AEP LOCATION

LEGEND

▽ GROUNDWATER LEVEL MEASURED ON DATE DRILLED

N SPT N-VALUE IN BLOWS PER FOOT (UNLESS OTHERWISE NOTED)

SPT N VALUES CONVERTED TO EQUIVALENT SAFETY HAMMER

HA HAND AUGER

H WEIGHT OF HAMMER

k HYDRAULIC CONDUCTIVITY (FEET/DAY)

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

SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 4
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

Test Locations/Soil Boring Logs
North Coquina Boat Ramp
Gulf Drive, Bradenton Beach
Manatee County, Florida

DRAWN BY: KGS	CHECKED BY:	DATE: 1/22/14
FILE NO. 11-7419	APPROVED BY:	FIGURE: 1

APPENDIX B

Permits

- FDEP ERP
- ACOE PERMIT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST DISTRICT OFFICE
13051 NORTH TELECOM PARKWAY
TEMPLE TERRACE, FLORIDA 33637-0926

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
SECRETARY

March 11, 2015

Manatee County
c/o Charles Hunsicker, Parks and Recreation Director
5502 33rd Ave. Drive W.
Bradenton, FL, 34209
charlie.hunsicker@mymanatee.org

Dear Mr. Hunsicker:

Enclosed is the Environmental Resource Permit, DEP Project No. 41-0319897-003, issued pursuant to Part IV of Chapter 373, Florida Statutes, and Title 62, Florida Administrative Code.

Appeal rights for you and for any affected third party are described in the text of the permit along with conditions that must be met when authorized activities are undertaken.

You, as the applicant, are responsible for all aspects of permit compliance. You should therefore review this permit document carefully to ensure compliance with the general conditions and specific conditions contained herein.

Please be aware of permit General Condition number 4, which states, "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"."

If you have any questions about this document, please contact me at ryan.p.martin@dep.state.fl.us or (813) 470-5944.

Thank you for your participation in the permit process and in managing the natural resources of the State of Florida.

Sincerely,

Ryan P. Martin, P.E.
Engineering Specialist IV
Permitting and Waste Cleanup Program

cc:
U.S. Army Corps of Engineers, tampareg@usace.army.mil
Joshua A Bryant, CPH, Inc., jbryant@cphcorp.com
David A. Landers, CPH, Inc., dlanders@cphcorp.com

Enclosure:
Environmental Resource Permit with Attachments (168 pages)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST DISTRICT OFFICE
13051 NORTH TELECOM PARKWAY
TEMPLE TERRACE, FLORIDA 33637-0926

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
SECRETARY

Permittee/Authorized Entity:
Manatee County
c/o Charlie Hunsicker
5502 33rd Avenue Drive W.
Bradenton, FL, 34209

North Coquina Boat Ramp

Authorized Agent:
CPH, Inc.
c/o Joshua A. Bryant, P.E., Vice President
3277A Fruitville Road, Suite 2
Sarasota, FL, 34237

Individual Environmental Resource Permit

State-owned Submerged Lands Authorization – Approved

U.S. Army Corps of Engineers Authorization – Not Approved

Permit No.: 41-0319897-003

Permit Issuance Date: March 11, 2015
Permit Construction Phase Expiration Date: March 11, 2020

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST DISTRICT OFFICE
13051 NORTH TELECOM PARKWAY
TEMPLE TERRACE, FLORIDA 33637-0926

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
SECRETARY

Consolidated Environmental Resource Permit and Sovereignty Submerged Lands Authorization

Permittee: Manatee County
Permit No: 41-0319897-003

PROJECT LOCATION

The activities authorized by this permit and sovereignty submerged lands authorization are located at 2651 Gulf Drive South, Bradenton Beach (Parcel No. 7759200004, lying between Gulf Drive and the waters of Anna Maria Sound), Florida 34217, in Section 9 & 10, Township 35 South, Range 16 East, in Manatee County, at latitude 27° 27' 20" / longitude 87° 41' 37".

PROJECT DESCRIPTION

The permittee is authorized to improve and expand the current public boat ramp facility. The project proposes the removal of the existing boat ramp, docking structure, and seawall, for the installation of a new 3,572-square-foot public boat ramp, 1,508 square feet of docking structure with four associated temporary mooring areas, and 267 linear feet of concrete seawall. In addition, the project includes dredging 6,438 square feet of area waterward of the boat ramp to a depth of five feet below mean low water by removing approximately 427 cubic yards of material. The spoil material will be deposited and stabilized within upland portions of the project site. The project also includes the installation of a sanitary sewer line, an electrical line, a water line, and a force main of which 210 linear feet will be installed within an FDOT Right-of-Way via directional bore. The permittee is also authorized to improve the parking area, construct a restroom, construct ADA approved parking spaces and add a stormwater pond which will treat the first 0.75 inch of project site runoff through dry retention. The site improvements and stormwater management system discharge will occur within Sarasota Bay, a Class II Outstanding Florida Waterbody. Authorized activities are depicted on the attached exhibits.

AUTHORIZATIONS

Environmental Resource Permit
The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization
The activity is located on sovereignty submerged lands owned by the State of Florida. It therefore also requires authorization from the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), pursuant to Article X, Section 11 of the Florida Constitution, and Section 253.77, F.S., and Chapter 258, F.S.

As staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) under Sections 253.002, F.S., the Department has determined that the activity qualifies for and requires a Letter of Consent, as long as the work performed is located within the boundaries as described and is consistent with the terms and conditions herein.

During the term of this Letter of Consent you shall maintain satisfactory evidence of sufficient upland interest as required by paragraph 18-21.004(3)(b), Florida Administrative Code. If such interest is terminated or the Board of Trustees determines that such interest did not exist on the date of issuance of this Letter of Consent, this Letter of Consent may be terminated by the Board of Trustees at its sole option. If the Board of Trustees terminates this Letter of Consent, you agree not to assert a claim or defense against the Board of Trustees arising out of this Letter of Consent.

Federal Authorization

Your proposed activity as outlined in your application and attached drawings **does not qualify** for Federal authorization pursuant to the State Programmatic General Permit and a **SEPARATE permit** or authorization **may be required** from the Corps. A copy of your permit application has been forwarded to the Corps for their review. The Corps will issue their authorization directly to you or contact you if additional information is needed. If you have not heard from the Corps within 30 days from the date your application was received at the local FDEP Office, contact the Corps at the Tampa Regulatory Field Office at (813) 769-7073, for status and further information. **Failure to obtain Corps authorization prior to construction could subject you to federal enforcement action by that agency.**

Authority for review - an agreement with the USACOE entitled "Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection, or Duly Authorized Designee, State Programmatic General Permit", Section 10 of the Rivers and Harbor Act of 1899, and Section 404 of the Clean Water Act.

Coastal Zone Management

Issuance of this authorization also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification

This permit also constitutes a water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

Other Authorizations

You are advised that authorizations or permits for this activity may be required by other federal, state, regional, or local entities including but not limited to local governments or municipalities. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT/SOVEREIGNTY SUBMERGED LANDS CONDITIONS

The activities described must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The General Conditions for Sovereignty Submerged Lands Authorization**
- **The limits, conditions and locations of work shown in the attached drawings**
- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action. Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit and sovereignty submerged lands authorization, as described.

SPECIFIC CONDITIONS

1. Submittals required herein (e.g., progress reports, as-built drawings, etc.) shall include the permittee's name and permit number 41-0319897-003 and shall be directed by e-mail to SW_ERP@dep.state.fl.us with a subject line of "Compliance: permit number 41-0319897-003", or by mail to:

   Department of Environmental Protection
   Southwest District
   ATTN: ERP Compliance Assurance
   13051 North Telecom Parkway
   Temple Terrace, FL 33637-0926

2. The work authorized by this permit shall not be conducted on any property, other than that owned by the permittee, without the prior written approval of that property owner.

3. In the event the permittee files for bankruptcy prior to completion of work permitted and required by this permit, the permittee must notify the Department within 30 days of filing. The notification shall identify the bankruptcy court and case number and shall include a copy of the bankruptcy petition.

SPECIFIC CONDITIONS - PRIOR TO ANY CONSTRUCTION

4. Prior to installation of turbidity screens or initiation of dredging activities, the permittee shall use PVC pipes to clearly delineate the extent of seagrass beds in the vicinity of the dredge area.

5. Best management practices for erosion control shall be implemented prior to construction commencement and shall be maintained at all times during construction to prevent siltation and turbid discharges in excess of the ambient turbidity levels of the surrounding Outstanding Florida Waters (OFW's). Methods may include, but are not limited to the use of staked hay bales, staked filter cloth, sodding, seeding, staged construction and the installation of turbidity screens around the immediate project site. Erosion control methods shall be implemented as depicted in Sheets C-2 and E-2 of the attached permit drawings.

6. As the project area has not been surveyed for archaeological and historical resources, the Division of Historical Resources is requesting a professional cultural resources assessment survey of the project area. The survey report must conform to the provisions of Chapter 1A-46, Florida Administrative Code, and should be forwarded to the Division of Historical Resources (Christopher.Hunt@dos.myflorida.com), with a copy to the Department.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

7. Wetland areas or waterbodies that are outside the specific limits of construction authorized by this permit, must be protected from erosion, sedimentation, siltation, scouring, excess turbidity, and/or dewatering. There shall be no discharge in violation of the water quality standards in Chapter 62-302, F.A.C. Turbidity/erosion controls shall be installed prior to clearing, excavation or placement of fill material, shall be maintained until construction is completed, disturbed areas are stabilized, and turbidity levels have fallen to less than ambient background. The turbidity and erosion control devices shall be removed within 14 days once these conditions are met.

8. Areas of exposed soils shall be isolated from wetlands or other surface waters to prevent erosion and deposition of these soils into wetlands or other surface waters during construction and operation of permitted activities.

9. The permittee shall be responsible for ensuring erosion control devices/procedures are inspected and maintained daily during all phases of construction authorized by this permit until areas disturbed during construction are sufficiently stabilized to prevent erosion, siltation, and turbid discharges.

10. The following measures shall be taken immediately by the permittee when turbidity levels within waters of the State surrounding the project site exceed the ambient water quality levels of the Outstanding Florida Waters:

    a. Immediately cease work contributing to the water quality violation.

    b. Stabilize exposed soils contributing to the violation. Modify the work procedures responsible for the violation, install additional turbidity containment devices and repair non-functioning turbidity containment devices.

    c. Notify the Department within 24 hours of the time the violation is first detected.

11. Dredging shall be limited to day light; no dredging activities are authorized to be conducted at night.

12. The dredged material shall be placed within the uplands of the project site in a manner which will prevent the escape of dredged material and associated effluent into wetlands and surface waters.

13. The seawall shall be constructed in accordance with the distances from fixed landmarks as shown in the attached permit drawings.

14. The permittee shall report any damage to wetlands area as a result of the seawall construction to the Department within 24 hours.

15. The seawall shall be fully constructed prior to the placement of any backfill material. Any fill material used behind the seawall shall be clean fill and free of vegetative matter, trash, garbage, toxic or hazardous waste or any other unsuitable materials.

16. Dredging within waters of the State for the purpose of providing backfill is specifically prohibited.

17. Excavation of the retention pond is limited to the permitted design specifications as depicted on Sheets C-4, C-6 and C-6A of the attached permit drawings. If limestone bedrock is encountered during construction, the permittee shall notify the Department immediately and shall cease construction in the affected area. The permittee shall submit a design revision to the Department for review and approval that will demonstrate compliance with Rule 5.4.1.b. of the Applicant's Handbook, Volume II prior to proceeding with construction.

18. The authorized surface water management system shall be completed prior to or simultaneously with associated upland development.

19. All enclosed structures shall be a minimum of one-foot above the base flood elevation of 11.0 feet N.A.D.V. or be flood-proofed to be watertight and capable of resisting the effects of the regulatory flood. The flood-proofed design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effect of buoyancy, and impacts from debris. Flood proofing measures should be operable without human intervention and without an outside source of electricity.

20. This permit does not authorize the installation of water, sewer, cable or utility lines within wetlands or waterbodies.

21. The wetland buffer, as shown on sheet C-3 of the approved construction drawings, shall be clearly flagged or otherwise delineated on site prior to initial clearing or grading activities. The delineation shall endure throughout the construction period and be readily discernible to construction and Department personnel.

22. Unauthorized impacts to wetlands and shoreline as a result of the authorized construction shall be reported to the Department within 24 hours.

23. Storage or stockpiling of tools and materials (i.e., lumber, pilings, debris) within wetlands or other surface waters is prohibited.

SPECIFIC MANATEE CONDITIONS

24. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with, and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

25. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow routes of deep water whenever possible.

26. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers shall not impede manatee movement.

27. All on-site project personnel are responsible for observing water-related activities for the presence of manatees. All in-water operations, including vessels, shall be shutdown if a manatee comes within 50 feet of the operation. Activities shall not resume until every manatee has moved beyond the 50-foot radius of the project operation, or until 30 minutes has elapsed wherein a manatee has not reappeared within 50 feet of the operation. Animals shall not be herded away or harassed into leaving.

28. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida.

29. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. Please see the Florida Fish and Wildlife Conservation Commission website for information on how to obtain appropriate signs: http://www.myfwc.com/docs/WildlifeHabitats/Manatee_EducationalSign.pdf

30. No later than 60 days after permit issuance, permanent manatee educational signs must be installed by the permittee. In the event the signs fade, become damaged or outdated, they must be replaced and maintained for the life of the facility. The on-site locations and types of signs must be acceptable to the Florida Fish and Wildlife Conservation Commission,

which should be contacted at ImperiledSpecies@myfwc.com. The types of signs, sign vendors, and the process for FWC approval can be found at: http://www.myfwc.com/wildlifehabitats/managed/manatee/signs/.

31. No later than 60 days after construction commencement, bins for the disposal or recycling of monofilament line or other used fishing gear must be installed by the permittee. Educational signs encouraging the use of these bins shall be posted. An example of an approved educational sign concerning entanglement and information for sign vendors can be found at: http://www.myfwc.com/wildlifehabitats/managed/manatee/signs/.

32. All new coastal construction must utilize light fixtures that are shielded, low lumens, long wavelength (absent any peaks of short wavelength light below 560 nm) and do not allow light sources to be directly, reflectively, or cumulatively visible from the nesting beach. All proposed and existing exterior fixtures shall meet the requirements of the FWC Approved Sea Turtle Lighting guidelines. FWC Approved Sea Turtle Lighting guidelines and a data base of FWC approved Wildlife Friendly lighting fixtures may be found at: http://www.myfwc.com/wildlifehabitats/managed/sea-turtles/turtles-lights/. Fixtures "A" and "C" on sheet E501 (dated 1/7/15) would meet the requirements of the Sea Turtle Lighting guidelines. For technical assistance relating to the preparation of lighting plans, contact FWC staff at MarineTurtle@MyFWC.com.

SPECIFIC CONDITIONS - CONSTRUCTION COMPLETION

(The permittee shall comply with the following conditions prior to the transfer to operation phase of the facility. All documentation required below shall be included with the permittee's request to transfer the project to the operation phase [Form No. 62-330.310(2), F.A.C.].)

33. The permittee shall submit one set of signed, dated and sealed as-built drawings to the Department via email at SW_ERP@dep.state.fl.us for review and approval within 30 days of completion of construction. (Please contact the Department for files that are too large to email for alternative means of submitting electronically.) The as-built drawings shall be based on the Department permitted construction drawings and any pertinent specific conditions, which should be revised to reflect changes made during construction. Both the original design and constructed elevations must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. Surveyed dimensions and elevations required shall be verified and signed, dated and sealed by a Florida registered professional. *As-builts shall be submitted to the Department regardless of whether or not deviations are present. In addition, the permittee shall submit the "As-Built Certification and Request for Conversion to Operation Phase" form (Ch. 62-330.310(1), F.A.C.); as required in General Condition #6.*

The following information shall be verified on the as-built drawings from the engineering drawings signed and sealed by Joshua Bryant, P.E., #71551, on January 12, 2015, and Karyn Erickson, P.E., #41897, January 12, 2015:

Plans signed and Sealed by Joshua Bryant:

Plan View/ Cross Section Name	Drawing Number

Site Grading and Drainage Plan	C-4
Site Cross Sections	C-6, 6A

Plans Signed and Sealed by Karyn Erickson:

Plan View/ Cross Section Name	Drawing Number
Paving, Grading and Drainage Plan	E 5
Cross Sections (Shore Perpendicular)	E 6. 7, 8
Cross Sections (Shore Parallel)	E 9, 10
Site Plan	E3
Structural Site Plan	S1.1 through S2.6

SPECIFIC CONDITIONS – MONITORING/REPORTING REQUIREMENTS

34. Fish cleaning stations on structures over the water shall have sufficient measures in place (i.e., signage, sink screens, waste receptacles, etc.) to ensure that overboard discharges of trash and/or animal waste do not occur at the dock. The permittee shall submit a plan for Department review and approval prior to installation of any fish cleaning stations.

35. Boat maintenance or repair activities that require the removal of a vessel from the water, or removal of major portions of the vessel, including the engine, for purposes of routine repair or maintenance on site are prohibited over water at the facility, except where such activities are necessitated by emergency conditions which have resulted in or can result in the sinking of a vessel. Specifically prohibited shall be hull scraping, stripping, sanding, painting, recoating, and other maintenance or repair activities that may result in degradation of water quality from discharges or release of potential contaminants into waters of the state.

36. Fueling facilities shall not be provided at the facility.

37. Temporary 24-hour mooring shall be allowed at the facility. Overnight Permanent mooring is strictly prohibited. In order to ensure compliance with this condition, the permittee shall install signs reading "No Overnight Mooring".

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS

The following general conditions are binding on all individual permits issued under chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

1. 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. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. 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.

3. 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(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

4. 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," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., 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.

5. 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.

6. 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:
   a. 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
   b. For all other activities – "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
   c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.

7. If the final operation and maintenance entity is a third party:
   a. 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.
   b. 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.

8. 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.

9. This permit does not:
   a. 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.;
   b. Convey to the permittee or create in the permittee any interest in real property;
   c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
   d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

10. 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.

11. 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.

12. The permittee shall notify the Agency in writing:
   a. Immediately if any previously submitted information is discovered to be inaccurate; and
   b. 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.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

GENERAL CONDITIONS FOR SOVEREIGNTY SUBMERGED LANDS AUTHORIZATION

Any use of sovereignty submerged lands is subject to the following general conditions, are binding upon the applicant, and are enforceable under Chapter 253, F.S.

1. Sovereignty submerged lands may be used 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 will constitute a violation. Violation of the authorization will result in suspension or revocation of the applicant's use of the sovereignty submerged lands unless cured to the satisfaction of the Board of Trustees.

2. Authorization under Rule 18-21.005, F.A.C., conveys no title to sovereignty submerged lands or water column, nor does it constitute recognition or acknowledgment of any other person's title to such land or water.

3. Authorizations under Rule 18-21.005, F.A.C., may be modified, suspended or revoked in accordance with its terms or the remedies provided in Sections 253.04, F.S. and Chapter 18-14, F.A.C.

4. Structures or activities will be constructed and used to avoid or minimize adverse impacts to resources.

5. Construction, use, or operation of the structure or activity will 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, F.A.C.

6. Structures or activities will not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity will be modified in accordance with the court's decision.

7. Structures or activities will not create a navigational hazard.

8. Structures will be maintained in a functional condition and will be repaired or removed if they become dilapidated to such an extent that they are no longer functional.

9. Structures or activities will be constructed, operated, and maintained solely for water dependent purposes.

10. The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.

11. Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.

12. Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns. Upon receipt of such notice, the applicant or its successors or assigns will have thirty (30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.

13. All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.

14. This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

NOTICE OF RIGHTS

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

Petition for Administrative Hearing

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

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

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

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant must be filed within 14 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the notice or within 14 days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 14 days

of receipt of such notice, regardless of the date of publication. The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

Extension of Time

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

Mediation

Mediation is not available in this proceeding.

FLAWAC Review

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

Judicial Review

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

Executed in Hillsborough County, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Kelley M. Boatwright

Kelley M. Boatwright
Program Administrator
Permitting and Waste Cleanup Program
Southwest District

Attachments:
Project Drawings and Design Specs.
Construction Commencement Notice/Form 62-330.350(1)
As-built Certification and Request for Conversion to Operational Phase/Form 62-330.310(1)
Request for Transfer to the Perpetual Operation Entity/Form 62-330.310(2)
Request to Transfer Permit/Form 62-330.340(1)
Operation and Maintenance Inspection Certification/Form 62-330.311(1)

Copies furnished to:
U.S. Army Corps of Engineers, tampareg@usace.army.mil
Joshua A Bryant, CPH, Inc., jbryant@cphcorp.com
David A. Landers, CPH, Inc., dlanders@cphcorp.com

CERTIFICATE OF SERVICE

The undersigned hereby certifies that this permit and authorization to use sovereignty submerged lands, including all copies, were mailed before the close of business on **March 11, 2015,** to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, under 120.52(7) of the
Florida Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

Rhonda Hughes 3/11/2015
Clerk Date

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
10117 PRINCESS PALM AVENUE, SUITE 120
TAMPA, FLORIDA 33610

February 23, 2016

REPLY TO ATTENTION OF

West Branch
Tampa Permits Section
SAJ-2014-02969(LP-CMW)

Charles Hunsicker
Manatee County, Parks and Recreation
5502 33rd Ave. Dr. W.
Bradenton, FL 34209
Via Email: charlie.hunsicker@mymanatee.org

Dear Mr. Hunsicker:

This is in reference to your request for a Department of the Army (DA) permit to perform work in or affecting waters of the United States. If you determine the permit provided is acceptable in its entirety and you have chosen to proceed with the authorized activity, then upon recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) **and/or** Section 404 of the Clean Water Act (33 U.S.C. 1344), you are authorized under a Letter of Permission

to improve a public park by expanding/reconstructing the boat ramp and replacing docks and seawalls. The boat ramp expansion will require 0.03 acre of new fill; dredging to accommodate the new ramp will require removal of 0.14 acre/229 cubic yards of material; the area of the new dock is 456 square feet larger than the original. The seawall will be replaced immediately waterward of the existing wall.

at 2651 Gulf Drive South in Sections 9 and 10, Township 35 South, Range 16 West, Bradenton Beach, Manatee County, Florida.

Geographic Position: Latitude: 27.455601
Longitude: -82.693278

The project must be completed in accordance with the 37 enclosed construction drawings, and the general and special conditions which are incorporated in, and made a part of, the permit.

Special Conditions:

1. Reporting Address: The Permittee shall submit all reports, notifications, documentation and correspondence required by the general and special conditions of this permit to the following address:

a. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Special Projects and Enforcement Branch, 1520 Royal Palm Square Boulevard, Suite 310, Fort Myers, Florida 33919.

b. For electronic mail CESAJ-ComplyDocs@usace.army.mil (not to exceed 10 MB). The Permittee shall reference this permit number, SAJ-2014-02969(LP-CMW), on all submittals.

2. Commencement Notification: Within 10 days from the date of initiating the work authorized by this permit/Within 10 days from the date of initiating the work authorized by this permit for each phase of the authorized project, the Permittee shall provide a written notification of the date of commencement of authorized work to the Corps.

3. Self-Certification: Within 60 days of completion of the work authorized by this permit, the Permittee shall complete the attached "Self-Certification Statement of Compliance" form (Attachment 3) and submit it to the Corps. In the event that the completed work deviates in any manner from the authorized work, the Permittee shall describe the deviations between the work authorized by this permit and the work as constructed on the "Self-Certification Statement of Compliance" form. The description of any deviations on the "Self-Certification Statement of Compliance" form does not constitute approval of any deviations by the Corps.

4. Assurance of Navigation and Maintenance: 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 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.

5. Posting of Permit: The Permittee shall have available and maintain for review a copy of this permit and approved plans at the construction site.

6. Turbidity Barriers: Prior to the initiation of any of the work authorized by this permit, the Permittee shall install floating turbidity barriers with weighted skirts that extend to within 1 foot of the bottom around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained until the authorized work has been completed and all suspended and erodible materials have been stabilized. Turbidity barriers shall be removed upon stabilization of the work area.

7. Fill Material: 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.

8. Dredged material Disposal: The Permittee shall place all dredged material in a self-contained, upland disposal site as detailed on drawing sheet 22 of 37 (Drawing E4). The Permittee shall maintain the upland disposal site to prevent the discharge of dredged material and associated effluent into waters of the United States.

9. Manatee Conditions: The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011" (Attachment 4).

10. Manatee Educational Signs: The Permittee shall comply with "A Guide to Manatee Educational Signs, revised June 2011" (Attachment 5).

11. Sea Turtle and Smalltooth Sawfish Conditions: The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006, (Attachment 6).

If the work authorized is not completed on or before **February 16, 2021**, authorization, if not previously revoked or specifically extended, shall cease and be null and void.

Instructions for Objecting to Permit Terms and Conditions: This letter contains an initial proffered permit for your proposed project/permit application. If you object to certain terms and conditions contained within the permit, you may request that the permit be modified. Enclosed you will find a Notification of Administrative Appeal Options and Process fact sheet and Request for Appeal (RFA) form. If you choose to object to certain terms and conditions of the permit, you must follow the directions provided in Section 1, Part A and submit the completed RFA form to the letterhead address.

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria under 33 CFR Part 331.5, and that it has been received by the District office within 60 days of the date of the RFA. Should you decide to submit an RFA form, it must be received at the letterhead address by April 22, 2016.

Should you have any questions regarding this letter, please contact the project manager Candice Wheelahan in writing the letterhead address, by telephone at 813-769-7064, or by email at Candice.M.Wheelahan@usace.army.mil.

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 take a few minutes to visit http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey and complete our

automated Customer Service Survey. Your input is appreciated – favorable or otherwise.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

RYAN.ANGELA.C.1362394429 Digitally signed by RYAN.ANGELA.C.1362394429 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=RYAN.ANGELA.C.1362394429 Date: 2016.02.23 15:23:04 -05'00'

For Jason A. Kirk, P.E.
Colonel, U.S. Army
District Commander

Enclosures

Copy/ies Furnished:

CESAJ-RD-PE (w/ enclosures)

REQUEST PERMIT TRANSFER: PERMIT NUMBER: SAJ-2014-02969(LP-CMW)

When the structures or work verified 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. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, the present permittee and the transferee should sign and date below. This document must then be provided to the U.S. Army Corps of Engineers, Regulatory Division, Post Office Box 4970, Jacksonville, Florida 32232-0019.

_____ _____
(TRANSFEREE SIGNATURE) (DATE)

_____ _____
(Name - Printed) Lot/Block of site

_____
(Street Address)

_____
(City, State, and Zip Code)

Flood Plain Information:

This Department of the Army permit does not give absolute authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions. You should contact the local office in your area that issues building permits to determine if your site is located in a flood-prone or floodway area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program. If your local office cannot provide you the necessary information, you may request a flood hazard evaluation of the site by providing this office with a letter and a small scale map showing the location of the site. The request should be addressed to the **Chief, Flood Control and Floodplain Management Branch, Jacksonville District, U.S. Army Corps of Engineers, P.O. Box 4970, Jacksonville, Florida 32232-0019**. Phone inquiries may be made at 904-232-2515.

GENERAL CONDITIONS
33 CFR PART 320-330
PUBLISHED FR DATED 13 NOVEMBER 1986

1. The time limit for completing the work authorized ends on **the date noted in the permit letter**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

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.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Manatee County	File Number: **SAJ-2014-02969**	Date: Feb.23, 2016
Attached is:		See Section below
X	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

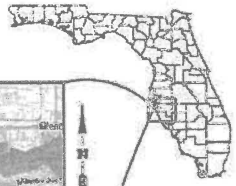
If you have questions regarding this decision and/or the appeal process you may contact: **Project Manager as noted in letter**	If you only have questions regarding the appeal process you may also contact: **for process:** **Stuart Santos 904-232-2018**

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

SITE IMPROVEMENT PLANS
FOR
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

2651 GULF DRIVE SOUTH
MANATEE COUNTY, FLORIDA



OWNER/ DEVELOPER

MANATEE COUNTY PARKS AND RECREATION
5502 33rd AVE. DRIVE WEST
BRADENTON, FLORIDA 34209
(941) 792-8784
ATTN: CHARLES HUNSICKER

CIVIL ENGINEER/ LAND PLANNER

CPH, INC.
32778 FRUITVILLE ROAD
SARASOTA, FLORIDA 34237
(941) 365-4771
ATTN: JOSHUA A. BRYANT, P.E.

SURVEYOR

ZNS ENGINEERING
201 5th AVENUE DRIVE EAST
BRADENTON, FL 34208
(941) 748-8080
ATTN: R.E.M. EDGERTON, P.S.M.

LANDSCAPE ARCHITECT

CPH, INC.
500 W. FULTON STREET
SANFORD, FLORIDA 32771
(407) 322-6841
ATTN: JAMES K. WINTER R.L.A., C.L.A.R.B.

UTILITIES

BRIGHT HOUSE NETWORKS
5411 SR 64 E
BRADENTON, FLORIDA 34203
(941) 345-1346
ATTN: TOM WRIGHT

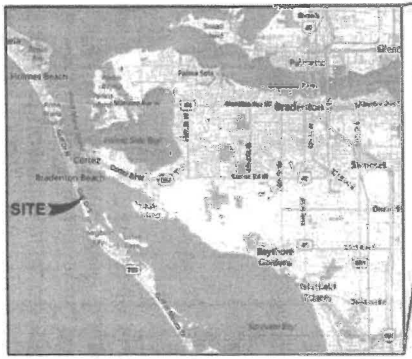
FLORIDA POWER & LIGHT - MANATEE
2000 CATHERINE ST
PALATKA, FLORIDA 32177
(800) 468-8554
ATTN: TRACY STERN

FLORIDA POWER & LIGHT - SUBAQUEOUS
2000 CATHERINE ST
PALATKA, FLORIDA 32177
(800) 468-8554
ATTN: TRACY STERN

VERIZON FLORIDA INC.
1009 US HWY 301 N
TAMPA, FLORIDA 33619
(813) 627-8343
ATTN: DAVID WYNNS

MANATEE COUNTY UTILITY OPERATIONS
4422 C 69TH STREET WEST
BRADENTON, FLORIDA 34210
(941) 792-8811 X6075
ATTN: KATHY MCMAHON

LONGBOAT KEY UTILITIES
600 GENERAL HARRIS STREET
LONGBOAT KEY, FLORIDA 34228
(941) 316-1938 X2
ATTN: JOHN MICHAEL



MANATEE COUNTY, FLORIDA
SECTION 18, TOWNSHIP 35 S., RANGE 16 E.

VICINITY MAP
NTS

DESIGN STANDARD REFERENCES:

- National Forest Products Association (NFPA)/Southern Pine Inspection Bureau (SPIB) Timber Construction Manual
- American Wood Preserver's Association (AWPA) Standards C2-90, C9-91 and C18-91
- AWPA Standards M1, M2, M4 and M6, Latest Edition
- American Concrete Institute (ACI) 304, 301, 318 and SP-66
- American Society for Testing and Materials (ASTM) C94, C260, C494, A615 and A1035
- FDOT Standard Specifications for Road and Bridge Construction, 2010, Sections 451 and 948
- Post Tensioning Institute Specification for Unbonded Single Strand Tendons Section 3.2.5
- Florida Department of Transportation, 2015 Design Standards and revised Index Drawings as appended herein
- Manatee County Engineering Standards

BASIC BUILDING CODE INFORMATION:

- AUTHORITY HAVING JURISDICTION: BRADENTON BEACH AND WEST MANATEE FIRE AND RESCUE DISTRICT
- BUILDING CODE COMPLIANCE: 2010 FLORIDA BUILDING CODE WITH 2012 AMENDMENTS
  2012 FLORIDA ACCESSIBILITY CODE
  2010 FLORIDA FIRE PREVENTION CODE WITH NFPA 1-18 ADOPTED MAY 2013

Sunshine811.com

NOTE: NOT RELEASED FOR CONSTRUCTION UNLESS STAMPED "RELEASED FOR CONSTRUCTION"

INDEX OF SHEETS

CIVIL ENGINEERING PLANS

C-1	COVER SHEET
S-1 - S-1A	BOUNDARY, MEAN HIGH WATER LINE, TOPOGRAPHIC & JURISDICTIONAL SURVEY
C-2	SITE DEMOLITION AND EROSION CONTROL PLAN
C-3	SITE DIMENSION PLAN
C-4	SITE GRADING AND DRAINAGE PLAN
C-5	COMPOSITE UTILITY PLAN
C-5A	LIFT STATION PLAN
C-5B - C-5C	FORCE MAIN PLAN AND PROFILE
C-6 - C-6A	SITE CROSS SECTIONS SHEET
C-7	GENERAL DETAILS SHEET
C-8	MANATEE COUNTY GENERAL DETAILS SHEET
C-8A - C-8B	MANATEE COUNTY UTILITY DETAILS SHEET
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE NOTES AND DETAILS

COASTAL ENGINEERING PLANS

E1	EXISTING CONDITIONS PLAN
E2	DEMOLITION PLAN
E3	SITE PLAN
E4	EXCAVATION AREAS
E5	PAVING, GRADING AND DRAINAGE PLAN
E6-E10	CROSS SECTIONS
E11-E12	CONSTRUCTION DETAILS
S1.1	STRUCTURAL SITE PLAN
S2.1-S2.3	STRUCTURAL SECTIONS
S2.4-S2.5	STRUCTURAL DETAILS
S2.6	STRUCTURAL NOTES AND DETAILS

ARCHITECTURAL PLANS

A001	COVER SHEET
A201	RESTROOM FLOOR PLAN
A251	STORAGE FLOOR PLAN
A501	RESTROOM BUILDING SECTIONS AND DETAILS
A551	STORAGE BUILDING SECTIONS AND DETAILS
A801	DETAILS
A901	SPECIFICATIONS
A902	SPECIFICATIONS
A903	SPECIFICATIONS
S1.00	STRUCTURAL NOTES & WIND SCHEDULE
S1.01	TYPICAL DETAILS
S2.00	RESTROOM BUILDING FOUNDATION AND FRAMING PLANS
S2.01	STORAGE BUILDING FOUNDATION AND FRAMING PLANS
M251	MECHANICAL STORAGE FLOOR PLAN
P001	PLUMBING LEGEND
P201	PLUMBING RESTROOM FLOOR PLANS
P501	PLUMBING DETAILS
P901	PLUMBING SPECIFICATIONS
E101	ELECTRICAL SITE PLAN
E201	ELECTRICAL FLOOR PLANS
E501	ELECTRICAL DETAILS
E901	ELECTRICAL SPECIFICATIONS

cph
www.cphcorp.com
A Full Service A & E Firm
Architects Engineers Environmental Landscape Architects M / E / P Planners Structural Surveyors Traffic / Transportation
Offices in: • Florida • Puerto Rico • Connecticut • Maryland • Texas

No	Date	Revision	By
1	01/08/15	AGENCY SUBMITTAL	JAB

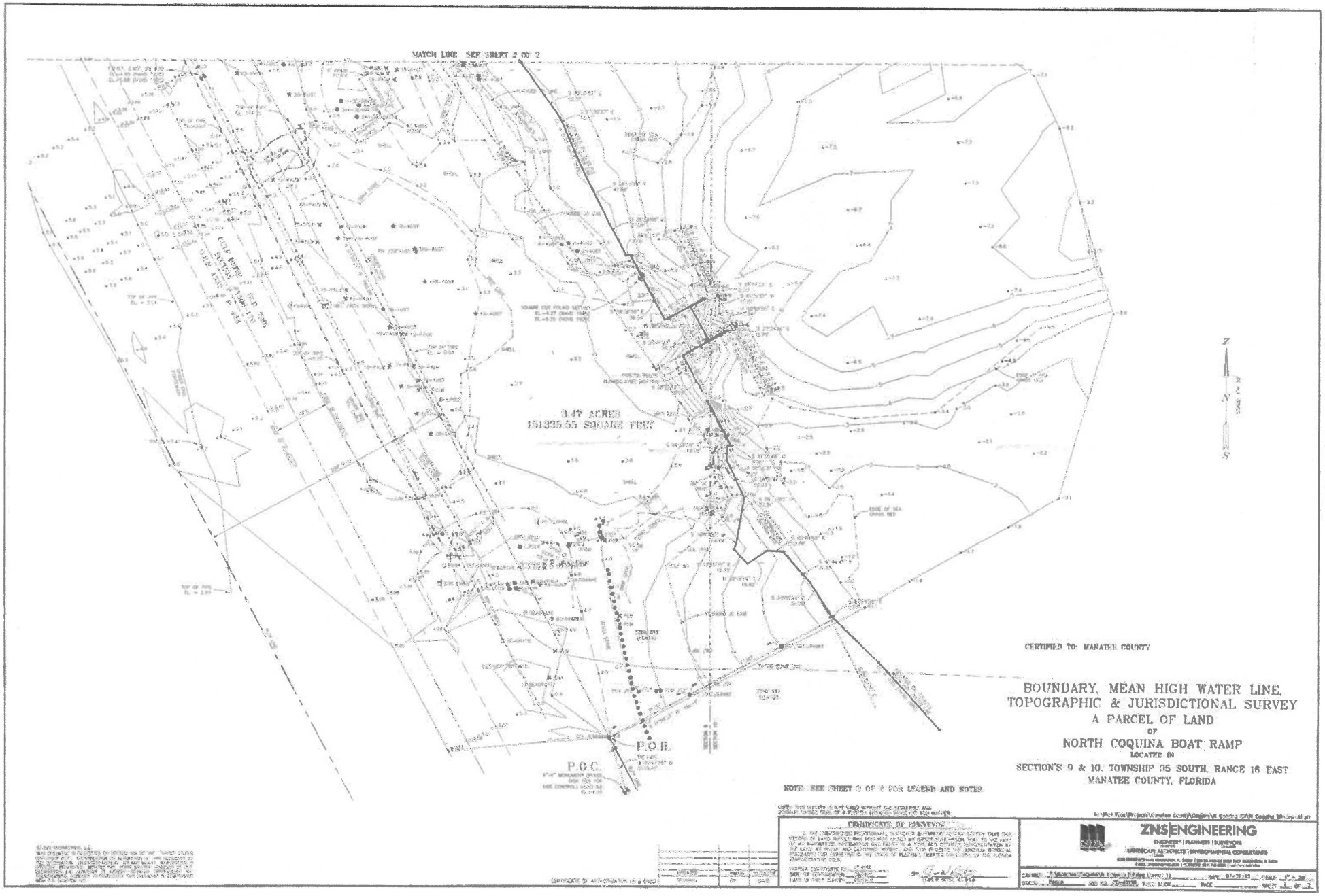
Designed by: KAMJ
Drawn by: KAMJ
Checked by: JAB
Approved by: JAB
Scale: N.T.S.
Date: 06/15
Job No.: M13110
© 2014

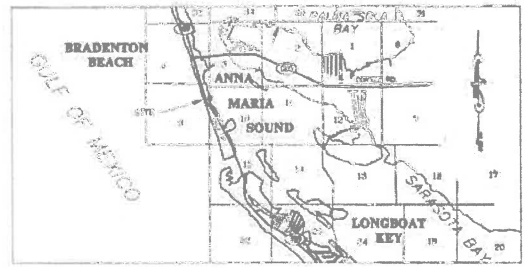
Plans Prepared By CPH, Inc.
32778 Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph. 941.365.4771
Licensed:
Reg. U.B.A. No. 3236
Survey L.B. No. 7486
Arch. Lic. No. AA26001661
Landsc. Lic. No. LC0000666

COVER SHEET

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA

Sheet No.
C-1


MATCH LINE SEE SHEET 2 OF 2
3.47 ACRES
151335.55 SQUARE FEET
P.O.B.
P.O.C.
N
S
CERTIFIED TO: MANATEE COUNTY
BOUNDARY, MEAN HIGH WATER LINE,
TOPOGRAPHIC & JURISDICTIONAL SURVEY
A PARCEL OF LAND
OF
NORTH COQUINA BOAT RAMP
LOCATED IN
SECTION'S 9 & 10, TOWNSHIP 35 SOUTH, RANGE 16 EAST
MANATEE COUNTY, FLORIDA
NOTE: SEE SHEET 2 OF 2 FOR LEGEND AND NOTES
CERTIFICATE OF SURVEYOR
ZNS|ENGINEERING

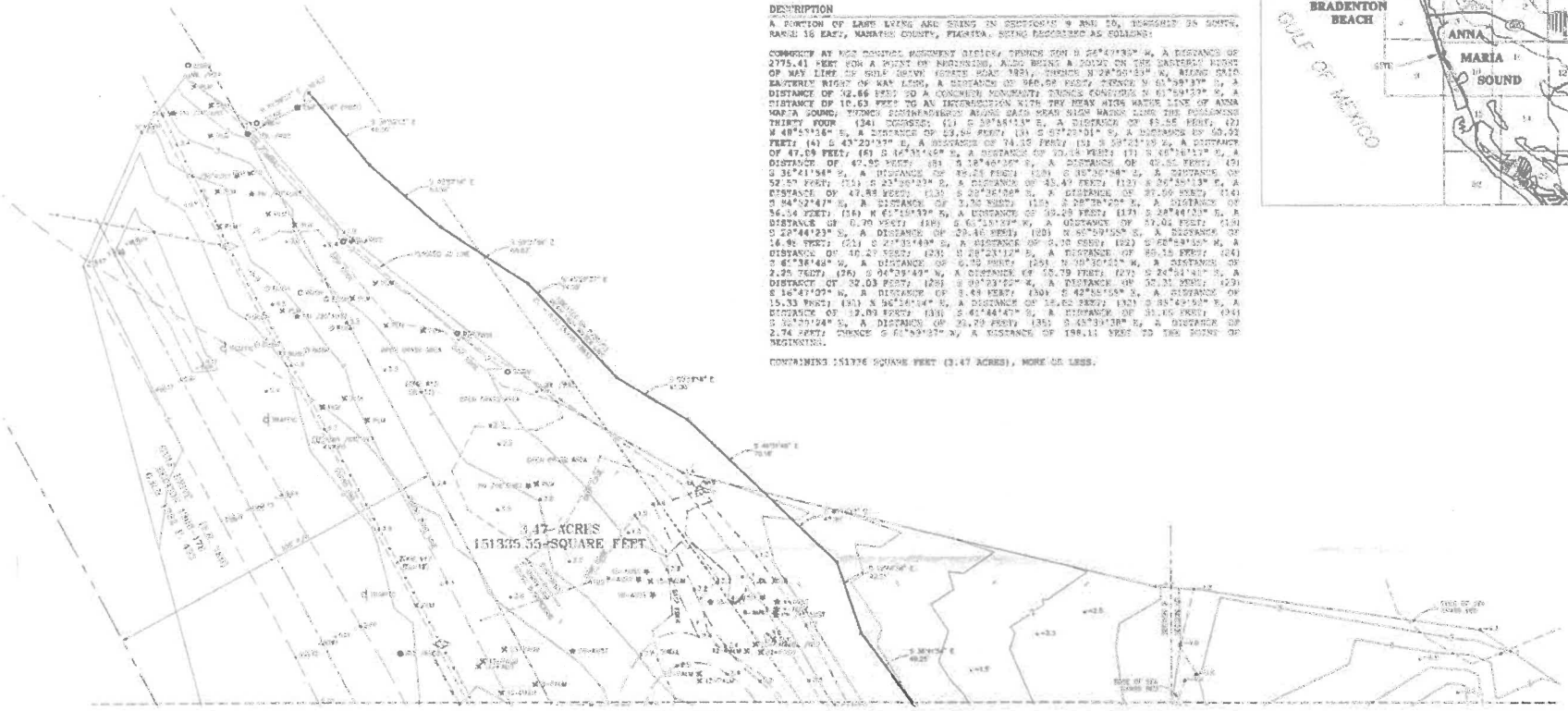


DESCRIPTION

A PORTION OF LANDS LYING AND BEING IN SECTIONS 9 AND 10, TOWNSHIP 35 SOUTH, RANGE 16 EAST, MANATEE COUNTY, FLORIDA, BEING DESCRIBED AS FOLLOWS:

COMMENCE AT NGS CONTROL MONUMENT DIGICON; THENCE S00°13'38" W, A DISTANCE OF 2775.41 FEET FOR A POINT OF BEGINNING, ALSO BEING A POINT ON THE EASTERLY RIGHT OF WAY LINE OF GULF DRIVE (STATE ROAD 789); THENCE N 28°00'23" W, ALONG SAID EASTERLY RIGHT OF WAY LINE, A DISTANCE OF 988.68 FEET; THENCE N 61°59'37" E, A DISTANCE OF 92.86 FEET TO A CONCRETE MONUMENT; THENCE CONTINUE N 61°59'37" E, A DISTANCE OF 10.63 FEET TO AN INTERSECTION WITH THE MEAN HIGH WATER LINE OF ANNA MARIA SOUND; THENCE CONTINUE ALONG SAID MEAN HIGH WATER LINE THE FOLLOWING THIRTY FOUR (34) COURSES: (1) S 50°16'13" E, A DISTANCE OF 15.15 FEET; (2) N 48°53'56" E, A DISTANCE OF 13.59 FEET; (3) S 57°20'01" E, A DISTANCE OF 50.52 FEET; (4) S 43°20'37" E, A DISTANCE OF 74.13 FEET; (5) S 38°21'19" E, A DISTANCE OF 47.09 FEET; (6) S 46°35'45" E, A DISTANCE OF 20.14 FEET; (7) S 65°16'17" E, A DISTANCE OF 47.95 FEET; (8) S 18°40'07" E, A DISTANCE OF 45.55 FEET; (9) S 36°21'54" E, A DISTANCE OF 49.25 FEET; (10) S 35°35'54" E, A DISTANCE OF 52.57 FEET; (11) S 23°39'27" E, A DISTANCE OF 45.47 FEET; (12) S 26°39'13" E, A DISTANCE OF 47.88 FEET; (13) S 28°36'08" E, A DISTANCE OF 37.59 FEET; (14) S 34°52'47" E, A DISTANCE OF 3.70 FEET; (15) S 28°38'29" E, A DISTANCE OF 56.34 FEET; (16) N 61°55'39" E, A DISTANCE OF 30.28 FEET; (17) S 28°44'23" E, A DISTANCE OF 8.70 FEET; (18) S 61°15'37" W, A DISTANCE OF 37.04 FEET; (19) S 28°44'23" E, A DISTANCE OF 29.46 FEET; (20) N 61°59'55" E, A DISTANCE OF 16.9[illegible] FEET; (21) S 27°35'49" E, A DISTANCE OF 9.10 FEET; (22) S 62°59'55" W, A DISTANCE OF 40.27 FEET; (23) S 28°21'12" E, A DISTANCE OF 85.15 FEET; (24) S 61°38'48" W, A DISTANCE OF 6.70 FEET; (25) S 28°30'25" W, A DISTANCE OF 2.25 FEET; (26) S 04°39'49" W, A DISTANCE OF 55.79 FEET; (27) S 24°51'41" E, A DISTANCE OF 32.03 FEET; (28) S 09°23'02" W, A DISTANCE OF 32.31 FEET; (29) S 16°47'07" W, A DISTANCE OF 3.48 FEET; (30) S 42°55'55" E, A DISTANCE OF 15.33 FEET; (31) N 56°15'34" E, A DISTANCE OF 15.62 FEET; (32) S 85°49'07" E, A DISTANCE OF 12.09 FEET; (33) S 61°44'47" E, A DISTANCE OF 31.15 FEET; (34) S 30°29'24" E, A DISTANCE OF 20.79 FEET; (35) S 65°39'38" E, A DISTANCE OF 2.74 FEET; THENCE S 61°59'37" W, A DISTANCE OF 198.11 FEET TO THE POINT OF BEGINNING.

CONTAINING 151335 SQUARE FEET (3.47 ACRES), MORE OR LESS.



NOTES:

1. BEARINGS AND COORDINATES ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM WEST ZONE NAD 83/90, AND ARE DERIVED FROM POINT GPS 108 AND 789-108, ESTABLISHED DURING THE MANATEE COUNTY GPS CONTROL SURVEY OF 1998. THIS HORIZONTAL DATUM RESULTS IN THE EASTERLY RIGHT-OF-LINE OF GULF DRIVE (SR 789), HAVING A BEARING N 28°00'23" W.
2. ELEVATIONS ARE BASED ON NAVD 1988, AND ARE DERIVED FROM BENCHMARK GPS 108, HAVING AN ELEVATION OF 4.18 FEET (NAVD'88).
3. THIS MANATEE COUNTY COASTAL CONSTRUCTION CONTROL LINE FOR THIS AREA IS RECORDED IN ROAD PLAT BOOK 10, PAGE 1 THROUGH 7, OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA, AND WAS RECORDED ON 8/6/1987.
4. THERE IS NO EROSION CONTROL LINE SURVEY IN EXISTENCE WHICH PERTAINS TO THIS PARCEL.
5. THE MEAN HIGH WATER ELEVATION AS SHOWN HEREON WAS ESTABLISHED BY EXTENDING THE ELEVATION SHOWN ON THAT MEAN HIGH WATER INTERPOLATION POINT "39" WHICH CALLS FOR A MEAN HIGH WATER ELEVATION OF 0.23 FEET (NAVD 1988). THE MEAN HIGH WATER LINE AT ELEVATION 0.23 FEET (NAVD 1988) WAS LOCATED ON 8/29/13. THIS MEAN HIGH WATER LINE SURVEY COMPLIES WITH CHAPTER 177 PART 2 OF THE FLORIDA STATUTES.
6. THE JURISDICTIONAL WETLAND LINE WAS PROVIDED BY DAVID A. LANDERS OF CPH ENGINEERS, INC., AND WAS LOCATED IN THE FIELD ON 7/26/2013.
7. THIS MEAN HIGH WATER SURVEY HAS BEEN FILED IN THE FLORIDA BUREAU OF SURVEYING AND MAPPING PUBLIC REPOSITORY UNDER FILE NUMBER 5345.
8. PROPERTY LIES IN FEMA ZONE "A13 (EL12) AND "V17" (EL12), AS SHOWN ON CITY OF BRADENTON BEACH PANEL No. 125091 0002 C, DATED MAY 18, 1982.

LEGEND:

- ■ – CONCRETE MONUMENT FOUND (AS NOTED)
- ● – IRON PIPE FOUND (AS NOTED)
- ⊕ – MONUMENT (AS NOTED)
- R.O.C. – RIGHT OF CONSTRUCTION
- R.O.B. – RIGHT OF BULKHEAD
- R/W – RIGHT OF WAY
- C.M.P. – CONCRETE MONUMENT FOUND
- IRS – IRON ROD SET
- ID – IDENTIFICATION
- BM – BENCH MARK
- FDOT – FLORIDA DEPARTMENT OF TRANSPORTATION
- EL – ELEVATION
- LB – LICENSED BUSINESS
- GND – GROUND
- CCCL – COASTAL CONSTRUCTION CONTROL LINE
- INT. – INTERSECTION
- JDL – JURISDICTIONAL LINE
- MHWL – MEAN HIGH WATER LINE
- L POLE – LIGHT POLE
- AUST – AUSTRALIAN
- MORV – MASTICHORV
- PLM – PALM
- ORNAM. – ORNAMENTAL
- MHFO – MARKED FIBER OPTIC
- VLT – VAULT
- WV – WATER VALVE
- BOL – BOLLARD
- UBX – UTILITY BOX
- BRT/HSE – BRICK HOUSE
- NAVD – NORTH AMERICAN VERTICAL DATUM
- NGVD – NATIONAL GEODETIC VERTICAL DATUM
- O.R.B. – OFFICIAL RECORDS BOOK
- P – PAGE
- STATE ROAD
- GUY ANCHOR
- SIGN
- LIGHT POLE
- MEASURED LINE
- PALM TREE
- TREE GRATE
- MANGROVE
- UTILITY BOX
- WATER VALVE
- FIRE HYDRANT
- MEASURED DIMENSION
- MARKED HOLDING FIBER OPTIC CABLE
- BOLLARD
- SANITARY MANHOLE
- IRON PIPING
- NGVD ELEVATION
- OVERHEAD ELECTRIC
- BURIED ELECTRIC
- BURIED TELEPHONE
- BURIED WATER

JURISDICTIONAL POINT TABLE

NORTHING	EASTING	POINT IDENTIFICATION
[illegible]	[illegible]	[illegible]

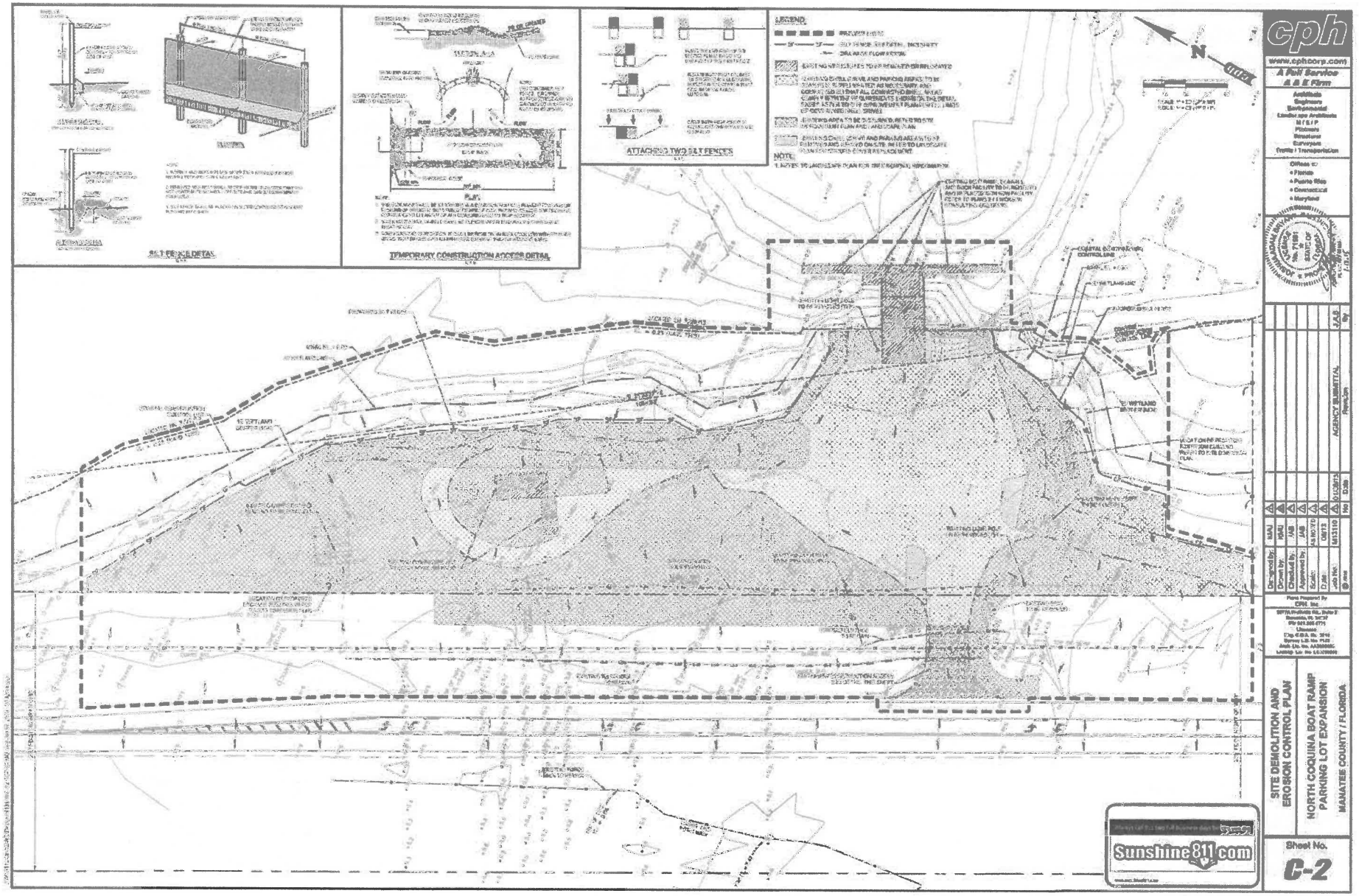
CERTIFIED TO: MANATEE COUNTY

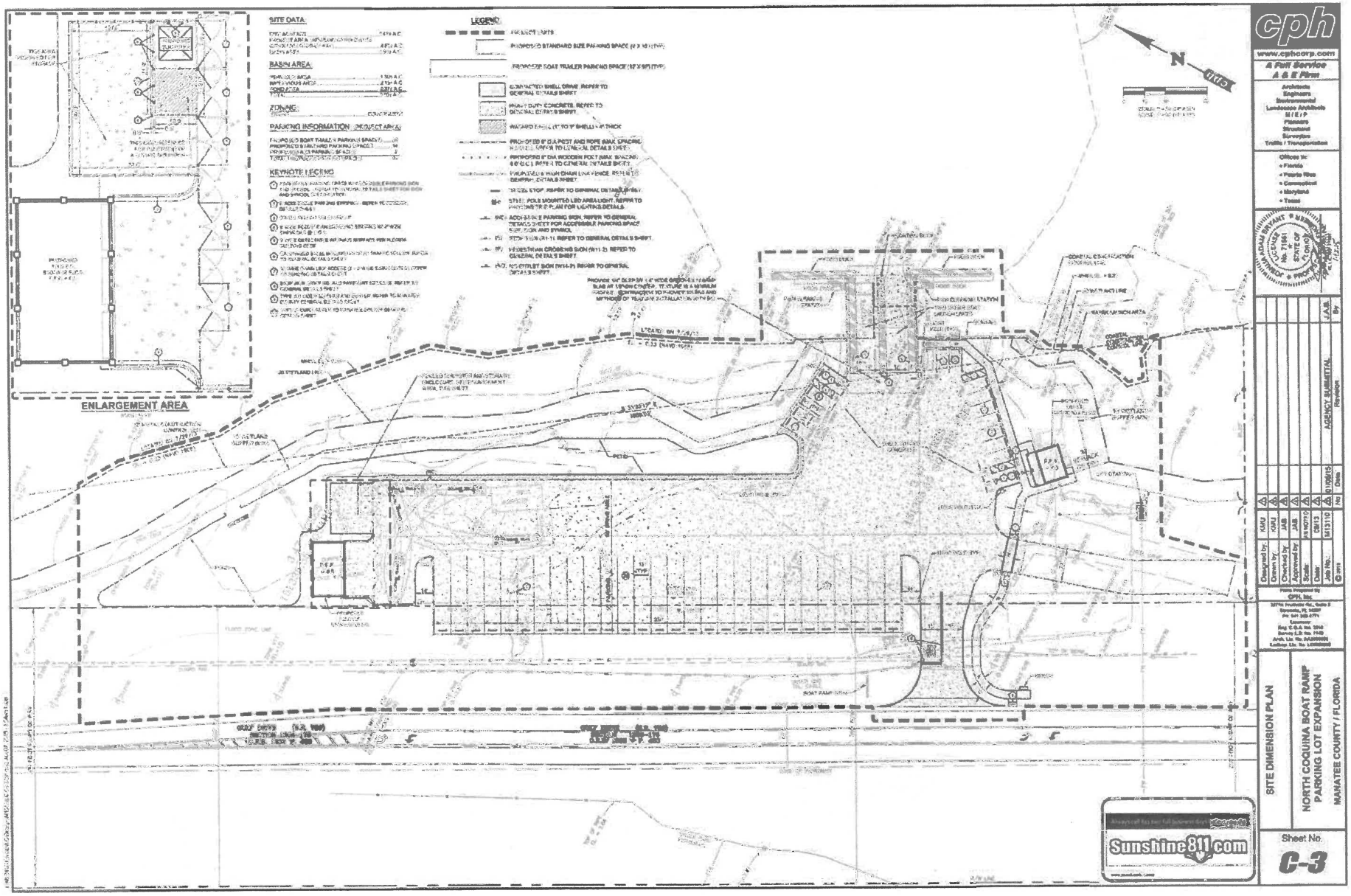
BOUNDARY, MEAN HIGH WATER LINE, TOPOGRAPHIC & JURISDICTIONAL SURVEY

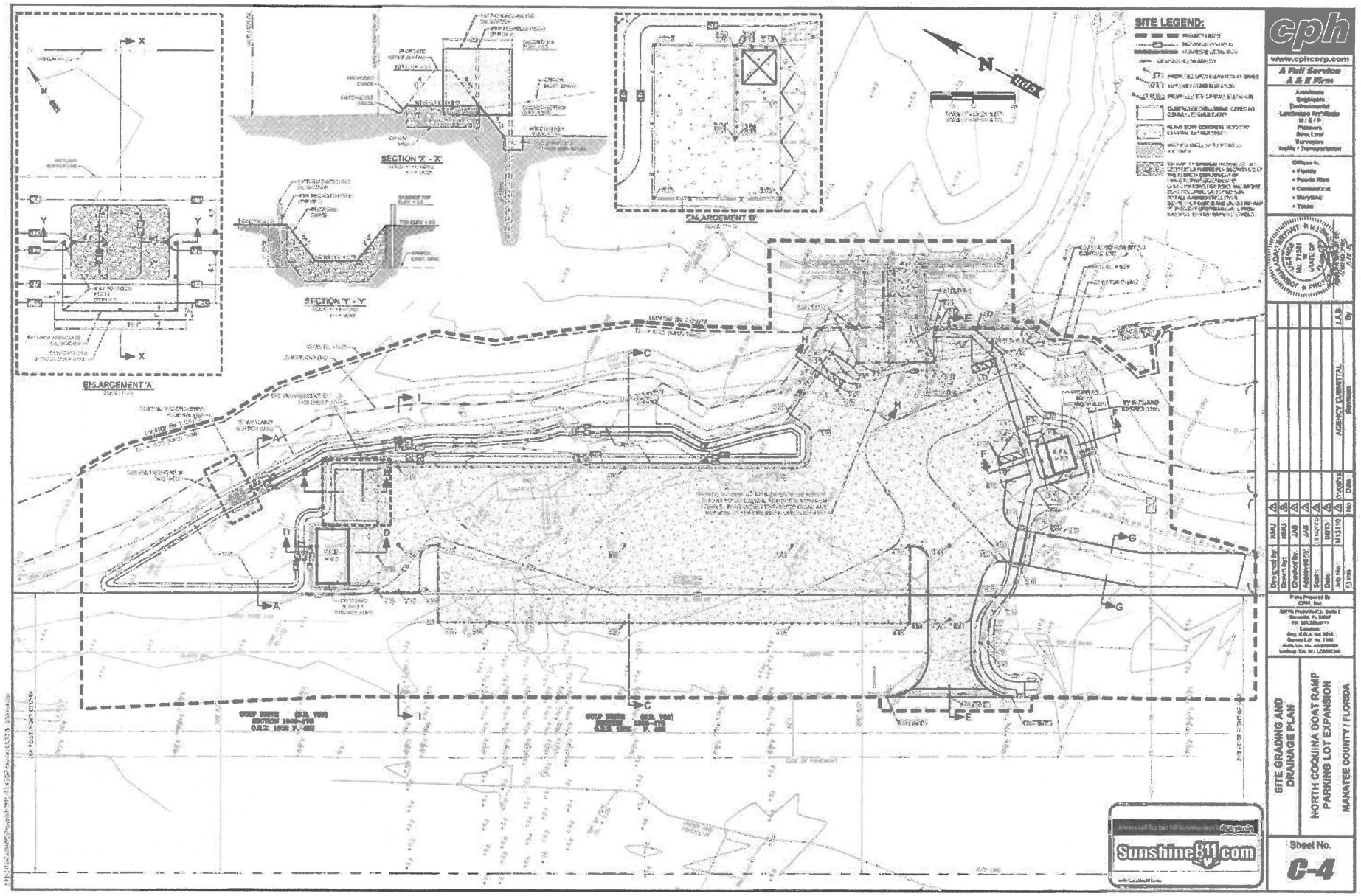
PARCEL OF LAND
OF
NORTH COQUINA BOAT RAMP
LOCATED IN
SECTIONS 9 & 10, TOWNSHIP 35 SOUTH, RANGE 16 EAST
MANATEE COUNTY, FLORIDA

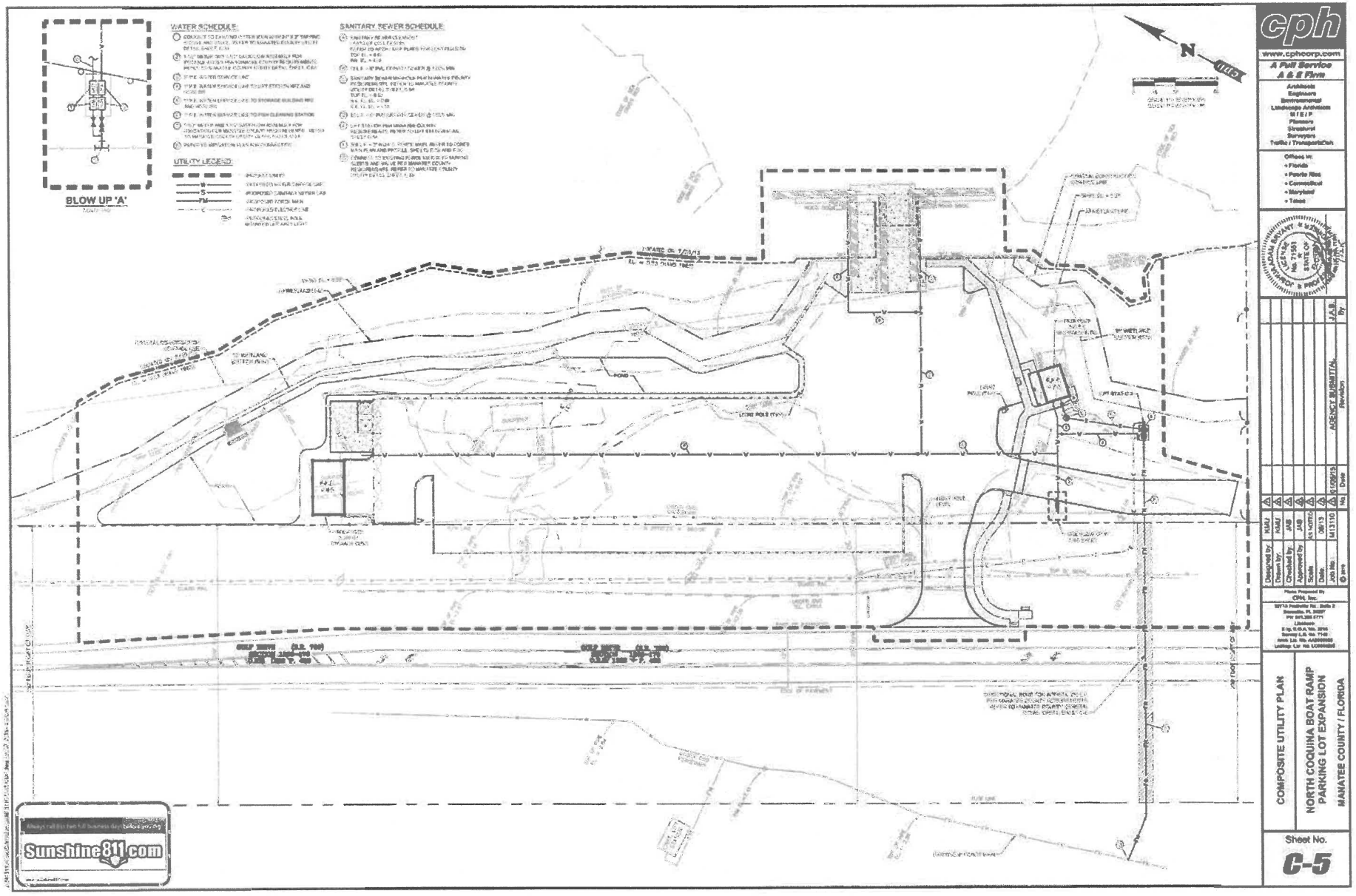
ZNS|ENGINEERING
ENGINEERS | PLANNERS | SURVEYORS
LANDSCAPE ARCHITECTS | ENVIRONMENTAL CONSULTANTS

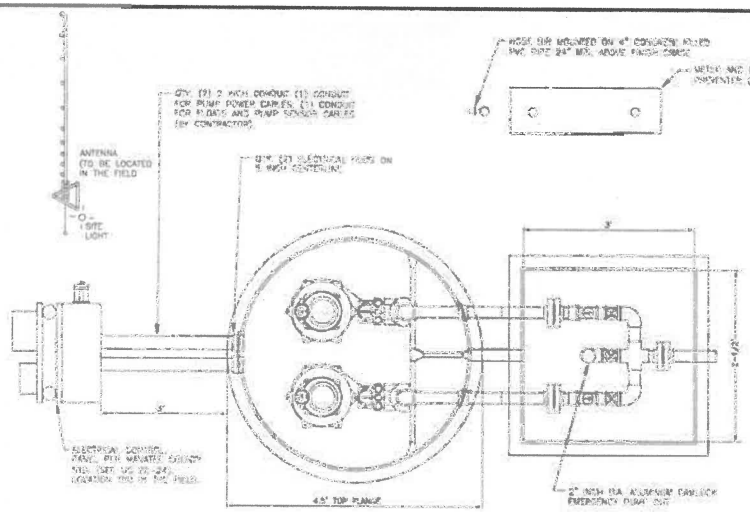
DRAWN: [illegible] DATE: 07-31-13 SCALE: 1" = 30'
FIELD BOOK: [illegible] PAGE: [illegible] SHEET 2 OF 2


SILT FENCE DETAIL
TEMPORARY CONSTRUCTION ACCESS DETAIL
ATTACHING TWO SILT FENCES
LEGEND
NOTE
N
cph
www.cphcorp.com
A Full Service A & E Firm
Sunshine811.com
Sheet No.
C-2
SITE DEMOLITION AND EROSION CONTROL PLAN
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
AGENCY SUBMITTAL


SITE DATA
BASIN AREA
ZONING
PARKING INFORMATION
KEYNOTE LEGEND
LEGEND
ENLARGEMENT AREA
N
cph
www.cphcorp.com
A Full Service A & E Firm
Sunshine811.com
SITE DIMENSION PLAN
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
Sheet No.
C-3

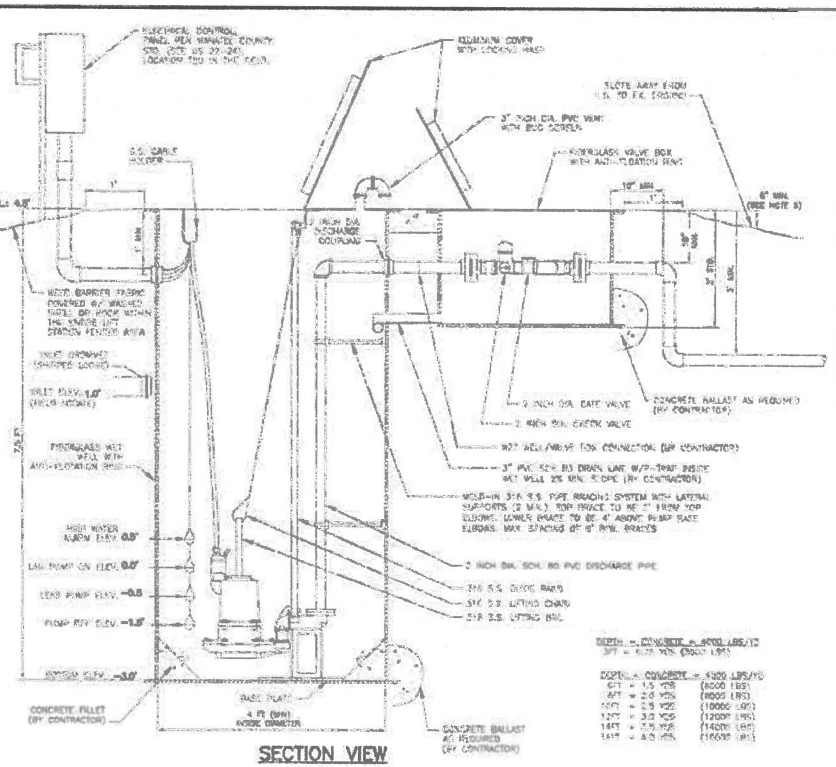

SITE LEGEND:
ENLARGEMENT 'A'
SECTION 'X' - 'X'
SECTION 'Y' - 'Y'
ENLARGEMENT 'B'
N
cph
www.cphcorp.com
A Full Service A & E Firm
Sunshine811.com
SITE GRADING AND DRAINAGE PLAN
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
Sheet No.
C-4


BLOW UP 'A'
WATER SCHEDULE:
SANITARY SEWER SCHEDULE
UTILITY LEGEND:
N
Sunshine811.com
cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M/E/P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
AGENCY SUBMITTAL
Revision
Date
By
Designed by: KMJ
Drawn by: KMJ
Checked by: JAB
Approved by: JAB
Scale: AS NOTED
Date: 06/13
Job No.: M13110
Plans Prepared By
CPH, Inc.
COMPOSITE UTILITY PLAN
NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
Sheet No.
C-5



PLAN VIEW

NTS



SECTION VIEW

NTS

GRINDER LIFT STATION NOTES:

1. GRINDER LIFT STATION SHALL BE IN ACCORDANCE WITH THE LATEST MANATEE COUNTY UTILITY STANDARDS, UNLESS OTHERWISE STATED BELOW. DWG US-19, US-21, US-23, US-24, AND US-26.
2. ALL THE HATCH COVERS SHALL BE SIZE HINGED TO ALLOW FOR MINIMUM ACCESS TO THE WET WELL. THE HATCH COVER SHALL INCLUDE A SINGLE OR DUAL DOOR OF DIMENSIONS SPECIFIED BY THE PUMP MANUFACTURER FOR PROPER PUMP CLEARANCE.
3. ALL FORCE MAIN PIPING AND FITTINGS WITHIN THE WET WELL AND THE VALVE VAULT SHALL BE TYPE 304 STAINLESS STEEL. THE FORCE MAIN SHALL BE AT LEAST 18 INCHES BELOW THE TOP WITHIN THE WET WELL & VALVE VAULT. A 90 DEGREE BEND THAT IS TURNED DOWN SHALL BE INSTALLED UP AGAINST BOTTOM OF THE VALVE VAULT TO OBTAIN A MINIMUM 3 FEET OF COVER. ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. (GREEN-RAW SEWAGE, YELLOW-DISCHARGE, ORANGE-DISCHARGE-CHLORINATED, BLUE-POTABLE WATER).
4. ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL.
5. VERTICAL PVC PUMP DISCHARGE PIPE IN THE WET WELL TO BE BRACED. FOR GRADE TO BE 30' OR HIGH TOP ELBOW, LOWER BRACE TO BE 4' ABOVE BASE ELBOW, MAX. SPACING OF 8' BETWEEN BRACES. THE PIPE SHALL BE CLAMPED TO A SINGLE LENGTH OF 1-1/2" STAINLESS STEEL CHANNEL (UNISTRUT P1000 OR EQUAL) INSTALLED HORIZONTALLY AND ANCHORED TO THE WET WELL WALL AT EACH END WITH A CENTER BRACE OF 1-1/2" CHANNEL ATTACHED TO THE BACK OF THE WET WELL. THE PIPE CLAMPS SHALL BE UNISTRUT P1137 STAINLESS STEEL OR EQUAL.

DESIGN CONDITIONS

WEIGHT	33 DRY	3	HP
GPM	37	30	FT/DH
VOLTAGE	208/230/460	SINGLE/THREE	PHASE
DISCHARGE (INCHES)	2 INCH	110 MM	IMPELLER (INCHES)

PUMPS SHALL BE OF THE SUBMERSIBLE TYPE. EACH PUMP SHALL BE MOUNTED ON A BPG-12 RAIL SYSTEM. THE RAIL SYSTEM SHALL BE SELF ENGAGING RESULTING IN A LEAKPROOF COUPLING. THE RAIL SYSTEM SHALL INCLUDE THE BASE ELBOW, DISCHARGE FLANGE ASSEMBLY, 01" 316 SS GUIDE RAILS, 316 SS UPPER GUIDE BRACKET, 316 SS LIFTING BAIL AND CABLE, AND A SIX-HOLE 316 SS CABLE HOLDER. THE RAIL SYSTEM SHALL BE MOUNTED AND PRE-PIPED BY THE PUMP SUPPLIER.

PUMP CONSTRUCTION
THE PUMP VOLUTE, MOTOR AND SEAL HOUSING SHALL BE MANUFACTURED OF CAST IRON ASTM A-48. ALL EXTERNAL FASTENERS SHALL BE SERIES 300 STAINLESS STEEL. THE PUMP SHAFT SHALL BE CONSTRUCTED OF SERIES 400 STAINLESS STEEL.

IMPELLER
THE IMPELLER SHALL BE OF NON-CLOG, SEMI-OPEN VORTEX CONSTRUCTION. THE IMPELLER SHALL INCLUDE PUMP-OUT VANES ON THE BACK OF THE IMPELLER AND SHALL BE STATICALLY AND HYDRAULICALLY BALANCED.

CUTTER
A TWO-STAGE CUTTER ASSEMBLY SHALL BE MOUNTED ON THE SUCTION SIDE OF THE PUMP WITH DIRECT DISCHARGE INTO THE PUMP VOLUTE. THE GRINDER SHALL BE CAPABLE OF GRINDING ALL MATERIALS FOUND IN NORMAL DOMESTIC SEWAGE, INCLUDING PLASTICS, RUBBER, SANITARY NAPKINS, DISPOSABLE DIAPERS AND WOOD FRAGMENTS, INTO A FINE SLURRY. BOTH THE STATIONARY AND ROTATING CUTTERS SHALL BE CONSTRUCTED OF 440C STAINLESS STEEL HARDENED TO ROCKWELL 60C.

MOTOR
THE MOTOR SHALL BE GROWLER IN A SEALED, SUBMERSIBLE TYPE HOUSING. THE STATOR SHALL BE SECURELY HELD IN PLACE WITH A REMOVABLE END RING AND THREADED FASTENERS FOR EASE OF REMOVAL WITHOUT THE USE OF HEAT OR A PRESS. THE MOTOR WILL HAVE TWO HERMETICALLY SEALED BEARINGS, ONE UPPER (RADIAL) AND ONE LOWER (THRUST), TO SUPPORT THE SHAFT. THE MOTOR SHALL BE EQUIPPED WITH A WINDING THERMOSTAT THAT AUTOMATICALLY SHUTS THE MOTOR OFF IN CASE OF MOTOR OVERHEATING.

SEAL CHAMBER
THE PUMP SHALL HAVE TWO MECHANICAL SEALS, MOUNTED IN TANDEM WITH AN OIL CHAMBER BETWEEN THE SEALS (FOR EQUIPMENT). THE PUMP SHALL BE EQUIPPED WITH A SEAL LEAK DETECTION PROBE AND WARNING SYSTEM BY USING A SEAL FAILURE SENSOR INSTALLED IN THE SEAL CHAMBER.

WET WELL
THE PUMP SUPPLIER SHALL PROVIDE THE FIBERGLASS WET WELL. THE SLAB TYPE REINFORCED POLYESTER BASE SHALL BE CONSTRUCTED OF A COMMERCIAL GRADE OF GLASS FIBER AND SHALL BE PROVIDED WITH AN ANTI-FLOTATION RING WITH A MINIMUM DIAMETER OF THREE INCHES LARGER THAN THE BASE DIAMETER. THE WELL SYSTEM, INTERNAL PIPING AND DISCHARGE CONNECTIONS SHALL BE PRE-INSTALLED BY THE PUMP SUPPLIER.

VALVE BOX
THE VALVE BOX IS FIBERGLASS WITH ALUMINUM LOCKABLE COVER. STANDARD 1020 VALVE BOX IS 3' X 2 1/2' X 3'.

VALVES
VALVES SHALL BE SEAMLESS GLASS CHECK WITH CLEAN-OUT PORTS AND GLASS GATE VALVES.

FLOATS
FLOATS SHALL BE HYDROMAGNETIC OR EQUAL.

PAINTING
ALL EXTERNAL PARTS SHALL CONFORM TO THE CURRENT MANATEE COUNTY SPECIFICATION.

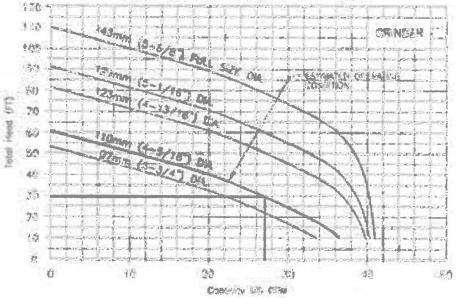
ELECTRICAL
PUMP SUPPLIER SHALL PROVIDE SUBMERSIBLE PUMPS, SLIDE RAIL ASSEMBLIES, CONTROL PANEL, FLOAT SWITCHES, ALUMINUM HATCHES AND ACCESSORIES TO INSURE PROPER OPERATIONS AND WARRANTY. THE SUBMERSIBLE SEWAGE PUMPING STATION SHALL HAVE PUMP BASES, RAIL ASSEMBLIES, AND DISCHARGE PIPING READY FOR FIELD INSTALLATION.

GENERAL NOTES:

1. THE GRINDER LIFT STATION SHALL MEET THE CRITERIA OF THE LATEST MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS FOR PUMP LIFT STATION, SECTION 13.
2. METAL LIFT & NOSE BIB SHALL BE PER M.C. UTILITY STANDARDS & LOCATED AS SHOWN TO PROVIDE UNIMPEDED VEHICULAR ACCESS TO THE LIFT STATION FOR PUMP REMOVAL. COORDINATE LOCATION WITH LIFT STATION SUPERINTENDENT.
3. ALL ELECTRICAL PANELS SHALL BE 1' ABOVE THE 100 YEAR FLOOD ELEVATION.
4. FENCING AROUND THE GRINDER LIFT STATION SHALL BE FOLD LOCATED AND INSTALLATION COORDINATED WITH MANATEE COUNTY PERSONNEL.
5. SEE "ENTRANCE HATCH ELEVATION" CRITERIA IN THE M.C. UTILITY STANDARDS.

EBARA SEWAGE GRINDER PUMP
48" DUPLEX STATION - 2" PIPING
WITH SLIDE RAIL SYSTEM, V.B. AND F.D.E.P. PANEL
TSC PRE-FAB PUMP SOLUTIONS

EBARA 1SDF 3 HP Synchronous Speed: 3600 RPM
Single and Three Phase 2 inch Discharge
Discharge Flows GPM @ TDH(FT)



cph
www.cphcorp.com
A Full Service A & E Firm
Architects Engineers Environmental Landscape Architects M/E/P Planners Directional Surveyors Traffic / Transportation
Offices in: • Florida • Puerto Rico • Connecticut • Maryland • Texas

No.	Date	Revision	By
1			
2			
3			
4			
5			

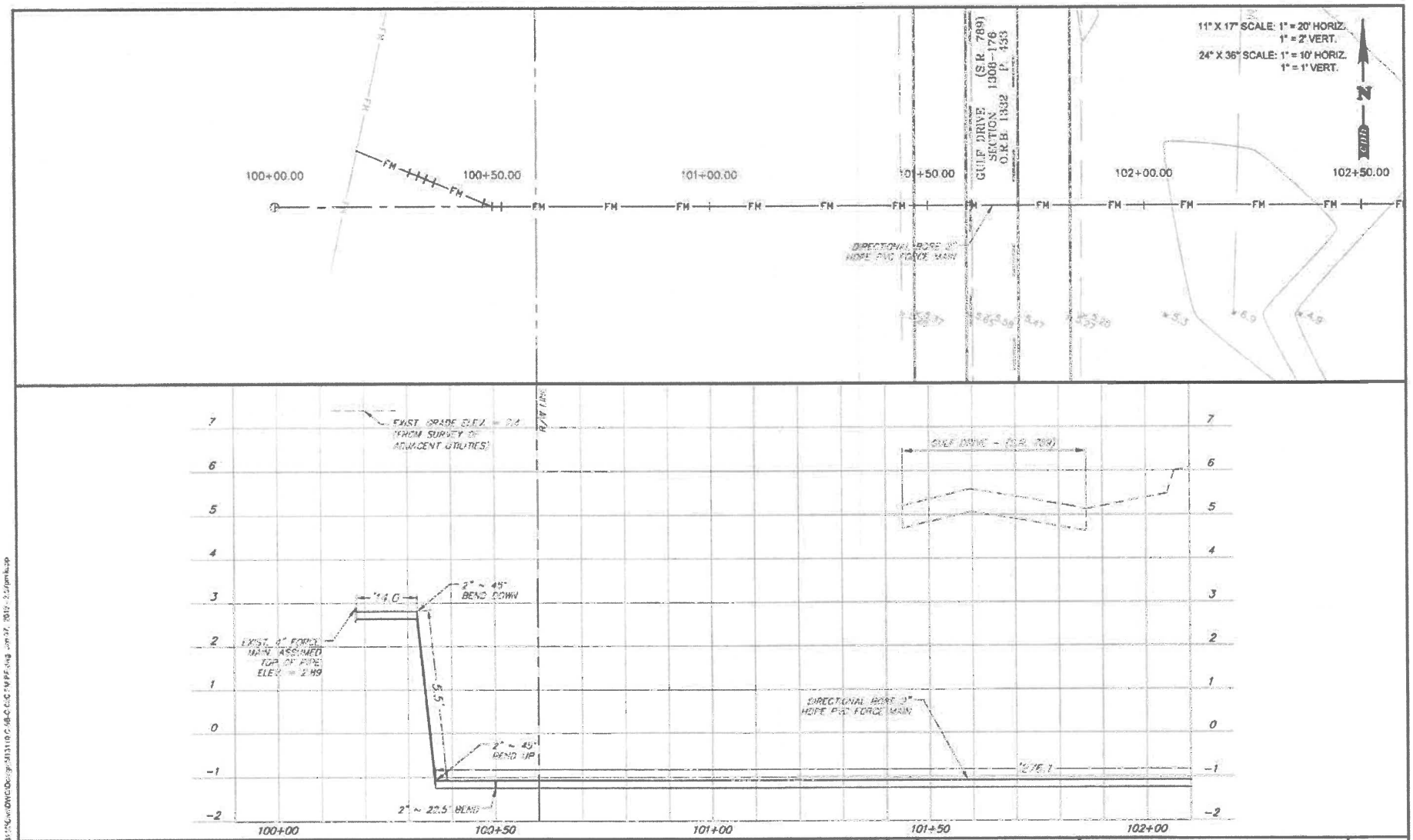
Designed by:	MJT	Date:	
Drawn by:	RDMJ	Scale:	
Checked by:	MJT	Code:	72718
Approved by:	JAB	Job No.:	53133110

Plans Prepared By CPH, Inc.
12734 Kenwood Ln., Suite 2
Sarasota, FL 34240
Ph. 941.355.4775
Licenses
Eng. C.O.A. No. 2241
Survey L.B. No. 7540
Arch. Lic. No. AC26000
Landscape Lic. No. LC26000266

LIFT STATION PLAN

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA

Sheet No.
C-5A



REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED
A	01/06/15	AGENCY SUBMITTAL	J.A.B.

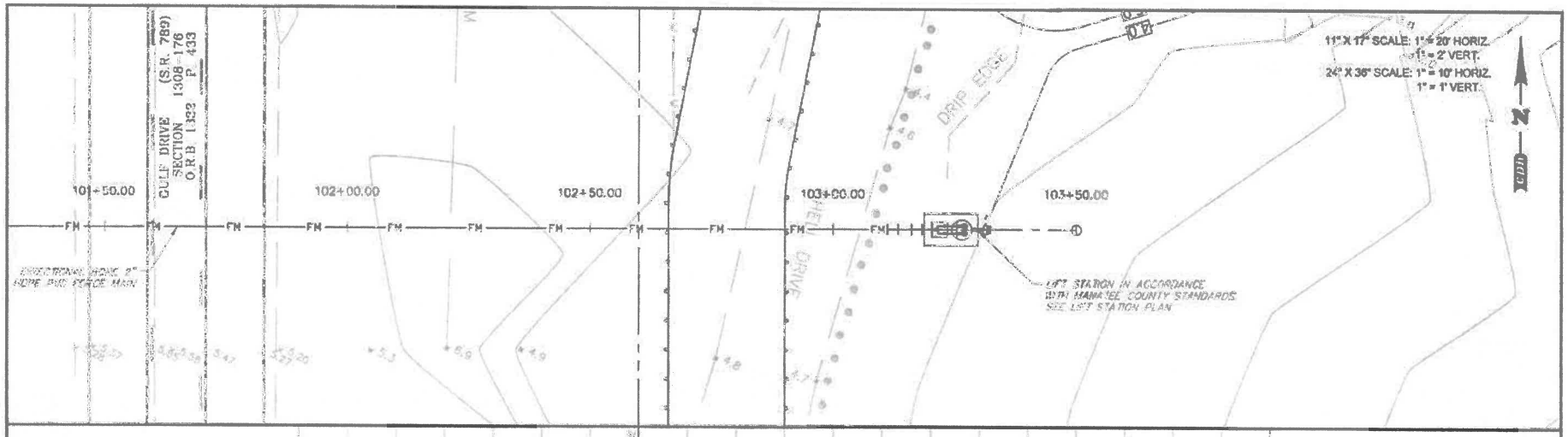
cph

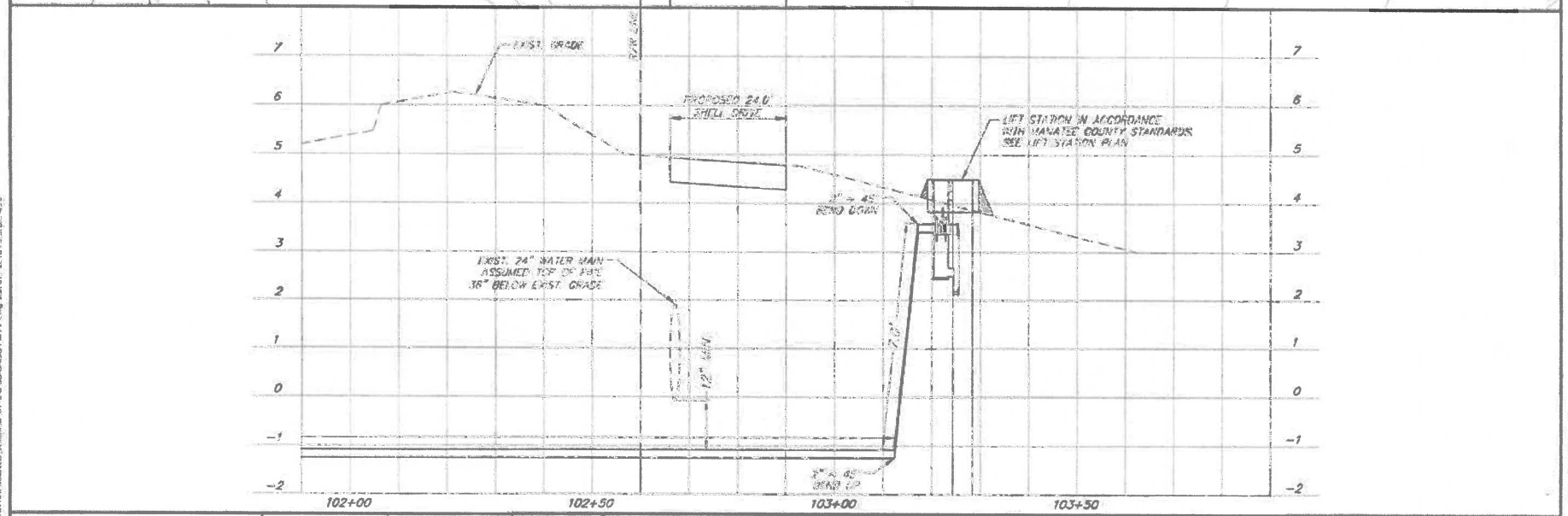
ROADWAY IMPROVEMENTS TO S.R. 789 (GULF DRIVE)

	NAME	DATE
DESIGNED BY		12/2014
DRAWN BY		12/2014
CHECKED BY		12/2014
APPROVED BY		12/2014

FORCE MAIN PLAN AND PROFILE

SHEET NO. C-5B





REVISIONS			
NO	DATE	DESCRIPTION	APPROVED

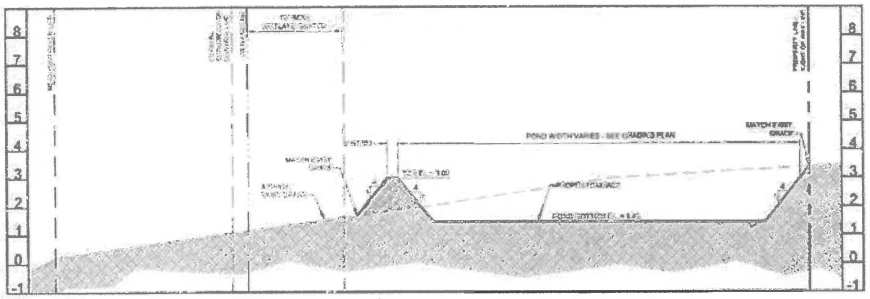
cph

ROADWAY IMPROVEMENTS TO S.R. 789 (GULF DRIVE)

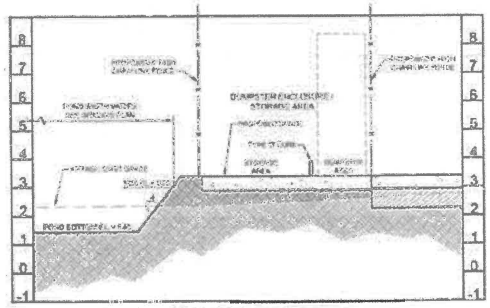
	NAME	DATE
DESIGNED BY	MJT	12-30-14
DRAWN BY	KRD	12-30-14
CHECKED BY	MJT	12-30-14
SUPERVISED BY	JAB	12-30-14

FORCE MAIN PLAN AND PROFILE

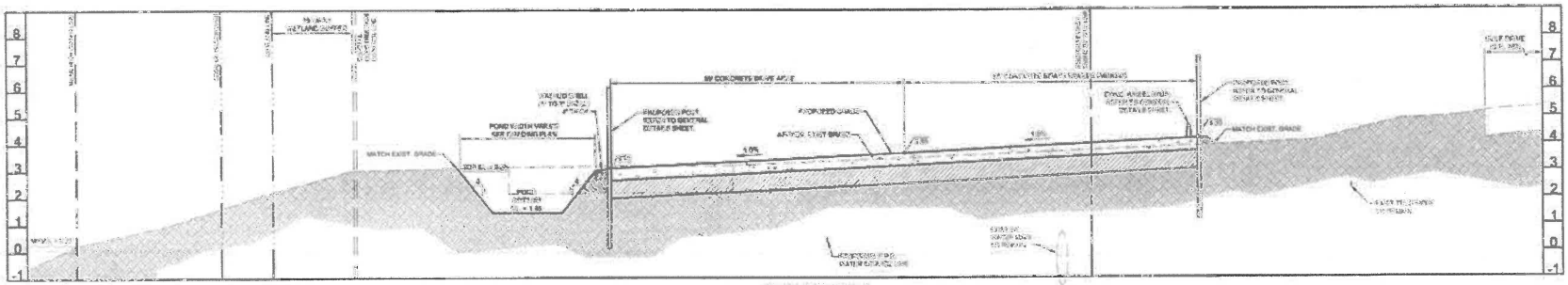
SHEET NO. C-5C



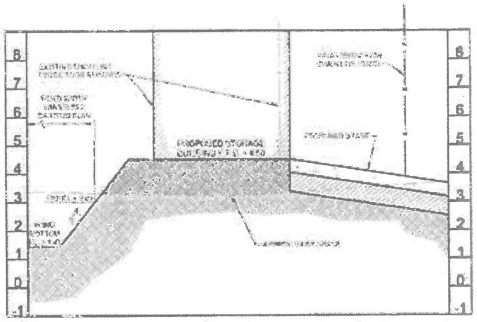
SECTION 'A'-'A'



SECTION 'B'-'B'



SECTION 'C'-'C'



SECTION 'D'-'D'

Sunshine811.com

www.cphcorp.com

A Full Service A & E Firm

Architects
Engineers
Environmental
Landscape Architects
S / E / P
Planners
Structural
Surveyors
Traffic / Transportation

Offices in:
- Florida
- Puerto Rico
- Connecticut
- Maryland
- Texas

Rev	Date	By
1	01/29/15	J.A.B.

AGENCY SUBMITTAL
Revision

Designed by:	JGMJ	
Drawn by:	JGMJ	
Checked by:	JAB	
Approved by:	JAB	
Scale:	AS NOTED	
Date:	01/14	
Job No.:	04131.10	
© ers.		

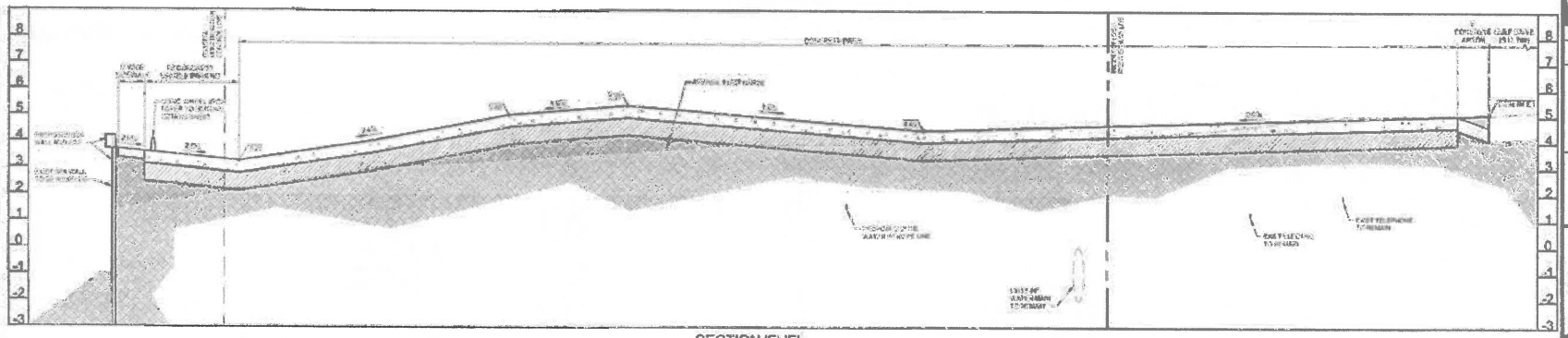
Plans Prepared By
CPH, Inc.
3776 Pembrooke Rd., Suite 2
Sarasota, FL 34237
Ph. 941.366.8751
Licensed
Eng. C.O.A. No. 3214
Survey L.B. No. 7143
Arch. Lic. No. AA26001811
Landscape Lic. No. LC0000035

SITE CROSS SECTIONS SHEET

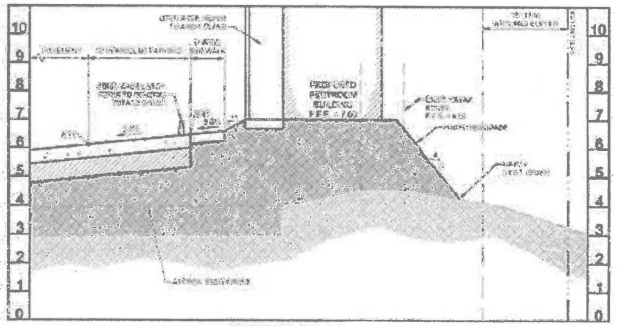
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

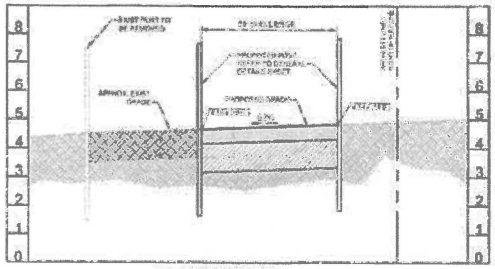
Sheet No.
C-6



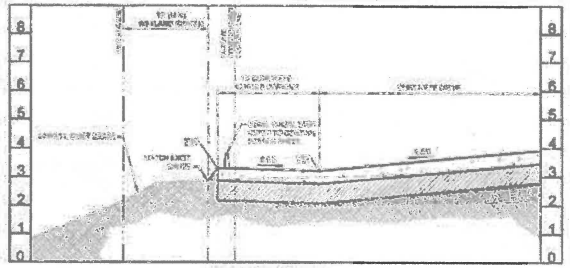
SECTION 'E'-'E'



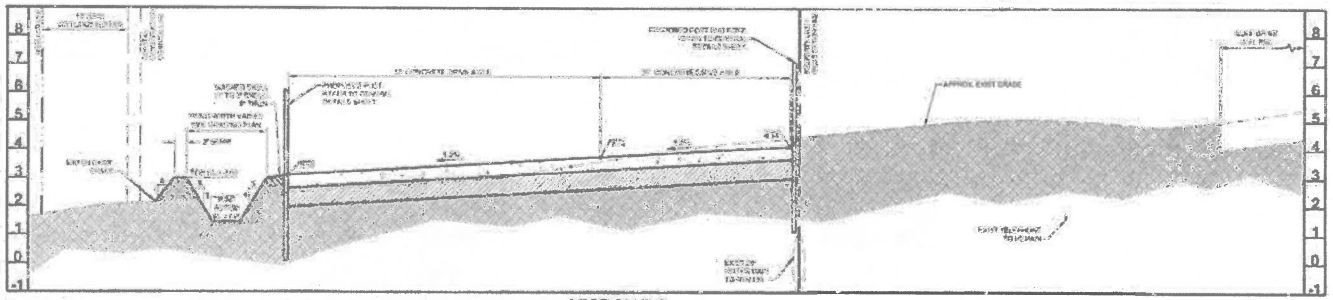
SECTION 'F'-'F'



SECTION 'G'-'G'



SECTION 'H'-'H'



SECTION 'I'-'I'

cph

www.cphcorp.com

A Full Service A & E Firm

Architects
Engineers
Environmental
Landscape Architects
GIS/LIS
Planners
Structural
Surveyors
Traffic / Transportation

Offices in:
- Florida
- Puerto Rico
- Connecticut
- Maryland
- Texas

No.	Date	By
1	01/05/15	J.A.B.

AGENCY SUBMITTAL

Designed by: KMJ
Drawn by: KMJ
Checked by: JAB
Approved by: JAB
Scale: 1"=10'
Date: 07/14
Job No.: 0415110
Sheet No.: 63 of 65

Plans Prepared by
CPH, Inc.
5970 Pratt Ct. Ste. 3
Sarasota, FL 34237
Ph: (941) 366-4771
Licensed
Eng. C.O.A. No. 3145
Survey L.B. No. 7148
Arch. Lic. No. AAC 0000
Landscape Lic. No. LC26000295

SITE CROSS SECTIONS SHEET

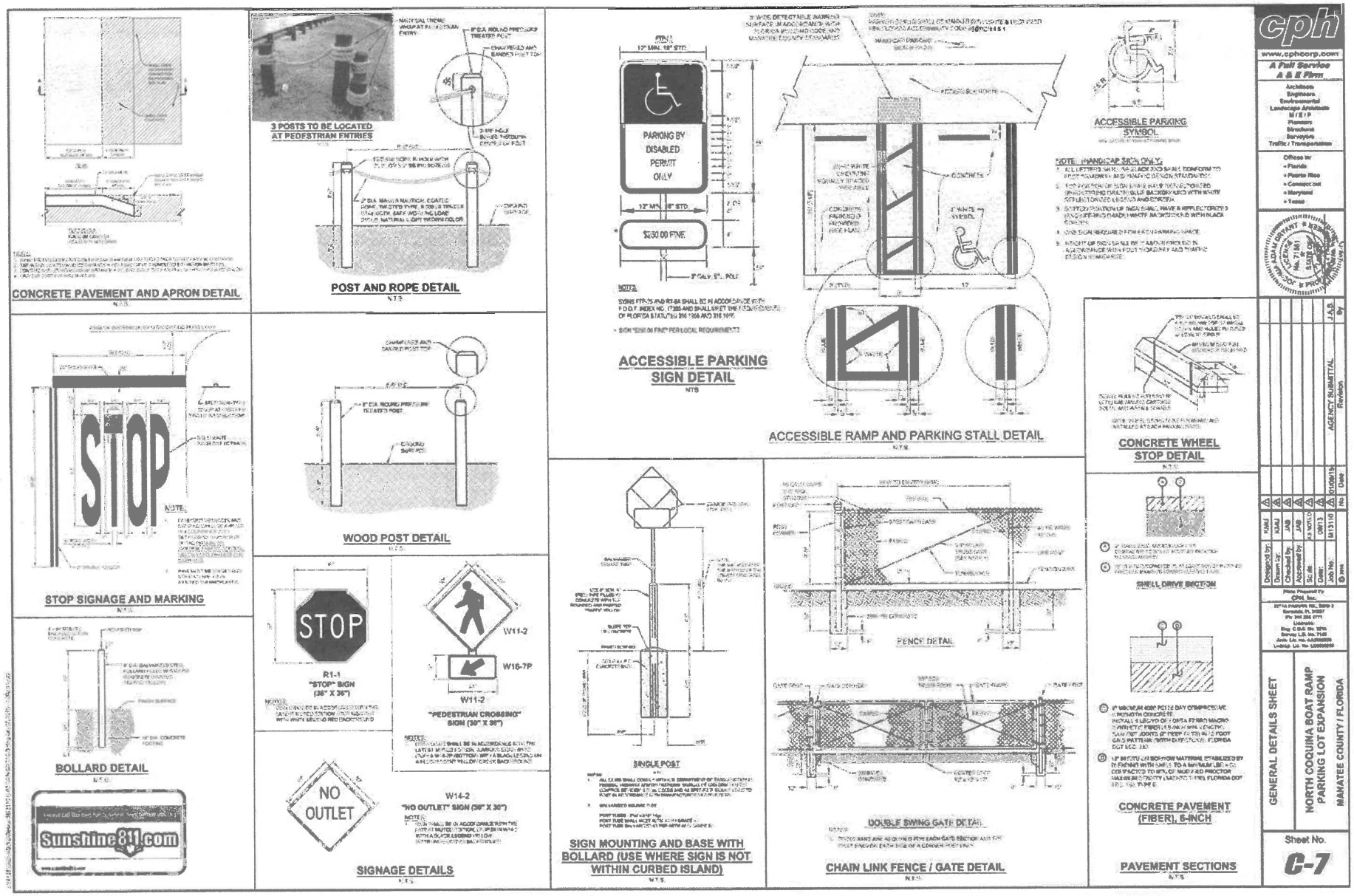
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

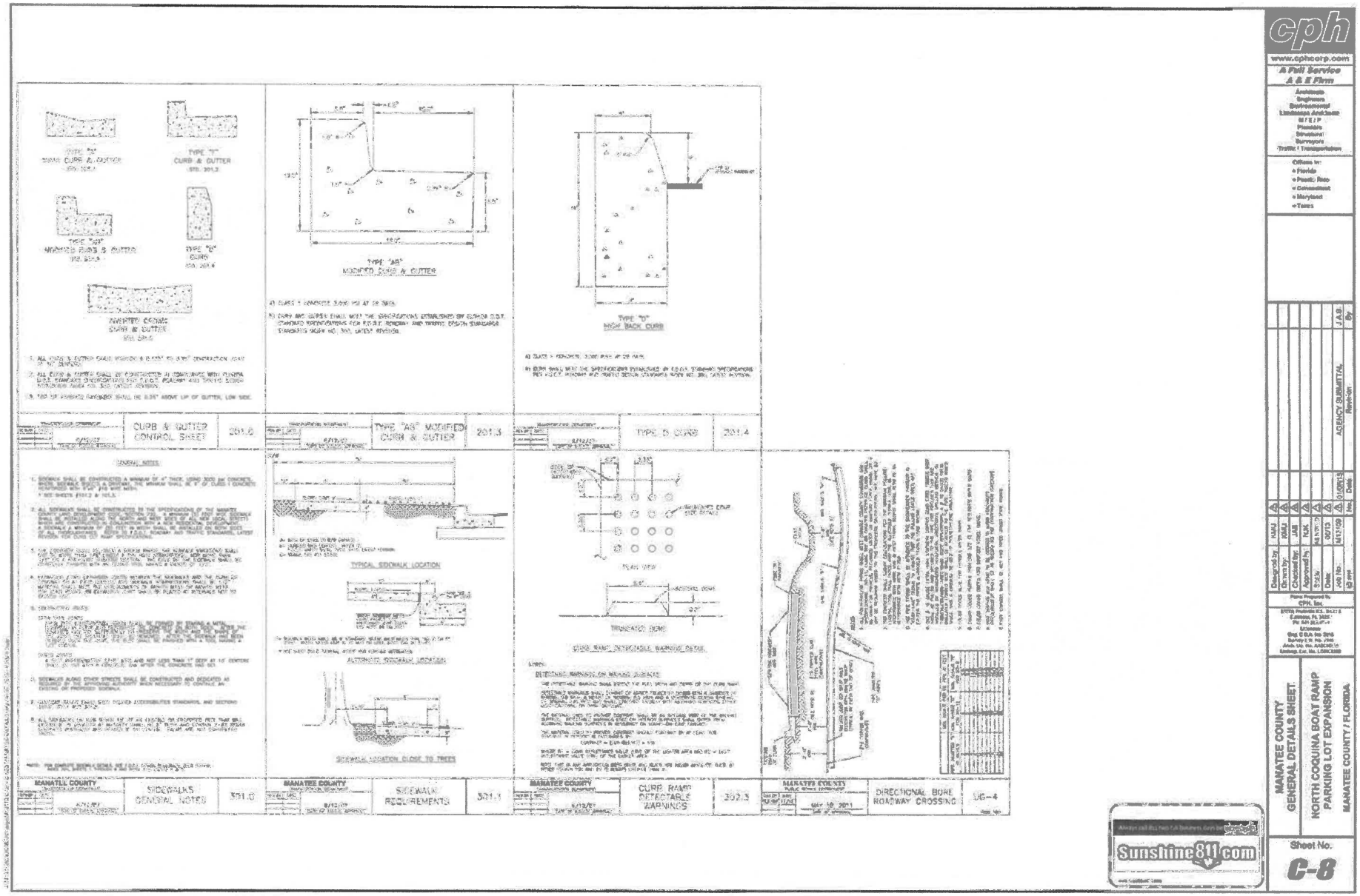
MANATEE COUNTY / FLORIDA

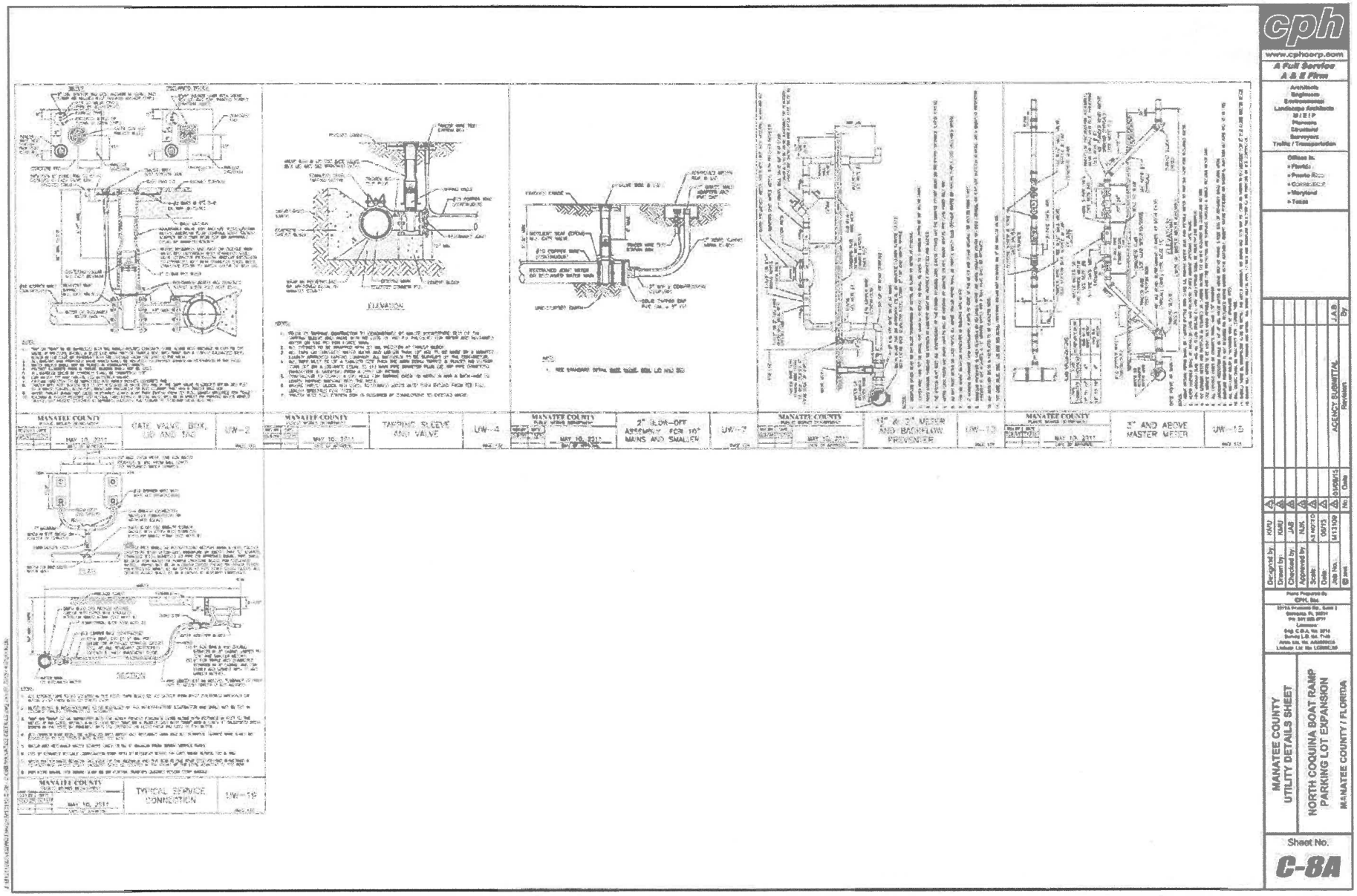
Sunshine811.com

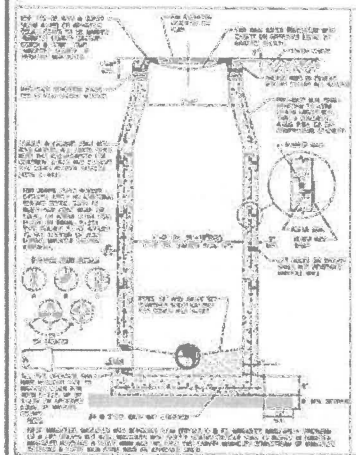
Sheet No.

C-6A

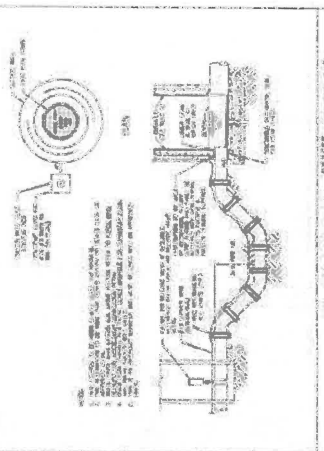

CONCRETE PAVEMENT AND APRON DETAIL
3 POSTS TO BE LOCATED AT PEDESTRIAN ENTRIES
POST AND ROPE DETAIL
PARKING BY DISABLED PERMIT ONLY
$250.00 FINE
ACCESSIBLE PARKING SIGN DETAIL
ACCESSIBLE PARKING SYMBOL
ACCESSIBLE RAMP AND PARKING STALL DETAIL
CONCRETE WHEEL STOP DETAIL
STOP
STOP SIGNAGE AND MARKING
WOOD POST DETAIL
BOLLARD DETAIL
Sunshine811.com
R1-1 "STOP" SIGN (36" X 36")
W11-2
W16-7P
W11-2 "PEDESTRIAN CROSSING" SIGN (36" X 36")
NO OUTLET
W14-2 "NO OUTLET" SIGN (36" X 36")
SIGNAGE DETAILS
SINGLE POST
SIGN MOUNTING AND BASE WITH BOLLARD (USE WHERE SIGN IS NOT WITHIN CURBED ISLAND)
FENCE DETAIL
DOUBLE SWING GATE DETAIL
CHAIN LINK FENCE / GATE DETAIL
SHELL DRIVE SECTION
CONCRETE PAVEMENT (FIBER), 6-INCH
PAVEMENT SECTIONS
cph
www.cphcorp.com
A Full Service A & E Firm
Architects Engineers Environmental Landscape Architects M / E / P Planners Structural Surveyors Traffic / Transportation
Offices in • Florida • Puerto Rico • Connecticut • Maryland • Texas
AGENCY SUBMITTAL
GENERAL DETAILS SHEET
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
Sheet No.
C-7


TYPE "A" CURB & GUTTER
TYPE "B" CURB
TYPE "D" HIGH BACK CURB
CURB & GUTTER CONTROL SHEET
TYPE "AS" MODIFIED CURB & GUTTER
TYPE "D" CURB
GENERAL NOTES
TYPICAL SIDEWALK LOCATION
ALTERNATE SIDEWALK LOCATION
SIDEWALK LOCATION CLOSE TO TREES
PLAN VIEW
TRUNCATED DOME
CURB RAMP DETECTABLE WARNING DETAIL
DETECTABLE WARNING ON RAMPED SURFACES
SIDEWALKS GENERAL NOTES
SIDEWALK REQUIREMENTS
CURB RAMP DETECTABLE WARNINGS
DIRECTIONAL BORE ROADWAY CROSSING
cph
www.cphcorp.com
A Full Service A & E Firm
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
AGENCY SUBMITTAL
Plans Prepared by CPH, Inc.
MANATEE COUNTY
GENERAL DETAILS SHEET
NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
Sheet No.
C-8
Sunshine811.com

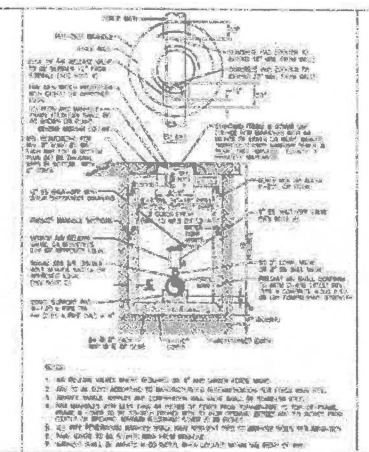

MANATEE COUNTY
GATE VALVE, BOX, UP AND TEE
UW-2
MANATEE COUNTY
TAPPING SLEEVE AND VALVE
UW-4
MANATEE COUNTY
2" BLOW-OFF ASSEMBLY FOR 10" MAINS AND SMALLER
UW-7
MANATEE COUNTY
1" & 2" METER AND BACKFLOW PREVENTER
UW-13
MANATEE COUNTY
3" AND ABOVE MASTER METER
UW-15
MANATEE COUNTY
TYPICAL SERVICE CONNECTION
UW-19
ELEVATION
SECTION
cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Caribbean
• Maryland
• Texas
AGENCY SUBMITTAL
Revisions
No.
Date
By
Designed by: KMU
Drawn by: KMU
Checked by: JAB
Approved by: NJK
Scale: AS NOTED
Date: 06/13
Job No.: 413109
Plans Prepared By:
CPH, Inc.
MANATEE COUNTY
UTILITY DETAILS SHEET
NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
Sheet No.
C-8A



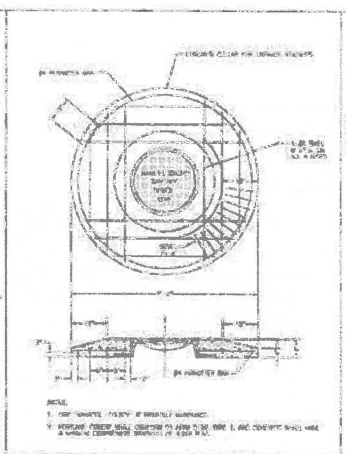
MANATEE COUNTY | JANUARY 7, 2014 | SANITARY SEWER MANHOLE FOR UNDERGROUND FLOW | US-7



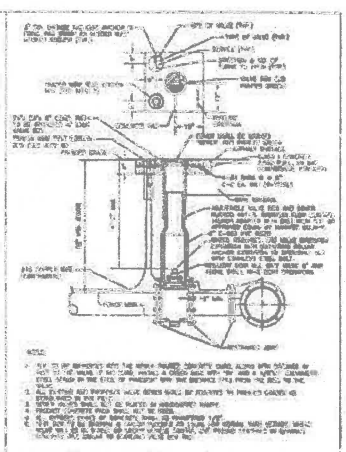
MANATEE COUNTY | JANUARY 7, 2014 | FORCE MAIN CONNECTION TO MANHOLE | US-8



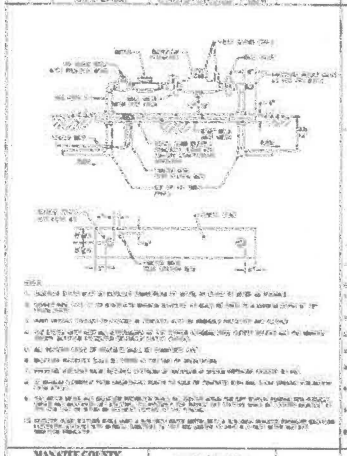
MANATEE COUNTY | JANUARY 7, 2014 | BELOW GRADE AIR RELEASE VALVE FOR FORCE MAINS | US-10



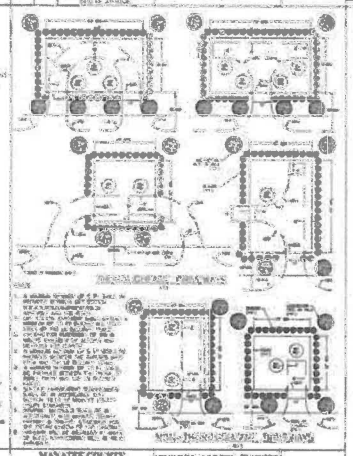
MANATEE COUNTY | JANUARY 7, 2014 | MANHOLE, DRIVER & CONCRETE COLLAR FOR UNPAVED ROADWAYS | US-11



MANATEE COUNTY | JANUARY 7, 2014 | GATE VALVE, BOX, COVER AND TAC | US-12



MANATEE COUNTY | JANUARY 7, 2014 | WATER METER & BACKFLOW PREVENTER FOR PUMP STATIONS | US-15



MANATEE COUNTY | JANUARY 7, 2014 | MINIMUM ACCESS/EGRESS AND LANDSCAPING REQUIREMENTS FOR PUMP STATIONS | US-16

cph

www.cphcorp.com

A Full Service A & E Firm

Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation

Offices in:
- Florida
- Puerto Rico
- Connecticut
- Maryland
- Texas

No	Date	By	Revision
1	1/08/15	J.A.B.	AGENCY SUBMITTAL

Designed by: RJMJ
Drawn by: RJMJ
Checked by: JAB
Approved by: MJK
Scale: 1" = 40'
Date: 06/13
Job No.: M13109
Sheet No.: 9 of 9

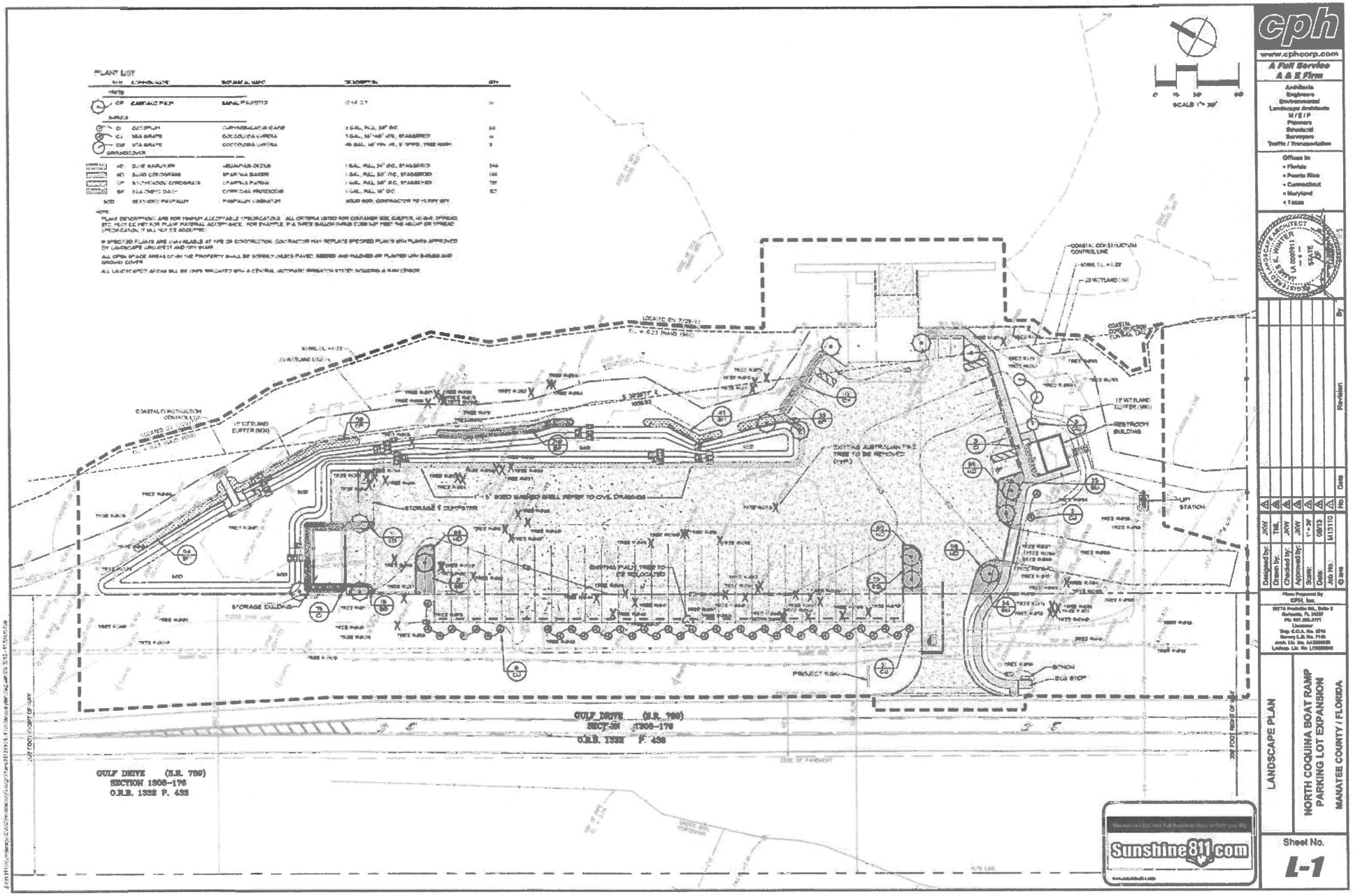
Plans Prepared By
CPH, Inc.
[illegible]
Ph: 941 [illegible]
License:
FBPE C.O.A. No. [illegible]
Survey L.B. No. [illegible]
Arch. Lic. No. [illegible]
Eng. Lic. No. [illegible]

MANATEE COUNTY
UTILITY DETAILS SHEET

NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-8B


PLANT LIST
GULF DRIVE (S.R. 789)
SECTION 1808-176
O.R.B. 1332 P. 433
STORAGE CONTAINER
STORAGE BUILDING
RESTROOM BUILDING
LIFT STATION
PROJECT AREA
BENCH
BUS STOP
SCALE 1" = 30'
cph
www.cphcorp.com
A Full Service A & E Firm
Sunshine811.com
LANDSCAPE PLAN
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA
Sheet No.
L-1

LANDSCAPE NOTES

PALM PLANTING DETAIL

NTS

* ALL PALMS TO HAVE CLEAR WOOD INDICATED ABOVE UNLESS OTHERWISE SPECIFIED

PALM HEIGHT/TRUNK SPECIFICATIONS

OVERALL HEIGHT

CLEAR TRUNK

CLEAR WOOD

CENTERED (TYP)

5' MINIMUM (BOTH ENDS)

TYPICAL ISLAND PLANTING

ALL TREES PLANTED IN LANDSCAPE ISLANDS OR ANY LANDSCAPED AREAS SHOULD BE A MINIMUM OF 5' OFF OF BACK OF CURB UNLESS ABSOLUTELY NECESSARY DUE TO UTILITY LOCATION LOCATION.

PLAN

CONTAINER TREE PLANTING ON SLOPE

NTS

SHRUB/GROUNDCOVER SPACING PLAN

NTS

SHRUB AND GROUNDCOVER PLANTING DETAIL

NTS

TYPICAL LANDSCAPE ISLANDS

NTS

DPI INSPECTION NOTES(REQUIRED)

DPI PLANT INSPECTION NOTE

DPI INSPECTION OF ALL PLANT MATERIAL

BEFORE YOU DIG!
CALL SUNSHINE STATE ONE CALL OF FLORIDA
48 HOURS (TWO FULL BUSINESS DAYS) BEFORE
YOU BEGIN EXCAVATION
Sunshine State One Call of Florida 811
Know what's below. Call before you dig.

cph
www.cphroorg.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

No.	Date	Revision	By
1	12-3-15		
2			
3			
4			
5			

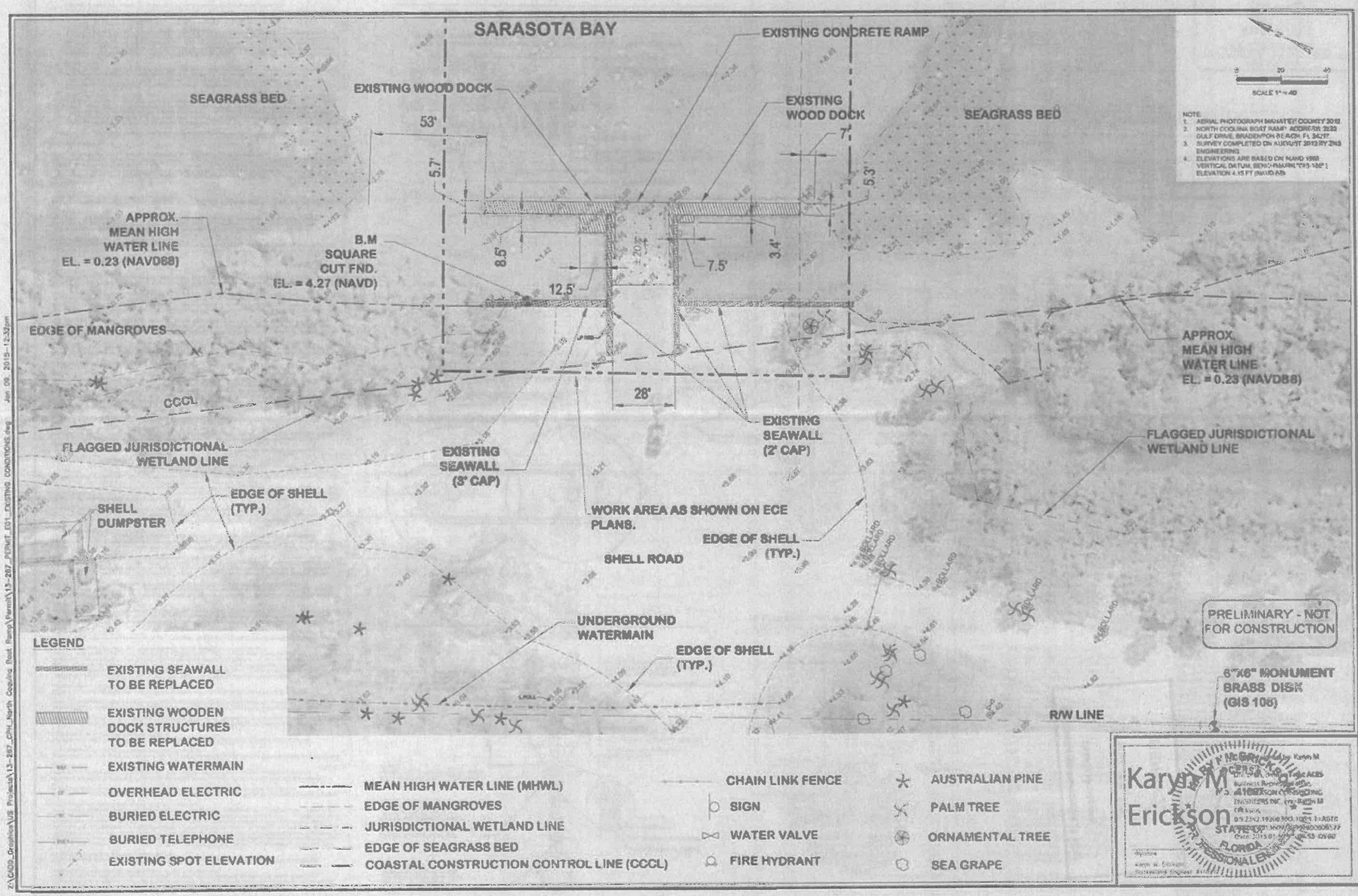
Designed by: JWW
Drawn by: TRL
Checked by: JWW
Approved by: JWW
Scale: N/A
Date: 06/13
Job No.: M13110
© 2013

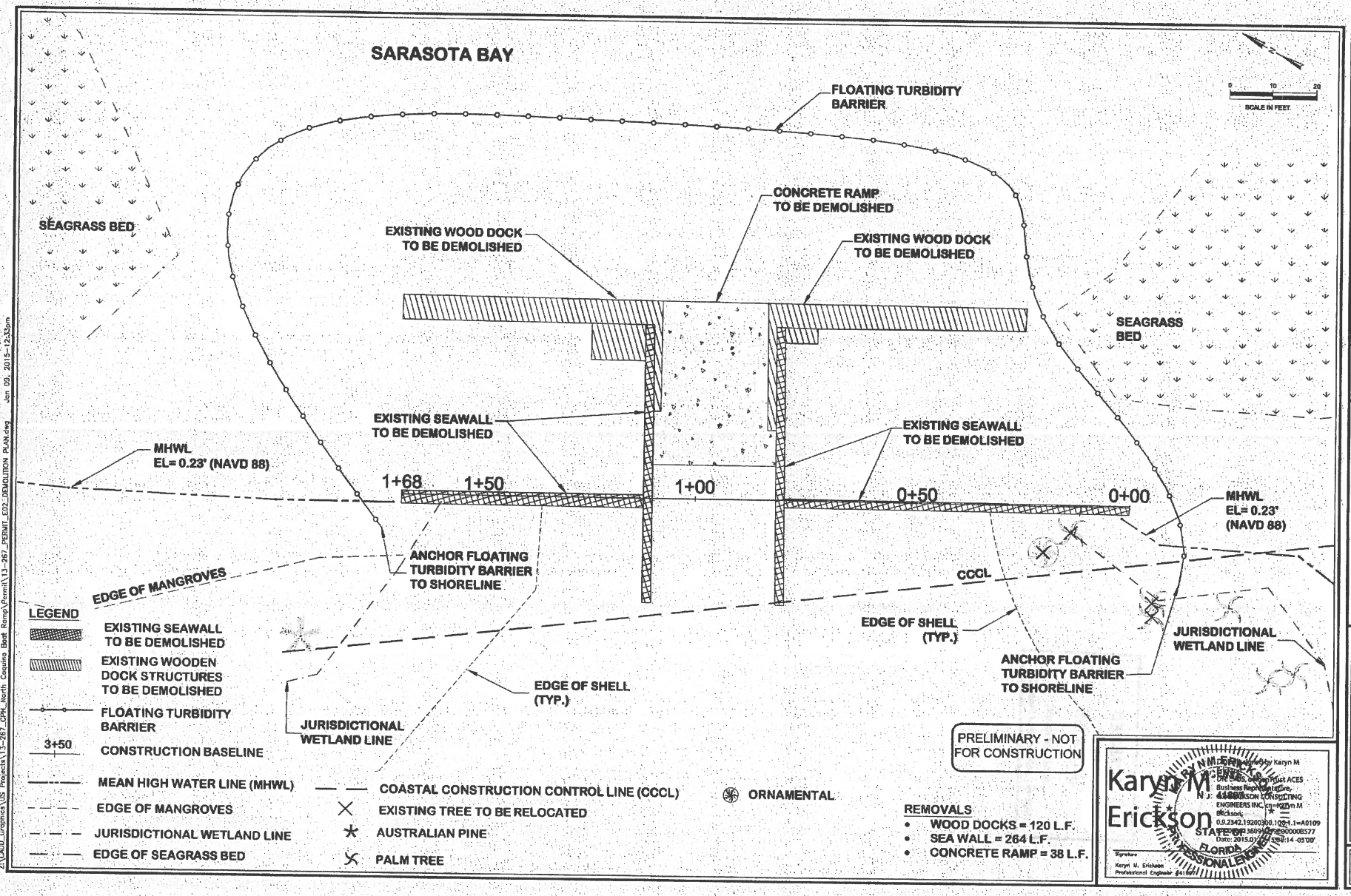
Plans Prepared By
CPH, Inc.
3975 Nebraska Rd., Suite 2
Sarasota, FL 34232
Ph: 941.955.4771
License:
Reg C.O.A. No. 3016
Survey L.B No. 7148
Arch. Lic. No. AR96666
Landsc. Lic. No. LC0000183

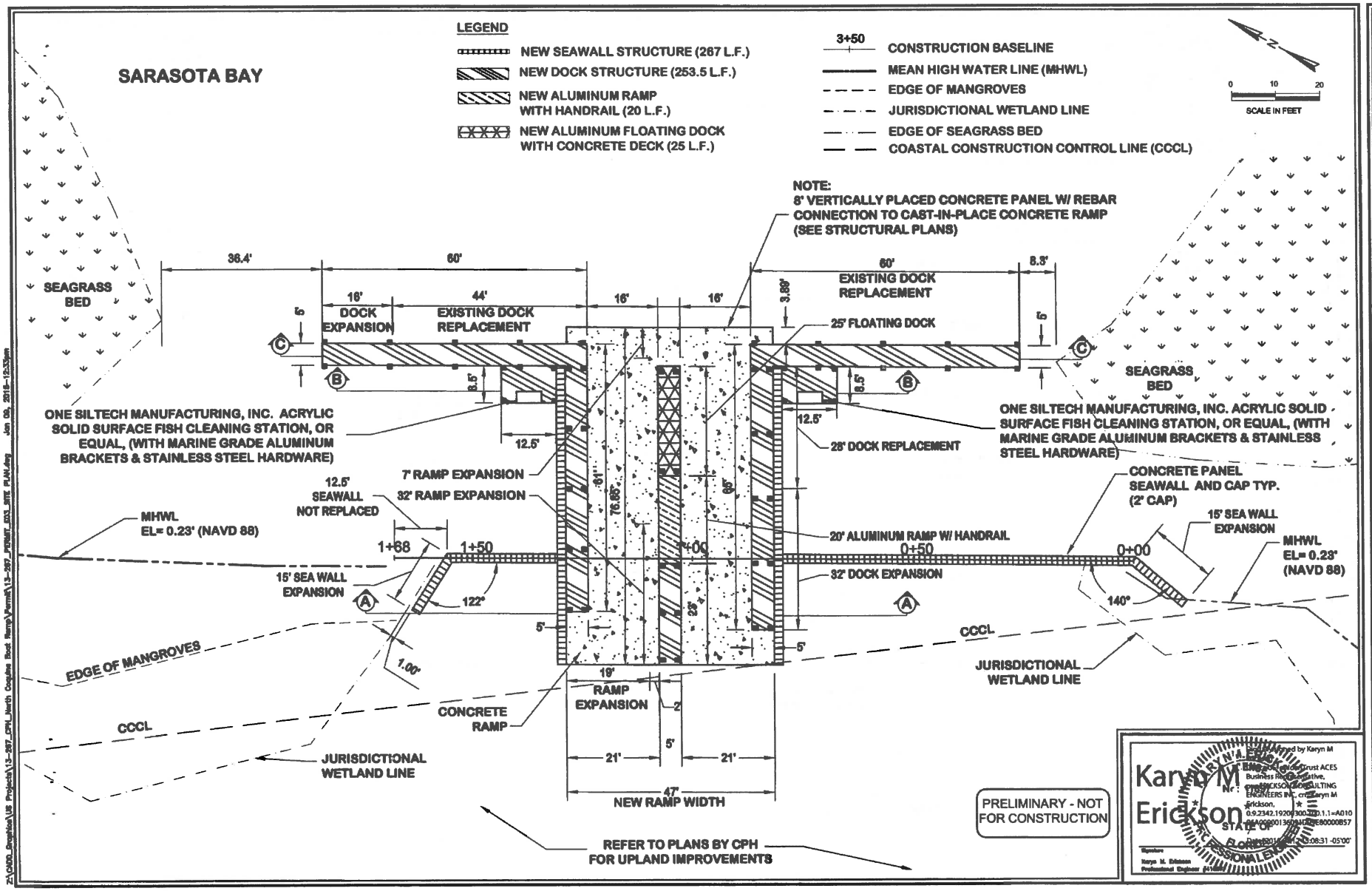
LANDSCAPE PLAN

NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA

Sheet No.
L-2


SARASOTA BAY
EXISTING CONCRETE RAMP
SEAGRASS BED
EXISTING WOOD DOCK
EXISTING WOOD DOCK
SEAGRASS BED
53'
7'
5.7'
5.3'
APPROX. MEAN HIGH WATER LINE EL. = 0.23 (NAVD88)
B.M SQUARE CUT FND. EL. = 4.27 (NAVD)
8.5'
12.5'
7.5'
3.4'
EDGE OF MANGROVES
APPROX. MEAN HIGH WATER LINE EL. = 0.23 (NAVD88)
CCCL
28'
EXISTING SEAWALL (2' CAP)
FLAGGED JURISDICTIONAL WETLAND LINE
FLAGGED JURISDICTIONAL WETLAND LINE
EXISTING SEAWALL (3' CAP)
EDGE OF SHELL (TYP.)
SHELL DUMPSTER
WORK AREA AS SHOWN ON ECE PLANS.
EDGE OF SHELL (TYP.)
SHELL ROAD
UNDERGROUND WATERMAIN
EDGE OF SHELL (TYP.)
PRELIMINARY - NOT FOR CONSTRUCTION
6"X6" MONUMENT BRASS DISK (GIS 106)
R/W LINE
LEGEND
EXISTING SEAWALL TO BE REPLACED
EXISTING WOODEN DOCK STRUCTURES TO BE REPLACED
EXISTING WATERMAIN
OVERHEAD ELECTRIC
BURIED ELECTRIC
BURIED TELEPHONE
EXISTING SPOT ELEVATION
MEAN HIGH WATER LINE (MHWL)
EDGE OF MANGROVES
JURISDICTIONAL WETLAND LINE
EDGE OF SEAGRASS BED
COASTAL CONSTRUCTION CONTROL LINE (CCCL)
CHAIN LINK FENCE
SIGN
WATER VALVE
FIRE HYDRANT
AUSTRALIAN PINE
PALM TREE
ORNAMENTAL TREE
SEA GRAPE
Karyn M Erickson
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA
EXISTING CONDITIONS
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 34243
(941) 373-6460
ECE
DRAWING NUMBER
E1


SARASOTA BAY
FLOATING TURBIDITY BARRIER
SCALE IN FEET
CONCRETE RAMP TO BE DEMOLISHED
EXISTING WOOD DOCK TO BE DEMOLISHED
EXISTING WOOD DOCK TO BE DEMOLISHED
SEAGRASS BED
SEAGRASS BED
EXISTING SEAWALL TO BE DEMOLISHED
EXISTING SEAWALL TO BE DEMOLISHED
MHWL EL= 0.23' (NAVD 88)
1+68
1+50
1+00
0+50
0+00
MHWL EL= 0.23' (NAVD 88)
ANCHOR FLOATING TURBIDITY BARRIER TO SHORELINE
EDGE OF MANGROVES
CCCL
EDGE OF SHELL (TYP.)
JURISDICTIONAL WETLAND LINE
ANCHOR FLOATING TURBIDITY BARRIER TO SHORELINE
EDGE OF SHELL (TYP.)
JURISDICTIONAL WETLAND LINE
LEGEND
EXISTING SEAWALL TO BE DEMOLISHED
EXISTING WOODEN DOCK STRUCTURES TO BE DEMOLISHED
FLOATING TURBIDITY BARRIER
3+50 CONSTRUCTION BASELINE
MEAN HIGH WATER LINE (MHWL)
EDGE OF MANGROVES
JURISDICTIONAL WETLAND LINE
EDGE OF SEAGRASS BED
COASTAL CONSTRUCTION CONTROL LINE (CCCL)
EXISTING TREE TO BE RELOCATED
AUSTRALIAN PINE
PALM TREE
ORNAMENTAL
PRELIMINARY - NOT FOR CONSTRUCTION
REMOVALS
• WOOD DOCKS = 120 L.F.
• SEA WALL = 264 L.F.
• CONCRETE RAMP = 38 L.F.
Karyn M. Erickson
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Signature
Karyn M. Erickson
Professional Engineer #41997
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA
DEMOLITION PLAN
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 34240
(941) 373-8460
DRAWING NUMBER
E 2
Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Permit\13-267_PERMIT_E02_DEMOLITION PLAN.dwg Jan 09, 2015-12:33pm


SARASOTA BAY
LEGEND
NEW SEAWALL STRUCTURE (267 L.F.)
NEW DOCK STRUCTURE (253.5 L.F.)
NEW ALUMINUM RAMP WITH HANDRAIL (20 L.F.)
NEW ALUMINUM FLOATING DOCK WITH CONCRETE DECK (25 L.F.)
3+50
CONSTRUCTION BASELINE
MEAN HIGH WATER LINE (MHWL)
EDGE OF MANGROVES
JURISDICTIONAL WETLAND LINE
EDGE OF SEAGRASS BED
COASTAL CONSTRUCTION CONTROL LINE (CCCL)
0 10 20
SCALE IN FEET
NOTE:
8' VERTICALLY PLACED CONCRETE PANEL W/ REBAR CONNECTION TO CAST-IN-PLACE CONCRETE RAMP (SEE STRUCTURAL PLANS)
SEAGRASS BED
36.4'
60'
16'
44'
DOCK EXPANSION
EXISTING DOCK REPLACEMENT
16'
16'
60'
8.3'
EXISTING DOCK REPLACEMENT
3.89'
25' FLOATING DOCK
5'
8.5'
12.5'
28' DOCK REPLACEMENT
ONE SILTECH MANUFACTURING, INC. ACRYLIC SOLID SURFACE FISH CLEANING STATION, OR EQUAL, (WITH MARINE GRADE ALUMINUM BRACKETS & STAINLESS STEEL HARDWARE)
7' RAMP EXPANSION
32' RAMP EXPANSION
12.5' SEAWALL NOT REPLACED
MHWL EL= 0.23' (NAVD 88)
1+68
1+50
1+00
0+50
0+00
15' SEA WALL EXPANSION
122°
140°
20' ALUMINUM RAMP W/ HANDRAIL
32' DOCK EXPANSION
CONCRETE PANEL SEAWALL AND CAP TYP. (2' CAP)
15' SEA WALL EXPANSION
MHWL EL= 0.23' (NAVD 88)
EDGE OF MANGROVES
CCCL
1.00'
JURISDICTIONAL WETLAND LINE
CONCRETE RAMP
RAMP EXPANSION
19'
21'
21'
47'
NEW RAMP WIDTH
REFER TO PLANS BY CPH FOR UPLAND IMPROVEMENTS
PRELIMINARY - NOT FOR CONSTRUCTION
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Karyn M Erickson
Signature
Karyn M. Erickson
Professional Engineer (41166)
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA
SITE PLAN
Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 34240
(941) 373-8483
DRAWING NUMBER
E 3

LEGEND

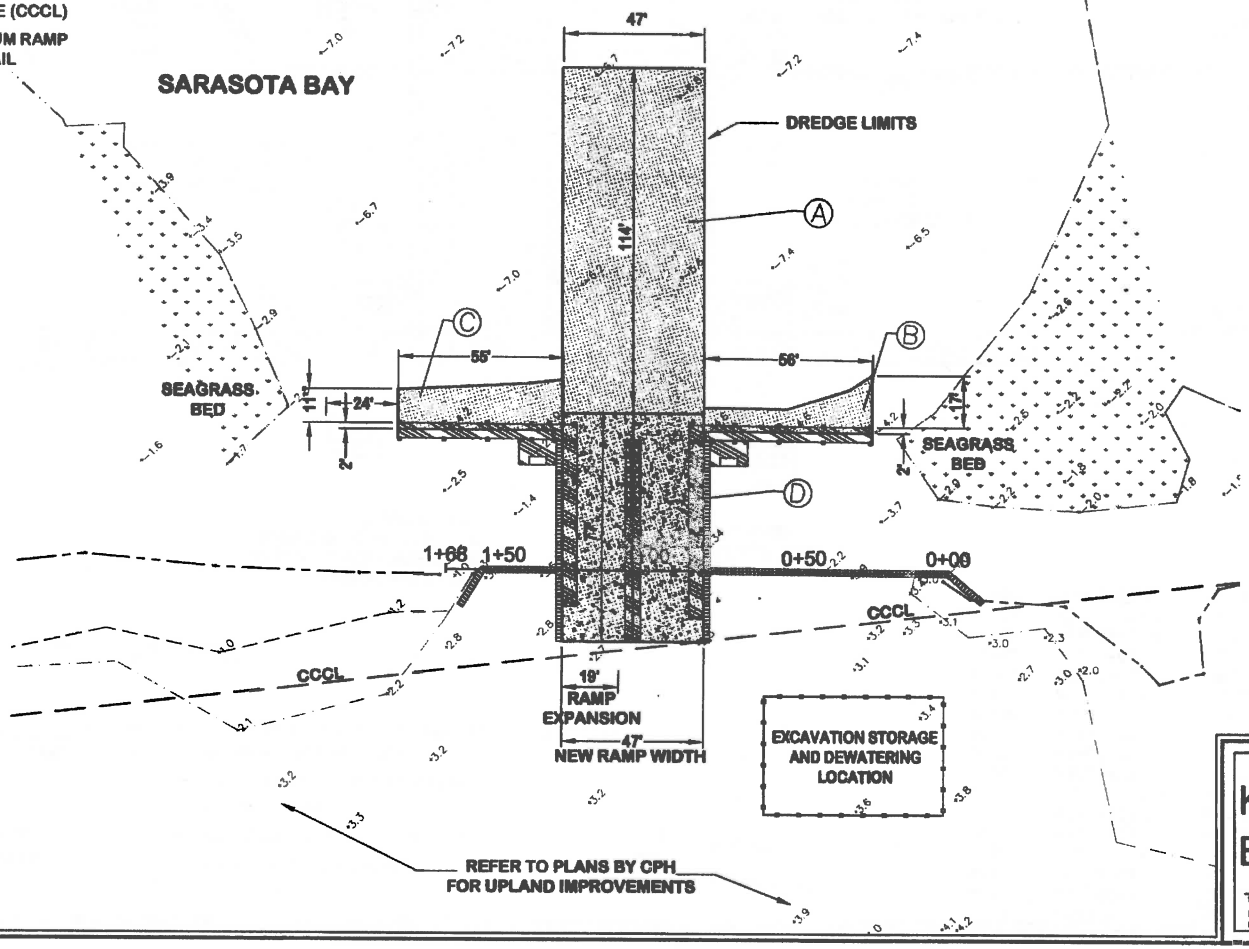
- LIMITS OF EXCAVATION
- 3+50 CONSTRUCTION BASELINE
- SILT FENCE (TYPE III)
- JURISDICTIONAL WETLAND LINE
- MEAN HIGH WATER LINE (MHWL)
- COASTAL CONSTRUCTION CONTROL LINE (CCCL)
- NEW ALUMINUM RAMP WITH HANDRAIL
- EDGE OF SEAGRASS BED
- NEW SEAWALL STRUCTURE (267 L.F.)
- NEW DOCK STRUCTURE (253.5 L.F.)
- EXISTING SPOT ELEVATION
- EDGE OF MANGROVES
- NEW ALUMINUM FLOATING DOCK WITH CONCRETE DECK

Excavation Volumes		
Area	Dredge Depth (ft-NAVD88)	Volume (CY)
A	-7.22	200
B	-5.22	8
C	-5.22	21
D	-2.77 TO -7.22 (RAMP)	198
Total		427

PRELIMINARY - NOT FOR CONSTRUCTION

N

0 20 40
SCALE IN FEET



Karyn M Erickson

STATE OF FLORIDA PROFESSIONAL ENGINEER

Karyn M. Erickson
Professional Engineer

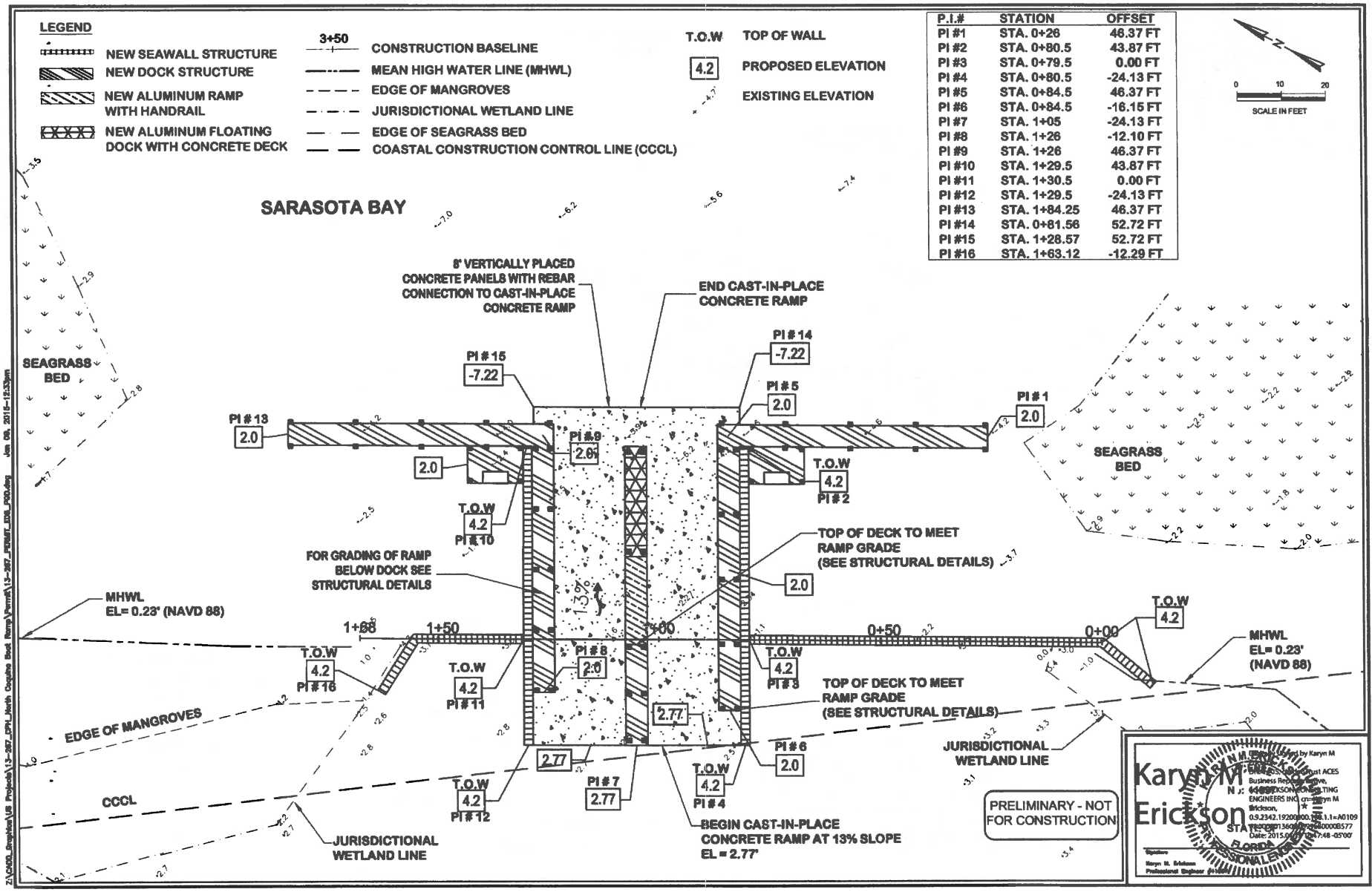
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

EXCAVATION AREAS

Erickson Consulting Engineers, Inc.
7201 Dalesway Court
Sarasota, FL 34240
(941) 373-8460

DRAWING NUMBER
E 4

Z:\0409_Graphics\US Projects\13-257_CPH_North Coquina Boat Ramp\Permit\13-257_PERMIT_E04_EXCAVATION AREAS.dwg Jan 08, 2016-12:33pm



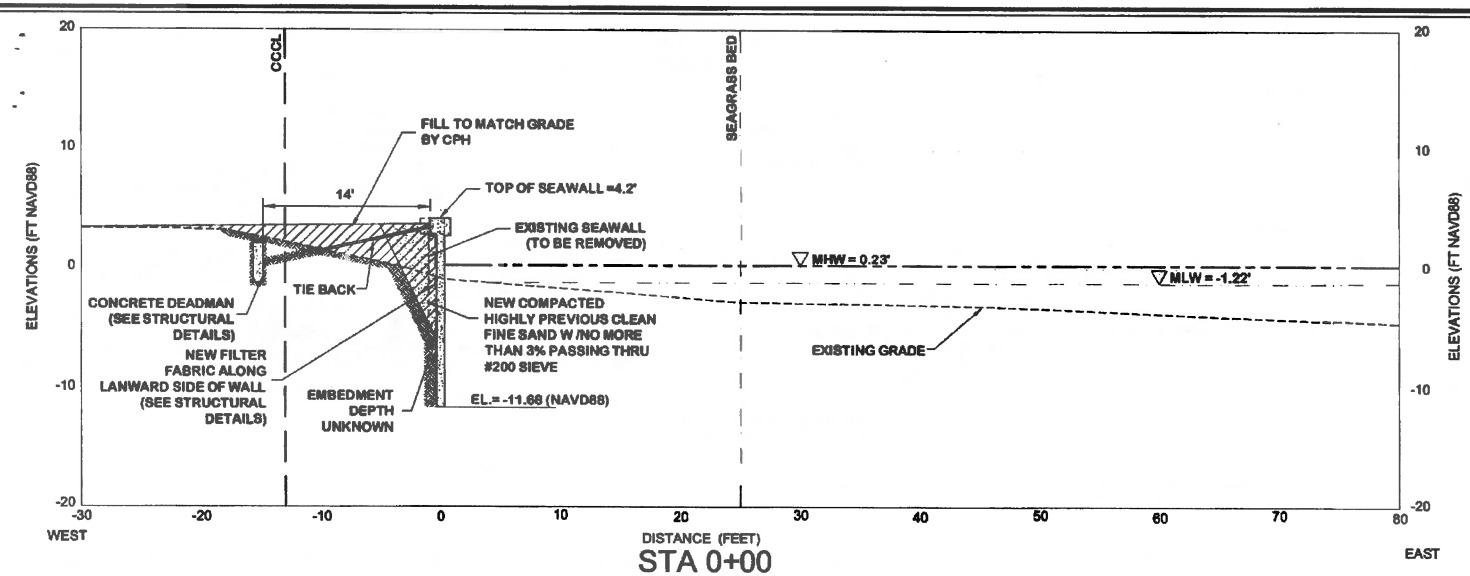
P.I.#	STATION	OFFSET
PI #1	STA. 0+26	46.37 FT
PI #2	STA. 0+80.5	43.87 FT
PI #3	STA. 0+79.5	0.00 FT
PI #4	STA. 0+80.5	-24.13 FT
PI #5	STA. 0+84.5	46.37 FT
PI #6	STA. 0+84.5	-16.15 FT
PI #7	STA. 1+05	-24.13 FT
PI #8	STA. 1+26	-12.10 FT
PI #9	STA. 1+26	46.37 FT
PI #10	STA. 1+29.5	43.87 FT
PI #11	STA. 1+30.5	0.00 FT
PI #12	STA. 1+29.5	-24.13 FT
PI #13	STA. 1+84.25	46.37 FT
PI #14	STA. 0+81.56	52.72 FT
PI #15	STA. 1+28.57	52.72 FT
PI #16	STA. 1+63.12	-12.29 FT

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

PAVING, GRADING AND DRAINAGE PLAN

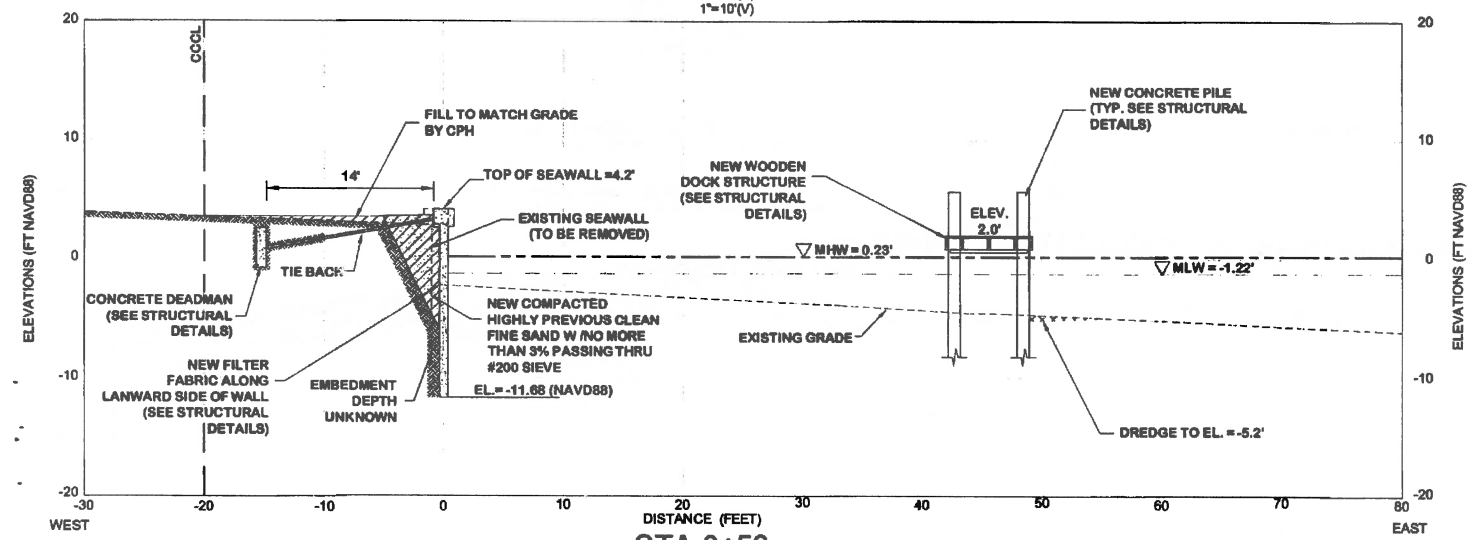
Erickson Consulting Engineers, Inc.
7201 Distribution Court
Sarasota, FL 34240
(941) 372-6480

DRAWING NUMBER
E 5



STA 0+00

SCALE 1"=10'(H) 1"=10'(V)



STA 0+50

SCALE 1"=10'(H) 1"=10'(V)

LEGEND

- CUT
- FILL
- MHW
- MLW

PRELIMINARY - NOT FOR CONSTRUCTION

Karyn M Erickson

STATE OF FLORIDA PROFESSIONAL ENGINEER

Signature

Karyn M. Erickson
Professional Engineer

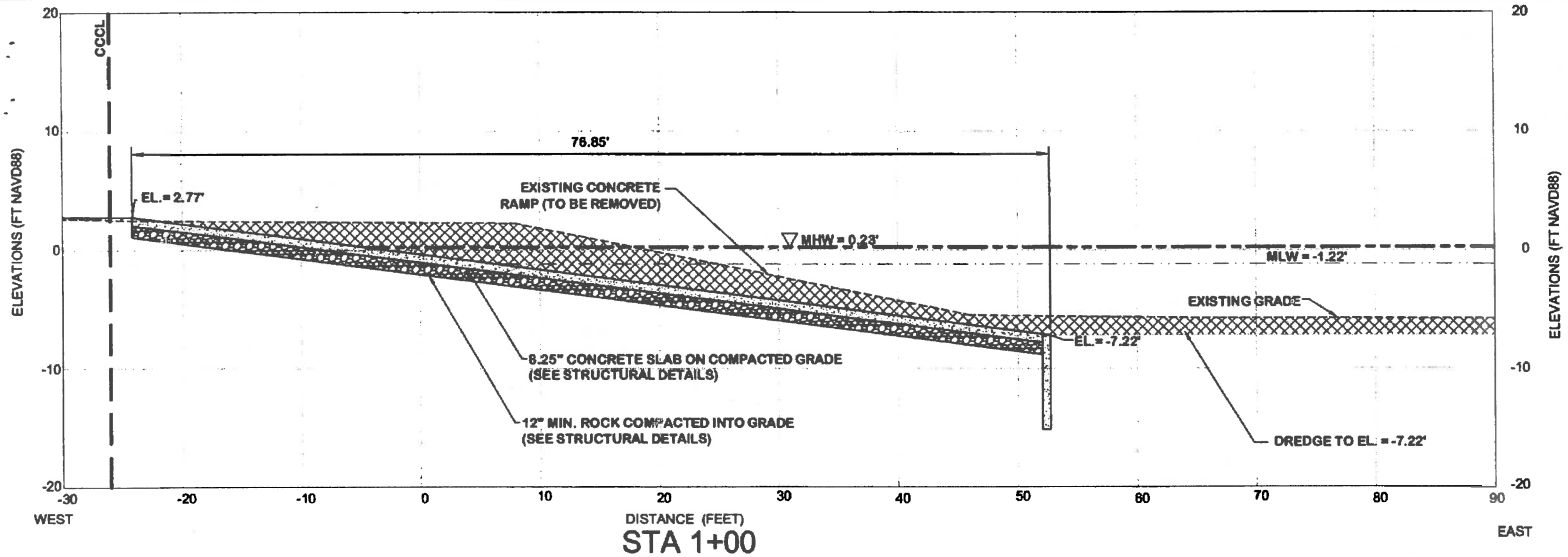
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS
(SHORE PERPENDICULAR)

Erickson Consulting Engineers, Inc.
7201 Defoniay Court
Sarasota, FL 32420
(941) 373-6460

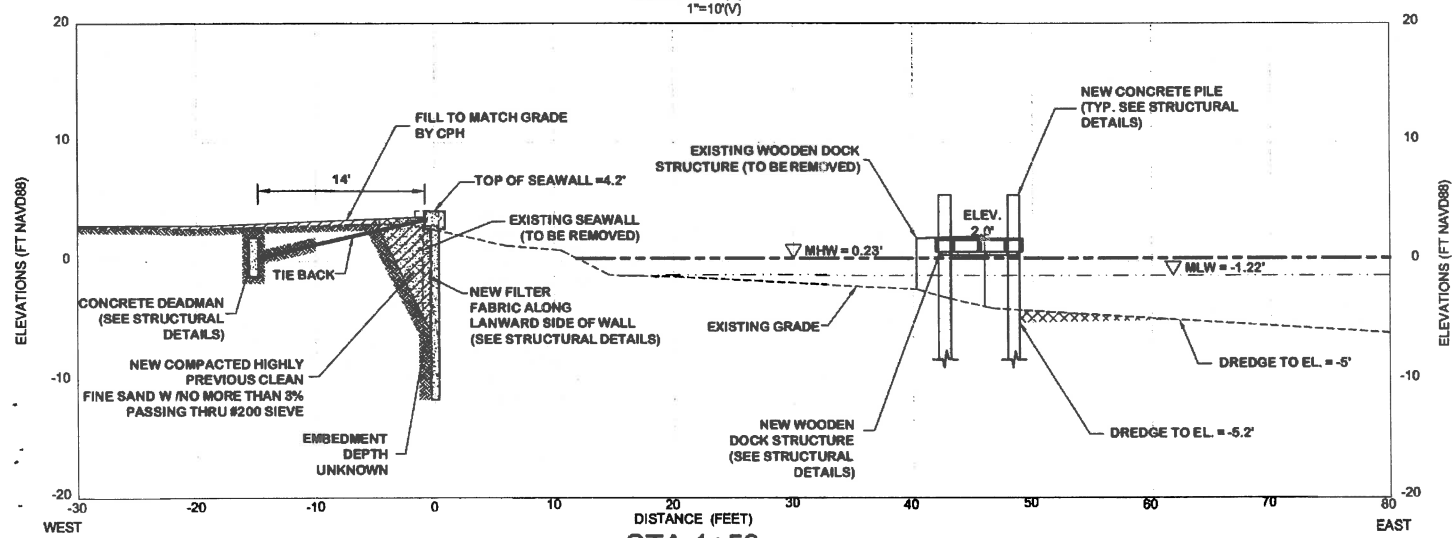
DRAWING NUMBER
E 6

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Permit\13-267_PERMIT_E05-E10_CROSS SECTIONS.dwg Jan 09, 2015-12:34pm



STA 1+00

SCALE 1"=10'(H) 1"=10'(V)



STA 1+50

SCALE 1"=10'(H) 1"=10'(V)

LEGEND

- CUT
- FILL
- MHW
- MLW

PRELIMINARY - NOT FOR CONSTRUCTION

Karyn M Erickson

STATE OF FLORIDA PROFESSIONAL ENGINEER

Signature

Karyn M. Erickson

Professional Engineer 41

Digitally signed by Karyn M Erickson

DN: C=US, O=Guest ACES Business Representative, CN=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson, 0.9.2342.19200300.100.1.1=A010 [illegible] 0000008577

Date: 2015.0[illegible] 21:54:-05'00'

REVISIONS				
DATE	BY			

02	11-07-2014		
01	11-05-2014	JOB NO. 13-267	

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS
(SHORE PERPENDICULAR)

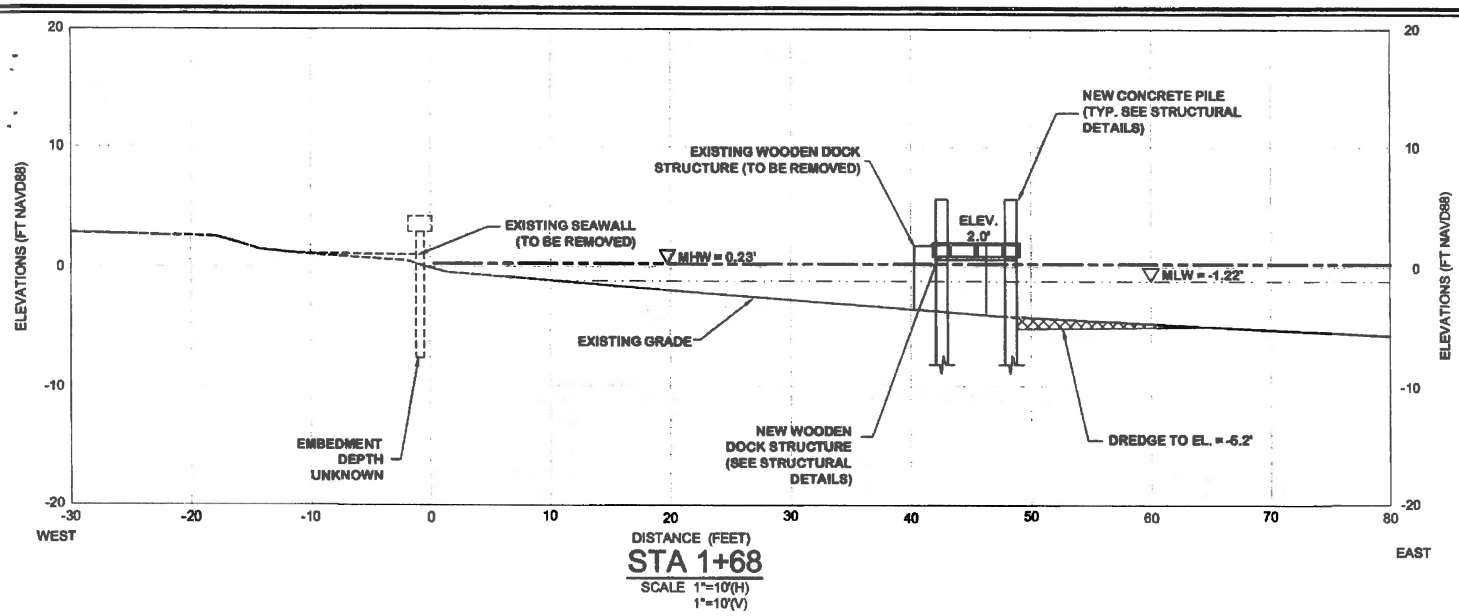
Erickson Consulting Engineers, Inc.

7201 Delaney Court
Sarasota, FL 34240
(941) 373-8400

DRAWING NUMBER

E 7

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Permit\13-267_PERMIT_E06-E10_CROSS SECTIONS.dwg Jan 08, 2015-12:34pm



STA 1+68

SCALE 1"=10'(H)
1"=10'(V)

LEGEND

- CUT
- FILL
- MHW
- MLW

PRELIMINARY - NOT FOR CONSTRUCTION

Karyn M Erickson

STATE OF FLORIDA PROFESSIONAL ENGINEER

Signed by Karyn M Erickson, 0.9.2342.19200300.100.1.1=A010 06000013604E0000B57 Date: 2016.02.22 22:20 -05'00'

Signature
Karyn M. Erickson
Professional Engineer 041

REVISIONS	BY	DATE

REVISIONS	BY	DATE

REVISIONS	BY	DATE

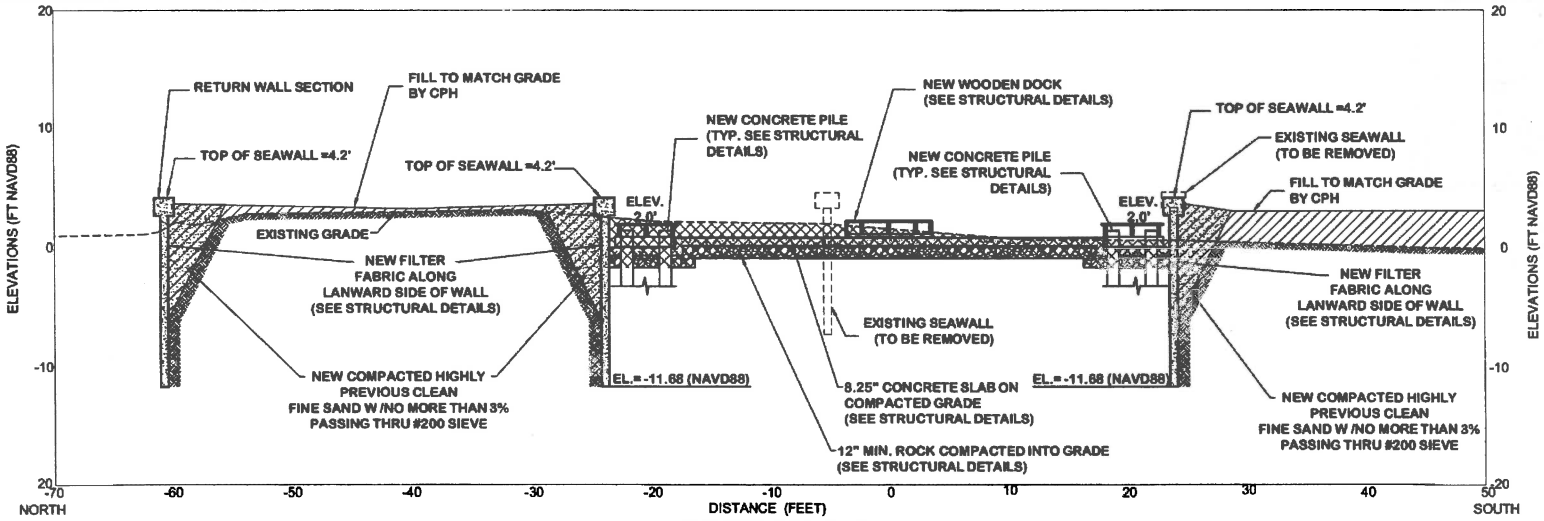
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS
(SHORE PERPENDICULAR)

Erickson Consulting Engineers, Inc.
7201 Dalsley Court
Sarasota, FL 34240
(941) 373-5440

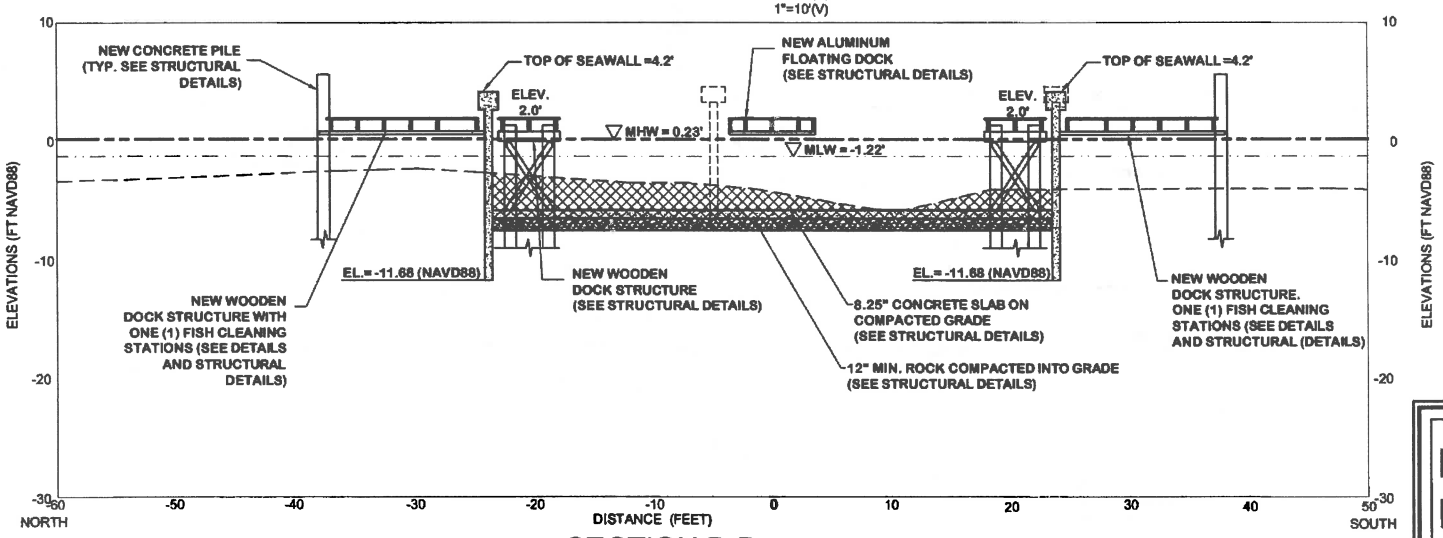
DRAWING NUMBER
E 8

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Permit\13-267_PERMIT_E06-E10_CROSS SECTIONS.dwg Jan 09, 2019-12:34pm



SECTION A-A

SCALE 1"=10'(H)
1"=10'(V)



SECTION B-B

SCALE 1"=10'(H)
1"=10'(V)

LEGEND

- CUT
- FILL
- MHW
- MLW

PRELIMINARY - NOT FOR CONSTRUCTION

Karyn M Erickson

Karyn M. Erickson
Professional Engineer

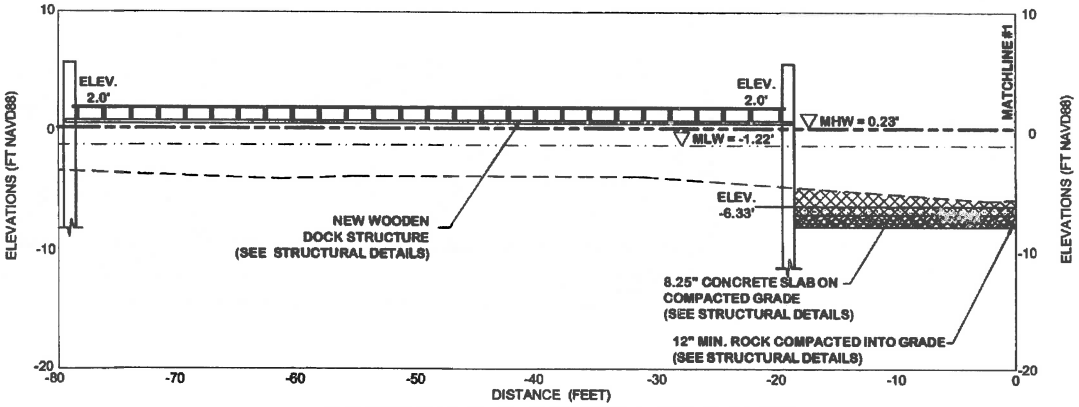
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS (SHORE PARALLEL)

Erickson Consulting Engineers, Inc.
7201 Distribution Court
Sarasota, FL 34243
(941) 373-4400

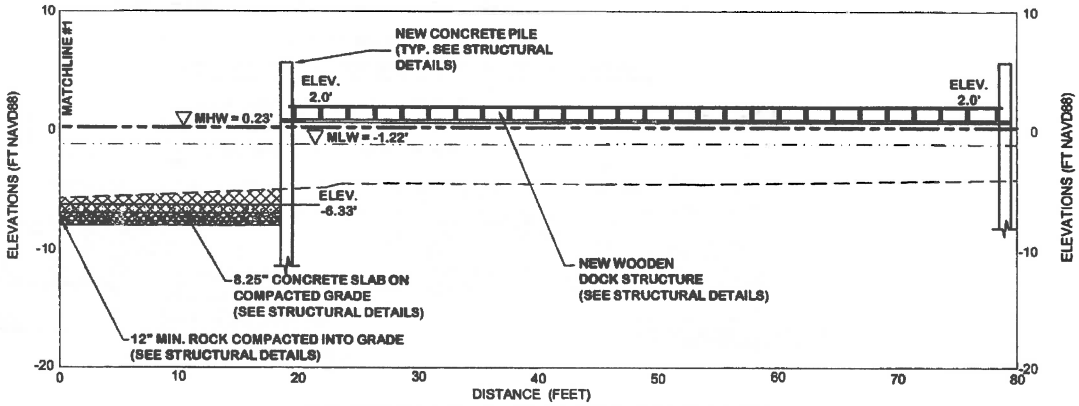
DRAWING NUMBER
E 9

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Permit\13-267_PERMIT_E06-E10_CROSS SECTIONS.dwg Jan 06, 2015-12:34pm



SECTION C-C (NORTH OF RAMP)

SCALE 1"=10'(H)
1"=10'(V)



SECTION C-C (SOUTH OF RAMP)

SCALE 1"=10'(H)
1"=10'(V)

LEGEND

- CUT
- FILL
- MHW
- MLW
- 8.25" CONCRETE SLAB ON COMPACTED GRADE
- 12" MIN. ROCK COMPACTED INTO GRADE

PRELIMINARY - NOT FOR CONSTRUCTION

Karyn M Erickson

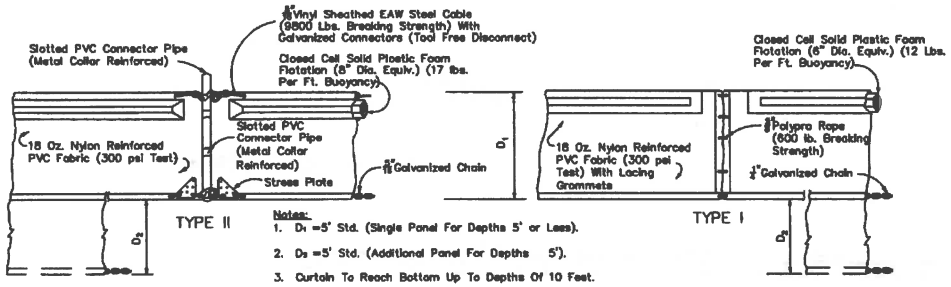
NORTH OCQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS (SHORE PARALLEL)

Erickson Consulting Engineers, Inc.
7201 Dalahoy Court
Sarasota, FL 32420
(941) 373-4480

DRAWING NUMBER
E 10

Jan 08, 2015-12:34pm

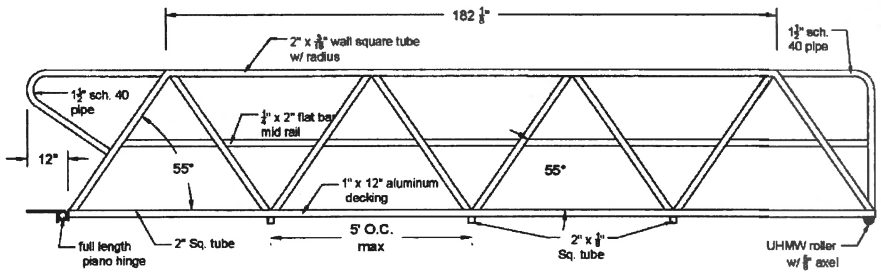


Notes:

1. D_1 =5' Std. (Single Panel For Depths 5' or Less).
2. D_2 =5' Std. (Additional Panel For Depths 5').
3. Curtain To Reach Bottom Up To Depths Of 10 Feet.
4. Two (2) Panels To Be Used For Depths Greater Than 10 Feet Unless Special Depth Curtains Specifically Called For In The Plans Or As Determined By The Engineer.
5. Refer to FDOT Standard Spec #104 for Floating Turbidity Barriers.

NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

FLOATING TURBIDITY BARRIER
FDOT INDEX #103
NOT TO SCALE



4'x20' ALUMINUM GANGWAY
SIDE ELEVATION
NOT TO SCALE

Karyn M Erickson

Signature
Karyn M. Erickson
Professional Engineer 64

STATE OF FLORIDA PROFESSIONAL ENGINEER KARYN M. ERICKSON No. 64

Digitally signed by Karyn M Erickson
DN: c=US, o=Joint ACES Business Representative, ou=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson, 0.9.2342.19200300.100.1.1=A01041680000013604D5A2B0000857
Date: 2015.05.13 09:53:55 -05'00'

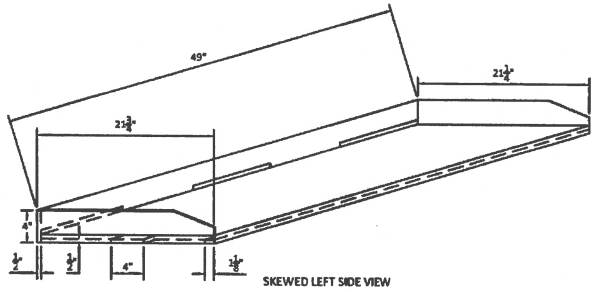
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CONSTRUCTION DETAILS

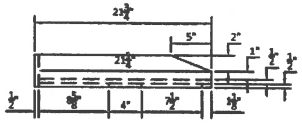
Erickson Consulting Engineers, Inc.
ECE
7201 Distelrow Court
Sarasota, FL 34240
(941) 373-6400

DRAWING NUMBER
E 11

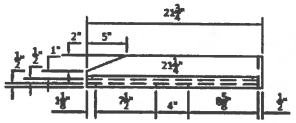
Z:\CADD_Graphics\US Projects\13-287_CPH_North Coquina Boat Ramp\Permit\13-287_PERMIT_E11-E12_DETAILS.dwg Jan 09, 2015-12:35pm



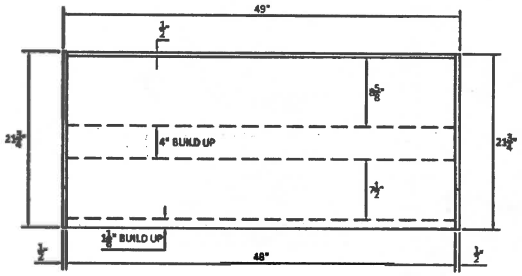
SKEWED LEFT SIDE VIEW



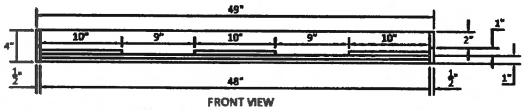
LEFT SIDE VIEW



RIGHT SIDE VIEW

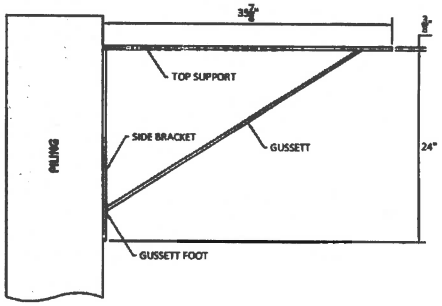


TOP VIEW



FRONT VIEW

THREE SIDED 22" X 48" FISH CLEANING
TABLE SPECIFICATIONS
FOR PILING MOUNTED BRACKET
SILTECH FILLET-A-WAY (OR EQUAL)
NOT TO SCALE



QUANTITY	LOCATION	ITEM	TOOLS
8	TABLE MOUNT	#8 X 1" HEX SHEET METAL SCREWS STAINLESS	TAPE MEASURE
8	TABLE MOUNT	W/ #8 NEOPRENE BONDED WASHER STAINLESS	PENCIL / MARKER
6	SIDE BRACKET	1/2" X 4" TAP-CON SCREWS, HOT DIPPED GALVANIZED	3/8" CONCRETE BIT
4	FOOT	#12 x 1-1/2" CLIMASEAL STEEL HEX WASHER HEAD SELF DRILLING FASTENERS	2 FT LEVEL RATCHET WITH 3/4" SOCKET
4	FOOT	#12 NEOPRENE BONDED WASHER STAINLESS	5/16" HEX DRIVE
4		PLASTIC WINDOWN SHIM:	CORDLESS DRILL

MOUNTING INSTRUCTIONS

1. MARK PILING 36 INCHES ABOVE DECK (STANDARD HEIGHT) OR AT DESIRED HEIGHT.
2. POSITION TOP OF 24 INCH BRACKET LEG AGAINST PILING WITH TOP SUPPORT PARALLEL TO EDGE OF DOCK.
3. WHILE HOLDING THE BRACKET AGAINST THE PILING, MAKE A MARK ON THE PILING IN THE CENTER OF THE TOP INSIDE PRE-DRILLED HOLE IN PREPARATION FOR PILOT HOLE.
4. REMOVE BRACKET. USING A 3/8 INCH CONCRETE BIT, DRILL A 4 INCH DEEP HOLE ON THE MARK MADE FOR THE PILOT HOLE.
5. REPOSITION BRACKET OVER PRE-DRILLED PILOT HOLE.
6. USING A RATCHET WITH A 3/4 INCH SOCKET, INSERT 1/2 INCH BY 4 INCH TAP CONS INTO PRE-DRILLED PILOT HOLE AND TIGHTEN.
7. USING 3/8 INCH CONCREE BIT, DRILL A 4 INCH DEEP PILOT HOLE THROUGH THE REMAINIGN PRE-DRILLED BRAKCET HOLES.
8. INSTALL AND TIGHTEN REMAINING LAG BOLTS.
9. USING A 2 FT LEVEL, CHECK TOP SUPPORT BRACKET FOR LEVEL SIDE TO SIDE; SLIDE GUSSET FOOT UP OR DOWN AGAINST SIDE BRACKET LEG TO LEVEL TOP SUPPORT. ONCE LEVEL, MARK POSITION OF TOP EDGE OF GUSSETT FOOT AGAINST SIDE BRACKET. HOLIDING GUSSETT FOOT ON MARK AND USING A 5/16 INCH HEX DRIVE, INSTALL #12 HEX HEAD SELF DRILLING SCREWS WITH NEOPRIENE WASHERS THROUGH PRE-DRILLED HOLES ON GUSSETT FOOT INTO BRACKET LEG.
10. POSITION THE FILLET-A-WAY™ TABLE** OVER TOP SUPPORT BRACKET ALIGNING TOP BRACKET SUPPORT PRE-DRILLED SCREW HOLES WITH PRE-DRILLED PILOT HOLES ON THE UNDERSIDE OF THE TABEL DECK 4 INCH BRACKET SUPPORT. SECURE TABLE TO TOP BRACKET SUPPORT USING A 3/8 INCH HEX DRIVE AND #8 HEX HEAD SCREWS WITH NEOPRENE WASHERS; LEAVING FRONT EDGE SCRES SLIGHTLY LOOSE TO ALLOW FOR SHIMMING OF TABLE FOR PITCH. USING A 2 FT LEVEL, CHECK TABLE FOR PITCH FRONT TO BACK. ALONG THE FRONT EDE, INSERT PLASTIC SHIMS BETWEEN BOTTOM OF TABLE BRACKET SUPPORT AND TOP BRACKET SUPPORT AND ADJUST FOR PITCH. (THE TABLE DECK SHOULD BE PITCHED SLIGHTLY TO THE BACK APPROXIMATELY 1/8 INCH TO 1/4 INCH TO ALLOW FOR WATER RUN-OFF.) TIGHTEN SCREWS ONCE DESIRED PITCH IS OBTAINED.

** EACH INDIVIDUAL TABLE HAS ITS OWN BRACKET PRE-DRILLED FOR THAT TABLE AND CAN BE MOUNTED EITHER LEFT OR RIGHT HANDED.

MOUNTING BRACKET
SILTECH FILLET-A-WAY (OR EQUAL)
NOT TO SCALE

Karyn M Erickson

Signature
Karyn M. Erickson
Professional Engineer (#41[illegible])

Digitally signed by Karyn M Erickson
Business Registration Number ACES
Nr: 1[illegible]
ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson, 0.9.2342.19200300.100.1.1=A0109[illegible]
Date: 2015.0[illegible]35 -05'00'

STATE OF FLORIDA
KARYN M. ERICKSON
PROFESSIONAL ENGINEER

REV	DATE	BY	CHK'D

REV	DATE	DESCRIPTION

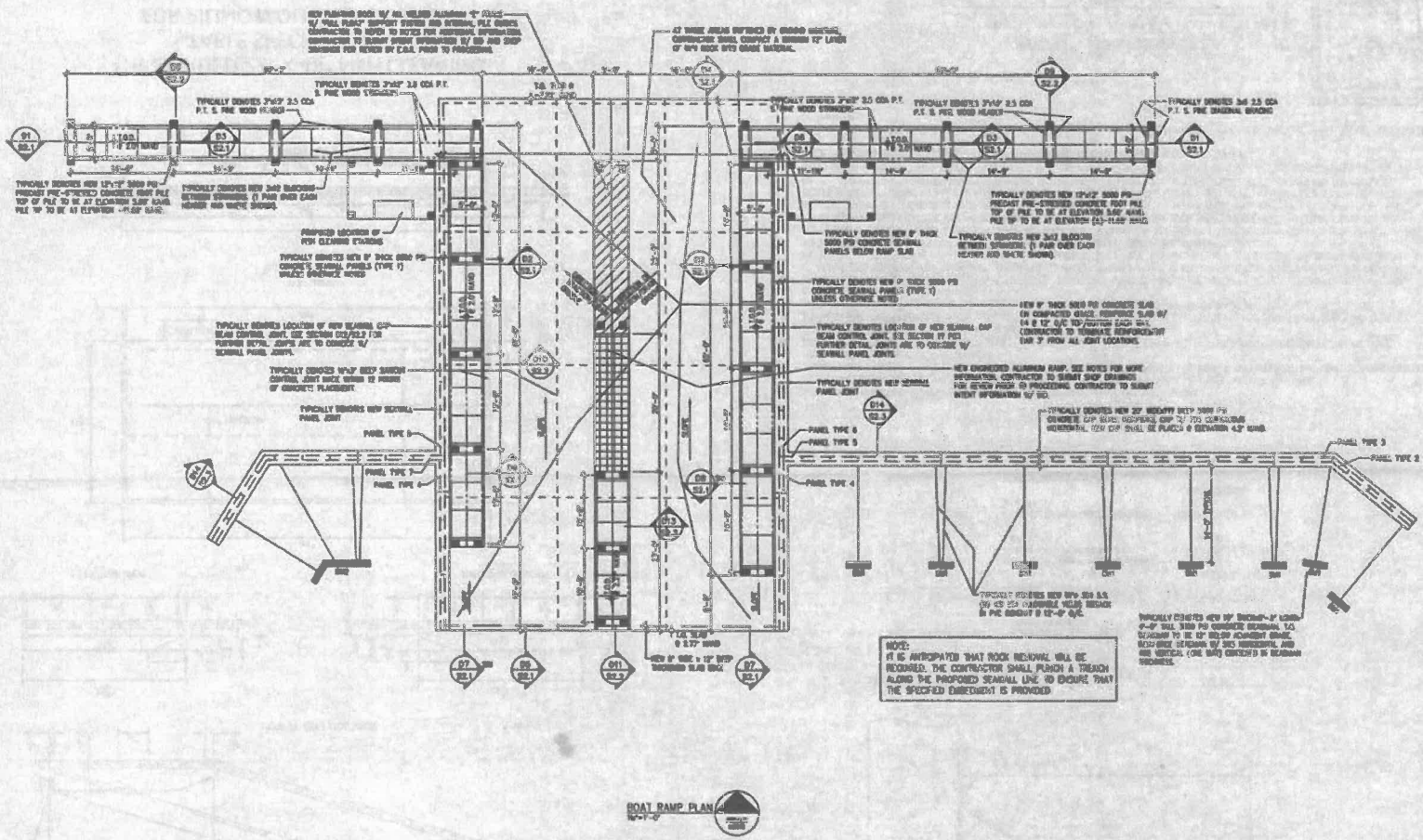
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CONSTRUCTION DETAILS

Erickson Consulting Engineers, Inc.
ECE
7201 Delaney Court
Sarasota, FL 33580
(941) 373-6400

DRAWING NUMBER
E 12

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Permit\13-267_PERMIT_E11-E12_DETAILS.dwg Jan 08, 2015-12:35pm



STIRLING & WILBUR
ENGINEERING GROUP

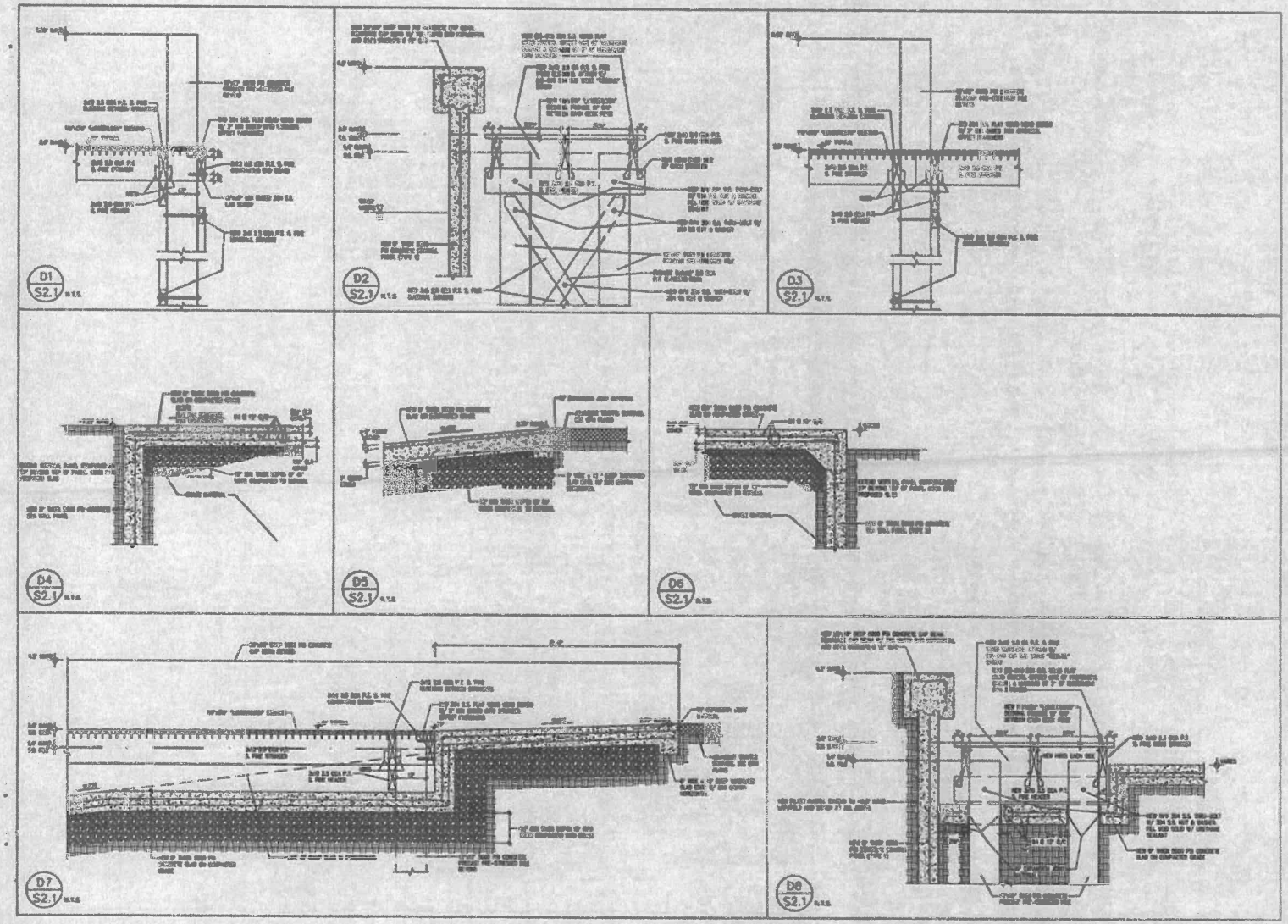
Erickson Consulting Engineers, Inc.
ECE

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

STRUCTURAL SITE PLAN

S1.1

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Permit\13-267_PERMIT_S1.1_S2.6_STRUCTURAL SHEETS.dwg Jan 09, 2015-12:38pm



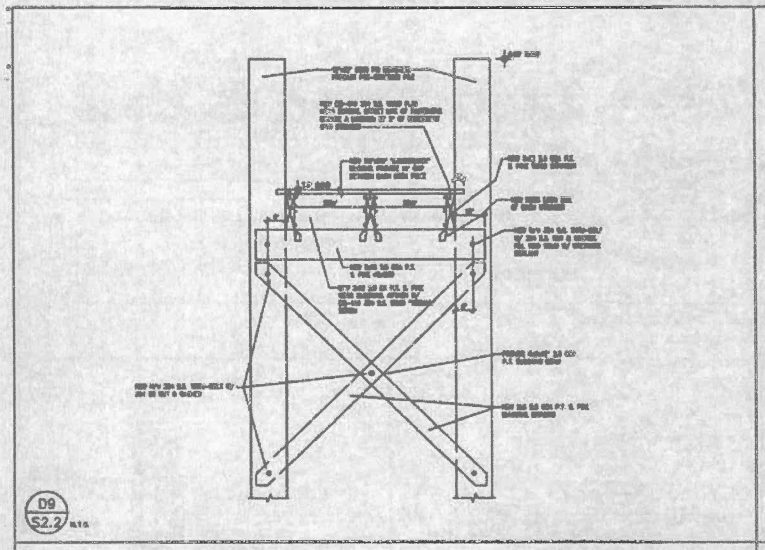
STIRLING & WILBUR
ENGINEERING GROUP

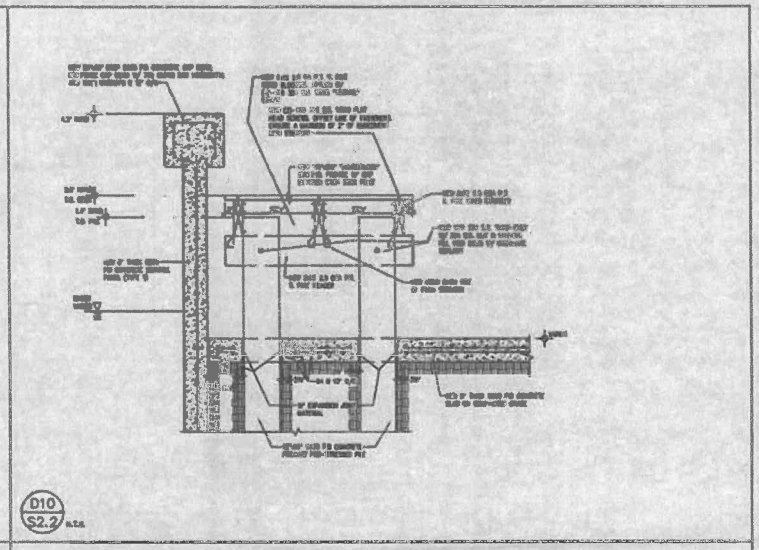
Erickson Consulting Engineers, Inc.

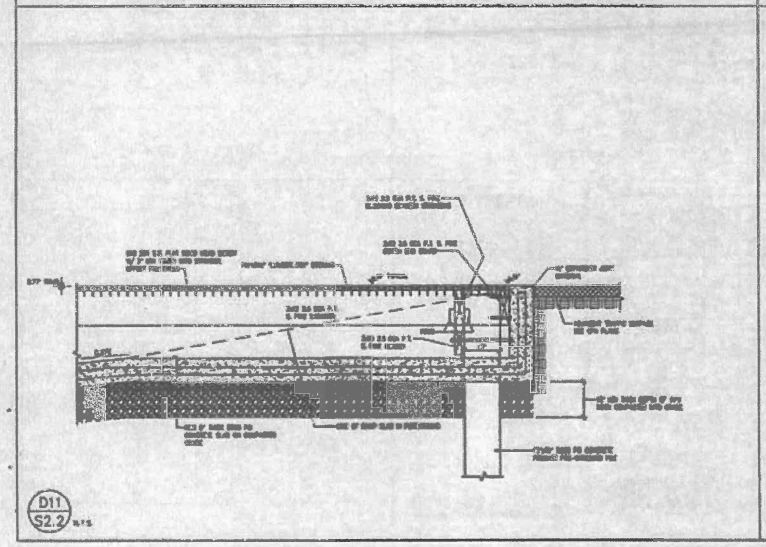
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

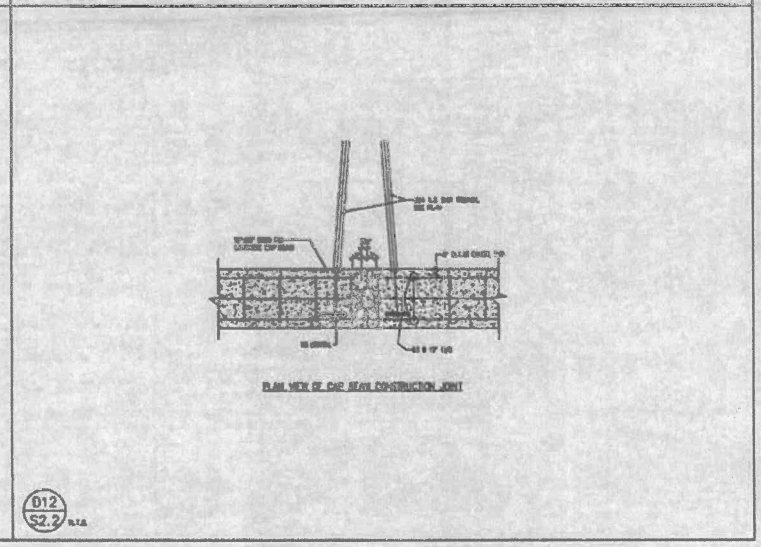
STRUCTURAL SECTIONS

S2.1









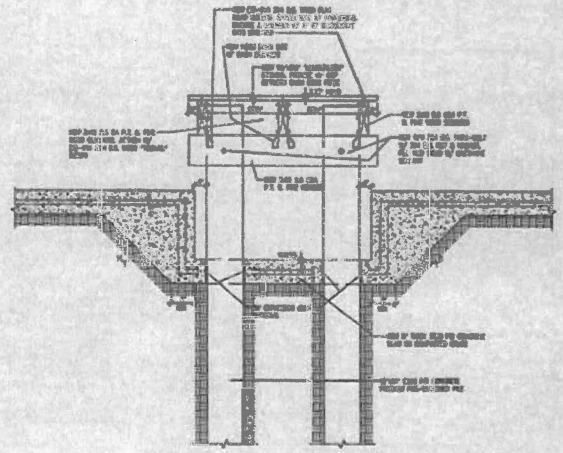
STIRLING & WILBUR
ENGINEERING GROUP

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

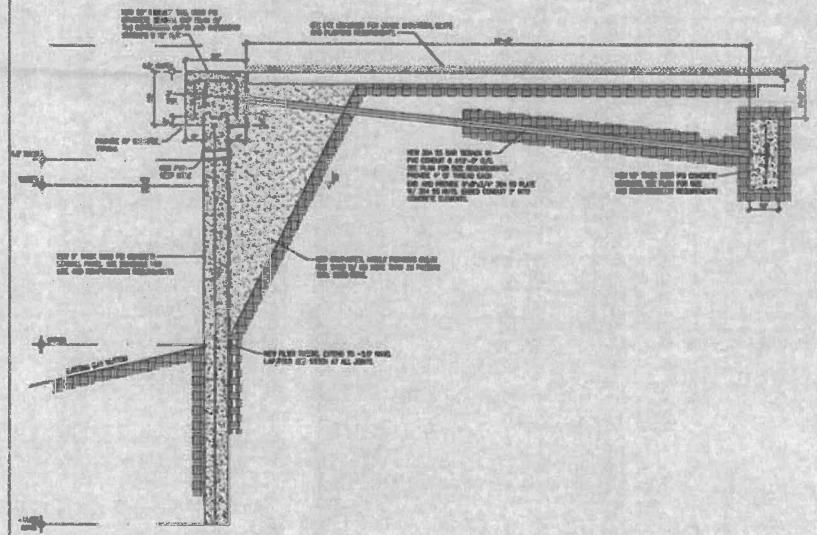
STRUCTURAL SECTIONS

Erickson Consulting Engineers, Inc.

S2.2



D13
S2.3



D14
S2.3

STIRLING & WILBUR
ENGINEERING GROUP

7351 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 923-1002 FAX (941) 923-1003
email: ceo@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group
Inc.

SIGNATURE DATE

BRIAN STIRLING P.E.
PROFESSIONAL ENGINEER (CIVIL)
LICENSE NO. [illegible]

No.	Date	Revisions
1	11-14-14	Per Comments
2	12-1-14	
3	12-18-14	

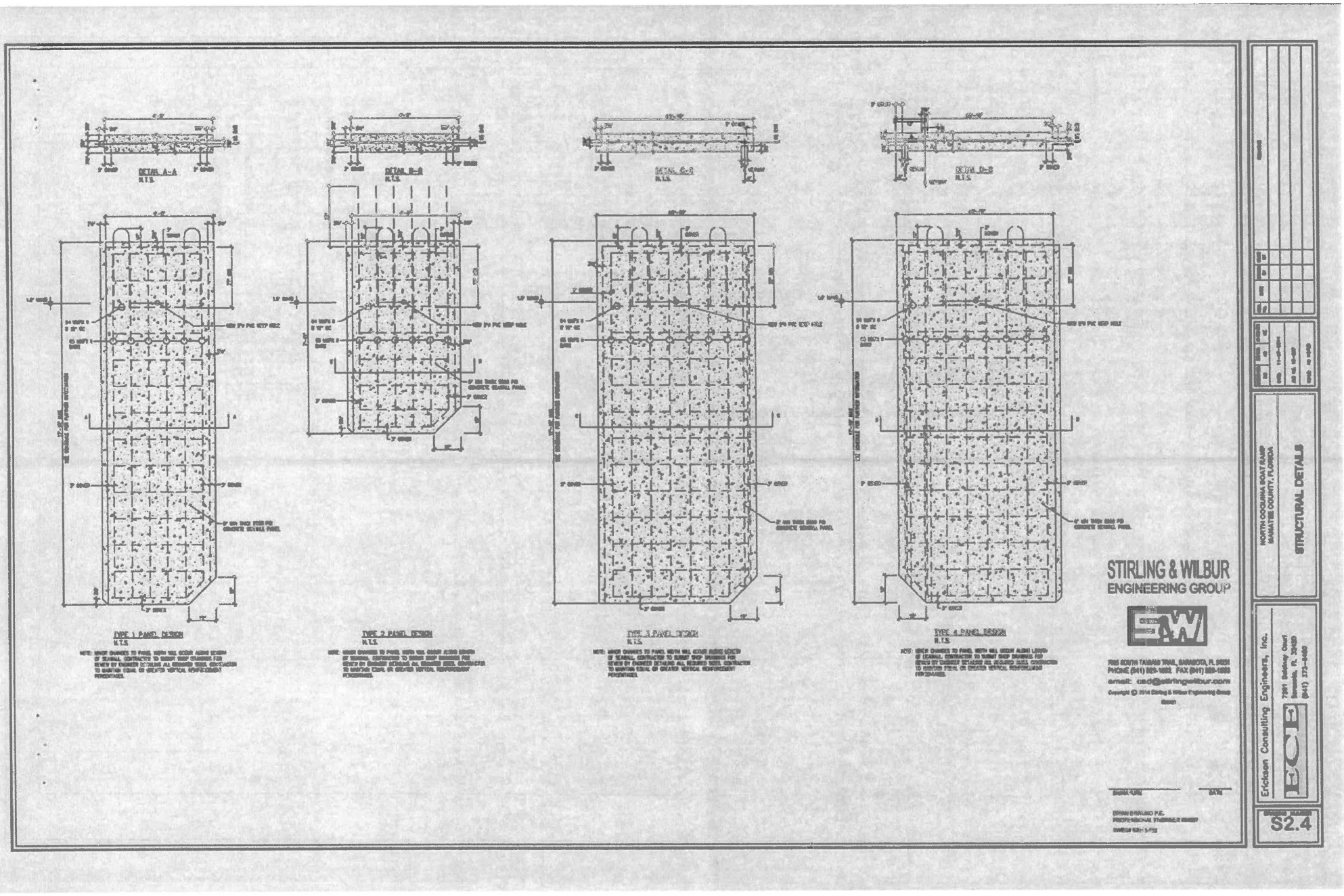
Issued: 12-18-14

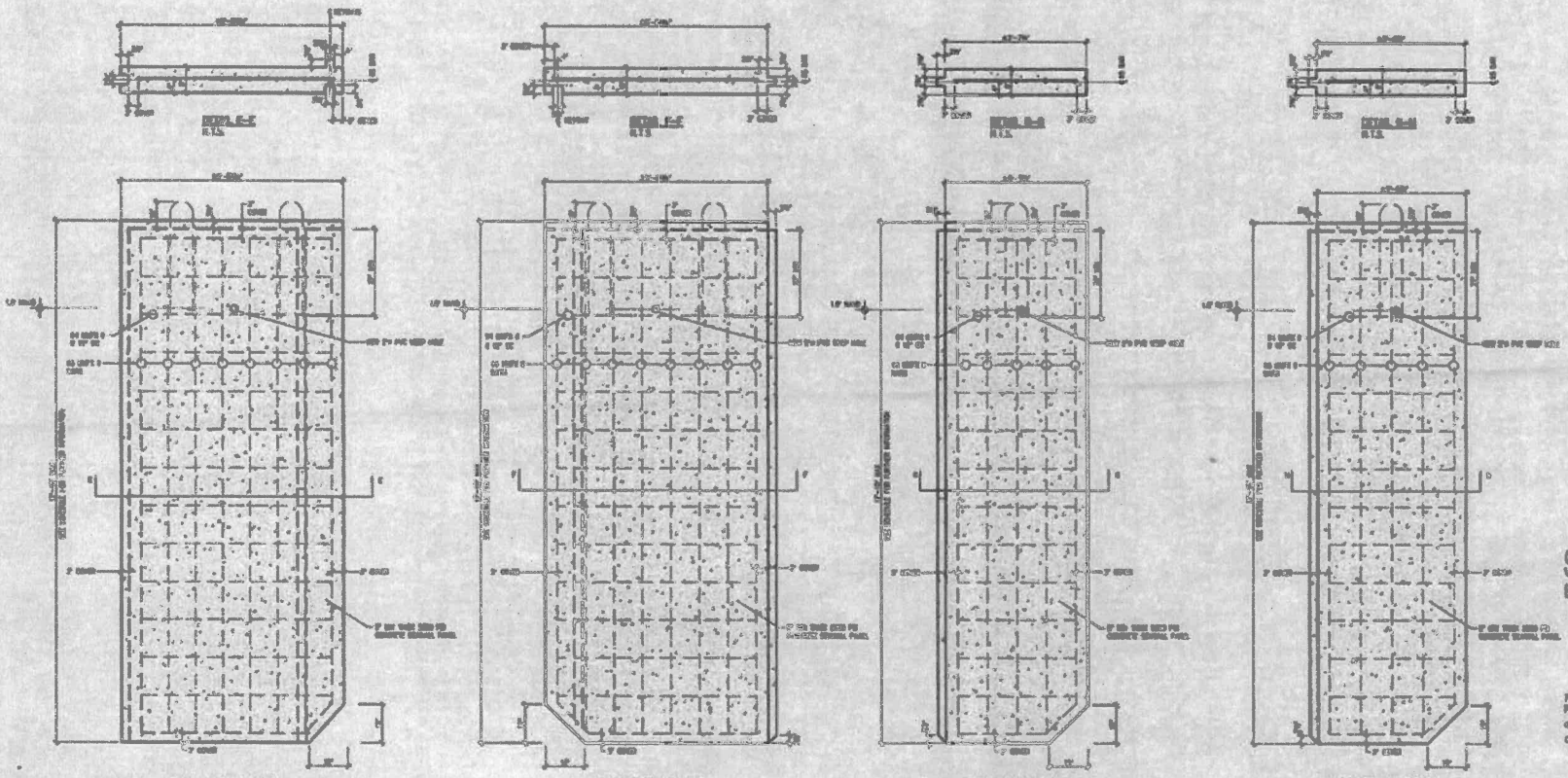
NORTH CORONA BOAT RAMP
MANATEE COUNTY, FLORIDA

STRUCTURAL SECTIONS

Erickson Consulting Engineers, Inc.
7351 Mobley Court
Sarasota, FL 34238
(941) 373-8400

S2.3


DETAIL A-A
N.T.S.
DETAIL B-B
N.T.S.
DETAIL C-C
N.T.S.
DETAIL D-D
N.T.S.
TYPE 1 PANEL DESIGN
N.T.S.
TYPE 2 PANEL DESIGN
N.T.S.
TYPE 3 PANEL DESIGN
N.T.S.
TYPE 4 PANEL DESIGN
N.T.S.
STIRLING & WILBUR
ENGINEERING GROUP
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA
STRUCTURAL DETAILS
Ericksen Consulting Engineers, Inc.
S2.4



STIRLING & WILBUR
ENGINEERING GROUP

7501 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE: (941) 955-4000 FAX: (941) 955-3000
email: eng@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group
Inc.

SIGNATURE DATE

BRIAN SHERIDAN P.E.
PROFESSIONAL ENGINEER EMBEDS

NORTH DOUGLAS ROAD BRIDGE
MANATEE COUNTY, FLORIDA

STRUCTURAL DETAILS

Erickson Consulting Engineers, Inc.

ECE

7501 Gateway Court
Sarasota, FL 34240
(941) 323-8400

DRAWING NUMBER
S2.5

GENERAL NOTES

CODES:

1. THE STRUCTURE DESIGNED 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 REQUIREMENTS.
4. ALL CODES AND STANDARDS REFERRED TO ARE LATEST EDITIONS INCLUDING LATEST REVISIONS AND ADDENDA.
5. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING COMPONENTS, NOTED SUBSURFACE 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 FACILITIES AFFECTING THIS WORK PRIOR TO PROCEEDING.
6. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING EXCAVATION 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 BY NOTARGENTY PORRUCCIO FOR MORE INFORMATION.
7. REMOVE AND LEGALLY DISPOSE ALL EXCAVATION 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 STRENGTHS FOR CONCRETE SHALL BE AS NOTED ON THE STRUCTURAL PLANS. SLUMP 4" +/- 1" WITH A MAXIMUM WATER-TO-CEMENT RATIO OF 0.35 (6,000 PSI) AND (3000 PSI). PROVIDE FLY ASH SUBSTITUTION TO 25% OF CEMENT CONTENT AND 50 LBS OF SILICA FUME PER CUBIC YARD OF MATERIAL. IN ALL CONCRETE PROVIDE A HIGH RANGE WATER REDUCING ADMIXTURE CONFORMING TO ASTM C494. 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 COLD REINFORCEMENT SHALL BE MEETS 2 GRADE (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 97-94.
2. MINIMUM REINFORCING STEEL LAP SPLICE LENGTH, UNLESS NOTED OTHERWISE, IS 36X BAR DIAMETER.
3. FORM 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 REDUCE THE INTEGRITY OF THE STRUCTURE, AND IN A MANNER WHICH WILL NOT REQUIRE THE REMOVAL, CUTTING OR DISPLACEMENT OF THE REINFORCEMENT.
5. FOR HEAVY 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 THE 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. EMBEDDED 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 MINIMUM LOW SEA VERTIFIELD.
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 (CBS, CLASS4).
11. ALL CONCRETE SHALL BE WET CURED FOR A MINIMUM OF 3 DAYS.
12. PROVIDE CONCRETE TESTING OF CONCRETE MATERIAL CONFIRMING DESIGN STRENGTHS.

TIMBER

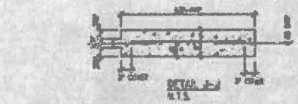
1. PILE:
   TYPE I, GRADE I SOUTHERN PINE, CONFORMING TO SECTION 960 OF FDOT "STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, 2007".
2. GRILLAGE:
   MEET REQUIREMENTS OF SECTION 2.2.3 OF THE FDOT TIMBER DESIGN SPECIFICATION FOR UNBRACKED SINGLE STRAND TENDONS, PER SECTION 450 OF FDOT "STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, 2007".

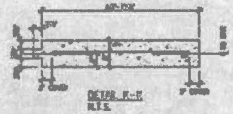
NOTES

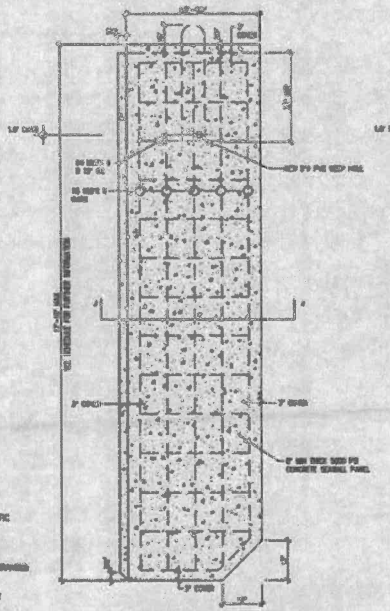
1. SUBMIT TO ENGINEER FOR REVIEW, COMPLETE DETAILS AND SPECIFICATIONS OF THE PROPOSED PILES AND A WRITTEN STATEMENT DESCRIBING THE EQUIPMENT TO BE USED.
2. INSTALL PILES/SHEET PILES TO -13.0' (MLW).
3. REPRESENTATIVE FROM ASBRIDGE & ASSOCIATES, LLC TO BE PRESENT DURING PILE INSTALLATION TO PROVIDE THE NECESSARY INSPECTIONS DOCUMENTATION OF PILE DEPTHS. NO STRUCTURAL CONCRETE SHALL BE POURED AT PILES WHERE DOCUMENTATION HAS NOT BEEN SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.
4. REMOVE EXISTING DOCK STRUCTURE, SEAWALL, DECK, PILINGS, AND ELECTRICAL COMPONENTS AND DISPOSE OF LEGALLY.
5. THE DOCK HAS DESIGNED TO CARRY A LIVE LOAD OF 40 PSF.
6. PROVIDE THE FOLLOWING INSTALLATION ACCESSORIES, PROVIDE PRODUCT DATA SHEET FOR OWNER REVIEW AND ACCEPTANCE PRIOR TO PURCHASE AND INSTALLATION. ALL ATTACHMENT FASTENERS SHALL BE OF STAINLESS STEEL MATERIAL (CONICAL PLANE CAPS, FOR CLEANING SEAMS "FILLET-A-ANY CLEANING TOOLS AS MANUFACTURED BY "SLIDEON", CONCRETE PILE AND SHALL REFER TO HOBLAND SHORES BOAT RAMP FACILITY AT 3635 SHORE DRIVE, ELLENTON FLORIDA. WHERE, AT DEEP 6 10" THICK GROUNDS IN RAMP SLAB AT 10' O.C. TEXTURE O A SIMILAR PROFILE. CONTRACTOR TO PROVIDE MEANS AND METHODS OF TEXTURE INSTALLATION W/ OWN.
   ALL FINISH SHALL BE IN SAME OWN, HOWEVER, SINCE SPECIFIED MATERIALS MAY NOT BEEN SELECTED BY OWNER, CONTRACTOR SHALL PROVIDE ALLOWANCE FIGURE AND PRODUCT DATA ASSOCIATED WITH SAID ALLOWANCE WITH BID.
7. CONTRACTOR TO ADHERE TO THE FOLLOWING INSTALLATION TOLERANCES:
   A. CONCRETE SHEET PILE: OUT OF PLANE FLUSHNESS- 1/8" IN 4'.
   B. CONCRETE SHEET PILE: IN PLANE FLUSHNESS- SHIPLOCK SEPARATION W/ SHIMSON.
   C. STRAIGHTNESS OF CONCRETE SHEETPILE LINE- 1/4" IN 4'.
   D. TOP OF SHEETPILE ELEVATION ±1/4".
8. FILTER FABRIC SHALL CONFORM TO FDOT SPECIFICATION STANDARD INDEX 199, US 230 (GRADE).

DESIGN NOTES

1. CONNECTIONS, MATERIALS AND WORKMANSHIP SHALL BE IN STRICT ACCORDANCE WITH CHAPTER 17, UCBO CONSTRUCTION, OF THE MOST RECENT STANDARD BUILDING CODE AND THE TIMBER CONSTRUCTION MANUAL BY THE NATIONAL FOREST PRODUCTS ASSOCIATION (NFPA) OR SOUTHERN PINE INSPECTION BUREAU (SPIB). MOISTURE CONTENT SHALL NOT BE MORE THAN 19% AT THE TIME OF INCORPORATION INTO STRUCTURE.
2. ALL STRUCTURAL MATERIAL SHALL BE IN SOUTHERN PINE FRAMING (UNLESS NOTED OTHERWISE), AS DESCRIBED IN THE SPIB STANDARD RULES.
3. IF STANDARDS FOR WOOD PRESERVATIVE TREATMENT IS NOT CONSISTENT W/ THE FOLLOWING, THE LATEST STANDARDS SHALL PREVAIL.
4. PROCESS FOR PRESERVATIVE TREATMENT SHALL BE IN CONFORMANCE TO THE AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) STANDARDS C3-96, C9-94, AND C20-94.
5. THE PURCHASE, INSPECTION, AND HANDLING OF ALL WOOD WOOD MATERIAL SHALL BE IN CONFORMANCE W/ THE APPLICABLE SECTIONS OF THE AWPA STANDARDS M4, M5, AND M6, LATEST EDITION.
6. THE CONTRACTOR SHALL PROVIDE A LETTER(S) FROM AN EXPERIENCED INSPECTOR(S) QUALIFIED IN THE INSPECTION FIELD, THAT THE WOOD PRODUCTS, PRESERVATIVES, AND TREATMENT, MEET THE SPECIFICATIONS AND THAT THE METHODS AND FACILITIES OF PRODUCTION CONFORM W/ THE APPLICABLE AWPA STANDARDS OF RECOMMENDED PRACTICE.
7. AN INSPECTION TAG/STAMP SHALL BE REQUIRED ON EACH PIECE OF ACCEPTED MATERIAL WOOD (AND MATERIAL ARRIVED ON SITE. THE TAG/STAMP SHALL BE PLACED ON THOSE PIECES CONFORMING TO ALL STAGES OF PROCESSING. THE INSPECTION TAG/STAMP SHALL REMAIN ON MATERIAL, AS A MINIMUM, UNTIL REMOVED-OF-SECOND HAS VERIFIED MATERIAL.
8. STEP-BY-STEP WORK SHEETS ARE REQUIRED FOR USE IN EXAMINING PRESERVATIVE ANALYSIS AND RETENTION ABOVE. REFER TO SECTION 7.0 OF AWPA STANDARD M5 FOR MORE INFO.
9. ALL COMMENTS WITHIN THE AWPA STANDARDS STATED AS AN OPTION SHALL BE INTERPRETED BY THE CONTRACTOR AS A SPECIFIC REQUIREMENTS OF THESE DOCUMENTS.
10. BRACES SHALL BE IN ACCORDANCE WITH AWPA M5 AND SHALL BE PLACED CLEARLY AND PERMANENTLY ON EACH STRINGER. MEMBERS SHALL BE SPACED AT A MINIMUM OF 0'-0" O/C.
11. TREATED MATERIAL SHALL NOT BE STACKED ALONG THE GROUND.
12. PRIOR TO USE, TREATED MATERIAL SHALL BE STACKED ON TREATED OR NON-RECEIVING SIDES OF SUCH MEMBERS AND SO ARRANGED AS TO SUPPORT THE MATERIAL WITHOUT PRODUCING NOTICEABLE DISTORTION.
13. ALL TREATED MATERIAL SHALL BE STACKED IN SUCH A MANNER SO THAT THERE IS AN SPACE BENEATH THE MATERIAL.
14. STORAGE AREAS SHALL BE FREE OF DEBRIS, GROUND WEED AND DRY VEGETATION (FIRE HAZARD) AND SHALL HAVE SUFFICIENT DRAINAGE TO PREVENT WOOD PRODUCTS FROM BEING SUBJECTED TO STANDING WATER.
15. ALL CUTS, HOLES, AND SURFACE OF THE SURFACE OF TREATED MATERIAL SHALL BE FIELD-PROTECTED BY THOROUGHLY DRENCHING ALL AREAS WITH A FIELD-TREATING SOLUTION PRIOR TO ERECTION AND PLACEMENT OF FASTENERS.
16. COPPER NAPHTHENATE SOLUTION SHALL BE USED AS FIELD TREATMENT. THE PRESERVATIVE SOLUTION SHALL BE PREPARED BY DISSOLVING COPPER NAPHTHENATE PRESERVATIVE MEETING AWPA STANDARD P9. THE SOLUTION SHALL CONTAIN A MIN OF 2% COPPER METAL.
17. ALL DRILLED BORE HOLES AND NAIL HOLES SHALL BE FRONTS FULL OF PRESERVATIVE AND PLUGGED WITH TIGHT-FITTING TREATED PLUGS OF THE SAME MATERIAL.
18. ALL DIMENSIONS SHOWN ON THE PLAN SHALL BE FIELD VERIFIED PRIOR TO FABRICATION/ERECTION.
19. ALL FASTENER HOLES SHALL BE PRE-DRILLED AND TREATED PRIOR TO INSTALLATION OF FASTENERS.

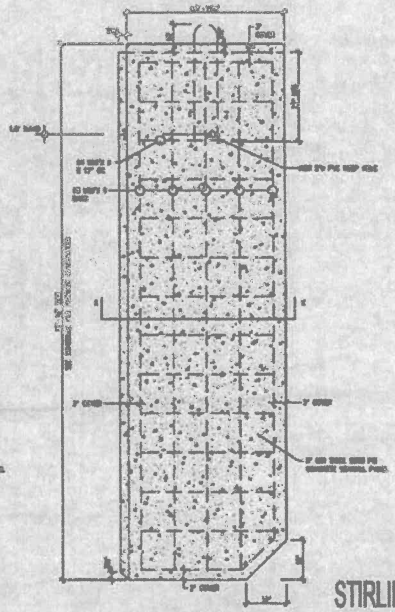






TYPE 9 PANEL DESIGN
N.T.S.

NOTE: WHEN CHANGES TO PANEL WITH WILL OCCUR ALONG LENGTH OF SEAWALL, CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PENETRATIONS.



TYPE 10 PANEL DESIGN
N.T.S.

NOTE: WHEN CHANGES TO PANEL WITH WILL OCCUR ALONG LENGTH OF SEAWALL, CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PENETRATIONS.

STIRLING & WILBUR
ENGINEERING GROUP
7400 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 921-1552 FAX (941) 921-1559
email: cbh@stirlingwilbur.com
Copyright © 2014 Stirling & Wilbur Engineering Group
Corp.

SIGNATURE DATE
STIRLING & WILBUR P.E.
PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE 0000000-153

REVISIONS					

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

STRUCTURAL NOTES AND DETAILS

Erickson Consulting Engineers, Inc.
ECE
7201 Dobbins Court
Sarasota, FL 34240
(941) 373-6400

S2.6

PERMIT/SOVEREIGNTY SUBMERGED LANDS CONDITIONS

The activities described must be conducted in accordance with:

- **The Specific Conditions**
- **The General Conditions**
- **The General Conditions for Sovereignty Submerged Lands Authorization**
- **The limits, conditions and locations of work shown in the attached drawings**
- **The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action. Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit and sovereignty submerged lands authorization, as described.

SPECIFIC CONDITIONS

1. Submittals required herein (e.g., progress reports, as-built drawings, etc.) shall include the permittee's name and permit number 41-0319897-003 and shall be directed by e-mail to SW_ERP@dep.state.fl.us with a subject line of "Compliance: permit number 41-0319897-003", or by mail to:

   Department of Environmental Protection
   Southwest District
   ATTN: ERP Compliance Assurance
   13051 North Telecom Parkway
   Temple Terrace, FL 33637-0926

2. The work authorized by this permit shall not be conducted on any property, other than that owned by the permittee, without the prior written approval of that property owner.

3. In the event the permittee files for bankruptcy prior to completion of work permitted and required by this permit, the permittee must notify the Department within 30 days of filing. The notification shall identify the bankruptcy court and case number and shall include a copy of the bankruptcy petition.

SPECIFIC CONDITIONS - PRIOR TO ANY CONSTRUCTION

4. Prior to installation of turbidity screens or initiation of dredging activities, the permittee shall use PVC pipes to clearly delineate the extent of seagrass beds in the vicinity of the dredge area.

5. Best management practices for erosion control shall be implemented prior to construction commencement and shall be maintained at all times during construction to prevent siltation and turbid discharges in excess of the ambient turbidity levels of the surrounding Outstanding Florida Waters (OFW's). Methods may include, but are not limited to the use of staked hay bales, staked filter cloth, sodding, seeding, staged construction and the installation of turbidity screens around the immediate project site. Erosion control methods shall be implemented as depicted in Sheets C-2 and E-2 of the attached permit drawings.

6. As the project area has not been surveyed for archaeological and historical resources, the Division of Historical Resources is requesting a professional cultural resources assessment survey of the project area. The survey report must conform to the provisions of Chapter 1A-46, Florida Administrative Code, and should be forwarded to the Division of Historical Resources (Christopher.Hunt@dos.myflorida.com), with a copy to the Department.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

7. Wetland areas or waterbodies that are outside the specific limits of construction authorized by this permit, must be protected from erosion, sedimentation, siltation, scouring, excess turbidity, and/or dewatering. There shall be no discharge in violation of the water quality standards in Chapter 62-302, F.A.C. Turbidity/erosion controls shall be installed prior to clearing, excavation or placement of fill material, shall be maintained until construction is completed, disturbed areas are stabilized, and turbidity levels have fallen to less than ambient background. The turbidity and erosion control devices shall be removed within 14 days once these conditions are met.

8. Areas of exposed soils shall be isolated from wetlands or other surface waters to prevent erosion and deposition of these soils into wetlands or other surface waters during construction and operation of permitted activities.

9. The permittee shall be responsible for ensuring erosion control devices/procedures are inspected and maintained daily during all phases of construction authorized by this permit until areas disturbed during construction are sufficiently stabilized to prevent erosion, siltation, and turbid discharges.

10. The following measures shall be taken immediately by the permittee when turbidity levels within waters of the State surrounding the project site exceed the ambient water quality levels of the Outstanding Florida Waters:

    a. Immediately cease work contributing to the water quality violation.

    b. Stabilize exposed soils contributing to the violation. Modify the work procedures responsible for the violation, install additional turbidity containment devices and repair non-functioning turbidity containment devices.

    c. Notify the Department within 24 hours of the time the violation is first detected.

11. Dredging shall be limited to day light; no dredging activities are authorized to be conducted at night.

12. The dredged material shall be placed within the uplands of the project site in a manner which will prevent the escape of dredged material and associated effluent into wetlands and surface waters.

13. The seawall shall be constructed in accordance with the distances from fixed landmarks as shown in the attached permit drawings.

14. The permittee shall report any damage to wetlands area as a result of the seawall construction to the Department within 24 hours.

15. The seawall shall be fully constructed prior to the placement of any backfill material. Any fill material used behind the seawall shall be clean fill and free of vegetative matter, trash, garbage, toxic or hazardous waste or any other unsuitable materials.

16. Dredging within waters of the State for the purpose of providing backfill is specifically prohibited.

17. Excavation of the retention pond is limited to the permitted design specifications as depicted on Sheets C-4, C-6 and C-6A of the attached permit drawings. If limestone bedrock is encountered during construction, the permittee shall notify the Department immediately and shall cease construction in the affected area. The permittee shall submit a design revision to the Department for review and approval that will demonstrate compliance with Rule 5.4.1.b. of the Applicant's Handbook, Volume II prior to proceeding with construction.

18. The authorized surface water management system shall be completed prior to or simultaneously with associated upland development.

19. All enclosed structures shall be a minimum of one-foot above the base flood elevation of 11.0 feet N.A.D.V. or be flood-proofed to be watertight and capable of resisting the effects of the regulatory flood. The flood-proofed design shall take into account flood velocities, duration, rate of rise, hydrostatic and hydrodynamic forces, the effect of buoyancy, and impacts from debris. Flood proofing measures should be operable without human intervention and without an outside source of electricity.

20. This permit does not authorize the installation of water, sewer, cable or utility lines within wetlands or waterbodies.

21. The wetland buffer, as shown on sheet C-3 of the approved construction drawings, shall be clearly flagged or otherwise delineated on site prior to initial clearing or grading activities. The delineation shall endure throughout the construction period and be readily discernible to construction and Department personnel.

22. Unauthorized impacts to wetlands and shoreline as a result of the authorized construction shall be reported to the Department within 24 hours.

23. Storage or stockpiling of tools and materials (i.e., lumber, pilings, debris) within wetlands or other surface waters is prohibited.

SPECIFIC MANATEE CONDITIONS

24. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with, and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

25. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels shall follow routes of deep water whenever possible.

26. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers shall not impede manatee movement.

27. All on-site project personnel are responsible for observing water-related activities for the presence of manatees. All in-water operations, including vessels, shall be shutdown if a manatee comes within 50 feet of the operation. Activities shall not resume until every manatee has moved beyond the 50-foot radius of the project operation, or until 30 minutes has elapsed wherein a manatee has not reappeared within 50 feet of the operation. Animals shall not be herded away or harassed into leaving.

28. Any collision with or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida.

29. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Awareness signs that have already been approved for this use by the Florida Fish and Wildlife Conservation Commission (FWC) must be used. One sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* must be posted. A second sign measuring at least 8 1/2" by 11" explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. Please see the Florida Fish and Wildlife Conservation Commission website for information on how to obtain appropriate signs: http://www.myfwc.com/docs/WildlifeHabitats/Manatee_EducationalSign.pdf

30. No later than 60 days after permit issuance, permanent manatee educational signs must be installed by the permittee. In the event the signs fade, become damaged or outdated, they must be replaced and maintained for the life of the facility. The on-site locations and types of signs must be acceptable to the Florida Fish and Wildlife Conservation Commission,

which should be contacted at ImperiledSpecies@myfwc.com. The types of signs, sign vendors, and the process for FWC approval can be found at: http://www.myfwc.com/wildlifehabitats/managed/manatee/signs/.

31. No later than 60 days after construction commencement, bins for the disposal or recycling of monofilament line or other used fishing gear must be installed by the permittee. Educational signs encouraging the use of these bins shall be posted. An example of an approved educational sign concerning entanglement and information for sign vendors can be found at: http://www.myfwc.com/wildlifehabitats/managed/manatee/signs/.

32. All new coastal construction must utilize light fixtures that are shielded, low lumens, long wavelength (absent any peaks of short wavelength light below 560 nm) and do not allow light sources to be directly, reflectively, or cumulatively visible from the nesting beach. All proposed and existing exterior fixtures shall meet the requirements of the FWC Approved Sea Turtle Lighting guidelines. FWC Approved Sea Turtle Lighting guidelines and a data base of FWC approved Wildlife Friendly lighting fixtures may be found at: http://www.myfwc.com/wildlifehabitats/managed/sea-turtles/turtles-lights/. Fixtures "A" and "C" on sheet E501 (dated 1/7/15) would meet the requirements of the Sea Turtle Lighting guidelines. For technical assistance relating to the preparation of lighting plans, contact FWC staff at MarineTurtle@MyFWC.com.

SPECIFIC CONDITIONS - CONSTRUCTION COMPLETION

(The permittee shall comply with the following conditions prior to the transfer to operation phase of the facility. All documentation required below shall be included with the permittee's request to transfer the project to the operation phase [Form No. 62-330.310(2), F.A.C.].)

33. The permittee shall submit one set of signed, dated and sealed as-built drawings to the Department via email at SW_ERP@dep.state.fl.us for review and approval within 30 days of completion of construction. (Please contact the Department for files that are too large to email for alternative means of submitting electronically.) The as-built drawings shall be based on the Department permitted construction drawings and any pertinent specific conditions, which should be revised to reflect changes made during construction. Both the original design and constructed elevations must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawings. Surveyed dimensions and elevations required shall be verified and signed, dated and sealed by a Florida registered professional. *As-builts shall be submitted to the Department regardless of whether or not deviations are present. In addition, the permittee shall submit the "As-Built Certification and Request for Conversion to Operation Phase" form (Ch. 62-330.310(1), F.A.C.); as required in General Condition #6.*

The following information shall be verified on the as-built drawings from the engineering drawings signed and sealed by Joshua Bryant, P.E., #71551, on January 12, 2015, and Karyn Erickson, P.E., #41897, January 12, 2015:

Plans signed and Sealed by Joshua Bryant:

Plan View/ Cross Section Name	Drawing Number

Site Grading and Drainage Plan	C-4
Site Cross Sections	C-6, 6A

Plans Signed and Sealed by Karyn Erickson:

Plan View/ Cross Section Name	Drawing Number
Paving, Grading and Drainage Plan	E 5
Cross Sections (Shore Perpendicular)	E 6. 7, 8
Cross Sections (Shore Parallel)	E 9, 10
Site Plan	E3
Structural Site Plan	S1.1 through S2.6

SPECIFIC CONDITIONS – MONITORING/REPORTING REQUIREMENTS

34. Fish cleaning stations on structures over the water shall have sufficient measures in place (i.e., signage, sink screens, waste receptacles, etc.) to ensure that overboard discharges of trash and/or animal waste do not occur at the dock. The permittee shall submit a plan for Department review and approval prior to installation of any fish cleaning stations.

35. Boat maintenance or repair activities that require the removal of a vessel from the water, or removal of major portions of the vessel, including the engine, for purposes of routine repair or maintenance on site are prohibited over water at the facility, except where such activities are necessitated by emergency conditions which have resulted in or can result in the sinking of a vessel. Specifically prohibited shall be hull scraping, stripping, sanding, painting, recoating, and other maintenance or repair activities that may result in degradation of water quality from discharges or release of potential contaminants into waters of the state.

36. Fueling facilities shall not be provided at the facility.

37. Temporary 24-hour mooring shall be allowed at the facility. Overnight Permanent mooring is strictly prohibited. In order to ensure compliance with this condition, the permittee shall install signs reading "No Overnight Mooring".

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS

The following general conditions are binding on all individual permits issued under chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

1. 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. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. 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

Attachment 3

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

Permit Number: SAJ-2014-02969(LP-CMW)

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

_____
Full Name of Permittee (printed or typed)

_____
Date

STANDARD MANATEE CONDITIONS FOR IN-WATER WORK
2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT

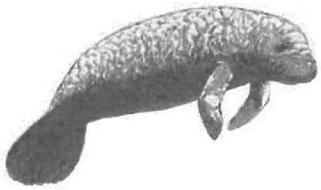
All project vessels

IDLE SPEED / NO WAKE

When a manatee is within 50 feet of work all in-water activities must

SHUT DOWN

Report any collision with or injury to a manatee:



Wildlife Alert:

1-888-404-FWCC(3922)

cell *FWC or #FWC

Manatee Educational Signs

Required by Permit or Submerged Lands Lease
March 2011

Florida Fish and Wildlife Conservation Commission

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600

MyFWC.com

In order to obtain FWC approval for the manatee educational signs required by state permit or submerged lands lease, requests should be sent to:

ImperiledSpecies@myfwc.com
or:
Florida Fish and Wildlife Conservation Commission
Imperiled Species Management Section 6-A
620 South Meridian Street Tallahassee, FL 32399-1600.

The FWC requests that the permittee propose and submit a plan for installing signs based on the guidelines discussed below. FWC will review the sign placement proposal and notify the permittee within 60 days of receiving the plan if the signs and locations are unacceptable. Modifications to the type, location and number of proposed signs may be required. All sign proposals should follow the general guidelines in this document. The following information should be included in this plan and forwarded to FWC for review:

- A detailed upland project site plan with proposed sign locations, types, and proposed numbers of manatee signs. Include which way the signs are proposed to face.
- The project address or a location map of the facility in relation to waterways.
- The project permit or submerged lands lease number.
- Your name, email address, mailing address and a phone number.

Guidelines for the installation of signs

- Signs must be placed in a prominent location for maximum visibility. Areas that are recommended include: dock walkways, dock master offices, near restrooms or other high patron foot traffic areas.
- Signs must be replaced when faded, damaged or outdated.
- If the facility is large or has multiple docks with separate walkways that are a considerable distance apart, multiple signs should be installed.
- These signs must not face the water, must never be attached to pilings or navigational markers in the water. One exception to signs facing the water exists for the temporary sign, "Caution Boaters" during in-water work.

FWC Approved Signs and Sign Specifications

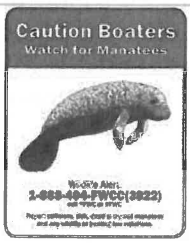
The FWC designs manatee educational signs, which can be produced by most sign companies. Signs other than depicted may be considered, but must be pre-approved by FWC's Imperiled Species Management Section. There is a list of known sign vendors who produce FWC signs on our Manatee Sign Vendor webpage as well as downloadable files for sign companies not on this list who may want to produce these signs.

Manatee Educational Signs

February 2011

For durability, all signs should be fiberglass or metal with rounded corners (hand-sanded to remove all sharp edges and burrs), constructed of 0.08 Gauge 5052-H38 Aluminum with an Alodine 1200 conversion coating and Engineer Grade Type I reflective sheeting. Signs constructed to other specifications may not provide durability acceptable to the consumer.

The approved signs must meet the following specifications:

Florida Friendly Boating (2009)	Caution: Boaters (2009)	Entanglement (2010)	Caution: Shut Down (2009)
Minimum size should be 30" tall x 36" wide with rounded corners	Minimum size should be 30" tall x 24" wide with rounded corners	Minimum size should be 15" tall X 12" wide with rounded corners	Minimum size should be 8½" tall by 11" wide metal with rounded corners
			
This sign is considered the manatee educational sign. In 2009, it replaced the older manatee educational sign called "Manatee Basics for Boaters".	This sign is sometimes referred to as an awareness sign. In 2009, it replaced the "Caution: Manatee Area" sign. These signs are also frequently used as temporary signs for construction purposes.	This entanglement sign is typically placed near recycling bins or trash containers.	This temporary sign is required as part of the standard manatee construction conditions and is intended to be placed near dredge, tugboat and work boat operators.

The size and type of signs required by permit or lease may vary from those depicted in this guide. If you have any questions, please contact FWC's Imperiled Species Management Section.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.

d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006
O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc

APPENDIX C

CONSTRUCTION PLANS

CONSTRUCTION PLANS
FOR
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
1343 GULF DRIVE SOUTH (SR 789)
CITY OF BRADENTON BEACH
MANATEE COUNTY, FLORIDA

OWNER/ DEVELOPER
MANATEE COUNTY PARKS
AND RECREATION
5502 33rd AVE. DRIVE WEST
BRADENTON, FLORIDA 34209
(941) 792-8784
ATTN: CHARLES HUNSICKER

CIVIL ENGINEER / LAND PLANNER
CPH, INC.
3277A FRUITVILLE ROAD
SARASOTA, FLORIDA 34237
(941) 365-4771
ATTN: DANIEL P. MOYER, P.E.

SURVEYOR
ZNS ENGINEERING
201 5th AVENUE DRIVE EAST
BRADENTON, FLORIDA 34208
(941) 748-8080
ATTN: R.E.M. EDGERTON, P.S.M.

ENVIRONMENTAL
CPH, INC.
3277A FRUITVILLE ROAD
SARASOTA, FLORIDA 34237
(941) 365-4771
ATTN: DAVID A. LANDERS

LANDSCAPE ARCHITECT
CPH, INC.
500 W. FULTON STREET
SANFORD, FLORIDA 32771
(407) 322-6841
ATTN: JAMES K. WINTER R.L.A., C.L.A.R.B.

ARCHITECTURAL CONSULTANTS

ARCHITECT
UGARTE & ASSOCIATES, INC.
434 9TH AVENUE WEST
PALMETTO, FLORIDA 34221
(941) 729-5692
ATTN: CARLOS D. UGARTE

STRUCTURAL
WILSON STRUCTURAL CONSULTANTS, INC.
6731 PROFESSIONAL PKWY. WEST
SUITE 103
SARASOTA, FLORIDA 34240
(941) 907-4789
ATTN: RICHARD D. WILSON

MECHANICAL
ME3 CONSULTING ENGINEERS, LLC
5300 PAYLOR LANE
SARASOTA, FLORIDA 34240
(941) 748-1319
ATTN: KAY C. CLEM, P.E.

ELECTRICAL
ME3 CONSULTING ENGINEERS, LLC
5300 PAYLOR LANE
SARASOTA, FLORIDA 34240
(941) 748-1319
ATTN: BRYAN P. ZAPF, P.E.

COASTAL CONSULTANTS

COASTAL
ERICKSON CONSULTING ENGINEERS, INC.
7201 DELAINEY COURT
SARASOTA, FLORIDA 32420
(941) 373-6460
ATTN: KARYN M. ERICKSON, P.E.

STRUCTURAL
STIRLING & WILBUR ENGINEERING GROUP
7085 SOUTH TAMIAMI TRAIL
SARASOTA, FLORIDA 34231
(941) 929-1552
ATTN: BRIAN STIRLING, P.E.

UTILITIES
BRIGHT HOUSE NETWORKS
5413 SR 64 E
BRADENTON, FLORIDA 34208
(941) 345-1348
ATTN: TOM WRIGHT

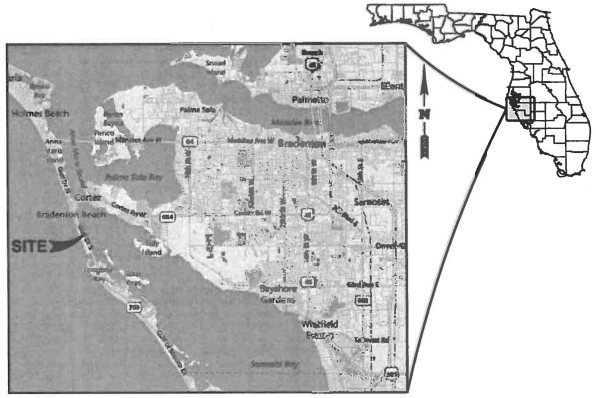
FLORIDA POWER & LIGHT
- MANATEE
2900 CATHERINE ST
PALATKA, FLORIDA 32177
(800) 868-9554
ATTN: TRACY STERN

FLORIDA POWER & LIGHT
- SUBAQUEOUS
2900 CATHERINE ST
PALATKA, FLORIDA 32177
(800) 868-9554
ATTN: TRACY STERN

VERIZON FLORIDA INC.
1909 US HWY 301 N
TAMPA, FLORIDA 33619
(813) 627-8343
ATTN: DAVID WYNNS

MANATEE COUNTY
UTILITY OPERATIONS
4422 C 66TH STREET WEST
BRADENTON, FLORIDA 34210
(941) 792-8811 X5075
ATTN: KATHY MCMAHON

LONGBOAT KEY UTILITIES
600 GENERAL HARRIS STREET
LONGBOAT KEY, FLORIDA 34228
(941) 316-1958 X2
ATTN: JOHN MICHAEL



MANATEE COUNTY, FLORIDA
SECTION 10, TOWNSHIP 35 S., RANGE 16 E.

VICINITY MAP
NTS

DESIGN STANDARD REFERENCES:

- National Forest Products Association (NFPA)/Southern Pine Inspection Bureau (SPIB) Timber Construction Manual
- American Wood Preserver's Association (AWPA) Standards C2-90, C9-91 and C18-91
- AWPA Standards M1, M2, M4 and M6, Latest Edition
- American Concrete Institute (ACI) 304, 301, 218 and SP-66
- American Society for Testing and Materials (ASTM) C94, C260, C494, A615 and A1035
- FDOT Standard Specifications for Road and Bridge Construction, 2010, Sections 451 and 948
- Post Tensioning Institute Specification for Unbonded Single Strand Tendons Section 3.2.5
- Florida Department of Transportation, 2015 Design Standards and revised Index Drawings as appended herein
- Manatee County Engineering Standards

BASIC BUILDING CODE INFORMATION:

- AUTHORITY HAVING JURISDICTION: BRADENTON BEACHAND WEST MANATEE FIRE AND RESCUE DISTRICT
- BUILDING CODE COMPLIANCE: 2010 FLORIDA BUILDING CODE WITH 2012 AMENDMENTS
  2012 FLORIDA ACCESSIBILITY CODE
  2010 FLORIDA FIRE PREVENTION CODE WITH NFPA 1-18 ADOPTED MAY 2013

INDEX OF SHEETS

CIVIL ENGINEERING PLANS

C-1	COVER SHEET
C-1A	TABULATION OF QUANTITIES SHEET
S-1 - S-1A	BOUNDARY, MEAN HIGH WATER LINE, TOPOGRAPHIC & JURISDICTIONAL SURVEY
C-2	SITE DEMOLITION AND EROSION CONTROL PLAN
C-3	SITE DIMENSION PLAN
C-4	SITE GRADING AND DRAINAGE PLAN
C-5	COMPOSITE UTILITY PLAN
C-6 - C-6A	SITE CROSS SECTIONS SHEET
C-7	GENERAL DETAILS SHEET
C-7A	FISH CLEANING STATION DETAILS SHEET
C-8	MANATEE COUNTY GENERAL DETAILS SHEET
C-8A - C-8B	MANATEE COUNTY UTILITY DETAILS SHEET
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE PLAN
R-1	S.R. 789 (GULF DRIVE) IMPROVEMENTS

ARCHITECTURAL PLANS

A001	COVER SHEET
A251	STORAGE FLOOR PLAN AND ELEVATIONS
A551	STORAGE BUILDING SECTIONS AND DETAILS
A801	DETAILS
A901	SPECIFICATIONS
A902	SPECIFICATIONS
A903	SPECIFICATIONS
S1.00	STRUCTURAL NOTES & WIND SCHEDULE
S1.01	TYPICAL DETAILS
S2.01	STORAGE BUILDING FOUNDATION & FRAMING PLANS
S3.00	SECTIONS
M201	MECHANICAL STORAGE FLOOR PLAN
E101	ELECTRICAL SITE PLAN
E201	ELECTRICAL FLOOR PLANS
E501	ELECTRICAL DETAILS
E901	ELECTRICAL SPECIFICATIONS

COASTAL ENGINEERING PLANS

E1	EXISTING CONDITIONS
E2	DEMOLITION PLAN
E3	SITE PLAN
E4	EXCAVATION AREAS
E5	PAVING, GRADING AND DRAINAGE PLAN
E6-E8	CROSS SECTIONS (SHORE PERPENDICULAR)
E9-E10	CROSS SECTIONS (SHORE PARALLEL)
E11	CONSTRUCTION DETAILS

STRUCTURAL PLANS

S1.1	STRUCTURAL SITE PLAN
S2.1-S2.3	STRUCTURAL SECTIONS
S2.4-S2.5	STRUCTURAL DETAILS
S2.6	STRUCTURAL NOTES AND DETAILS

Sunshine811.com
www.sunshine811.com

NOTICE
THE SIZE OF THESE PLANS MAY HAVE BEEN SLIGHTLY ALTERED BY REPRODUCTION PROCESSES. THIS MUST BE CONSIDERED WHEN SCALING ANY REPRODUCED PLANS FOR THE PURPOSE OF COLLECTING DATA.

NOTE: NOT RELEASED FOR CONSTRUCTION UNLESS STAMPED "RELEASED FOR CONSTRUCTION"

JN\M3110\Civil\DWG\Design\M3110 C-01 COVER.dwg Jan 18, 2016 - 11:09am kapo

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
DANIEL P. MOYER, P.E.
FL LICENSE NO. 56207
01-15-16

No.	Date	Revision	By
1	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by: KMU
Drawn by: KMU
Checked by: JAB
Approved by: DPM
Scale: N/A
Date: 08/13
Job No.: M13110
© 2015

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA26000626
Lndscp. Lic. No. LC0000298

COVER SHEET

NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA

Sheet No.
C-1

TABULATIONS OF QUANTITIES FOR SITE IMPROVEMENTS

ITEM NO.	DESCRIPTION	UNITS	QTY.
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 DISPOSE OF EXIST. SITE ITEMS (LIGHTING, DUMPSTERS, FENCING, SIGNAGE, GATES, POSTS)	LS	1
2.07	REMOVE AND DISPOSE OF. EXIST. TREES (8-INCH AND GREATER)	EA	58
2.08	CLEARING AND GRUBBING	LS	1
2.09	GRADING AND FILL	LS	1
2.10	STORMWATER POND OUTFALL, INCL RIP-RAP, SKIMMER, CONCRETE	LS	1
2.11	PAVEMENT CEMENT CONCRETE AND BASE (6-INCH THICK MIN., 4000 PSI), INCLUDING WWR AND 12" BASE	SY	6625
2.12	CONCRETE SIDEWALK ONSITE (4-INCH THICK MIN., 3000 PSI), AND 6" BASE	SY	140
2.13	CONCRETE SIDEWALK OFFSITE (FDOT INDEX 310, 6" THICK)	SY	140
2.14	COMPACTED SHELL DRIVE	SY	420
2.15	WASHED SHELL - 4" THICK	SY	146
2.16	FDOT DRIVEWAY	SY	288
2.17	PIPE, WATER, 2-INCH PE, SDR 9	LF	145
2.18	PIPE, WATER, 1-INCH PE, SDR 9	LF	680
2.19	2-INCH WATER CONNECTION (INCL. DISINFECTION AND TESTING)	LS	1
2.20	1.5-INCH WATER METER AND BACKFLOW ASSEMBLY	EA	1
2.21	RPZ AND HOSE BIB (FOR STORAGE BUILDING)	EA	1
2.22	FITTINGS (D.I.), WATER	LS	1
2.23	6' TALL CHAIN LINK FENCE	LF	155
2.24	10' WIDE CHAIN LINK ACCESS	EA	5
2.25	TYPE AB CURB AND GUTTER	LF	46
2.26	TYPE D CURB	LF	22
2.27	WOODEN POST	EA	190
2.28	POST / ROPE	LF	380
2.29	PIPE GUARDRAIL ON SEAWALL	LF	270
2.30	WHEEL STOPS (NEW)	EA	44
2.31	BOLLARD (GALVANIZED STEEL, PAINTED)	EA	8
2.32	BOLLARD (PVC, PAINTED)	EA	4
2.33	SIGNAGE	LS	1
2.34	BENCH	EA	1
2.35	DETECTABLE WARNING	EA	8
2.36	TRAFFIC STRIPES AND MARKINGS	LS	1
2.37	FISH CLEANING STATION	EA	2
2.38	BOAT RAMP SIGN	EA	1
2.39	ELECTRIC SERVICE, SITE LIGHTING AND SIGNAGE, INCL METER	LS	1
2.40	LIGHTING ASSEMBLY (INCLUDING FIXTURE, BASE, CONDUIT, WIRES)	EA	5
2.41	TREES, CABBAGE PALMS	EA	14
2.42	SHRUBS, ALL	LS	1
2.43	GROUNDCOVER, ALL	LS	1
2.44	SODDING	SY	5160
2.45	STOCKPILE DREDGE MATERIAL ONSITE	CY	430
2.46	REMOVE AND DISPOSE OF EXIST. BOAT RAMP ITEMS (BOAT RAMP, CONCRETE SEAWALL, DEADMEN, TIEBACKS, WOOD DOCK FACILITY INCLUDING SUPPORTS AND PILES)	LS	1
2.47	EXCAVATION (FOR BOAT RAMP, DOCKS & WATER-SIDE BOAT RAMP APPROACH)	CY	430

TABULATIONS OF QUANTITIES FOR SITE IMPROVEMENTS

ITEM NO.	DESCRIPTION	UNITS	QTY.
2.48	CONCRETE SEAWALL PANEL (INCLUDING CONCRETE CAP, GEOTEXTILE)	LF	270
2.49	FILL, CLEAN (BEHIND SEAWALL)	CY	170
2.50	SOUTH SEAWALL CONCRETE DEADMAN, 10-INCH THICK, 3000 PSI (FOR SEAWALL)	EA	8
2.51	NORTH SEAWALL CONCRETE DEADMAN, 10-INCH THICK, 3000 PSI (FOR SEAWALL)	EA	1
2.52	STEEL TIEBACK SYSTEM (304 SS BAR IN PVC CONDUIT) (FOR SEAWALL)	EA	15
2.53	CONCRETE, 8.25-INCH THICK, 5000 PSI (STEEL REINFORCED) (RAMP)	SY	405
2.54	AGGREGATE, 12-INCH THICK, #57 STONE (BELOW RAMP)	SY	405
2.55	CONCRETE PANEL (AT BASE OF RAMP)	LF	47
2.56	WOOD DOCK (5 FT WIDE - TIMBER FRAME STRUCTURE WITH COMPOSITE DECKING)	LF	237
2.57	FLOATING DOCK, ALUMINUM (INCLUDING 4' X 20' GANGWAY, 5' X 25' FLOATING DOCK, AND HANDRAIL)	LS	1
2.58	CONCRETE PILE, PRE-STRESSED 12-INCH X 12-INCH, 5000 PSI (FOR DOCK)	EA	48
3.01	DISCRETIONARY FUNDS (TESTING)	LS	1
3.02	DISCRETIONARY FUNDS (10% CONTINGENCY)	LS	1
4.00 4.01	BID AS ALTERNATIVE STORAGE BUILDING	LS	1

Sunshine811.com

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

DANIEL P. MEYER, P.E.
FL LICENSE NO. 56207
05-05-16

No.	Date	Revision	By
1	03/15/16	SHEET MODIFICATION	D.P.M.

Designed by: KMU
Drawn by: KMU
Checked by: JAB
Approved by: DPM
Scale: N/A
Date: 08/13
Job No.: M13110

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.355.4771
Licenses:
Eng. C.O.A. No. 3218
Survey L.B. No. 7143
Arch. Lic. No. AA26000026
Lndscp. Lic. No. LC0000298

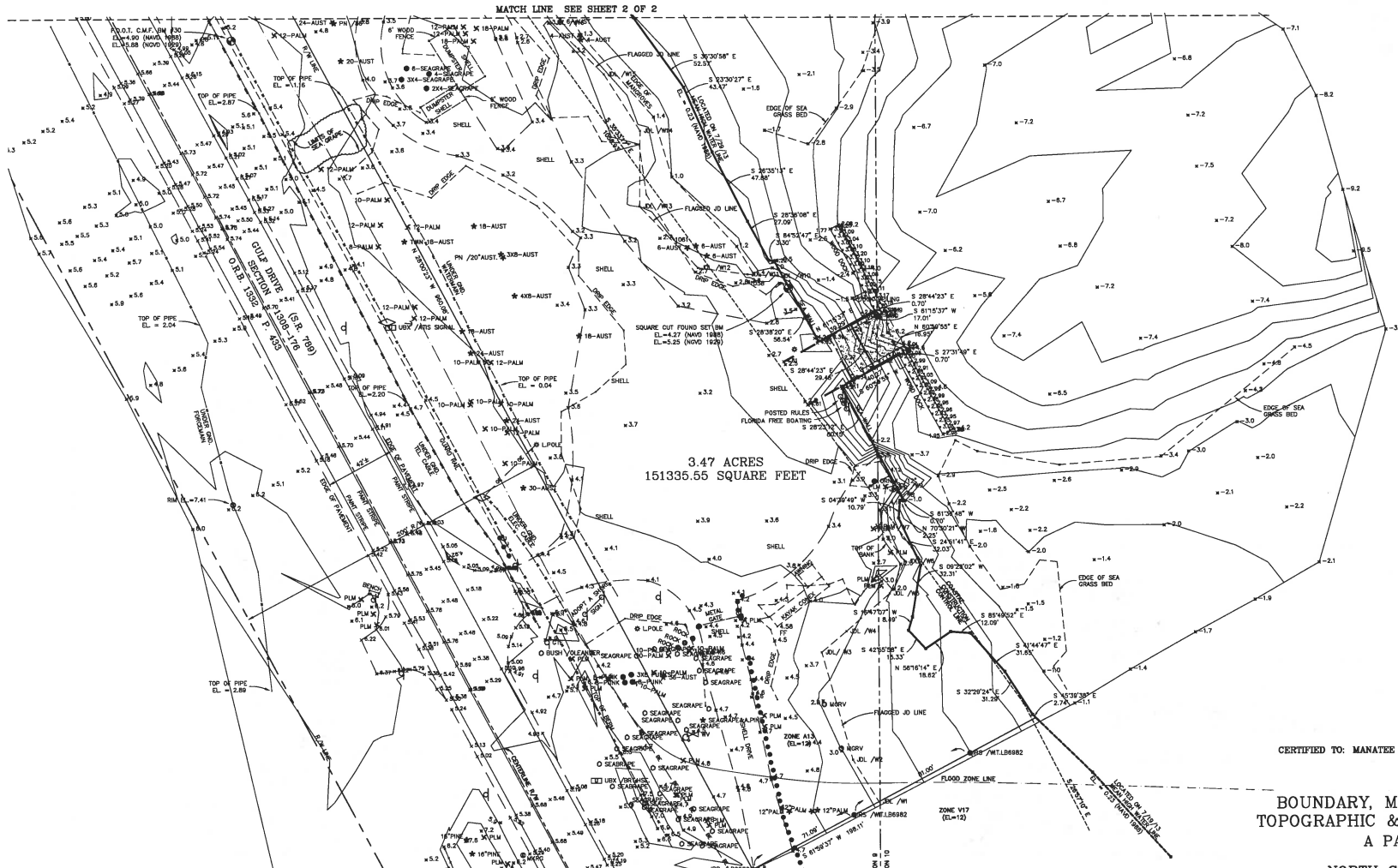
TABULATION OF QUANTITIES SHEET

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-1A

J:\M13110\CIVIL\DWG\Dw /gpM13110 C-01 COVER.dwg Mar 15, 2016 - 10:56am kapp



CERTIFIED TO: MANATEE COUNTY

BOUNDARY, MEAN HIGH WATER LINE, TOPOGRAPHIC & JURISDICTIONAL SURVEY

A PARCEL OF LAND
OF
NORTH COQUINA BOAT RAMP
LOCATED IN
SECTION'S 9 & 10, TOWNSHIP 35 SOUTH, RANGE 16 EAST
MANATEE COUNTY, FLORIDA

NOTE: SEE SHEET 2 OF 2 FOR LEGEND AND NOTES.

NOTE: THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

K:\Plot Files\Projects\Manatee County\Coquina\N Coquina BR\N Coquina BR-layout1.plt

CERTIFICATE OF SURVEYOR

I, THE UNDERSIGNED PROFESSIONAL SURVEYOR & MAPPER, HEREBY CERTIFY THAT THIS RECORD OF LAND SURVEY WAS PREPARED UNDER MY DIRECT SUPERVISION THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF IS A TRUE AND CORRECT REPRESENTATION OF THE LAND AS SHOWN AND DESCRIBED HEREON, AND THAT IT MEETS THE "MINIMUM TECHNICAL STANDARDS FOR SURVEYING IN THE STATE OF FLORIDA", CHAPTER 5J-17.050, OF THE FLORIDA ADMINISTRATIVE CODE.

FLORIDA CERTIFICATE No. LS 4386
DATE OF CERTIFICATION 08/08/13
DATE OF FIELD SURVEY 07/29/13

BY: J. N. Gatch
JAMES N. GATCH, JR., P.S.M.

REVISION	BY	DATE
UPDATED	bernie	11/25/13

CERTIFICATE OF AUTHORIZATION LB # 6982

ZNS ENGINEERING
ENGINEERS | PLANNERS | SURVEYORS
LANDSCAPE ARCHITECTS | ENVIRONMENTAL CONSULTANTS
POST OFFICE BOX 1648 BRADENTON, FL 34206 | 107 6th AVENUE EAST BRADENTON, FL 34208
E-MAIL: ZNS@ZNSENG.COM | TELEPHONE (941) 748-8080 | FAX (941) 748-3314

DRAWING: T:\Manatee\Coquina\N Coquina BR.dwg (layout 1) DATE 07-31-13 SCALE 1" = 30'
DRAWN bernie JOB NO. 00-43119 FIELD BOOK ____ PAGE ____ SHEET 1 OF 2

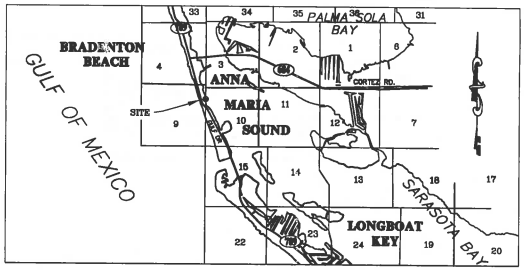
© ZNS ENGINEERING, L.C.
THIS DOCUMENT IS PROTECTED BY SECTION 108 OF THE "UNITED STATES COPYRIGHT ACT". REPRODUCTION OR ALTERATION OF THIS DOCUMENT OR THE INFORMATION CONTAINED HEREON BY ANY MEANS WHATSOEVER IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF ZNS ENGINEERING, L.C. CONSENT IS HEREBY GRANTED SPECIFICALLY TO GOVERNMENTAL AGENCIES TO REPRODUCE THIS DOCUMENT IN COMPLIANCE WITH F.S. CHAPTER 119.

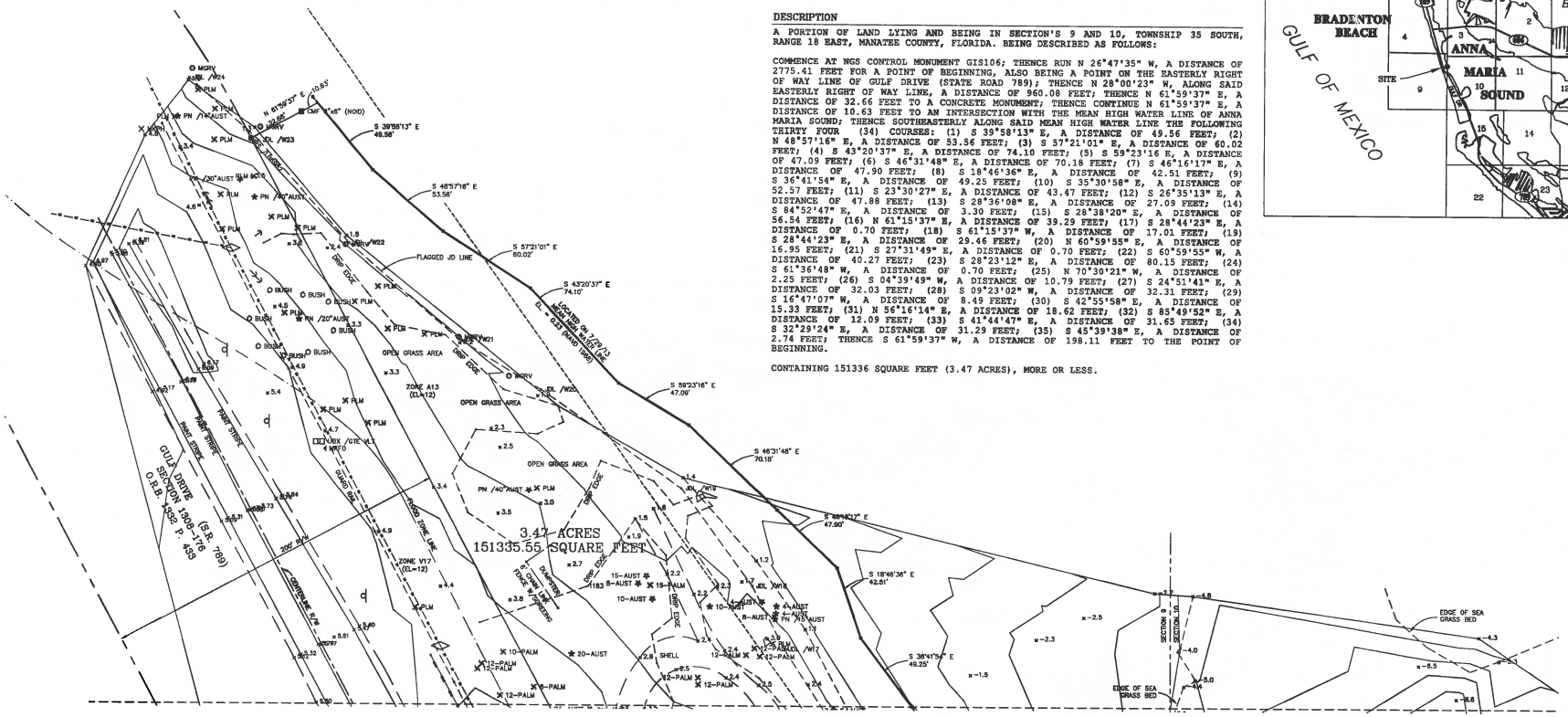
DESCRIPTION

A PORTION OF LAND LYING AND BEING IN SECTION'S 9 AND 10, TOWNSHIP 35 SOUTH, RANGE 18 EAST, MANATEE COUNTY, FLORIDA. BEING DESCRIBED AS FOLLOWS:

COMMENCE AT NGS CONTROL MONUMENT GIS106; THENCE RUN N 26°47'35" W, A DISTANCE OF 2775.41 FEET FOR A POINT OF BEGINNING, ALSO BEING A POINT ON THE EASTERLY RIGHT OF WAY LINE OF GULF DRIVE (STATE ROAD 789); THENCE N 28°00'23" W, ALONG SAID EASTERLY RIGHT OF WAY LINE, A DISTANCE OF 960.08 FEET; THENCE N 61°59'37" E, A DISTANCE OF 32.66 FEET TO A CONCRETE MONUMENT; THENCE CONTINUE N 61°59'37" E, A DISTANCE OF 10.63 FEET TO AN INTERSECTION WITH THE MEAN HIGH WATER LINE OF ANNA MARIA SOUND; THENCE SOUTHEASTERLY ALONG SAID MEAN HIGH WATER LINE THE FOLLOWING THIRTY FOUR (34) COURSES: (1) S 39°58'13" E, A DISTANCE OF 49.56 FEET; (2) N 48°57'16" E, A DISTANCE OF 53.56 FEET; (3) S 57°21'01" E, A DISTANCE OF 60.02 FEET; (4) S 43°20'37" E, A DISTANCE OF 74.10 FEET; (5) S 59°23'16 E, A DISTANCE OF 47.09 FEET; (6) S 46°31'48" E, A DISTANCE OF 70.18 FEET; (7) S 46°16'17" E, A DISTANCE OF 47.90 FEET; (8) S 18°46'36" E, A DISTANCE OF 42.51 FEET; (9) S 36°41'54" E, A DISTANCE OF 49.25 FEET; (10) S 35°30'58" E, A DISTANCE OF 52.57 FEET; (11) S 23°30'27" E, A DISTANCE OF 43.47 FEET; (12) S 26°35'13" E, A DISTANCE OF 47.88 FEET; (13) S 28°36'08" E, A DISTANCE OF 27.09 FEET; (14) S 84°52'47" E, A DISTANCE OF 3.30 FEET; (15) S 28°38'20" E, A DISTANCE OF 56.54 FEET; (16) N 61°15'37" E, A DISTANCE OF 39.29 FEET; (17) S 28°44'23" E, A DISTANCE OF 0.70 FEET; (18) S 61°15'37" W, A DISTANCE OF 17.01 FEET; (19) S 28°44'23" E, A DISTANCE OF 29.46 FEET; (20) N 60°59'55" E, A DISTANCE OF 16.95 FEET; (21) S 27°31'49" E, A DISTANCE OF 0.70 FEET; (22) S 60°59'55" W, A DISTANCE OF 40.27 FEET; (23) S 28°23'12" E, A DISTANCE OF 80.15 FEET; (24) S 61°36'48" W, A DISTANCE OF 0.70 FEET; (25) N 70°30'21" W, A DISTANCE OF 2.25 FEET; (26) S 04°39'49" W, A DISTANCE OF 10.79 FEET; (27) S 24°51'41" E, A DISTANCE OF 32.03 FEET; (28) S 09°23'02" W, A DISTANCE OF 32.31 FEET; (29) S 16°47'07" W, A DISTANCE OF 8.49 FEET; (30) S 42°55'58" E, A DISTANCE OF 15.33 FEET; (31) N 56°16'14" E, A DISTANCE OF 18.62 FEET; (32) S 85°49'52" E, A DISTANCE OF 12.09 FEET; (33) S 41°44'47" E, A DISTANCE OF 31.65 FEET; (34) S 32°29'24" E, A DISTANCE OF 31.29 FEET; (35) S 45°39'38" E, A DISTANCE OF 2.74 FEET; THENCE S 61°59'37" W, A DISTANCE OF 198.11 FEET TO THE POINT OF BEGINNING.

CONTAINING 151336 SQUARE FEET (3.47 ACRES), MORE OR LESS.





MATCH LINE SEE SHEET 1 OF 2

NOTES:

1. BEARINGS AND COORDINATES ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM (WEST ZONE) NAD 83/90, AND ARE DERIVED FROM POINT GIS -105 AND GIS-106, ESTABLISHED DURING THE MANATEE COUNTY GIS CONTROL SURVEY OF 1988. THIS HORIZONTAL DATUM RESULTS IN THE EASTERLY RIGHT-OF-LINE OF GULF DRIVE (SR 789), HAVING A BEARING N 28°00'23" W.
2. ELEVATIONS ARE BASED ON NAVD 1988, AND ARE DERIVED FROM BENCHMARK GIS-106, HAVING AN ELEVATION OF 4.15 FEET (NAVD '88).
3. THE MANATEE COUNTY COASTAL CONSTRUCTION CONTROL LINE FOR THIS AREA IS RECORDED IN ROAD PLAT BOOK 10, PAGE 1 THROUGH 7, OF THE PUBLIC RECORDS OF MANATEE COUNTY, FLORIDA, AND WAS RECORDED ON 8/6/1987.
4. THERE IS NO EROSION CONTROL LINE SURVEY IN EXISTENCE WHICH PERTAINS TO THIS PARCEL.
5. THE MEAN HIGH WATER ELEVATION AS SHOWN HEREON WAS ESTABLISHED BY EXTENDING THE ELEVATION SHOWN ON THAT MEAN HIGH WATER INTERPOLATION POINT 397 WHICH CALLS FOR A MEAN HIGH WATER ELEVATION OF 0.23 FEET (NAVD 1988). THE MEAN HIGH WATER LINE AT ELEVATION 0.23 FEET (NAVD 1988) WAS LOCATED ON 8/08/13. THIS MEAN HIGH WATER LINE SURVEY COMPLIES WITH CHAPTER 177 PART 2 OF THE FLORIDA STATUTES.
6. THE JURISDICTIONAL WETLAND LINE WAS PROVIDED BY DAVID A. LANDERS OF CPH ENGINEERS, INC., AND WAS LOCATED IN THE FIELD ON 7/29/2013.
7. THIS MEAN HIGH WATER SURVEY HAS BEEN FILED IN THE FLORIDA BUREAU OF SURVEYING AND MAPPING PUBLIC REPOSITORY UNDER FILE NUMBER 5345
8. PROPERTY LIES IN FLOOD ZONE "A13 (EL12) AND "V17" (EL12), AS SHOWN ON CITY OF BRADENTON BEACH PANEL No. 123081 0002 C, DATED MAY 18, 1992.

© ZNS ENGINEERING, L.C.
THIS DOCUMENT IS PROTECTED BY SECTION 108 OF THE "UNITED STATES COPYRIGHT ACT". REPRODUCTION OR ALTERATION OF THIS DOCUMENT OR THE INFORMATION CONTAINED HEREON BY ANY MEANS WHATSOEVER IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF ZNS ENGINEERING, L.C. CONSENT IS HEREBY GRANTED SPECIFICALLY TO GOVERNMENTAL AGENCIES TO REPRODUCE THIS DOCUMENT IN COMPLIANCE WITH F.S. CHAPTER 119.

LEGEND:

- ■ – CONCRETE MONUMENT FOUND (AS NOTED)
- ● – 5/8" IRON & CAP FOUND (CAP # LB 6982 UNLESS OTHERWISE NOTED)
- ⊛ – BENCHMARK (AS NOTED)
- P.O.C. – POINT OF COMMENCEMENT
- P.O.B. – POINT OF BEGINNING
- R/W – RIGHT OF WAY
- C.M.F. – CONCRETE MONUMENT FOUND
- IRS – IRON ROD SET
- ID – IDENTIFICATION
- BM – BENCH MARK
- FDOT – FLORIDA DEPARTMENT OF TRANSPORTATION
- EL – ELEVATION
- LB – LICENSED BUSINESS
- GND. – GROUND
- CCCL – COASTAL CONSTRUCTION CONTROL LINE
- TEL – TELEPHONE
- JDL – JURISDICTIONAL LINE
- MHWL – MEAN HIGH WATER LINE
- L.POLE – LIGHT POLE
- AUST – AUSTRALIAN
- MGRV – MANGROVE
- PLM – PALM
- ORNML – ORNAMENTAL
- MKFO – MARKER FIBER OPTIC
- VLT – VALUT
- WV – WATER VALVE
- BOL – BOLLARD
- UBX – UTILITY BOX
- BRT.HSE. – BRIGHT HOUSE
- NAVD – NORTH AMERICAN VERTICAL DATUM
- NGVD – NATIONAL GEODETIC VERTICAL DATUM
- O.R.B. – OFFICIAL RECORDS BOOK
- P. – PAGE
- POWER POLE
- GUY ANCHOR
- SIGN
- LIGHT POLE
- AUSTRALIAN PINE
- PALM TREE
- SEA GRAPE
- MANGROVE
- UTILITY BOX
- WATER VALVE
- FIRE HYDRANT
- MKRPH – MARKER VERIZON
- MKFO /GTE – MARKER VERIZON FIBER OPTIC CABLE
- BOLLARD
- SANITARY MANHOLE
- DOCK PILING
- SPOT ELEVATION
- OHW OHE – OVERHEAD ELECTRIC
- UGE UGE – BURIED ELECTRIC
- UGT UGT – BURIED TELEPHONE
- FORCE MAIN

JURISDICTIONAL POINT TABLE

NORTHING	EASTING	POINT IDENTIFICATION
1135244.8740	431332.8100	JDL /W4
1135267.7430	431350.3720	JDL /W5
1135287.5410	431368.7250	JDL /W6
1135308.2150	431353.5870	JDL /W7
1135332.5320	431337.2580	JDL /W8
1135333.5240	431361.9954	JDL /W9
1135463.0064	431291.7752	JDL /W10
1135483.9570	431272.9830	JDL /W11
1135488.0840	431242.8220	JDL /W12
1135505.7190	431207.0270	JDL /W13
1135552.3050	431207.5790	JDL /W14
1135587.0810	431185.4120	JDL /W15
1135231.8060	431317.3320	JDL/ W3
1135185.6760	431335.8310	JDL /W2
1135139.9410	431351.8440	JDL /W1
1135618.8330	431153.6790	JDL /W16
1135654.5430	431130.5310	JDL /W17
1135690.7310	431112.5340	JDL /W18
1135746.9080	431071.0880	JDL /W19
1135802.8940	430990.1850	JDL /W20
1135830.9920	430943.1400	JDL /W21
1135885.1940	430879.4140	JDL /W22
1135945.0920	430827.1710	JDL /W23
1135980.2450	430787.1940	JDL /W24

CERTIFIED TO: MANATEE COUNTY

BOUNDARY, MEAN HIGH WATER LINE, TOPOGRAPHIC & JURISDICTIONAL SURVEY

PARCEL OF LAND
OF
NORTH COQUINA BOAT RAMP
LOCATED IN
SECTIONS 9 & 10, TOWNSHIP 35 SOUTH, RANGE 16 EAST
MANATEE COUNTY, FLORIDA

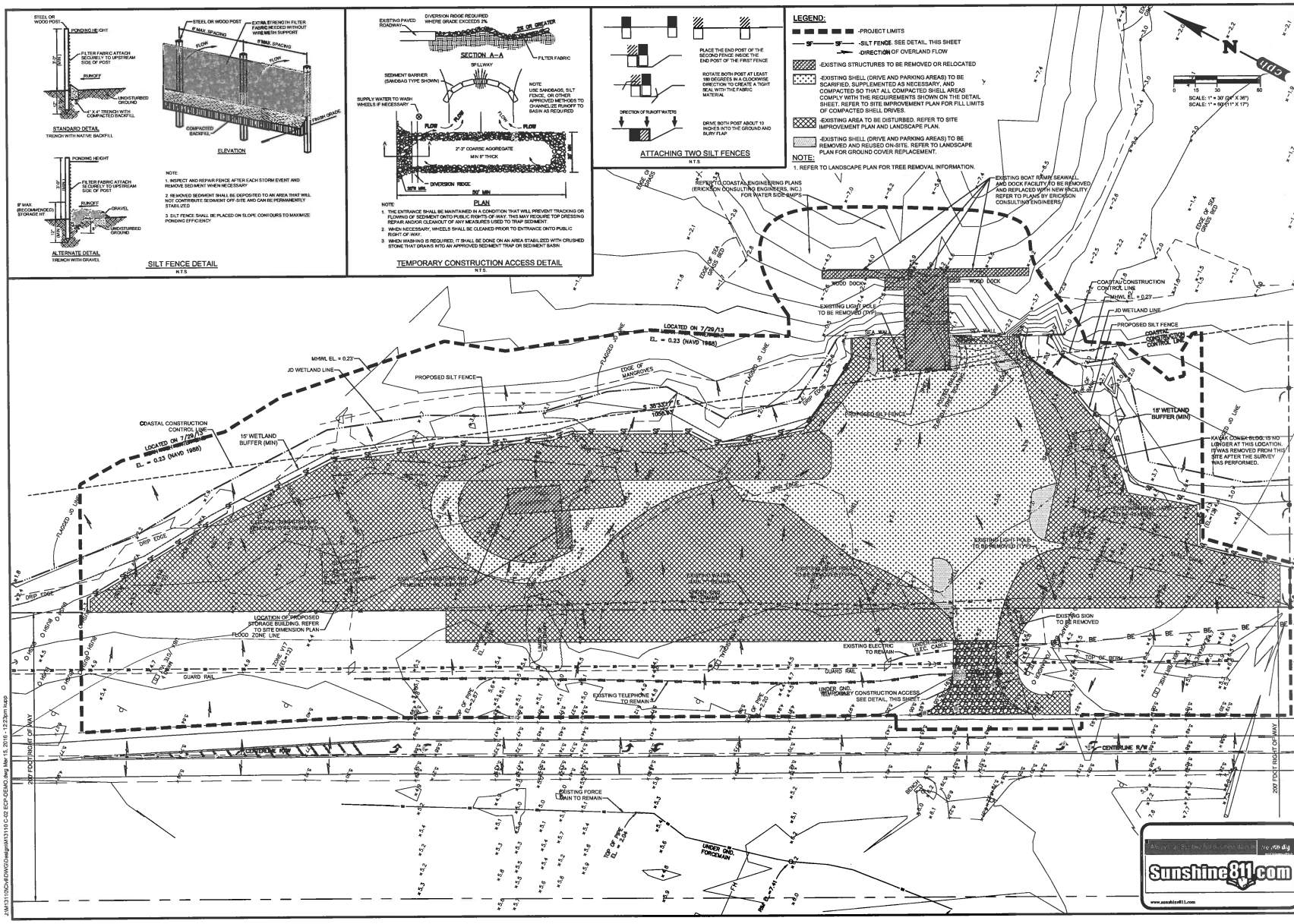
K:\Plot Files\Projects\Manatee County\Coquina\N Coquina BR-layout2.plt

CERTIFICATE OF AUTHORIZATION LB # 6982

REVISION	BY	DATE

ZNS ENGINEERING
ENGINEERS | PLANNERS | SURVEYORS
LANDSCAPE ARCHITECTS | ENVIRONMENTAL CONSULTANTS
POST OFFICE BOX 9448 BRADENTON, FL 34206 | 301 6th AVENUE DRIVE EAST BRADENTON, FL 34208
EMAIL: ZNS@ZNS-ENG.COM | TELEPHONE (941) 748-8000 | FAX (941) 748-3314

DRAWING: T:\Manatee\Coquina\N Coquina BR.dwg (layout 2) DATE 07-31-13 SCALE 1" = 30'
DRAWN bernie JOB NO. 00-43119 FIELD BOOK ____ PAGE ____ SHEET 2 OF 2



cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

DANIEL P. MOYER, P.E. FL. LICENSE NO. 65-15-18

No.	Date	Revision	By
1	03/15/16	PLAN MODIFICATION	D.P.M.
2	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU
Drawn by:	KMU
Checked by:	JAB
Approved by:	DPM
Scale:	AS NOTED
Date:	08/13
Job No.:	M13110

© 2015

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA26000926
Landscape. Lic. No. LC0000298

SITE DEMOLITION AND EROSION CONTROL PLAN

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-2

Z:\M13110\CivilDWG\Design\M13110 C-02 ECP-DEMO.dwg Mar 15, 2016 - 12:23pm kapp

SITE DATA:

SITE ACREAGE	3.47± A.C.
PROJECT AREA (INCLUDING IMPROVEMENTS WITHIN FDOT RIGHT-OF WAY)	4.85± A.C.
BASIN AREA	2.63± A.C.

BASIN AREA:

PERVIOUS AREA	32,443 S.F. (0.74± A.C.) (28.1%)
IMPERVIOUS AREA	65,887 S.F. (1.52± A.C.) (57.9%)
POND AREA	16,032 S.F. (0.37± A.C.) (14.1%)
TOTAL	114,362 S.F. (2.63± A.C.) (100.0%)

ZONING:

ZONING ..... GOVERNMENT

PARKING INFORMATION: (PROJECT AREA)

PROPOSED BOAT TRAILER PARKING SPACES	28
PROPOSED STANDARD PARKING SPACES	14
PROPOSED ADA PARKING SPACES	2
TOTAL PROPOSED PARKING SPACES	44

BUILDING FAR = .01%

KEYNOTE LEGEND

1. ACCESSIBLE PARKING SPACE W/ ACCESSIBLE PARKING SIGN AND SYMBOL - REFER TO GENERAL DETAILS SHEET FOR SIGN AND SYMBOL SPECIFICATION
2. 5' ACCESSIBLE PARKING STRIPING - REFER TO GENERAL DETAILS SHEET
3. SINGLE YELLOW SOLID LINE / 4" PER FDOT INDEX NO. 17346
4. 5' WIDE PEDESTRIAN CROSSING STRIPING W/ 4" WIDE CHEVRONS @ 3' O.C.
5. 2' WIDE DETECTABLE WARNING SURFACE PER FLORIDA BUILDING CODE
6. GALVANIZED STEEL BOLLARD PAINTED TRAFFIC YELLOW. REFER TO GENERAL DETAILS SHEET
7. 10' WIDE CHAIN LINK ACCESS (2 - 5' WIDE SWING GATES). REFER TO GENERAL DETAILS SHEET
8. FISH CLEANING TABLE WITH DRAINAGE. SEE DETAIL, SHEET C-7A
9. TYPE 'ND' MODIFIED CURB AND GUTTER. REFER TO MANATEE COUNTY GENERAL DETAILS SHEET
10. TYPE 'D' CURB. REFER TO MANATEE COUNTY GENERAL DETAILS SHEET
11. ALUMINUM PIPE GUARDRAIL PER FDOT INDEX NO. 870. CONTRACTOR SHALL INSTALL THE RAIL IN THE CENTER OF THE SEAWALL CAP BEAM. ALL HOLES SHALL BE PRE-DRILLED AND CLEANED. USE ONLY 300 SERIES STAINLESS STEEL EPOXY ANCHORS.
12. 8" SCHEDULE 40 PVC BOLLARD (CORE MOUNTED), PAINTED OMEGA TRAFFIC SAFETY YELLOW, FILLED WITH 5,000 PSI CONCRETE. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL.

LEGEND:

- -PROJECT LIMITS
- -PROPOSED STANDARD SIZE PARKING SPACE (9' X 18') (TYP)
- -PROPOSED BOAT TRAILER PARKING SPACE (12' X 55') (TYP)
- COMPACTED SHELL DRIVE. REFER TO GENERAL DETAILS SHEET
- CONCRETE PAVEMENT. REFER TO GENERAL DETAILS SHEET.
- WASHED SHELL (1" TO 3" SHELL) - 4" THICK
- DRIVEWAY PAVEMENT. SEE SHEET R-1, S.R. 789 (GULF DRIVE) IMPROVEMENTS
- CONCRETE SIDEWALK. ONSITE - REFER TO GENERAL DETAILS SHEET. OFFSITE (WITHIN FDOT RIGHT OF WAY) - PER FDOT INDEX NO. 310, GC PROVIDE 6" THICK.
- PROPOSED 8" DIA POST AND ROPE (MAX. SPACING 8.0' O.C.). REFER TO GENERAL DETAILS SHEET.
- PROPOSED 8" DIA WOODEN POST (MAX. SPACING 8.0' O.C.). REFER TO GENERAL DETAILS SHEET.
- PROPOSED 6' HIGH CHAIN LINK FENCE. REFER TO GENERAL DETAILS SHEET.
- WHEEL STOP / CONCRETE BUMPER GUARD. FOR ONSITE WHEEL STOPS, REFER TO GENERAL DETAILS SHEET. FOR CONCRETE BUMPER GUARDS WITHIN FDOT RIGHT OF WAY, REFER TO CONCRETE BUMPER GUARDS, FDOT INDEX NO. 300
- STEEL POLE MOUNTED LED AREA LIGHT. REFER TO PHOTOMETRIC PLAN FOR LIGHTING DETAILS.
- (HC) ACCESSIBLE PARKING SIGN. REFER TO GENERAL DETAILS SHEET FOR ACCESSIBLE PARKING SPACE SIZE, SIGN AND SYMBOL
- (S) STOP SIGN (R1-1). REFER TO GENERAL DETAILS SHEET.
- (P) PEDESTRIAN CROSSING SIGN (W11-2). REFER TO GENERAL DETAILS SHEET.
- (NO) NO OUTLET SIGN (W14-2). REFER TO GENERAL DETAILS SHEET.

BENCHMARK LOCATIONS

Point #	Description	Northing	Easting
1	Benchmark No. 1	1135608.3280	430956.4586
2	Benchmark No. 2	1135455.3580	431298.0165

BENCHMARK IDENTIFICATION

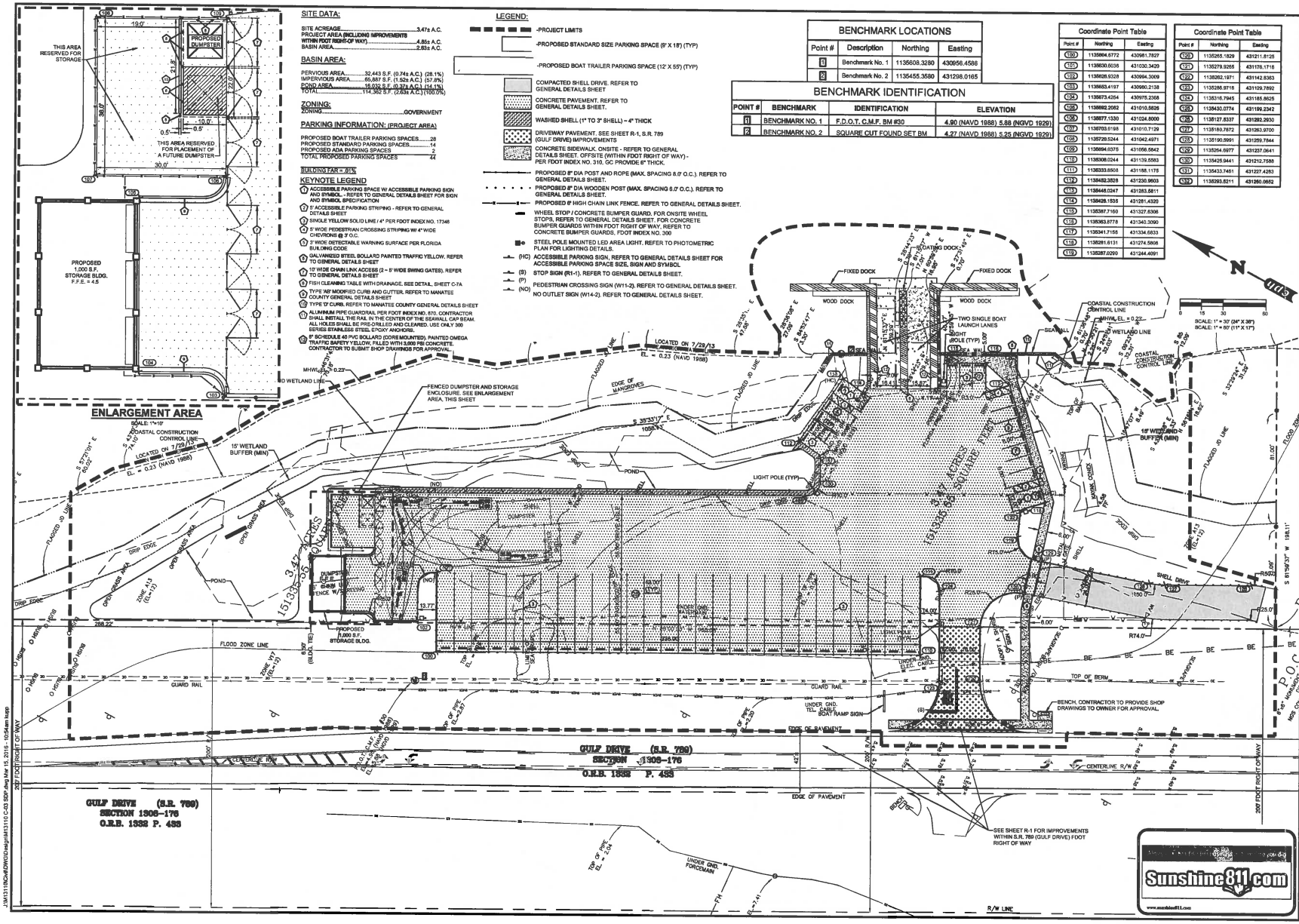
POINT #	BENCHMARK	IDENTIFICATION	ELEVATION
1	BENCHMARK NO. 1	F.D.O.T. C.M.F. BM #30	4.90 (NAVD 1988) 5.88 (NGVD 1929)
2	BENCHMARK NO. 2	SQUARE CUT FOUND SET BM	4.27 (NAVD 1988) 5.25 (NGVD 1929)

Coordinate Point Table

Point #	Northing	Easting
100	1135904.6772	430981.7827
101	1135830.6036	431030.3429
102	1135628.9328	430994.3009
103	1135653.4197	430990.2138
104	1135673.4264	430975.2368
105	1135692.2062	431010.5626
106	1135677.1330	431024.8000
107	1136703.6198	431010.7129
108	1135729.5244	431042.4971
109	1135694.0375	431056.5642
110	1135308.0244	431139.5583
111	1135333.8508	431158.1175
112	1135452.3528	431230.9603
113	1135448.0247	431263.5811
114	1135428.1538	431281.4320
115	1135387.7160	431327.6308
116	1135363.8778	431340.3090
117	1135341.7158	431334.6833
118	1135281.6131	431274.5806
119	1135287.0290	431244.4091

Coordinate Point Table

Point #	Northing	Easting
120	1135265.1829	431211.8125
121	1135279.9265	431176.1716
122	1135262.1971	431142.5363
123	1135286.9718	431129.7892
124	1135316.7945	431185.8625
125	1135430.0774	431199.2342
126	1135127.5337	431292.2930
127	1135180.7872	431263.9700
128	1135190.5991	431259.7544
129	1135264.5977	431237.0641
130	1135425.9441	431212.7585
131	1135433.7461	431227.4283
132	1135293.5211	431260.0652



cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
- Florida
- Puerto Rico
- Connecticut
- Maryland
- Texas

DANIEL P. MAYNOR, P.E. FL LICENSE NO. 55207 03-15-16

No.	Date	Revision	By
1	03/15/16	PLAN MODIFICATION	D.P.M.
2	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU	1			
Drawn by:	KMU	2			
Checked by:	JAB	3			
Approved by:	DPM	4			
Scale:	AS NOTED	5			
Date:	08/13	6			
Job No.:	M13110				

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.366.4771
Licenses:
Eng. C.O.A. No. 5215
Survey L.B. No. 7143
Arch. Lic. No. AA2600026
Landscape Lic. No. LC0000298

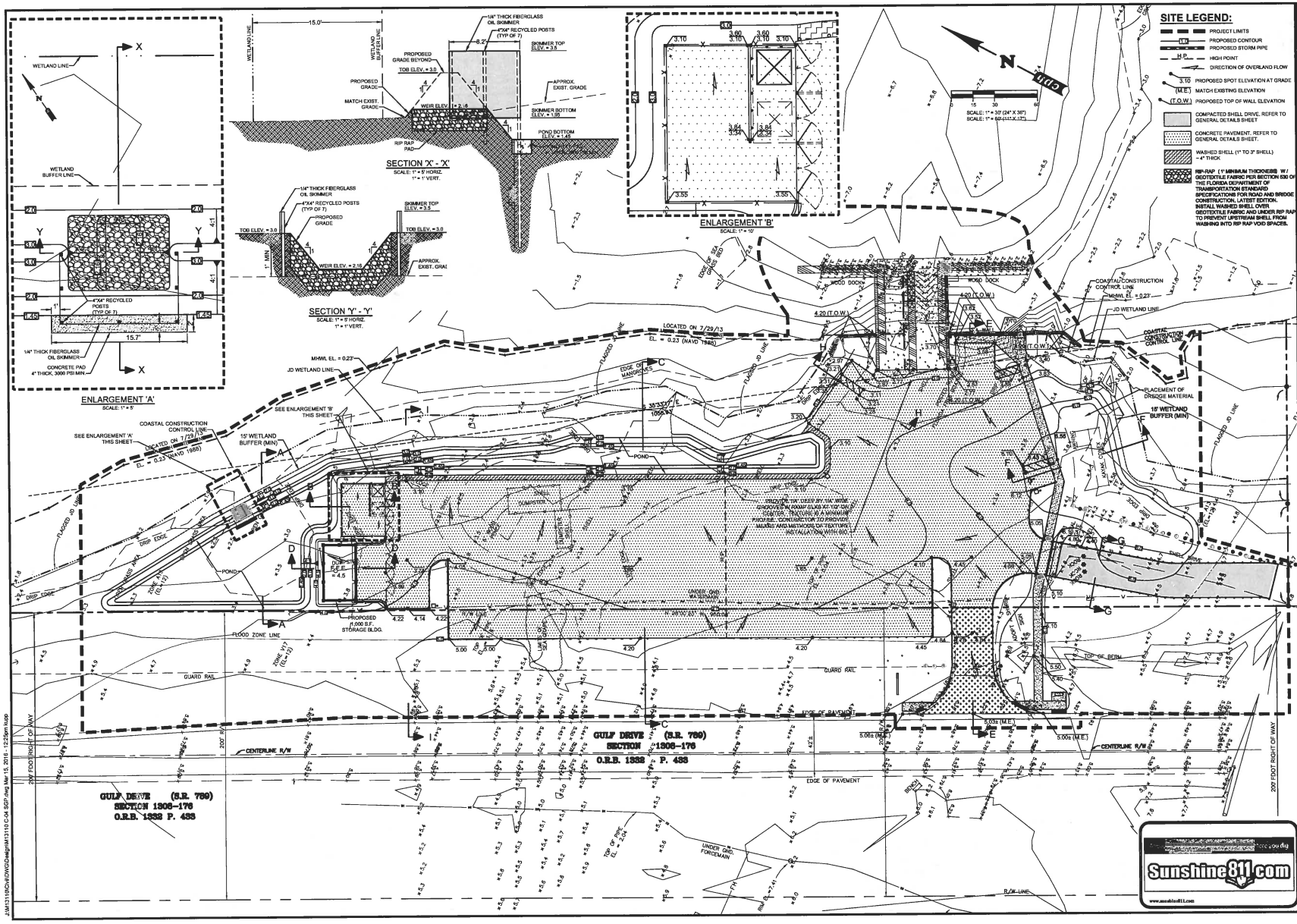
SITE DIMENSION PLAN

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-3

J:\M13110\CAD\DWG\Design\M13110 C-03 SDP.dwg Mar 15, 2016 - 10:54am kaup



cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices In:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

DANIEL P. MOSER, P.E. FLA. LIC. NO. 43997 03-15-16

No.	Date	Revision	By
1	03/15/16	PLAN MODIFICATION	D.P.M.
2	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU
Drawn by:	KMU
Checked by:	JAB
Approved by:	DPM
Scale:	AS NOTED
Date:	08/13
Job No.:	M13110

© 2016

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licenses:
Eng. C.O.A. No. 3216
Survey L.B. No. 7143
Arch. Lic. No. AA26000526
Landscp. Lic. No. LC0000298

SITE GRADING AND DRAINAGE PLAN

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-4

J:\M13110\Civil\DWG\Design\M13110-C-04 SGP.dwg Mar 15, 2016 - 12:25pm kuop

BLOW UP 'A'

SCALE: 1"=5'

WATER SCHEDULE:

1. CONNECT TO EXISTING WATER MAIN WITH 8" X 2" TAPPING SLEEVE AND VALVE FOR PROPOSED WATER LINE. REFER TO MANATEE COUNTY UTILITY DETAIL SHEET, C-8B. OPEN AFTER DISINFECTION, TESTING, AND APPROVAL.
2. 1-1/2" METER AND 1-1/2" BACKFLOW ASSEMBLY FOR POTABLE WATER PER MANATEE COUNTY REQUIREMENTS. REFER TO MANATEE COUNTY UTILITY DETAIL SHEET, C-8B. CONTRACTOR TO FIELD LOCATE WITH MANATEE COUNTY STAFF.
3. 2" P.E. WATER SERVICE LINE
4. 1" P.E. WATER SERVICE LINE TO STORAGE BUILDING RPZ AND HOSE BIB
5. 1" P.E. WATER SERVICE LINE TO FISH CLEANING STATION
6. 2" - 90° BEND
7. 1" - 90° BEND
8. 2" X 2" X 1" TEE
9. 1" GATE VALVE AND BOX. REFER TO MANATEE COUNTY UTILITY DETAIL SHEET, C-8B.
10. 2" X 1" REDUCER
11. 1" - 22.5° BEND
12. 1" WATER LINE TO FISH CLEANING STATION. GENERAL CONTRACTOR TO PROVIDE HOSE BIB AT CLEANING STATION.
13. STORAGE BUILDING RPZ AND HOSE BIB

UTILITY LEGEND:

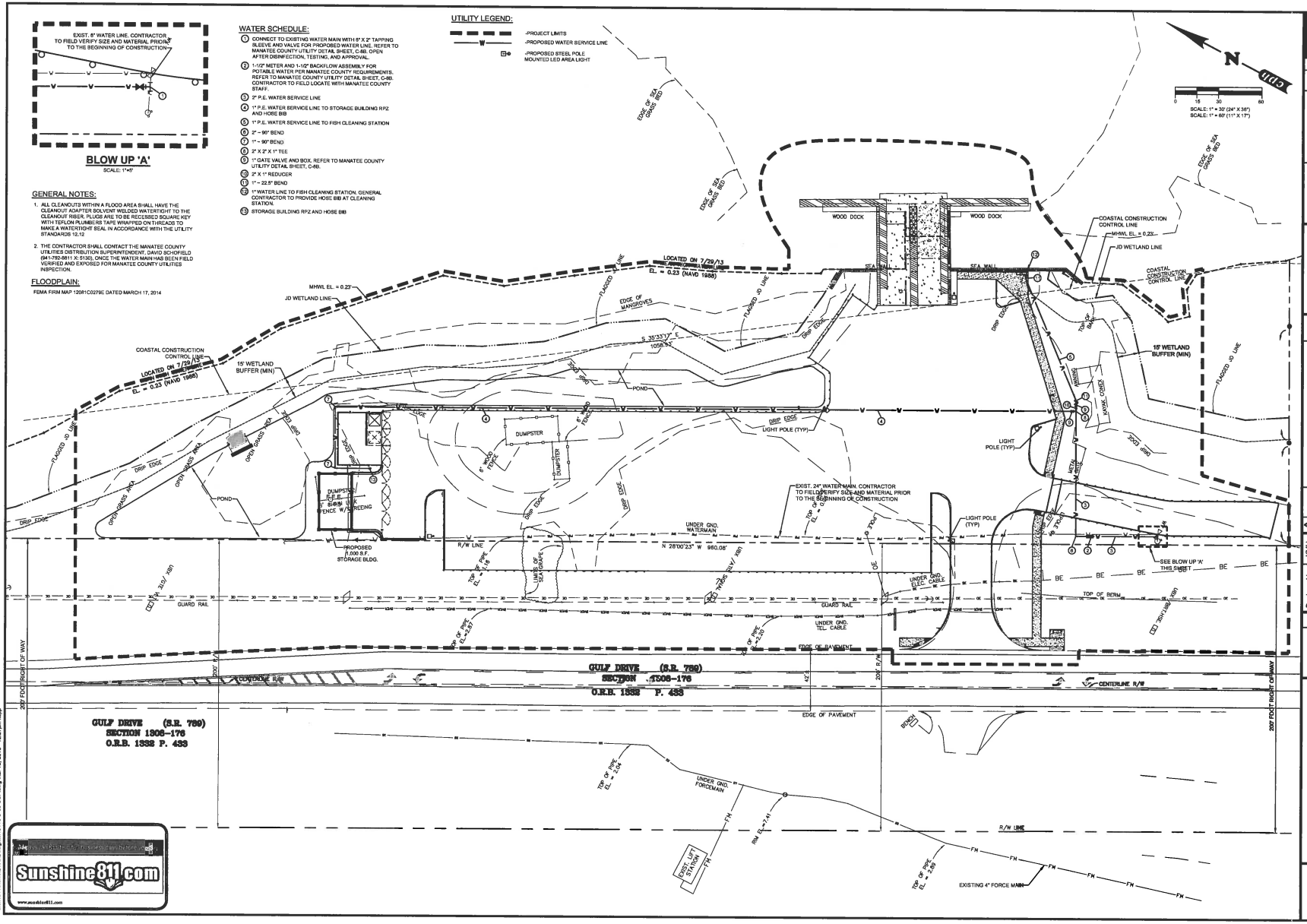
- -PROJECT LIMITS
- -PROPOSED WATER SERVICE LINE
- -PROPOSED STEEL POLE MOUNTED LED AREA LIGHT

GENERAL NOTES:

1. ALL CLEANOUTS WITHIN A FLOOD AREA SHALL HAVE THE CLEANOUT ADAPTER SOLVENT WELDED WATERTIGHT TO THE CLEANOUT RISER. PLUGS ARE TO BE RECESSED SQUARE KEY WITH TEFLON PLUMBERS TAPE WRAPPED ON THREADS TO MAKE A WATERTIGHT SEAL IN ACCORDANCE WITH THE UTILITY STANDARDS 12.12
2. THE CONTRACTOR SHALL CONTACT THE MANATEE COUNTY UTILITIES DISTRIBUTION SUPERINTENDENT, DAVID SCHOFIELD (941-792-8811 X: 5130), ONCE THE WATER MAIN HAS BEEN FIELD VERIFIED AND EXPOSED FOR MANATEE COUNTY UTILITIES INSPECTION.

FLOODPLAIN:

FEMA FIRM MAP 12081C0279E DATED MARCH 17, 2014



Sunshine811.com
www.sunshine811.com

JM13110Civil\DWG\Design\M13110 C-05 GUP.dwg Mar 15, 2016 - 12:27pm kopp

cph
www.cphcorp.com
A Full Service A & E Firm

Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation

Offices in:
- Florida
- Puerto Rico
- Connecticut
- Maryland
- Texas

DANIEL P. MOYSE, P.E. FL Lic. No. 65057 03-15-16

No.	Date	Revision	By
1	03/15/16	PLAN MODIFICATION	D.P.M.
2	01/15/16	ISSUED TO COUNTY	D.P.M.

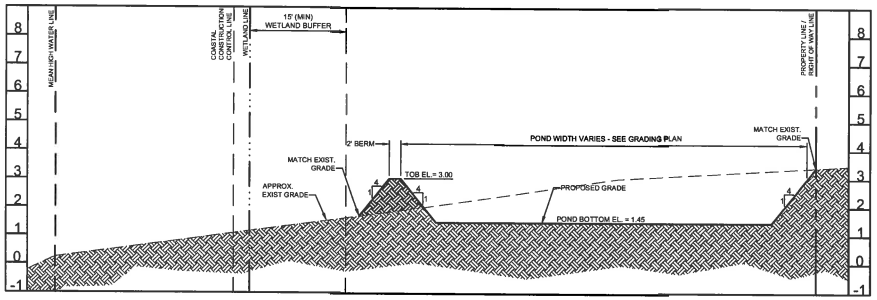
Designed by:	KMU	1
Drawn by:	KMU	2
Checked by:	JAB	3
Approved by:	DPM	4
Scale:	AS NOTED	5
Date:	08/13	6
Job No.:	M13110	7

Plans Prepared By
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA26000626
Lndscp. Lic. No. LC0000296

COMPOSITE UTILITY PLAN

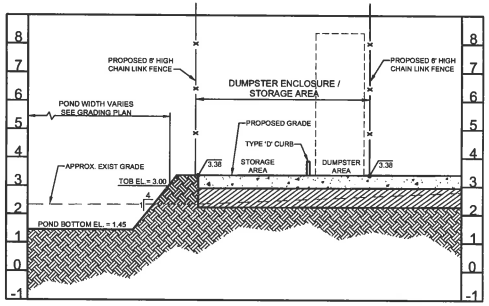
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA

Sheet No.
C-5



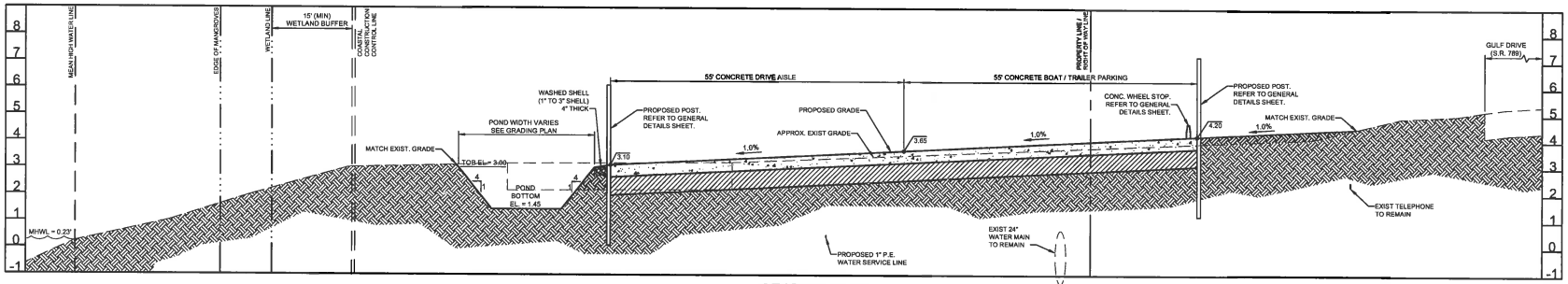
SECTION 'A'-'A'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")



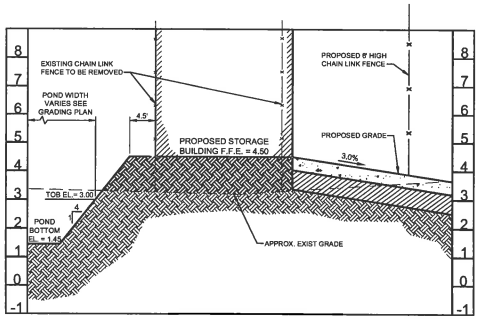
SECTION 'B'-'B'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")



SECTION 'C'-'C'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")



SECTION 'D'-'D'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")

LEGEND:

- PROPOSED CONCRETE. REFER TO GENERAL DETAILS SHEET.
- PROPOSED COMPACTED SHELL. REFER TO GENERAL DETAILS SHEET
- PROPOSED COMPACTED SUBGRADE. REFER TO GENERAL DETAILS SHEET.
- EXISTING CONCRETE MATERIAL.
- PROPOSED WASHED SHELL (1" TO 3" SHELL), 4" THICK
- PROPOSED FILL MATERIAL
- EXISTING GROUND MATERIAL

Sunshine811.com
www.sunshine811.com

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
DANIEL P. MOYER, P.E.
FL LIC. NO. 69667
EXPIRES

No.	Date	Revision	By
1	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU
Drawn by:	KMU
Checked by:	JAB
Approved by:	DPM
Scale:	AS NOTED
Date:	07/14
Job No.:	M13110
©2015	

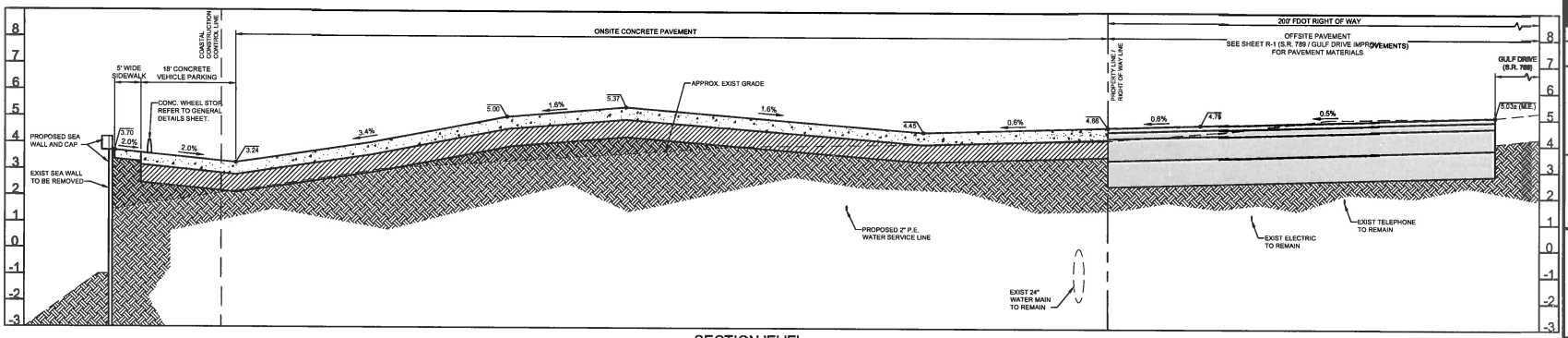
Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.358.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

SITE CROSS SECTIONS SHEET

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA

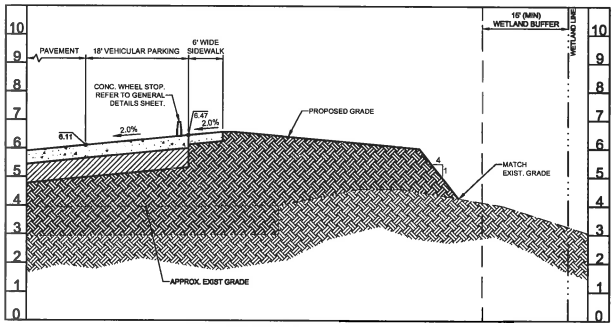
Sheet No.
C-6

J:\M13110\Civil\DWG\Design\M13110 C-06 Cross Sect.dwg Jan 19, 2016 - 12:04pm kopp



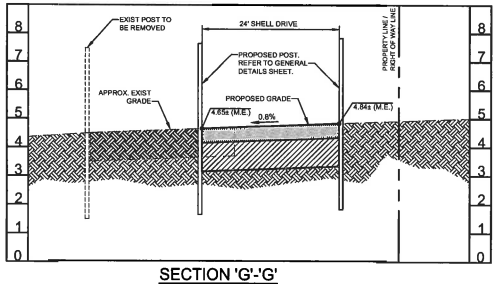
SECTION 'E'-'E'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")



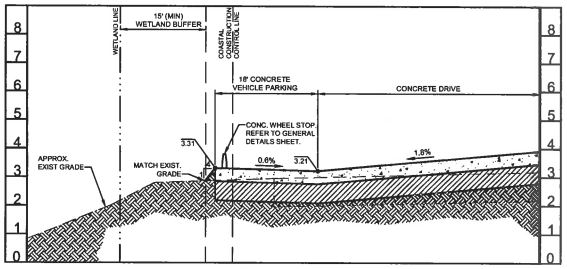
SECTION 'F'-'F'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")



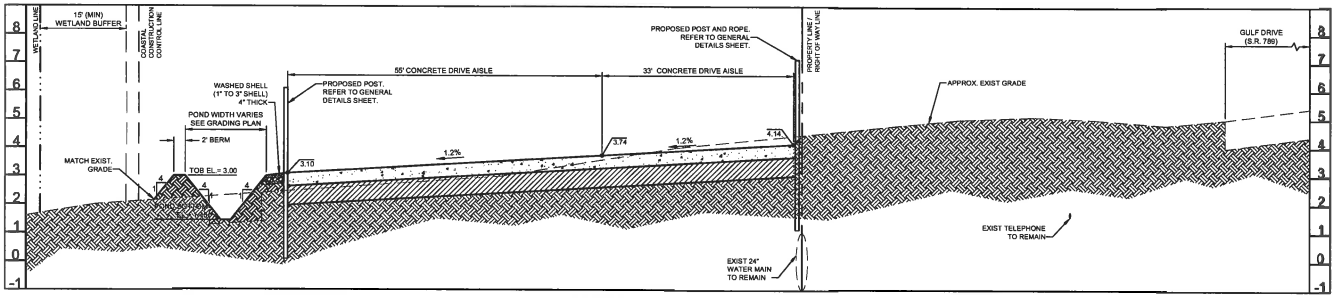
SECTION 'G'-'G'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")



SECTION 'H'-'H'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")



SECTION 'I'-'I'

SCALE: 1"=10' HORIZ, 1"=2' VERT (24" X 36")
1"=20' HORIZ, 1"=4' VERT (11" X 17")

LEGEND:

- PROPOSED CONCRETE. REFER TO GENERAL DETAILS SHEET.
- PROPOSED COMPACTED SHELL. REFER TO GENERAL DETAILS SHEET
- PROPOSED COMPACTED SUBGRADE, REFER TO GENERAL DETAILS SHEET.
- EXISTING CONCRETE MATERIAL.
- PROPOSED WASHED SHELL (1" TO 3" SHELL), 4" THICK
- PROPOSED FILL MATERIAL
- EXISTING GROUND MATERIAL

Sunshine811.com
www.sunshine811.com

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
DANIEL P. MOYER, P.E.
FL Lic. No. 48807
01-15-16

No.	Date	Revision	By
	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU
Drawn by:	KMU
Checked by:	JAB
Approved by:	DPM
Scale:	AS NOTED
Date:	07/14
Job No.:	M13110

© 2016

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licensee:
Eng. C.O.A. No. 3218
Survey L.B. No. 7143
Arch. Lic. No. AA2600026
Landscape. Lic. No. LC0000298

SITE CROSS SECTIONS SHEET

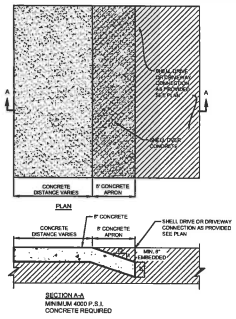
NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.

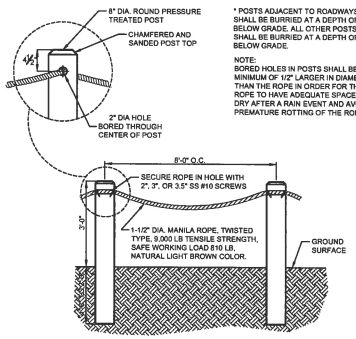
C-6A

J:\M13110\Civil\CIVIL\Design\M13110 C-06 Cross Sect.dwg Jan 19, 2016 - 12:04pm lsupp



NOTES:
1. 3/4"x4" PREMOLDED EXPANSION MATERIALS AROUND POSTS OR OTHER STRUCTURES IN CONCRETE.
2. EXPANSION JOINTS MAXIMUM DISTANCE = 100', USED 3/4"x4" PREMOLDED EXPANSION MATERIAL.
3. CONTRACTION JOINTS MAXIMUM DISTANCE = 21', SAW CUT 2" DEEP AND FILL WITH HOT POURED SEALER.
4. SAW CUT JOINTS WITHIN 24 HOURS.

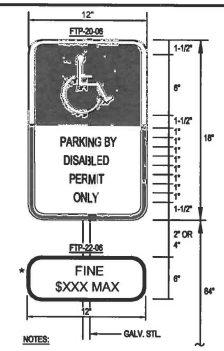
CONCRETE PAVEMENT AND APRON DETAIL
N.T.S.



* POSTS ADJACENT TO ROADWAYS SHALL BE BURRIED AT A DEPTH OF 1'-6" BELOW GRADE. ALL OTHER POSTS SHALL BE BURRIED AT A DEPTH OF 2'-0" BELOW GRADE.

NOTE:
BORED HOLES IN POSTS SHALL BE A MINIMUM OF 1/2" LARGER IN DIAMETER THAN THE ROPE IN ORDER FOR THE ROPE TO HAVE ADEQUATE SPACE TO DRY AFTER A RAIN EVENT AND AVOID PREMATURE ROTTING OF THE ROPE.

POST AND ROPE DETAIL
N.T.S.



NOTES:

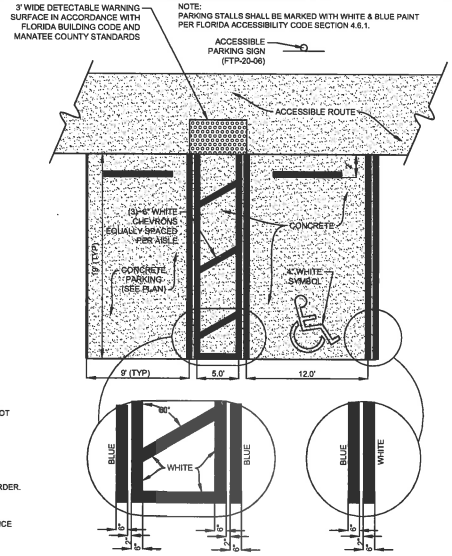
(FTP-20-06) AND (FTP-22-06) SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX NO. 17355 AND SHALL MEET THE REQUIREMENTS OF FLORIDA STATUTES 318.1955 AND 316.1956.

* SIGN "$XXX.00 FINE" PER LOCAL REQUIREMENTS.

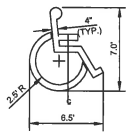
NOTE: (HANDICAP SIGN ONLY)

1. ALL LETTERS SHALL BE BLACK AND SHALL CONFORM TO FDOT "ROADWAY AND TRAFFIC DESIGN STANDARDS".
2. TOP PORTION OF SIGN SHALL HAVE REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER.
3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK BORDER.
4. ONE SIGN REQUIRED FOR EACH PARKING SPACE.
5. HEIGHT OF SIGN SHALL BE 7' ABOVE GROUND IN ACCORDANCE WITH FDOT "ROADWAY AND TRAFFIC DESIGN STANDARDS".

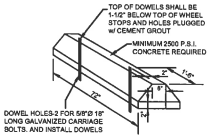
ACCESSIBLE PARKING SIGN DETAIL
N.T.S.



ACCESSIBLE RAMP AND PARKING STALL DETAIL
N.T.S.

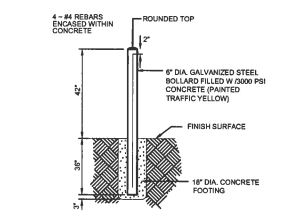


ACCESSIBLE PARKING SYMBOL
HTS - LOCATE AT EDGE OF PARKING SPACE

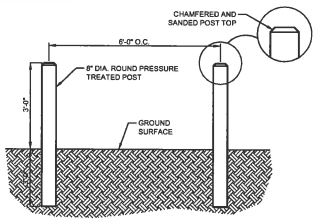


NOTE: WHEEL STOPS TO BE FURNISHED AND INSTALLED AT EACH PARKING SPACE.

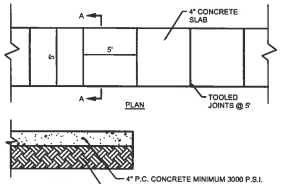
CONCRETE WHEEL STOP DETAIL (ON-SITE)
N.T.S.



BOLLARD DETAIL
N.T.S.



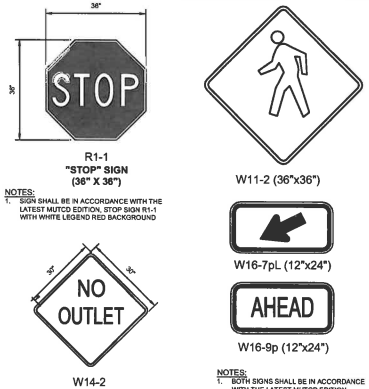
WOOD POST DETAIL
N.T.S.



NOTES:

1. 3/4"x4" PREMOLDED EXPANSION MATERIALS AROUND P.P. OR OTHER STRUCTURES IN WALK.
2. EXPANSION JOINTS MAXIMUM DISTANCE = 100', USED 3/4"x4" PREMOLDED EXPANSION MATERIAL.
3. CONTRACTION JOINTS MAXIMUM DISTANCE = 21', SAW CUT 2" DEEP AND FILL WITH HOT POURED SEALER.
4. SAW CUT JOINTS WITHIN 24 HOURS.

CONCRETE SIDEWALK DETAIL
N.T.S.

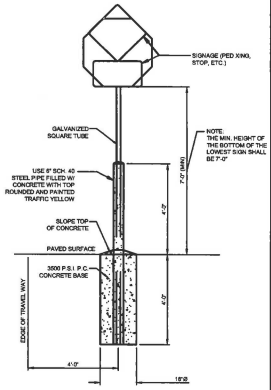


NOTES:
1. SIGN SHALL BE IN ACCORDANCE WITH THE LATEST MUTCD EDITION, STOP SIGN R1-1 WITH WHITE LEGEND RED BACKGROUND

NOTES:
1. SIGN SHALL BE IN ACCORDANCE WITH THE LATEST MUTCD EDITION, STOP SIGN W14-2 WITH A BLACK LEGEND YELLOW (RETROREFLECTIVE) BACKGROUND

NOTES:
1. BOTH SIGNS SHALL BE IN ACCORDANCE WITH THE LATEST MUTCD EDITION, WARNING SIGNS W11-2 (TOP) & W16-7P (BOTTOM) WITH A BLACK LEGEND ON A FLUORESCENT YELLOW-GREEN BACKGROUND

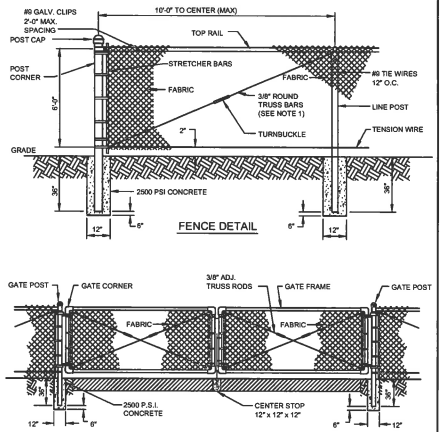
SIGNAGE DETAILS
N.T.S.



NOTES
1 ALL SIGNS SHALL COMPLY WITH U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES", LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2 GALVANIZED SQUARE TUBE
POST TUBES - 2"x2"x16" ttge
POST TUBE SHALL MEET ASTM A1011 GRADE 50.
POST TUBE GALVANIZED AS PER ASTM A653 GRADE 90.

SINGLE POST

SIGN MOUNTING AND BASE WITH BOLLARD (USE WHERE SIGN IS NOT WITHIN CURBED ISLAND)
N.T.S.



NOTES:
1. TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.

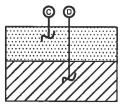
DOUBLE SWING GATE DETAIL

CHAIN LINK FENCE / GATE DETAIL
N.T.S.

(A) 6" SHELL BASE, MINIMUM LBR = 100, COMPACTED TO 98% OF MODIFIED PROCTOR MAXIMUM DENSITY.

(B) 12" IN SITU COMPACTED TO AT LEAST 98% OF MODIFIED PROCTOR MAXIMUM DENSITY (AASHTO T-180)

COMPACTED SHELL DRIVE SECTION



(C) 6" MINIMUM 4000 PSI 28 DAY COMPRESSIVE STRENGTH CONCRETE WITH 6" WELDED WIRE REINFORCEMENT.

(D) 12" INSITU OR BORROW MATERIAL STABILIZED BY BLENDING WITH SHELL TO A MINIMUM LBR = 60, COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY (AASHTO T-180), FLORIDA DOT SEC. 160, TYPE B.

CONCRETE PAVEMENT (WWR), 6-INCH

PAVEMENT SECTIONS
N.T.S.

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas
DANIEL P. BOYDEN, P.E. FL Lic. No. 56657

No.	Date	Revision	By
1	03/15/16	SHEET MODIFICATION	D.P.M.
2	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU
Drawn by:	KMU
Checked by:	JAB
Approved by:	DPM
Scale:	AS NOTED
Date:	06/13
Job No.:	M13110
© 2015	

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.366.4771
Licenses:
Eng. C.O.A. No. 5215
Survey L.B. No. 7143
Arch. Lic. No. AA2600026
Lndscp. Lic. No. LC0000298

GENERAL DETAILS SHEET

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

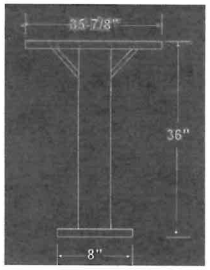
MANATEE COUNTY / FLORIDA

Sheet No.
C-7

Sunshine811.com
www.sunshine811.com

J:\M13110\Civil\DWG\Design\M13110-C-07 GEN-DETAILS.dwg Mar 15, 2016 - 10:57am kcup

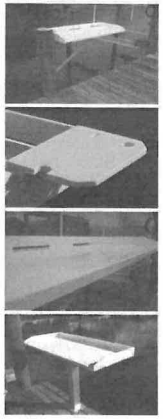
Stanchion Mounting Instructions



1. Position stanchion base plate approximately 2" to 3" parallel from edge of deck or at desired location.
2. While holding the bracket base plate in place, make a mark onto the deck through pre-drilled base mounting hole in preparation for drilling a pilot hole.
3. Remove bracket. Using a 3/8" wood bit, drill a 4" deep hole on the mark made for the pilot hole.
4. Reposition bracket over pre-drilled pilot hole.
5. Using a ¼" ratchet, insert ½" x 4" wood lag into pre-drilled pilot hole and tighten.
6. Using a 3/8" wood bit, drill a 4" deep pilot hole through the remaining pre-drilled bracket holes.
7. Install and tighten remaining lag bolts.
8. Using a 2 foot level - check top support bracket for level side to side; slide gusset foot up or down against side bracket leg to level top support. Once level, mark position of top edge of gusset foot against side bracket. Holding gusset foot on mark, install #12 hex head self drilling screws w/neoprene washers through pre-drilled holes on gusset foot into bracket leg.
9. Position the Fillet-A-Way™ table over top support bracket aligning top bracket support pre-drilled cover holes with pre-drilled pilot holes on the underside of the table deck 4" bracket support. Secure table to top bracket support using #8 hex head screws w/neoprene washers; leaving front edge screws slightly loose to allow for shimming for table pitch.
10. Using a (2) foot level – Check table for pitch front to back. Along the front edge, insert plastic shims between bottom of table bracket support and top bracket support and adjust for pitch. (Table deck should be pitched slightly to the back approximately 1/8" to 1/4" to allow for water run-off.) Tighten screws once desired pitch is obtained.

NOTE:
CONTRACTOR SHALL FABRICATE A DRAIN TO COLLECT RUNOFF FROM THE BACK OF THE TABLE TO DRAIN INTO THE WATER. MATERIALS SHALL BE ACRYLIC TO MATCH THE SILTECH, ALONG WITH A 3" PVC DRAIN FROM THE TABLE TO WATER ELEVATION. CONTRACTOR TO PROVIDE A SKETCH TO THE COUNTY FOR APPROVAL.

Siltech®



MATERIALS

- 100% Acrylic Solid Surface Tables
- T6061 Marine Grade Aluminum Brackets
- Stainless Steel Hardware
- No Fasteners on Table Surface

ADVANTAGES

- Nonporous, Easy to Clean
- Durable and Renewable Table Surface
- Bracket Design Eliminates Obtrusive Legs
- Adjustable and Removable Accessory Tray
- Table Will Not Mold, Rot or Mildew
- UV Resistant

Siltech® Manufacturing, Inc.
1881 Trade Center Way
Naples, Fl 34109
Phone: 239.593.7938
Fax: 239.593.7983
www.siltech-inc.com

Fillet-A-Way

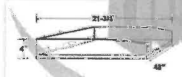
100% Acrylic Solid Surface Fish Cleaning Tables

And Accessories

Available Sizes

15" x 36" Fish Cleaning Table

22" x 48" Fish Cleaning Table



Custom Orders Available. For More Information Visit Our Web-site at www.siltech-inc.com

Mounting Brackets

Round Piling Bracket

Square Piling Bracket

Stanchion Bracket

Pricing

Retail

22" x 48" Fish Cleaning Table
$294.00

~~48" x 96" Fish Cleaning Table~~
~~$999.00~~

Round Piling Bracket
$226.00

Square Piling Bracket
$197.00

Stanchion Bracket
$247.00

Accessory Shelf
$40.00

Drop Shipment Pricing available upon request

Visit www.siltech-inc.com
1881 Trade Center Way
Naples, FL 34109

© Siltech® Manufacturing, Inc. 2013

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

No.	Date	Revision	By
1	03/15/16	SHEET MODIFICATION	D.P.M.
1	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU	1
Drawn by:	KMU	1
Checked by:	JAB	1
Approved by:	DPM	1
Scale:	AS NOTED	1
Date:	06/13	1
Job No.:	M13110	1
CADD File:		

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.366.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600926
Lndscp. Lic. No. LC0000298

FISH CLEANING STATION DETAILS SHEET

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-7A

Sunshine811.com
www.sunshine811.com

J:\M13110\CAD\DWG\Design\M13110-C-07 GEN-DETAILS.dwg Mar 15, 2016 - 10:57am kcap

TYPE "A"
MIAMI CURB & GUTTER
STD. 201.1

TYPE "F"
CURB & GUTTER
STD. 201.2

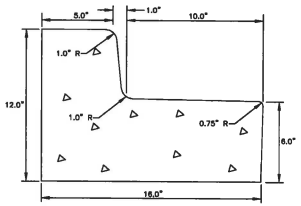
TYPE "AB"
MODIFIED CURB & GUTTER
STD. 201.3

TYPE "D"
CURB
STD. 201.4

INVERTED CROWN
CURB & GUTTER
STD. 201.5

1. ALL CURB & GUTTER SHALL PROVIDE A 0.125" TO 0.25" CONTRACTION JOINT AT 10' CENTERS.
2. ALL CURB & GUTTER SHALL BE CONSTRUCTED IN COMPLIANCE WITH FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.
3. TOP OF FINISHED PAVEMENT SHALL BE 0.25" ABOVE LIP OF GUTTER, LOW SIDE.

TRANSPORTATION DEPARTMENT			
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	CURB & GUTTER CONTROL SHEET	201.0

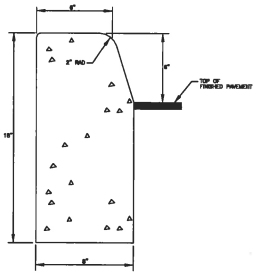


TYPE "AB"
MODIFIED CURB & GUTTER

A) CLASS 1 CONCRETE 3,000 PSI AT 28 DAYS.

B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS STANDARDS INDEX NO. 300, LATEST REVISION.

TRANSPORTATION DEPARTMENT			
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	TYPE "AB" MODIFIED CURB & GUTTER	201.3



TYPE "D"
HIGH BACK CURB

A) CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.

B) CURB SHALL MEET THE SPECIFICATIONS ESTABLISHED BY F.D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

TRANSPORTATION DEPARTMENT			
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	TYPE D CURB	201.4

GENERAL NOTES

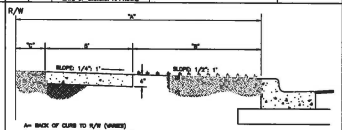
1. SIDEWALK SHALL BE CONSTRUCTED A MINIMUM OF 4" THICK, USING 3000 psi CONCRETE. WHERE SIDEWALK BISECTS A DRIVEWAY, THE MINIMUM SHALL BE 6" OF CLASS I CONCRETE REINFORCED WITH 6"x6" #10 WIRE MESH.
   * SEE SHEETS #101.2 & 101.3.
2. ALL SIDEWALKS SHALL BE CONSTRUCTED TO THE SPECIFICATIONS OF THE MANATEE COUNTY LAND DEVELOPMENT CODE, SECTION 722. A MINIMUM (5) FOOT WIDE SIDEWALK SHALL BE INSTALLED ALONG THE NORTH AND WEST SIDES OF ALL NEW LOCAL STREETS WHICH ARE CONSTRUCTED IN CONJUNCTION WITH A NEW RESIDENTIAL DEVELOPMENT. A SIDEWALK A MINIMUM OF (5) FEET IN WIDTH SHALL BE INSTALLED ON BOTH SIDES OF ALL THOROUGHFARES. REFER TO F.D.O.T. ROADWAY AND TRAFFIC STANDARDS, LATEST REVISION FOR CURB CUT RAMP SPECIFICATIONS.
3. THE CONCRETE SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL NOT BE MORE THAN 1/2" UNDER A TEN FOOT STRAIGHTEDGE, NOR MORE THAN 1/8" ON A FIVE-FOOT TRAVERSE SECTION. THE EDGE OF THE SIDEWALK SHALL BE CAREFULLY FINISHED WITH AN EDGING TOOL HAVING A RADIUS OF 1/2".
4. EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE SIDEWALKS AND THE CURB, OR DRIVEWAY OR AT FIXED OBJECTS AND SIDEWALK INTERSECTIONS SHALL BE 1/2" MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO M153 OR AASHTO M213. FOR LONG POURS, AN EXPANSION JOINT SHALL BE PLACED AT INTERVALS NOT TO EXCEED 120'.
5. CONTRACTION JOINTS:

   OPEN TYPE JOINTS
   OPEN TYPE CONTRACTION JOINTS SHALL BE FORMED BY STAKING A METAL BULKHEAD IN PLACE AND DEPOSITING THE CONCRETE ON BOTH SIDES. AFTER THE CONCRETE HAS SET SUFFICIENTLY TO PRESERVE THE WIDTH AND THE SHAPE OF THE JOINT, THE BULKHEAD SHALL BE REMOVED. AFTER THE SIDEWALK HAS BEEN FINISHED OVER THE JOINT, THE SLOT SHALL BE FINISHED WITH A TOOL HAVING A 1/2" RADIUS.

   SAWED JOINTS
   A SLOT APPROXIMATELY 3/16" WIDE AND NOT LESS THAN 1" DEEP AT 10' CENTERS SHALL BE CUT WITH A CONCRETE SAW AFTER THE CONCRETE HAS SET.
6. SIDEWALKS ALONG OTHER STREETS SHALL BE CONSTRUCTED AND DEDICATED AS REQUIRED BY THE APPROVING AUTHORITY WHEN NECESSARY TO CONTINUE AN EXISTING OR PROPOSED SIDEWALK.
7. HANDICAP RAMPS SHALL MEET FLORIDA ACCESS/FACILITIES STANDARDS, AND SECTIONS 301.0, 301.1 AND 301.2.
8. ALL SIDEWALKS ON R/W WITHIN 10' OF AN EXISTING OR PROPOSED TREE THAT WILL EXCEED 6" IN DIAMETER AT MATURITY SHALL BE 5" THICK AND CONTAIN 2-#3 BESIR CENTERED VERTICALLY AND SPACED 3' ON CENTER. PALMS ARE NOT CONSIDERED TREES.

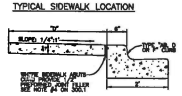
*NOTE: FOR COMPLETE SIDEWALK DETAILS SEE F.D.O.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 6 AND INDEX 310, SHEETS 1 & 2.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	SIDEWALKS GENERAL NOTES	301.0



A= BACK OF CURB TO R/W (VARIES)
B= UNPAVED AREA (VARIES) REFER TO F.D.O.T. INDEX 304, SHEET 2-12, LATEST REVISION.
C= VARIES, SEE 401 SERIES

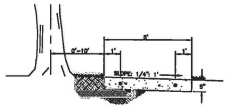
TYPICAL SIDEWALK LOCATION



D= SIDEWALK WIDTH SHALL BE 6" STANDARD, WHERE RAILS ABUTS TYPE "AB, D OR F" CURB. WHERE SPEED LIMIT IS 25 MPH OR LESS, WIDTH CAN BE 5'-3".

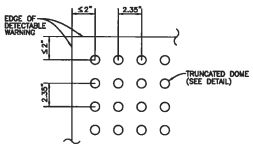
* SEE SHEET 301.0 "GENERAL NOTES" FOR FURTHER INFORMATION

ALTERNATE SIDEWALK LOCATION

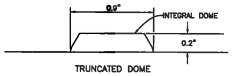


SIDEWALK LOCATION CLOSE TO TREES

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	SIDEWALK REQUIREMENTS	301.1



PLAN VIEW



TRUNCATED DOME

CURB RAMP DETECTABLE WARNING DETAIL

NOTES:

DETECTABLE WARNINGS ON WALKING SURFACES

THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH AND DEPTH OF THE CURB RAMP.

DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCH, A HEIGHT OF NOMINAL 0.2 INCH AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCH. THEY SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

THE MATERIAL USED TO PROVIDE CONTRAST SHOULD CONTRAST BY AT LEAST 70%. CONTRAST IN PERCENT IS DETERMINED BY:

CONTRAST = [(B1-B2)/B1] x 100

WHERE B1 = LIGHT REFLECTANCE VALUE (LRV) OF THE LIGHTER AREA AND B2 = LIGHT REFLECTANCE VALUE (LRV) OF THE DARKER AREA.

NOTE THAT IN ANY APPLICATION BOTH WHITE AND BLACK ARE NEVER ABSOLUTE; THUS, B1 NEVER EQUALS 100 AND B2 IS ALWAYS GREATER THAN 0.

MANATEE COUNTY TRANSPORTATION DEPARTMENT			
REV.BY	DATE	6/12/07 DATE OF B.O.C.C. APPROVAL	CURB RAMP DETECTABLE WARNINGS	302.3

Sunshine811.com
www.sunshine811.com

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices In:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

No.	Date	Revision	By
1	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU
Drawn by:	KMU
Checked by:	JAB
Approved by:	NJK
Scale:	AS NOTED
Date:	06/13
Job No.:	M13109
© 2015	

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.366.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600026
Landscape. Lic. No. LC0000296

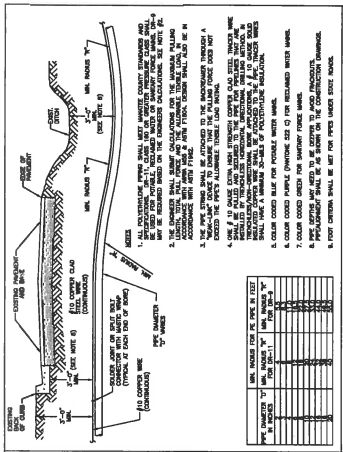
MANATEE COUNTY
GENERAL DETAILS SHEET

NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-8

J:\M13109\CIVIL\DWG\Design\M13110-C-08 - C-08D MANATEE-DETAILS.dwg Jan 19, 2016 - 12:07pm kapp

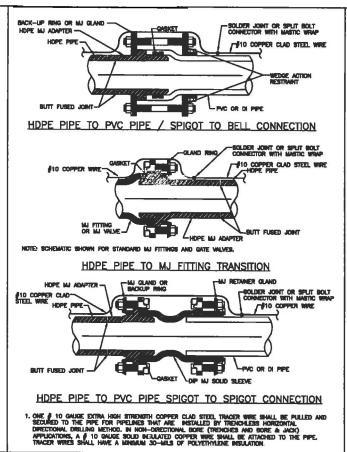


NOTES:

1. ALL POLYETHYLENE PIPING SHALL MEET WINTER COVER STANDARDS AND SPECIFICATION PE-3-1. CLASS 100 OR HIGHER PRESSURE CLASS SHALL BE USED FOR DIRECTIONAL BORE PIPE. PIPE DIAMETER AND WALL THICKNESS MAY BE REQUIRED BASED ON THE ENGINEERS CALCULATIONS. SEE NOTE 8.
2. THE ENGINEER SHALL SUBMIT CALCULATIONS FOR THE MINIMUM PULLING FORCE, PIPE WALL STRESS, AND PIPE DEFLECTION TO BE ACCEPTED IN ACCORDANCE WITH ASTM F1962. DESIGN SHALL ALSO BE IN ACCORDANCE WITH ASTM F894.
3. THE PIPE STRING SHALL BE ATTACHED TO THE BACKREAMER THROUGH A SWIVEL TO PREVENT TORQUE FROM BEING APPLIED TO THE PIPE DOES NOT EXCEED THE PIPE'S ALLOWABLE TORSIL LOAD RATING.
4. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN NON-DIRECTIONAL BORE (TRENCHES AND BORE & JACK) APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.
5. COLOR CODED BLUE FOR POTABLE WATER MAINS.
6. COLOR CODED PURPLE (PANTONE 522 C) FOR RECLAIMED WATER MAINS.
7. COLOR CODED GREEN FOR SANITARY FORCE MAINS.
8. PIPE JOINTS MAY NEED TO BE DEFINED TO AVOID PINCHOUTS, ENCROACHMENTS, OR OTHER UTILITIES IN THE DIRECTIONAL BORE CORRIDOR.
9. FOOT CRITERIA SHALL BE MET FOR PIPES UNDER STATE ROADS.

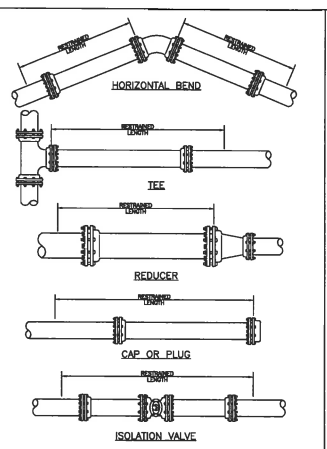
PIPE DIAMETER IN INCHES	MIN. WIDTH FOR 2" PIPE IN FOOT	MIN. WIDTH FOR 3" PIPE IN FOOT
2"	1'	1'
3"	1'	1'
4"	1'	1'
6"	1'	1'
8"	1'	1'
10"	1'	1'
12"	1'	1'
14"	1'	1'
16"	1'	1'
18"	1'	1'
20"	1'	1'
24"	1'	1'
30"	1'	1'
36"	1'	1'
42"	1'	1'
48"	1'	1'
54"	1'	1'
60"	1'	1'
66"	1'	1'
72"	1'	1'
78"	1'	1'
84"	1'	1'
90"	1'	1'
96"	1'	1'

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			DIRECTIONAL BORE ROADWAY CROSSING	UG-4
REV.BY	DATE			
CLK/BR	11/10	MAY 10, 2011 DATE OF APPROVAL		PAGE 104



1. ONE # 10 GAUGE EXTRA HIGH STRENGTH COPPER CLAD STEEL TRACER WIRE SHALL BE PULLED AND SECURED TO THE PIPE FOR PIPELINES THAT ARE INSTALLED BY TRENCHLESS HORIZONTAL DIRECTIONAL DRILLING METHOD. IN NON-DIRECTIONAL BORE (TRENCHES AND BORE & JACK) APPLICATIONS, A # 10 GAUGE SOLID INSULATED COPPER WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRES SHALL HAVE A MINIMUM 30-MILS OF POLYETHYLENE INSULATION.

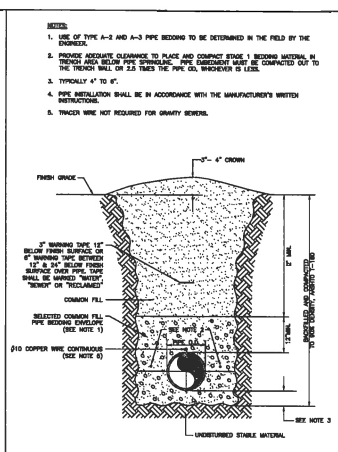
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			HDPE TO PVC OR DI PIPE ADAPTER	UG-6
REV.BY	DATE			
CLK/BR	11/10	MAY 10, 2011 DATE OF APPROVAL		PAGE 106



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			RESTRAINED LENGTHS FOR PIPE	UG-10
REV.BY	DATE			
CLK/BR	11/10	MAY 10, 2011 DATE OF APPROVAL		PAGE 110

NOTES:

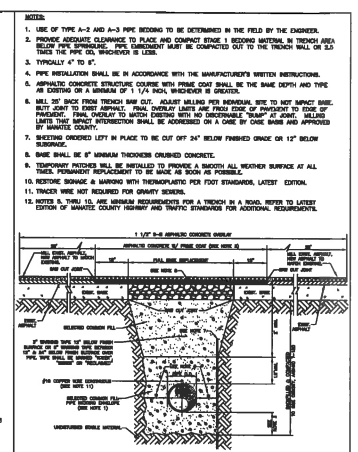
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 8".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING	UG-11
REV.BY	DATE			
WRT/RS	03/11	MAY 10, 2011 DATE OF APPROVAL		PAGE 111

NOTES:

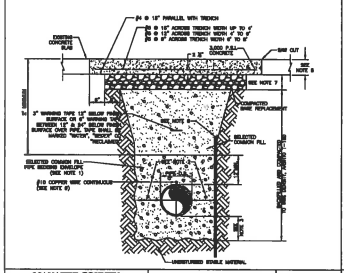
1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 8".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. ASPHALTIC CONCRETE STRUCTURE COURSE WITH PRIME COAT SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF 1 1/4 INCH, WHICHEVER IS GREATER.
6. MILL 25" BACK FROM TRENCH SAW CUT. ADJUST MILLING PER MENSIUM. SITE TO NOT IMPACT BASE. BUTT JOINT TO EXIST ASPHALT. FINAL OVERLAY LIMITS ARE FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT. FINAL OVERLAY TO MATCH EXISTING WITH NO DISCERNABLE "SEAM" AT JOINT. MILLING LIMITS THAT IMPACT INTERSECTION SHALL BE ADDRESSED ON A CASE BY CASE BASIS AND APPROVED BY MANATEE COUNTY.
7. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
8. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
9. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
10. RESTORE SIGNAGE & MARKING WITH THERMOPLASTIC PER FDOT STANDARDS, LATEST EDITION.
11. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
12. NOTES 5. THRU 10. ARE MINIMUM REQUIREMENTS FOR A TRENCH IN A ROAD. REFER TO LATEST EDITION OF MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



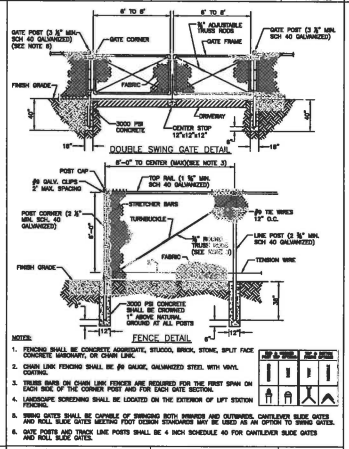
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH ASPHALT PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-12
REV.BY	DATE			
WRT/RS	03/11	MAY 10, 2011 DATE OF APPROVAL		PAGE 112

NOTES:

1. USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. PROVIDE ADEQUATE CLEARANCE TO PLACE AND COMPACT STAGE 1 BEDDING MATERIAL IN TRENCH AREA BELOW PIPE SPRINGLINE. PIPE EMBEDMENT MUST BE COMPACTED OUT TO THE TRENCH WALL OR 2.5 TIMES THE PIPE OD, WHICHEVER IS LESS.
3. TYPICALLY 4" TO 8".
4. PIPE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
5. THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.
6. SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
7. BASE SHALL BE 8" MINIMUM THICKNESS CRUSHED CONCRETE.
8. TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
9. TRACER WIRE NOT REQUIRED FOR GRAVITY SEWERS.
10. NOTES 5. THRU 8. ARE MINIMUM REQUIREMENTS. REFER TO MANATEE COUNTY HIGHWAY AND TRAFFIC STANDARDS FOR ADDITIONAL REQUIREMENTS.



MANATEE COUNTY PUBLIC WORKS DEPARTMENT			TRENCH WITH CONCRETE PAVEMENT SURFACE TYPE A-1 PIPE BEDDING	UG-13
REV.BY	DATE			
CLK/BR	11/10	MAY 10, 2011 DATE OF APPROVAL		PAGE 113



NOTES:

1. FENCING SHALL BE CONCRETE, AGGREGATE, STUCCO, BRICK, STONE, SPLIT FACE CONCRETE MASONARY, OR CHAIN LINK.
2. CHAIN LINK FENCING SHALL BE #9 GAUGE, GALVANIZED STEEL WITH VINYL COATING.
3. TRUSS BARS ON CHAIN LINK FENCES ARE REQUIRED FOR THE FIRST SPAN ON EACH SIDE OF THE CORNER POST AND FOR EACH GATE SECTION.
4. LANDSCAPE SCREENING SHALL BE LOCATED ON THE EXTERIOR OF LIFT STATION FENCING.
5. SWING GATES SHALL BE CAPABLE OF SWINGING BOTH INWARD AND OUTWARDS. CANTILEVER SLIDE GATES AND ROLL SLIDE GATES MEETING FDOT DESIGN STANDARDS MAY BE USED AS AN OPTION TO SWING GATES.
6. GATE POSTS AND TRACK LINE POSTS SHALL BE 4 INCH SCHEDULE 40 FOR CANTILEVER SLIDE GATES AND ROLL SLIDE GATES.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT			SECURITY FENCING	UG-18
REV.BY	DATE			
CLK/BR	11/10	MAY 10, 2011 DATE OF APPROVAL		PAGE 118

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

No.	Date	Revision	By
1	01/15/16	ISSUED TO COUNTY	D.P.M.

Designed by:	KMU
Drawn by:	KMU
Checked by:	JAB
Approved by:	NJK
Scale:	AS NOTED
Date:	06/13
Job No.:	M13109

Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA2600026
Lndscp. Lic. No. LC0000298

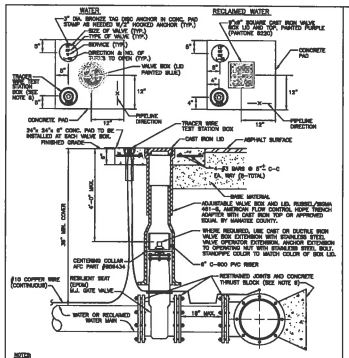
MANATEE COUNTY
UTILITY DETAILS SHEET

NORTH COQUINA BOAT RAMP
PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
C-8A

J:\M13110\Civil\DWG\Design\M13110 C-08 - C-08D MANATEE-DETAILS.dwg Jan 19, 2016 - 12:07pm kupp

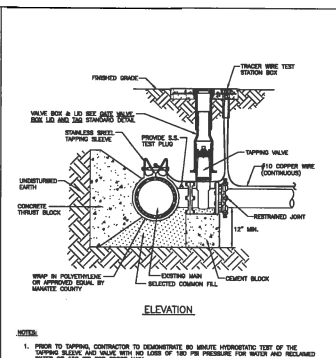


NOTES:

1. "NW" OR "RW" TO BE IMPRINTED INTO THE NEWLY-POURED CONCRETE CURB, ALONG WITH DISTANCE IN FEET TO THE VALVE. IF NO CURB, INSTALL A BLUE DISC INTO "NW" OR PURPLE DISC INTO "RW" AND A 1/4"x1" GALVANIZED STEEL SCREW IN THE EDGE OF PAVEMENT WITH THE DISTANCE FROM THE DISC TO THE VALVE.
2. VALVE BOXES SHALL BE ADJUSTED TO GRADE AS DIRECTED BY THE ENGINEER.
3. SEWER VALVES SHALL NOT BE PLACED IN HANDICAPPED RAMPS.
4. PRECAST CONCRETE PADS & THRUST BLOCKS SHALL NOT BE LABELED.
5. ALL EXPOSED SURFACE OF CONCRETE SHALL BE CHAMFERED 1/2".
6. FOR SEWER VALVES AND LARGER LINE BUTTERFLY VALVES:
   A. THE TRACER WIRE TEST STATION BOX SHALL BE PLACED ADJACENT TO THE PAD.
   B. TRACER WIRE TEST STATION BOX IN LIEU OF INSTALLING IN AN UPLIGHT BOX PAD IF THE GATE VALVE IS LOCATED WITHIN 300 FEET OF A WATER SERVICE, BLOW-OFF, BACKFLOW PREVENTOR OR FIRE HYDRANT THAT HAS A TRACER WIRE BOX.
7. WHERE THE VALVE IS LOCATED IN A PAVED AREA, THE TRACER WIRE BOX SHALL BE THE FLUSH LANDING BROCHURE FOR "TEES" OR MANUFACTURER'S SIMILAR PRODUCT WITH PRESSURE TEMPLATE AND SHALL BE CAPABLE OF SUPPORTING UNDER VEHICLE TRAFFIC. USE PRESTO CENTERED IN SEPARATE CONCRETE PAD SIMILAR TO STANDARD VALVE BOX PAD.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV.BY	DATE	DATE OF APPROVAL	GATE VALVE, BOX, LID AND TAG	UW-2
KJA/JVC	11/10	MAY 10, 2011		PAGE 130



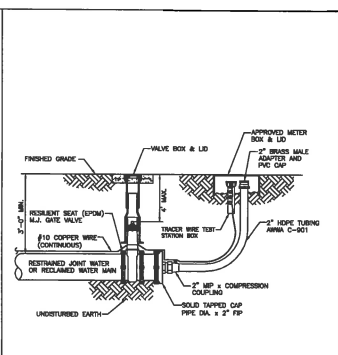
ELEVATION

NOTES:

1. PRIOR TO TAPPING, CONTRACTOR TO DEMONSTRATE 90 MINUTE HYDROSTATIC TEST OF THE TAPPING SLEEVE AND VALVE WITH NO LOSS OF 180 PSI PRESSURE FOR WATER AND RECLAIMED WATER OR 150 PSI FOR FORCE MAIN.
2. ALL FITTINGS TO BE WRAPPED WITH 30 MIL VISQUEEN AT THRUST BLOCK.
3. ALL TAPS ON CONCRETE WATER MAIN AND LARGER THAN 12" ARE TO BE MADE BY A MANATEE COUNTY APPROVED TAPPING COMPANY. ALL MATERIALS TO BE SUPPLIED BY THE CONTRACTOR.
4. ALL TAPS MUST BE OF A SMALLER SIZE THAN THE MAIN BEING TAPPED & PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS GREATER) FROM A JOINT OR FITTING.
5. CONTRACTOR TO SUPPLY A DRY HOLE FOR TAPPING CREW TO WORK IN AND A BACK-HOE TO SUPPORT TAPPING MACHINE INTO THE HOLE.
6. WHERE THRUST BLOCK NOT USED, RESTRAINED JOINTS MUST THEN EXTEND FROM TEE FULL LENGTH SPECIFIED FOR "TEES".
7. TRACER WIRE TEST STATION BOX IS REQUIRED AT CONNECTIONS TO EXISTING MAINS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV.BY	DATE	DATE OF APPROVAL	TAPPING SLEEVE AND VALVE	UW-4
CLG/KJC	11/10	MAY 10, 2011		PAGE 132

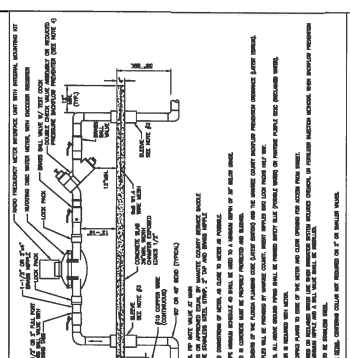


NOTE:

1. SEE STANDARD DETAIL GATE VALVE, BOX, LID AND TAG.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

REV.BY	DATE	DATE OF APPROVAL	2" BLOW-OFF ASSEMBLY FOR 10" MAINS AND SMALLER	UW-7
CLG/JVC	11/10	MAY 10, 2011		PAGE 135



PLANT LIST

SYM.	COMMON NAME	BOTANICAL NAME	DESCRIPTION	QTY
TREES				
CP	CABBAGE PALM	SABAL PALMETTO	12'-14' C.T.	14
SHRUBS				
CI	COCOPLUM	CHRYSOBALANUS ICACO	3 GAL., FULL, 36" O.C.	78
CU	SEA GRAPE	COCCOLOBA UVIFERA	7 GAL., 36"-48" HTS., STAGGERED	41
CU2	SEA GRAPE	COCCOLOBA UVIFERA	45 GAL., 18' MIN. HT., 5' SPRD., TREE FORM	3
GROUNDCOVER				
HD	DUNE SUNFLOWER	HELIANTHUS DEBILIS	1 GAL., FULL, 24" O.C., STAGGERED	249
SB	SAND CORDGRASS	SPARTINA BAKERI	1 GAL., FULL, 36" O.C., STAGGERED	141
SP	SALTMEADOW CORDGRASS	SPARTINA PATENS	1 GAL., FULL, 36" O.C., STAGGERED	229
SF	SEA OXEYE DAISY	BORRICHIA FRUTESCENS	1 GAL., FULL, 18" O.C.	522
SOD	SEASHORE PASPALUM	PASPALUM VAGINATUM	SOLID SOD, CONTRACTOR TO VERIFY QTY.	

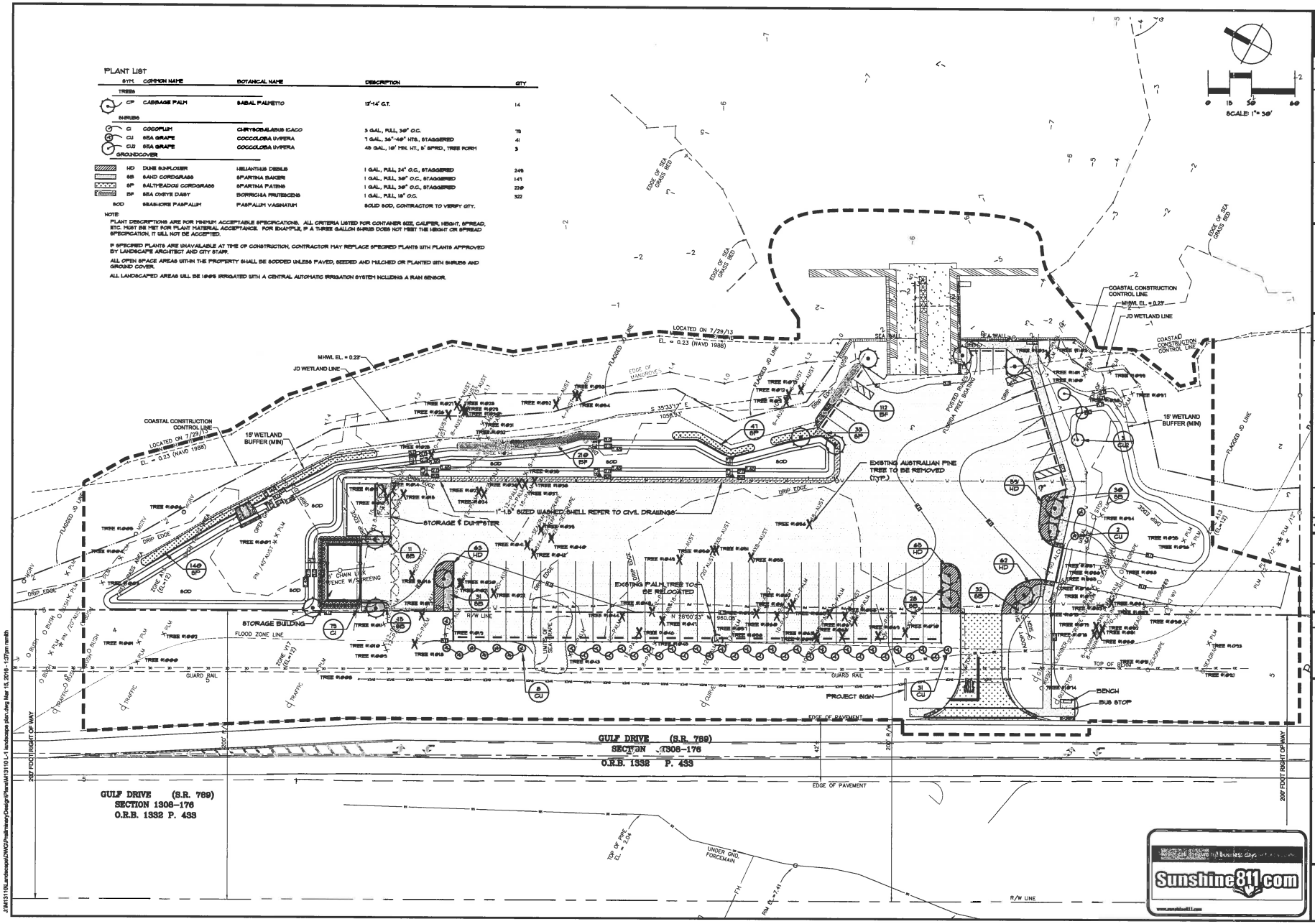
NOTE:

PLANT DESCRIPTIONS ARE FOR MINIMUM ACCEPTABLE SPECIFICATIONS. ALL CRITERIA LISTED FOR CONTAINER SIZE, CALIPER, HEIGHT, SPREAD, ETC. MUST BE MET FOR PLANT MATERIAL ACCEPTANCE. FOR EXAMPLE, IF A THREE GALLON SHRUB DOES NOT MEET THE HEIGHT OR SPREAD SPECIFICATION, IT WILL NOT BE ACCEPTED.

IF SPECIFIED PLANTS ARE UNAVAILABLE AT THE CP CONSTRUCTION, CONTRACTOR MAY REPLACE SPECIFIED PLANTS WITH PLANTS APPROVED BY LANDSCAPE ARCHITECT AND CITY STAFF.

ALL OPEN SPACE AREAS WITHIN THE PROPERTY SHALL BE SODDED UNLESS PAVED, SEEDED AND MULCHED OR PLANTED WITH SHRUBS AND GROUND COVER.

ALL LANDSCAPED AREAS WILL BE 100% IRRIGATED WITH A CENTRAL AUTOMATIC IRRIGATION SYSTEM INCLUDING A RAIN SENSOR.



Sunshine811.com

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

No.	Date	Revision	By
1	01-15-16	Issued to County	JKW

Designed by:	JKW
Drawn by:	RES
Checked by:	JKW
Approved by:	JKW
Scale:	1" = 30'
Date:	09/13
Job No.:	M13110
© 2015	

Plans Prepared By
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA26000628
Landscp. Lic. No. LC0000298

LANDSCAPE PLAN

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

Sheet No.
L-1

J:\M13110\Landscape\DWG\Preliminary\Design\Plans\M13110-L1 landscape plan.dwg Mar 15, 2016 - 1:37pm north

LANDSCAPE NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND ALL WORK AS CALLED FOR ON THE LANDSCAPE PLANS AND IN THE LANDSCAPE SPECIFICATIONS. IN THE EVENT OF VARIANCE BETWEEN QUANTITIES SHOWN ON PLANT LIST AND THE PLANS, THE PLANS SHALL CONTROL. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES AND REPORT ANY DISCREPANCIES AT THE TIME OF BIDDING.
2. THE LANDSCAPE CONTRACTOR SHALL REVIEW ARCHITECTURAL/ENGINEERING PLANS AND BECOME THOROUGHLY FAMILIAR WITH SURFACE AND SUBSURFACE UTILITIES.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE CONSIDERED TO BE APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR (1) TO VERIFY THE LOCATION OF UTILITY LINES WITHIN AND ADJACENT TO THE WORK AREA (2) TO PROTECT ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD (3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION (4) TO FIELD ADJUST THE LOCATION OF PROPOSED TREES AND PALMS 10' OFF THE CENTER OF THE UTILITY LINES WHEN THE LANDSCAPE ARCHITECT IS A 10' OFFSET DOES NOT FUNCTION.
4. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE THE PLANTING WITH THE IRRIGATION WORK TO ASSURE AVAILABILITY AND PROPER LOCATION OF IRRIGATION ITEMS AND PLANTS.
5. CONTRACTOR SHALL ENSURE THAT THERE ARE NO VISUAL OBSTRUCTIONS TO VEHICLE LINES OF SIGHT AND TRAFFIC CONTROLS. CONTRACTOR SHALL FIELD ADJUST TREES AND/OR LARGE SHRUB LOCATIONS TO AVOID ANY SUCH OBSTRUCTIONS.
6. TREES SHALL BE MAINTAINED BY THE OWNER TO AVOID FUTURE SUCH OBSTRUCTIONS BY PRUNING TREES AND/OR SHRUBS AS NECESSARY UTILIZING HORTICULTURALLY SOUND TECHNIQUES.
7. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN.
8. ALL PLANT MATERIAL SHALL BE GRADED FLORIDA NO. 1 OR BETTER AS OUTLINED UNDER GRADING AND STANDARDS FOR NURSERY STOCK, PART I AND II, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.
9. THE LANDSCAPE ARCHITECT OR OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY AND ALL WORK AND MATERIALS WHICH, IN HIS OPINION, DO NOT MEET WITH THE REQUIREMENTS OF THESE SPECIFICATIONS.
10. EXCEPT AS OTHERWISE SPECIFIED, THE LANDSCAPE CONTRACTOR'S WORK SHALL CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE.
11. THE MINIMUM ACCEPTABLE SIZE OF ALL PLANTS, MEASURED AFTER PRUNING, WITH BRANCHES IN NORMAL POSITION, SHALL CORRESPOND TO THE MEASUREMENTS SPECIFIED ON THE PLANT LIST OR AS INDICATED ON THE LANDSCAPE DRAWING. HEIGHT AND SPREAD DIMENSIONS REFER TO MAIN BODY OF THE PLANT AND NOT EXTREME BRANCHES OR TIP TO TIP. TRUNK CALIPER (TRUNK DIAMETER) IS MEASURED A NUMBER FROM THE GROUND ON TREES UP TO AND INCLUDING 4 INCHES IN CALIPER, AND 12 INCHES ABOVE THE GROUND FOR LARGER TREES. MULTI-TRUNK TREES SHALL BE SELECTED BASED ON THE AVERAGE OF THE LARGEST DIAMETER AND THAT PERPENDICULAR TO IT IS REFERRED TO AS CALIPER.
12. PLANTS SHALL BE PROTECTED UPON ARRIVAL AT THE SITE, BY BEING THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED.
13. ALL TREE PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE FLORIDA GRADES & STANDARDS FOR NURSERY STOCK, UNLESS SHOWN OTHERWISE ON THE DRAWINGS AND BACKFILLED WITH THE SPECIFIED PLANTING SOIL. THE LANDSCAPE CONTRACTOR SHALL TEST ALL TREE PITS WITH WATER FOR PROOF OF ADEQUATE PROPER DRAINAGE PERCOLATION IS AVAILABLE.
14. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER WATERING OF ALL PLANTS. ALL PLANTS SHALL BE THOROUGHLY WATERED AT TIME OF PLANTING AND KEPT ADEQUATELY WATERED UNTIL TIME OF ACCEPTANCE. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT PLANTS ARE NOT OVER WATERED.
15. IT SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO PREVENT PLANTS WHICH FALLEN OR BEING BLOWN OVER, TO REBTRAIGHTEN AND REPLANT. ALL PLANTS WHICH LEAN OR FALL AND TO REPLACE ALL PLANTS WHICH ARE DAMAGED DUE TO LACK OF PROPER GUYING OR STAKING. THE LANDSCAPE CONTRACTOR SHALL BE LIBERALLY LIABLE FOR ANY DAMAGE CAUSED BY INSTABILITY OF ANY PLANT MATERIAL.
16. ALL PALMS TO BE STAKED AS INDICATED PER PALM STAKING DETAILS. ALL OTHER TREES TO BE STABILIZED UTILIZING TOPGALLANT TREE STABILIZER SYSTEM PER TREE PLANTING DETAILS. REFER TO LANDSCAPE SPECIFICATIONS FOR MORE PRODUCT INFORMATION. PLEASE NOTE EXTENDED LEAD TIME IS POSSIBLE FOR THESE PRODUCTS. CONTACT MANUFACTURER AS SOON AS POSSIBLE.
17. PLANTS BLOWN OVER BY HIGH WINDS, WITHIN THE GUARANTEED PERIOD, SHALL NOT BE CAUSE FOR ADDITIONAL EXPENSE TO THE OWNER, BUT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. DAMAGED PLANTS SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
18. SOD SHALL BE CERTIFIED TO BE FREE OF THE IMPORTED FIRE ANT. SOD SHALL HAVE A CLEAN GROWTH OF ACCEPTABLE GRASS, REASONABLY FREE OF WEEDS WITH NOT LESS THAN 1/2" OF SOIL FIRMLY ADHERING TO ROOTS. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO MEASURE AND DETERMINE THE EXACT AMOUNT REQUIRED. ANY AMOUNT SHALL BE VERIFIED WITH THE OWNER OR LANDSCAPE ARCHITECT BEFORE INSTALLATION.
19. THE LANDSCAPE CONTRACTOR SHALL INSURE ADEQUATE VERTICAL DRAINAGE IN ALL PLANT BEDS, PLANTERS, AND SOD AREAS. VERTICAL DRILLING THROUGH ANY COMPACTED FILL TO NATIVE SOIL SHALL BE ACCOMPLISHED TO INSURE DRAINAGE. IF WELL DRAINED FILL IS NECESSARY TO ASSURE POSITIVE DRAINAGE, THIS FILL SHALL BE BROUGHT UP BY THE LANDSCAPE CONTRACTOR AT TIME OF BIDDING.
20. THE LANDSCAPE CONTRACTOR SHALL INSURE THAT HIS WORK DOES NOT INTERRUPT ESTABLISHED OR PROJECTED DRAINAGE PATTERNS.
21. THE LANDSCAPE CONTRACTOR SHALL PRUNE, SHAPE AND REMOVE DEAD MATERIALS FROM EXISTING PLANT MATERIAL TO REMAIN. COMPARE BID WITH THE LANDSCAPE ARCHITECT OR OWNER THE EXTENT OF WORK REQUIRED AT TIME OF BIDDING.
22. MULCH - ALL PLANT BEDS SHALL BE TOP DRESSED WITH 3" SHREDDED MULCH.
23. TRANSPLANTED MATERIAL - THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING AND EVALUATING WHICH PLANT MATERIALS ARE SUITABLE FOR TRANSPLANTING AND SHALL VERIFY THIS WITH THE LANDSCAPE ARCHITECT OR OWNER. THE LANDSCAPE CONTRACTOR SHALL TAKE ALL REASONABLE HORTICULTURALLY ACCEPTABLE MEASURES TO ASSURE THE SUCCESSFUL TRANSPLANTING OF DETERMINED PLANT MATERIALS. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ANY REJECTED PLANT MATERIALS SUCH THE REASONS ARE NOT TAKEN AS DETERMINED BY THE LANDSCAPE ARCHITECT OR OWNER. REPLACEMENT PLANTS SHALL BE OF IDENTICAL SPECIES AND SIZE IF REQUIRED.
24. MAINTENANCE PRIOR TO FINAL INSPECTION AND ACCEPTANCE

MAINTENANCE SHALL COMMENCE AFTER EACH PLANT IS PLANTED AND THE MAINTENANCE PERIOD SHALL CONTINUE UNTIL THE JOB OR SPECIFIC PHASE OF THE JOB IS ACCEPTED BY THE LANDSCAPE ARCHITECT OR OWNER. ENTIRE CARE SHALL BE TAKEN TO INSTRUCT THE OWNER OR HIS REPRESENTATIVES IN GENERAL MAINTENANCE PROCEDURES.

PLANT MAINTENANCE SHALL INCLUDE WATERING, PRUNING, SPRAYING, CULTIVATING, MULCHING, TIGHTENING, AND REPAIRING OR GUYS, REPLACEMENT OF WORN OR DEAD PLANTS, RESETTING PLANTS TO PROPER GRADES OR UPRIGHT POSITIONS AND RESTORATION OF THE PLANTING SAUCER AND ALL OTHER CARE NEEDED FOR PROPER GROWTH OF THE PLANTS.

DURING THE MAINTENANCE PERIOD AND UP TO THE DATE OF FINAL ACCEPTANCE, THE LANDSCAPE CONTRACTOR SHALL DO ALL SEASONAL SPRAYING AND/OR DUSTING OF TREES AND SHRUBS. UPON COMPLETION OF ALL PLANTING, AN INSPECTION FOR ACCEPTANCE OF WORK WILL BE HELD. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OR OWNER FOR SCHEDULING OF THIS INSPECTION NO DAYS PRIOR TO THE ANTICIPATED DATE.

AT THE TIME OF THE INSPECTION, IF ALL OF THE MATERIALS ARE ACCEPTABLE, A WRITTEN NOTICE WILL BE GIVEN BY THE LANDSCAPE ARCHITECT OR OWNER TO THE LANDSCAPE CONTRACTOR STATING THE DATE WHEN THE MAINTENANCE PERIOD ENDS.

GUARANTEE AND REPLACEMENT

ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE (1) YEAR, FROM THE TIME OF FINAL INSPECTION AND INTERIM ACCEPTANCE SHALL BE ALIVE AND IN SATISFACTORY GROWTH FOR EACH SPECIFIC KIND OF PLANT AT THE END OF THE GUARANTEED PERIOD.

AT THE END OF THE GUARANTEE PERIOD, ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR NOT IN SATISFACTORY GROWTH, AS DETERMINED BY THE OWNER OR THE LANDSCAPE ARCHITECT, SHALL BE REMOVED AND REPLACED. REPLACEMENT PLANTS SHALL HAVE AN EXTENDED GUARANTEE, AS NOTED ABOVE, FROM TIME OF REPLACEMENT.

ALL REPLACEMENTS SHALL BE PLANTED OF THE SAME KIND AND SIZE AS SPECIFIED ON THE PLANT LIST. THEY SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

25. TOPSOIL

TOPSOIL SHALL BE NATURAL, FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING CHARACTERISTICS OF REPRESENTATIVE TOPSOIL IN THE VICINITY THAT PRODUCES HEAVY GROWTH. TOPSOIL SHALL HAVE A PH RANGE OF 5.5 TO 7.5. FREE FROM SUBSOIL, OBJECTIONABLE SEEDS, LITTER, SODS, STIFF CLAY, STONES LARGER THAN 1-INCH IN DIAMETER, STUMPS, ROOTS, TRASH, TOXIC SUBSTANCES, OR ANY OTHER MATERIAL WHICH MAY BE HARMFUL TO PLANT GROWTH OR HINDER PLANTING OPERATIONS. TOP SOIL SHALL CONTAIN A MINIMUM OF THREE PERCENT ORGANIC MATERIAL.

26. UNSUITABLE SUBSOIL

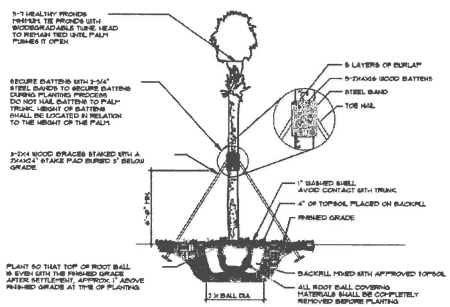
LOCATIONS CONTAINING UNSUITABLE SUBSOIL SHALL BE TREATED BY ONE OR MORE OF THE FOLLOWING:

A. WHERE UNSUITABILITY IS DEEMED BY OWNER OR OWNER'S REPRESENTATIVE TO BE DUE TO EXCESSIVE COMPACTION CAUSED BY HEAVY EQUIPMENT AND UNDER NATURAL SUBSOILS, OTHER THAN AASHTO CLASSIFICATION OF A3 OR A1, LOOSEN SUCH AREAS WITH SPIKES, DISCING, OR OTHER MEANS TO LOOSEN SOIL TO CONDITION ACCEPTABLE TO OWNER. LOOSEN SOIL TO MINIMUM DEPTH OF 12 INCHES WITH ADDITIONAL LOOSENING AS REQUIRED TO OBTAIN ADEQUATE DRAINAGE. CONTRACTOR MAY INTRODUCE PEAT, MOSS, SAND, OR ORGANIC MATTER INTO THE SUBSOIL TO OBTAIN ADEQUATE. MEASURES SHALL BE CONSIDERED AS INCIDENTAL, WITHOUT ADDITIONAL COST TO OWNER.

B. WHERE UNSUITABILITY IS DEEMED BY OWNER OR OWNER'S REPRESENTATIVE TO BE DUE TO PRESENCE OF ROUNDED, MORTAR, CONCRETE, GRADED AGGREGATE BASE, OR OTHER CONSTRUCTION MATERIALS IN SUB GRADE AND WHERE NATURAL SUBSOIL IS OTHER THAN AASHTO CLASSIFICATION OF A3 OR A1, REMOVE DEBRIS AND DEKTRONIALLY MATERIAL. SUCH REMEDIAL MEASURES SHALL BE CONSIDERED AS INCIDENTAL WITHOUT ADDITIONAL COST TO OWNER.

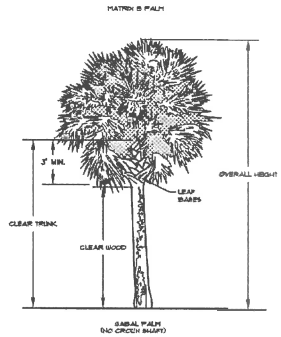
C. WHERE UNSUITABILITY IS DEEMED BY OWNER TO BE BECAUSE NATURAL SUBSOIL FALLS INTO AASHTO CLASSIFICATION OF A4 OR A7 AND CONTAINS MOISTURE IN EXCESS OF 50 PERCENT, THEN INSTALLATION OF SUB DRAINAGE SYSTEM OR OTHER MEANS DESCRIBED BELOW WHERE IN SPECIFICATIONS SHALL BE USED. WHERE SUCH CONDITIONS HAVE NOT BEEN KNOWN OR REVEALED PRIOR TO PLANTING TIME AND THEY HAVE NOT BEEN RECOGNIZED IN PREPARATION OF THE DRAINAGE AND SPECIFICATIONS, THEN OWNER SHALL ISSUE PRICING ORDER TO INSTALL PROPER REMEDIAL MEASURES.

D. PLANTING BEDS WHERE EXISTING SUBSOIL IS DETERMINED BY OWNER TO BE UNSUITABLE FOR PLANT GROWTH IN ACCORDANCE PARAGRAPH (A) UNSUITABLE SUBSOIL, WHEREIN SHALL BE EXCAVATED TO A DEPTH OF 12 INCHES OR AS NEEDED TO PROVIDE ADEQUATE DRAINAGE. REPLACE EXCAVATED SOIL WITH PLANTING SOIL.



PALM PLANTING DETAIL

N.T.S.



* ALL PALMS TO HAVE CLEAR WOOD INDICATED ABOVE UNLESS OTHERWISE SPECIFIED.

PALM HEIGHT/TRUNK SPECIFICATIONS

OVERALL HEIGHT(OA)
HIGHEST POINT IN THE CANOPY MEASURED FROM THE SOIL LINE TO THE NATURAL POSITION OF THE LAST FULLY EXPANDED LEAF. UNLESS SPECIFIED DIFFERENTLY, THE TERM HEIGHT, OR HEIGHT MEASUREMENTS SPECIFIED, WILL BE CONSIDERED OVERALL HEIGHT.

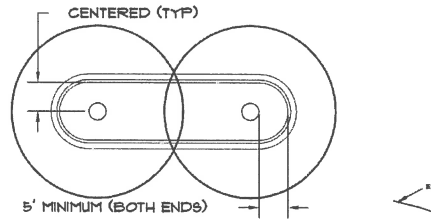
CLEAR TRUNK(CT)
A MEASUREMENT FROM THE SOIL LINE TO A POINT IN THE CANOPY WHERE THE TRUNK CALIPER BEGINS TO TAPER ABRUPTLY. ON MANY PALMS, THIS POINT WILL LIE AT THE BASE OF THE PETIOLE OF THE THIRD OR FOURTH YOUNGEST BUT FULLY EXPANDED LEAF.

CLEAR WOOD(CW)
A MEASUREMENT FROM THE SOIL LINE TO THE HIGHEST POINT OF THE TRUNK FREE OF PERSISTENT LEAF BASES. ON PALMS WITH A CROWN SHAFT, THE MEASURE WILL BE FROM THE SOIL LINE TO THE BASE OF THE CROWN SHAFT. IT SHOULD BE NOTED THAT PALMS WITH VERY PERSISTENT LEAF BASES MAY NOT HAVE CLEAR WOOD.

DPI INSPECTION NOTES(REQUIRED)

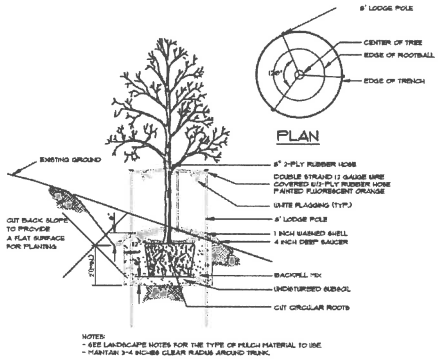
D.P.I. PALM INSPECTION NOTE:
ALL PALMS SHALL HAVE A VALID AND CURRENT STATE OF FLORIDA, DIVISION OF PLANT INDUSTRY (DPI) INSPECTION CERTIFICATION PRIOR TO BEING TRANSPORTED TO THE CONSTRUCTION SITE. THE DPI CERTIFICATION MUST BE SUBMITTED TO CPH AND A COPY OF THIS CERTIFICATION MUST BE PROVIDED TO THE GENERAL CONTRACTOR AND MAINTAINED WITH THE CONSTRUCTION RECORDS.

D.P.I. INSPECTION OF ALL PLANT MATERIAL:
ALL TREES, SHRUBS AND SOD WILL HAVE A VALID AND CURRENT STATE OF FLORIDA, DIVISION OF PLANT INDUSTRY (DPI) INSPECTION CERTIFICATION PRIOR TO BEING TRANSPORTED TO THE CONSTRUCTION SITE. THE DPI CERTIFICATION MUST BE SUBMITTED TO CPH AND A COPY OF THIS CERTIFICATION MUST BE PROVIDED TO THE GENERAL CONTRACTOR AND MAINTAINED WITH THE CONSTRUCTION RECORDS.



TYPICAL ISLAND PLANTING

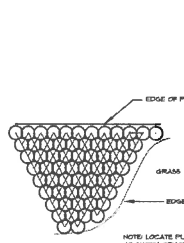
ALL TREES PLANTED IN LANDSCAPE ISLANDS OR ANY LANDSCAPED AREAS SHOULD BE A MINIMUM OF 5' OFF OF BACK OF CURB UNLESS ABSOLUTELY NECESSARY DUE TO UTILITY LINES/PIPES LOCATION.



NOTES:
- SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE
- MAINTAIN 3'-4 INCHES CLEAR RADIUS AROUND TRUNK.

CONTAINER TREE PLANTING ON SLOPE

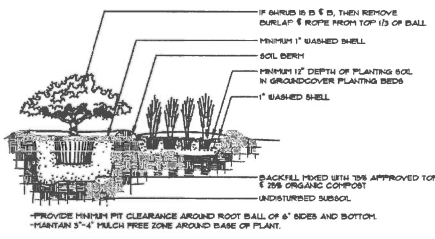
N.T.S.



NOTE: LOCATE PLANTS IN A TRIANGULAR PATTERN AS SHOWN, SPACED EQUIDISTANT FROM EACH OTHER (AT SPACING SPECIFIED IN THE PLANT LIST)

SHRUB/GROUNDCOVER SPACING PLAN

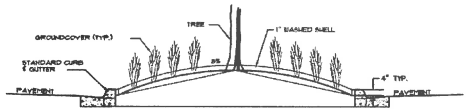
N.T.S.



-PROVIDE MINIMUM PIT CLEARANCE AROUND ROOT BALL OF 6" SIDES AND BOTTOM.
-MAINTAIN 3"-4" MULCH FREE ZONE AROUND BASE OF PLANT.

SHRUB AND GROUNDCOVER PLANTING DETAIL

NTS



TYPICAL LANDSCAPE ISLANDS

NTS

BEFORE YOU DIG!
CALL SUNSHINE STATE ONE CALL OF FLORIDA
AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING OR DISTURBING EARTH
Sunshine State One Call 811
Know what's below. Call before you dig.
www.callsunshine.com

cph
www.cphcorp.com
A Full Service A & E Firm
Architects
Engineers
Environmental
Landscape Architects
M / E / P
Planners
Structural
Surveyors
Traffic / Transportation
Offices in:
• Florida
• Puerto Rico
• Connecticut
• Maryland
• Texas

James K Winter, LA0000911, State of Florida

No.	Date	Revision	By
1	01-15-16	Issued to County	JKW

Designed by: JKW
Drawn by: TNL
Checked by: JKW
Approved by: JKW
Scale: NA
Date: 08/13
Job No.: MT3110
©2016

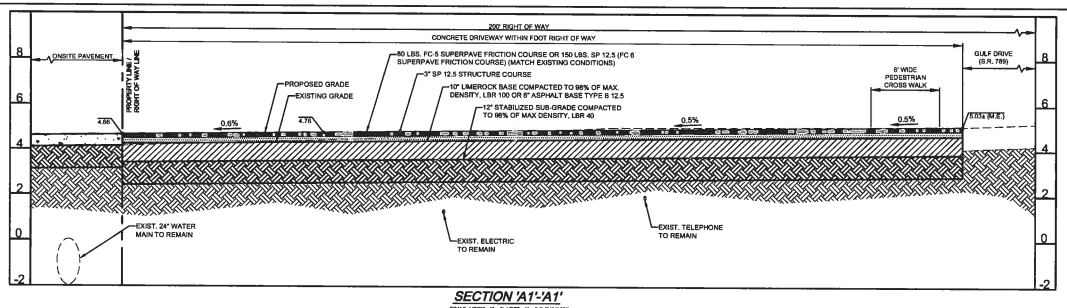
Plans Prepared By:
CPH, Inc.
3277A Fruitville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.365.4771
Licensed:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA3099298
Landscape. Lic. No. LC0000298

LANDSCAPE PLAN

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION
MANATEE COUNTY / FLORIDA

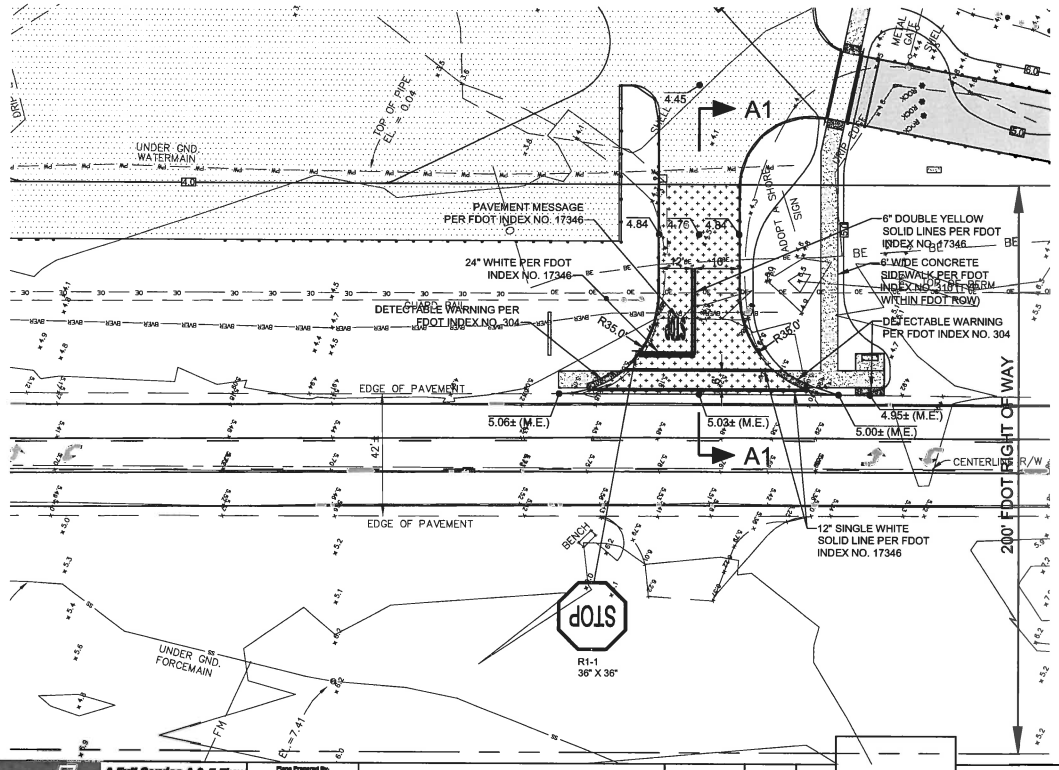
Sheet No.
L-2

J:\M13110\Landscape\DWG\Preliminary\Design\Plans\M13110-L-1 landscape.dwg, Jan 07, 2016 - 8:51am, rsmith



SECTION 'A1'-'A1'

SCALE: HORIZ.: 1" = 5, VERT.: 1" = 2.0' (24" X 36")
HORIZ.: 1" = 10, VERT.: 1" = 5 (11" X 17")



Sunshine811.com
www.sunshine811.com

N

GRAPHIC SCALE
20 0 15 20 40

SCALE: 1" = 20' (24" X 36")
1" = 40' (11" X 17")

REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED
	03/15/16	PLAN MODIFICATION	D.P.M.

cph
www.cphcorp.com © 2015

A Full Service A & E Firm
Architects, Engineers, Environmental, Landscape Architects, Traffic/Transportation, M / E / P, Planners, Structural, Surveyors

Plans Prepared By: CPH, Inc.
3277A Prudhville Rd., Suite 2
Sarasota, FL 34237
Ph: 941.366.4771
Licenses:
Eng. C.O.A. No. 3215
Survey L.B. No. 7143
Arch. Lic. No. AA26000926
Landscp. Lic. No. LC0000268

NORTH COQUINA BOAT RAMP PARKING LOT EXPANSION

MANATEE COUNTY / FLORIDA

	NAME	DATE
DESIGNED BY:	JMT	07-17-15
DRAWN BY:	KMU	07-17-15
CHECKED BY:	JMT	07-17-15
SUPERVISED BY:	DPM	07-17-15

DANIEL P. MOYER, P.E.
FL LIC NO. 60057
03-15-16

S.R. 789 (GULF DRIVE) IMPROVEMENTS

SHEET NO.
R-1

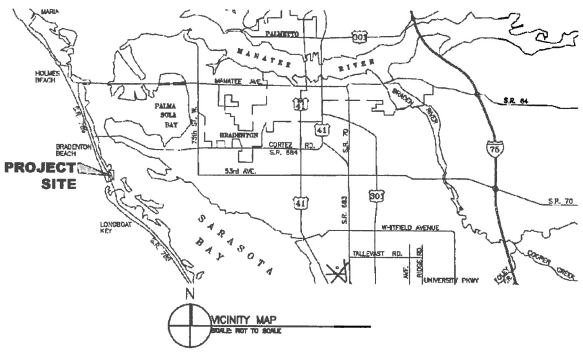
3/15/2016 12:28:47 PM

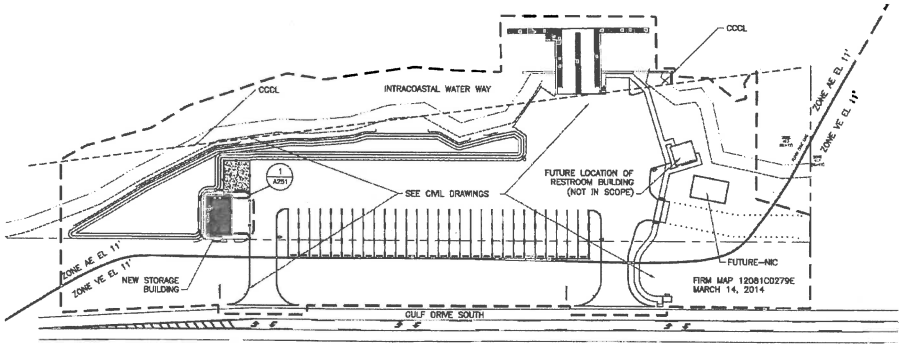
J:\M13110\CM\DWG\Design\M13110 R-01 SR 789 IMP.dwg

J:\M13110\CM\DWG\Design\M13110 R-01 SR 789 IMP.dwg Mar 15, 2016 - 12:28pm kopp

CONSTRUCTION DRAWINGS FOR THE NEW STORAGE BUILDING AT THE

NORTH COQUINA BEACH BOAT RAMP PARKING LOT





SITE KEY PLAN
N.T.S.

PROJECT DESCRIPTION:
THE PROJECT CONSISTS OF IMPROVEMENTS TO AN EXISTING BOAT RAMP FOR MANATEE COUNTY GOVERNMENT. THE SCOPE OF THE ARCHITECT IS LIMITED TO A NEW STORAGE BUILDING. THE BUILDING WILL BE OF BREAK-AWAY WALL CONSTRUCTION WITHIN A CONCRETE FRAME ON A PILE FOUNDATION.

ELEVATION DETERMINATIONS:

FEMA (FEDERAL, LOCAL)	FLOOD ELEVATION: AE EL. 11.0' NAVD
FDEP (STATE OF FLORIDA)	19.0' NAVD
STORM SCOUR ELEVATION:	1.0' NAVD

BASIC BUILDING CODE INFORMATION:

AUTHORITIES HAVING JURISDICTION:	CITY OF BRADENTON BEACH WEST MANATEE FIRE & RESCUE DISTRICT
BUILDING CODE COMPLIANCE:	FLORIDA BUILDING CODE, 5TH EDITION (2014) FLORIDA ACCESSIBILITY CODE, 5TH EDITION (2014) FLORIDA FIRE PREVENTION CODE, 5TH ED. (2014), BASED ON NFPA 101 (2012)

STORAGE BUILDING

SPRINKLER SYSTEM:	NO
CONSTRUCTION TYPE:	VB
OCCUPANCY:	S-2
SQUARE FOOTAGE:	780 GROSS
OCCUPANT LOAD:	3 (1/300SF)= 3
EXITS REQUIRED:	1

FLORIDA ADMINISTRATIVE CODE 69A-3.012
PROVIDE SYMBOL TO CLEARLY DENOTE LIGHT-FRAME TRUSS-TYPE ON PROJECT. LOCATION OF SYMBOL IS TO BE WITHIN 24 INCHES OF THE LEFT OF THE MAIN ENTRY DOOR AND BETWEEN 4 TO 6 FEET OFF THE GROUND.

FIRE EXTINGUISHERS REQUIRED FOR PROJECT PER NFPA 10

1 10/01/15

REVISION 1 IS A RE-ISSUE OF THIS PROJECT WITHOUT THE RESTROOM BUILDING. THE ARCHITECTURAL SCOPE IS NOW LIMITED TO ONLY THE STORAGE BUILDING. THE STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS HAVE ALSO BEEN REVISED TO SHOW THIS REDUCTION IN SCOPE.
IN ADDITION, THE HEIGHT OF THE BUILDING HAS BEEN INCREASED APPROXIMATELY 2' TO MEET THE FDEP FLOOD ELEVATION OF 19.0' NAVD.

PRODUCT APPROVAL LIST

APPROVAL No.	MANUFACTURER	PRODUCT CATEGORY	PRODUCT MODEL # or NAME	PRESSURE: PRODUCT DESIGN PRESSURE	PRESSURE: MIN. DESIGN PRESSURE	APPROVAL ENTITY	EXPIRATION/ APPROVAL DATE	COMMENTS
FL-6336.2	CLINE	EXTERIOR DOORS	MODEL #100BE	+60/-60	47 PSF	FLORIDA	REVISED 06/18/2011	XX
FL-18113	OVERHEAD DOOR CORPORATION	EXTERIOR DOORS	MODEL #610	+68.9/-68.9	38 PSF	FLORIDA	APPROVED 02/04/2013	XX
FL-11903.1	MBCI	ROOF	26G 5V CRIMP	-146 PSF	-88.2	FLORIDA	APPROVED 02/22/2012	XX

INDEX TO SHEETS

1 A001 COVER SHEET

ARCHITECTURAL
1 A251 FLOOR PLAN AND ELEVATIONS
A551 BUILDING AND WALL SECTIONS
A801 DETAILS
A901 SPECIFICATIONS
1 A902 SPECIFICATIONS
A903 SPECIFICATIONS

STRUCTURAL
S1.00 STRUCTURAL NOTES & SCHEDULES
S1.01 TYPICAL DETAILS
S2.01 FOUNDATION & FRAMING PLAN
S3.00 DETAILS

MECHANICAL
M201 MECHANICAL PLAN & DETAILS

ELECTRICAL
E101 ELECTRICAL SITE PLAN & DETAILS
E201 FLOOR PLANS, LEGEND & NOTES
E501 ELECTRICAL DETAILS
E901 ELECTRICAL SPECIFICATIONS

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5881
FAX (941)729-5892
WWW.UGARTEARCHITECTURE.COM
- AA-C001984 -

COVER SHEET

MC COQUINA NORTH STORAGE BLDG
GULF DRIVE SOUTH, BRADENTON BEACH, FL 34217

REVISIONS
1 10/01/15

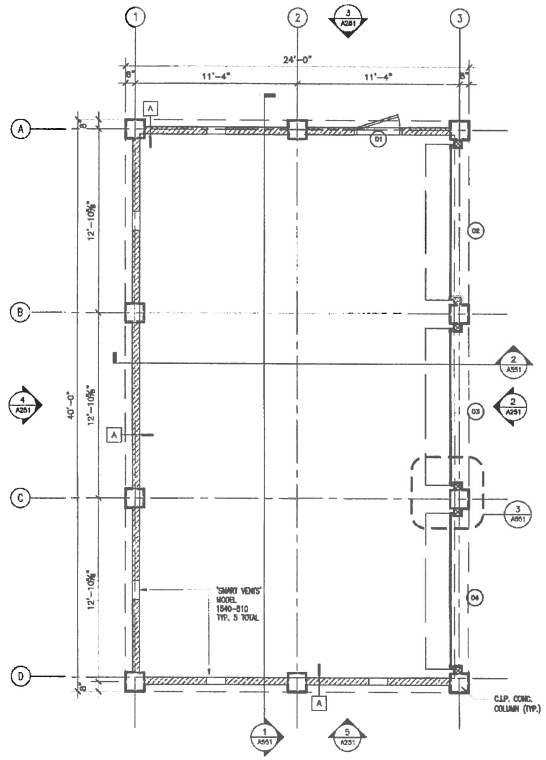
PROJECT NO: 2013-31
DATE: 04/02/15
DRAWN BY: CUBL
CHK'D BY: DB/CU

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

CARLOS D. UGARTE
LIC. NO. AR-0010725

SHEET
A001

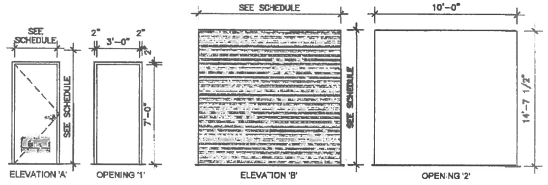
9/29/2015 4:11 PM CAD DWG FILE: A001 COVER SHEET.DWG



1 STORAGE BUILDING FLOOR PLAN
A251 1/8" = 1'-0"

DOOR SCHEDULE

No.	EL	DOOR SIZE WD.	DOOR SIZE HGT.	DOOR SIZE THK.	DOOR MATL.	FRAME MATL.	MANUF.	NOTES
01	A	3'-0"	7'-0"	1 3/4"	ALUM.	MTL.	CLINE	SEE COVER FOR NOA
02	B	10'-0"	14'-7 1/2"	2"	MTL.	MTL.	OVERHEAD DR.	SEE COVER FOR NOA
03	B	10'-0"	14'-7 1/2"	2"	MTL.	MTL.	OVERHEAD DR.	SEE COVER FOR NOA
04	B	10'-0"	14'-7 1/2"	2"	MTL.	MTL.	OVERHEAD DR.	SEE COVER FOR NOA

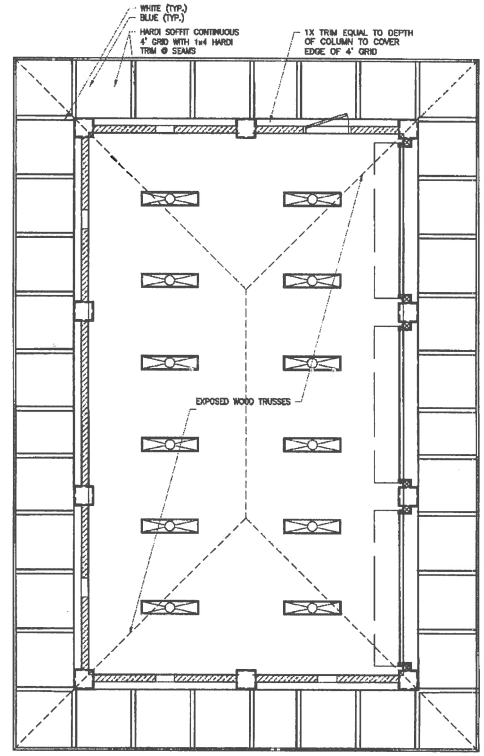


NOTES
1. CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A DETAILED PROPOSED HARDWARE SCHEDULE COMPLETE WITH CUT SHEETS FOR THE ARCHITECT'S REVIEW BEFORE PROCEEDING WITH DOORS, DOOR FRAMES AND HARDWARE ORDERS. FINAL HARDWARE SCHEDULE SHALL BE AN APPROVED HARDWARE SUPPLIER PROPOSAL.
2. ALL DISCREPANCIES SHALL BE BROUGHT TO ARCHITECT'S ATTENTION PRIOR TO ORDERING.
3. SEE NOA#'s ON COVER SHEET FOR INSTALLATION SPECIFICATIONS
4. NOA's AND MANUFACTURER'S SPECIFICATIONS SUPERCEDE ARCHITECTURAL DRAWINGS AND DETAILS.
5. ALL EXTERIOR DOOR FRAMES TO BE METAL.
6. DOOR HARDWARE PROVIDED AND INSTALLED BY CONTRACTOR, HARDWARE KEY CORE PROVIDED BY OWNER.

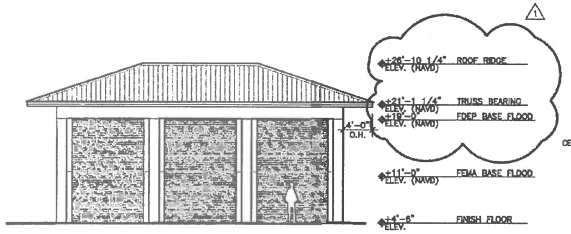
WALL LEGEND	
	TYP. EXTERIOR WALL: 16" CIP CONCRETE WALL WITH 2-COAT CEMENTITIOUS FINISH. SEE FOUNDATION PLAN FOR VERTICAL BAR REINFORCING.
	BREAK-AWAY WALL: 2X6 STUD FRAMED WALL w/ 1/2" SHEATHING, 3-COAT STUCCO FINISH

NOTES
1. ALL EXTERIOR DIMENSIONS ARE TO FACE OF CONCRETE

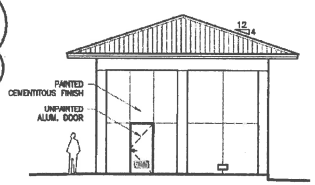
FLOOD VENT CALCULATION
960 S.F. REQUIRES 960 S.I. OF VENTING EACH "SMART VENT" = 200 S.I. = 5 VENTS



6 STORAGE BLDG. REFL. CEILING PLAN
A251 1/8" = 1'-0"

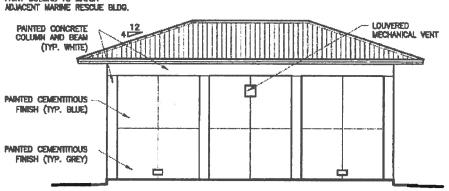


2 FRONT ELEVATION
A251 1/8" = 1'-0"

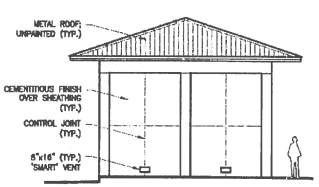


3 LEFT ELEVATION
A251 1/8" = 1'-0"

NOTE
PAINT COLORS TO MATCH ADJACENT MARINE RESCUE BLDG.



4 REAR ELEVATION
A251 1/8" = 1'-0"



5 RIGHT ELEVATION
A251 1/8" = 1'-0"

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5691
FAX (941)729-5692
WWW.UGARTEARCHITECTURE.COM
— AA-C001694 —

STORAGE FLOOR PLAN AND ELEVATIONS

MC COQUINA NORTH STORAGE BLDG

GULF DRIVE SOUTH BRADENTON BEACH, FLORIDA 34217

REVISIONS
1 10/01/15

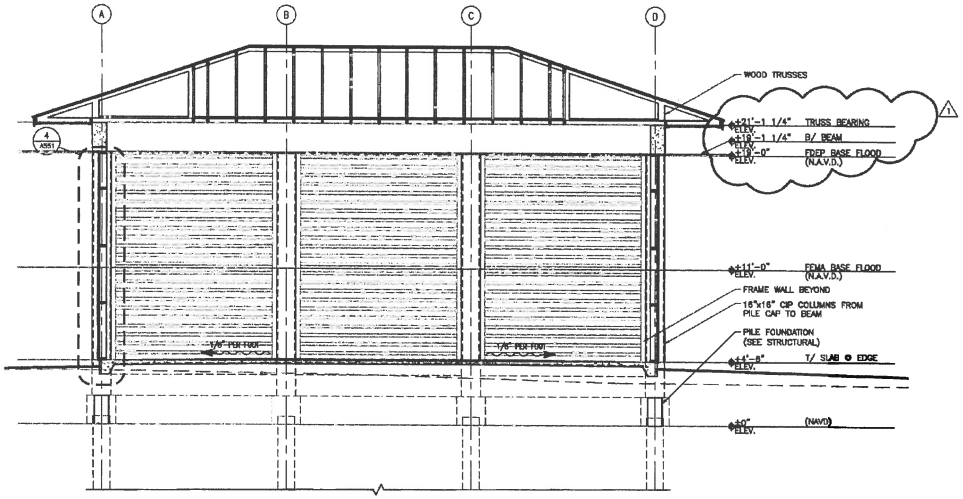
PROJECT NO: 2013-31
DATE: 04/02/15
DRAWN BY: CU/RL
CHK'D BY: CU/DB

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

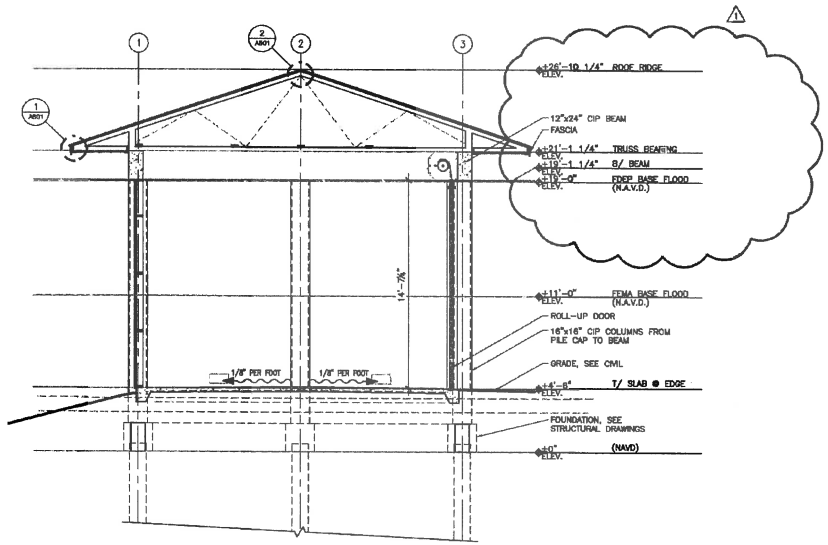
CARLOS D. UGARTE
LIC. NO. AR-0010725

SHEET
A251

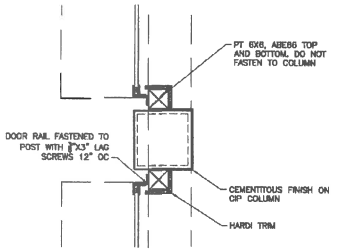
9/29/2015 10:15 AM CAD DWG FILE: A251 STORAGE FLOOR PLAN.DWG



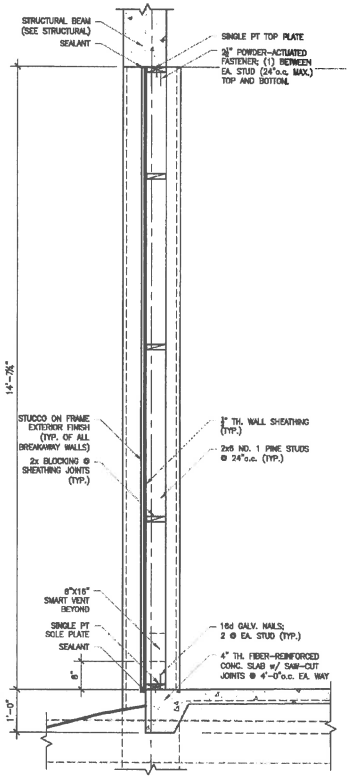
1 A551 BUILDING SECTION 1/4" = 1'-0"



2 A501 BUILDING SECTION 1/4" = 1'-0"



3 A501 ROLL DOOR PLAN DETAIL 3/4" = 1'-0"



4 A501 BREAK AWAY WALL DETAIL 3/4" = 1'-0"

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-6891
FAX (941)729-5592
WWW.UGARTEARCHITECTURE.COM
— AA-C001654 —

STORAGE BUILDING SECTIONS & DETAILS

MC COQUINA NORTH STORAGE BLDG

GULF DRIVE SOUTH BRADENTON BEACH, FLORIDA 34217

REVISIONS
1 10/01/15

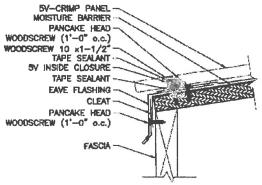
PROJECT NO: 2013-31
DATE: 04/02/15
DRAWN BY: CL/BL
CHK'D BY: CL/DB

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

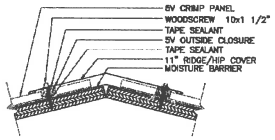
OCT 01 2015
CARLOS D. UGARTE
LIC. NO. AR-0010725

SHEET
A551

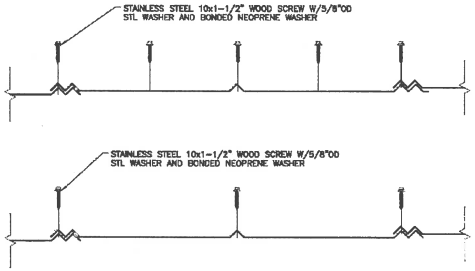
9/29/2015 10:15 AM CAD DWG FILE: A551 STORAGE BUILDING SECTIONS & DETAILS.DWG



1 A801 EAVE DETAIL
3/8" = 1'-0"

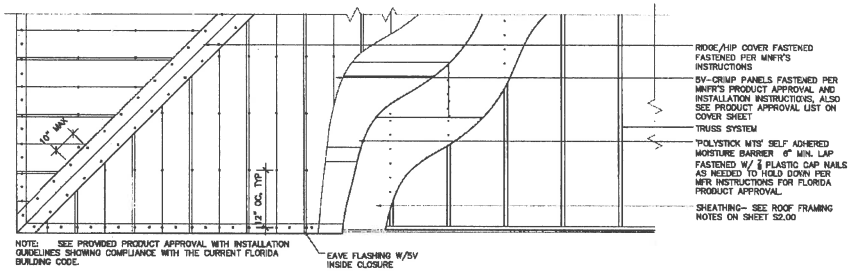


2 A801 RIDGE DETAIL
3/8" = 1'-0"



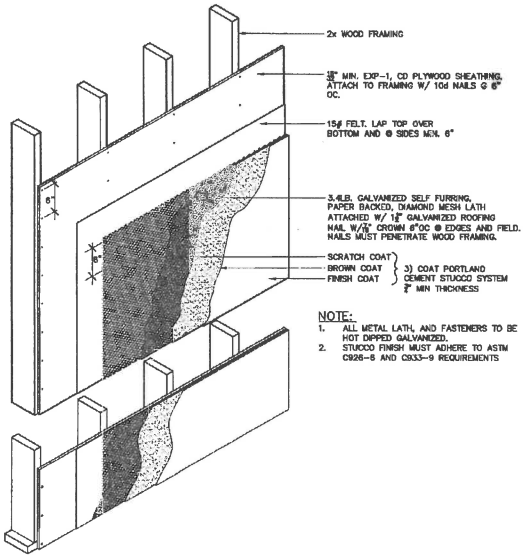
3 A801 FASTENING PATTERNS
3/8" = 1'-0"

ROOFING PANEL NOTES:
1. 5V CRIMP METAL ROOFING SYSTEM, 28GA, AS MANUFACTURED BY 'MBCL'
2. SEE COVER SHEET FOR MIAMI-DADE CO. NOA#
3. INSTALL ACCORDING TO THE PRODUCT APPROVAL.
4. DRAWINGS ARE NOT TO BE SCALED. CONTACT ARCHITECT FOR ANY DIMENSION NOT SHOWN.
5. COORDINATE COLOR WITH OWNER OR OWNERS REP.



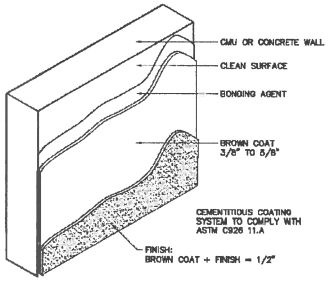
NOTE: SEE PROVIDED PRODUCT APPROVAL WITH INSTALLATION GUIDELINES SHOWING COMPLIANCE WITH THE CURRENT FLORIDA BUILDING CODE.

4 A801 ROOF PLAN DETAIL
1/8" = 1'-0"



NOTE:
1. ALL METAL LATH, AND FASTENERS TO BE HOT DIPPED GALVANIZED.
2. STUCCO FINISH MUST ADHERE TO ASTM C926-8 AND C933-9 REQUIREMENTS

5 A801 3 COAT APPLICATION OVER SHEATHING
1" = 1'-0"



6 A801 2 COAT APPLICATION OVER MASONRY
1" = 1'-0"

1 10/01/15

REVISION 1 REFERS TO THE RE-ISSUE OF THIS SET. THERE ARE NOT CHANGES TO THESE DETAILS

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5991
FAX (941)729-5002
WWW.UGARTEARCHITECTURE.COM
- AA-C001664 -

DETAILS

MC COQUINA NORTH STORAGE BLDG
GULF DRIVE SOUTH BRADENTON BEACH, FLORIDA 34217

REVISIONS
1 10/01/15

PROJECT NO. 2013-31
DATE: 04/02/15
DRAWN BY: CUBL
CHK'D BY: CU/DB

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

CARLOS D. UGARTE
LIC. NO. AR-0010725

SHEET
A801

9/29/2015 10:15 AM CAD DWG FILE: A801 DETAILS.DWG

BUILDING SPECIFICATIONS:

DIVISIONS 1 AND 2
BY OTHERS

DIVISIONS 3 AND 4 – CONCRETE AND MASONRY
BY OTHERS

DIVISION 5 – METALS

DIVISION 6 – WOOD, PLASTIC AND COMPOSITES

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY
A. SECTION INCLUDES:
1. FRAMING WITH DIMENSION LUMBER

1.2 ACTION SUBMITTALS
A. PRODUCT DATA: FOR EACH TYPE OF PROCESS AND FACTORY-FABRICATED PRODUCT, INDICATE COMPONENT MATERIALS AND DIMENSIONS AND INCLUDE CONSTRUCTION AND APPLICATION DETAILS.
1. INCLUDE DATA FOR WOOD-PRESERVATIVE TREATMENT FROM CHEMICAL TREATMENT MANUFACTURER AND CERTIFICATION BY TREATING PLANT THAT TREATED MATERIALS COMPLY WITH REQUIREMENTS. INDICATE TYPE OF PRESERVATIVE USED AND NET AMOUNT OF PRESERVATIVE RETAINED.
2. FOR PRODUCTS RECEIVING A WATERBORNE TREATMENT, INCLUDE STATEMENT THAT MOISTURE CONTENT OF TREATED MATERIALS WAS REDUCED TO LEVELS SPECIFIED BEFORE SHIPMENT TO PROJECT SITE.
3. INCLUDE COPIES OF WARRANTIES FROM CHEMICAL TREATMENT MANUFACTURERS FOR EACH TYPE OF TREATMENT.

1.3 DELIVERY, STORAGE, AND HANDLING
A. STACK LUMBER FLAT WITH SPACERS BENEATH AND BETWEEN EACH BUNDLE TO PROVIDE AIR CIRCULATION. PROTECT LUMBER FROM WEATHER BY COVERING WITH WATERPROOF SHEETING, SECURELY ANCHORED. PROVIDE FOR AIR CIRCULATION AROUND STACKS AND UNDER COVERINGS.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL
A. LUMBER: DOC PS 20 AND APPLICABLE RULES OF GRADING AGENCIES INDICATED. IF NO GRADING AGENCY IS INDICATED, PROVIDE LUMBER THAT COMPLIES WITH THE APPLICABLE RULES OF ANY RULES-WRITING AGENCY CERTIFIED BY THE ALSC BOARD OF REVIEW. PROVIDE LUMBER GRADED BY AN AGENCY CERTIFIED BY THE ALSC BOARD OF REVIEW TO INSPECT AND GRADE LUMBER UNDER THE RULES INDICATED.
1. FACTORY MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF GRADING AGENCY.
2. WHERE NOMINAL SIZES ARE INDICATED, PROVIDE ACTUAL SIZES REQUIRED BY DOC PS 20 FOR MOISTURE CONTENT SPECIFIED. WHERE ACTUAL SIZES ARE IND CATED, THEY ARE MINIMUM DRESSED SIZES FOR DRY LUMBER.
3. PROVIDE DRESSED LUMBER, S4S, UNLESS OTHERWISE INDICATED.
B. MAXIMUM MOISTURE CONTENT OF LUMBER, 19 PERCENT, UNLESS OTHERWISE IND CATED.

2.2 WOOD PRESERVATIVE-TREATED LUMBER
A. PRESERVATIVE TREATMENT BY PRESSURE PROCESS: AWPA U1; USE CATEGORY UC3. FOR INTERIOR CONSTRUCTION NOT IN CONTACT WITH THE GROUND, USE CATEGORY UC2. FOR EXTERIOR CONSTRUCTION NOT IN CONTACT WITH THE GROUND, USE CATEGORY UC4A FOR ITEMS IN CONTACT WITH THE GROUND.
1. PRESERVATIVE CHEMICALS: ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND CONTAINING NO ARSENIC OR CHROMIUM. DO NOT USE INORGANIC BORON (SBX) FOR ALL PLATES.
B. KILN-DRY LUMBER after TREATMENT TO A MAXIMUM MOISTURE CONTENT OF 19 PERCENT. DO NOT KILN-DRY MATERIAL THAT IS WARPED OR THAT DOES NOT COMPLY WITH REQUIREMENTS FOR UNTREATED MATERIAL.
C. MARK LUMBER WITH TREATMENT QUALITY MARK OF AN INSPECTION AGENCY APPROVED BY THE ALSC BOARD OF REVIEW.
D. APPLICATION: TREAT ALL ROUGH CARPENTRY UNLESS OTHERWISE INDICATED:
1. WOOD FRAMING AND FURRING ATTACHED DIRECTLY TO THE INTERIOR OF BELOW-GRADE EXTERIOR MASONRY OR CONCRETE WALLS.
2. WOOD FRAMING MEMBERS THAT ARE LESS THAN 18 INCHES ABOVE THE GROUND IN CRAWL SPACES OR UNDERCOVERED AREAS.

2.3 DIMENSION LUMBER FRAMING
A. LOAD-BEARING PARTITIONS: NO.2 GRADE.
1. APPLICATION: WALLS.
2. SPECIES:
a. SPRUCE PINE FIR (SPF/CM), NE.MA, MCLB, OR WWPA.

2.4 FASTENERS
A. GENERAL: PROVIDE FASTENERS OF SIZE AND TYPE INDICATED THAT COMPLY WITH REQUIREMENTS SPECIFIED IN THIS ARTICLE FOR MATERIAL AND MANUFACTURE.
1. WHERE INDOOR CARPENTRY IS EXPOSED TO WEATHER, IN GROUND CONTACT, IN CONTACT WITH PRESSURE-PRESERVATIVE-TREATED ELEMENTS, OR IS IN AN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH A HOT-DIPPED ZINC COATING COMPLYING WITH ASTM A 153/A 153M.
B. USE STAINLESS STEEL FASTENERS WITH STAINLESS STEEL ANCHORS.
1. NAILS, BROAD, AND STAPLES: ASTM F 1667
2. POWER-DRIVEN FASTENERS: NES NER-272
3. LAG BOLTS: ANSI/ASME B18.2.1.

2.5 METAL FRAMING ANCHORS
A. BASIS FOR DESIGN IS SIMPSON STRONG TIE.
B. ALLOWABLE DESIGN LOADS: PROVIDE PRODUCTS WITH ALLOWABLE DESIGN LOADS, AS PUBLISHED BY MANUFACTURER THAT MEET OR EXCEED THOSE INDICATED. MANUFACTURER'S PUBLISHED VALUES SHALL BE DETERMINED FROM EMPIRICAL DATA OR BY RATIONAL ENGINEERING ANALYSIS AND DEMONSTRATED BY COMPREHENSIVE TESTING PERFORMED BY A QUALIFIED INDEPENDENT TESTING AGENCY.
C. STAINLESS STEEL: TYPE 304, ASTM A 666 ASTM F1667.
1. USE FOR WOOD-PRESERVATIVE-TREATED LUMBER AND WHERE INDICATED.

2.6 MISCELLANEOUS MATERIALS
A. FLEXIBLE FLASHING: COMPOSITE, SELF-ADHESIVE, REINFORCED, COMPRISING OF A FILM OF RUBBERIZED-ASPHALT COMPOUND, BONDED TO A HIGH-DENSITY POLYETHYLENE FILM, ALUMINUM FOIL, OR SPUN-BONDED POLYOLEFIN TO PRODUCE AN OVERALL THICKNESS OF NOT LESS THAN 0.025 INCH.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL
A. FRAMING STANDARD: COMPLY WITH AFPA'S WCD 1, "DETAILS FOR CONVENTIONAL WOOD FRAME CONSTRUCTION," UNLESS OTHERWISE INDICATED.
B. METAL FRAMING ANCHORS: INSTALL METAL FRAMING ANCHORS TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. INSTALL FASTENERS THROUGH EACH FASTENER HOLE.
C. SORT AND SELECT LUMBER SO THAT NATURAL CHARACTERISTICS WILL NOT INTERFERE WITH INSTALLATION OR WITH FASTENING OTHER MATERIALS TO LUMBER. DO NOT USE MATERIALS WITH DEFECTS THAT INTERFERE WITH FUNCTION OF MEMBER OR PIECES THAT ARE TOO SMALL. TO USE WITH MINIMUM NUMBER OF JOINTS OR OPTIMUM JOINT ARRANGEMENT.
D. COMPLY WITH AWPA M4 FOR APPLYING FIELD TREATMENT TO CUT SURFACES OF PRESERVATIVE-TREATED LUMBER.
1. USE INORGANIC BORON FOR ITEMS THAT ARE CONTINUOUSLY PROTECTED FROM LIQUID WATER.
2. USE COPPER NAPHTHENATE FOR ITEMS NOT CONTINUOUSLY PROTECTED FROM LIQUID WATER.
E. SECURELY ATTACH ROUGH CARPENTRY WORK TO SUBSTRATE BY ANCHORING AND FASTENING AS INDICATED, COMPLYING WITH THE FOLLOWING:
1. NES NER-272 FOR POWER-DRIVEN FASTENERS.
2. TABLE 2304.9.1, "FASTENING SCHEDULE," IN ICC INTERNATIONAL BUILDING CODE.
3. TABLE R602.3(1), "FASTENER SCHEDULE FOR STRUCTURAL MEMBERS," AND TABLE R602.3(2), "ALTERNATE ATTACHMENTS," IN ICC INTERNATIONAL RESIDENTIAL CODE FOR ONE- AND TWO-FAMILY DWELLINGS.
F. USE WIRE, COMMON NAILS UNLESS OTHERWISE INDICATED. SELECT FASTENERS OF TYPE THAT WILL NOT PULL PENETRATE MEMBERS WHERE APPROPRIATE AND WILL BE REQUIRED TO VENEER WILL BE OF PIN SIZE MATERIALS. MAKE THREAD CONNECTIONS BETWEEN MEMBERS. INSTALL FASTENERS WITHOUT SPLITTING WOOD. DRIVE NAILS FLUSH BUT DO NOT COUNTERSINK NAIL HEADS, UNLESS OTHERWISE INDICATED.

3.2 WALL AND PARTITION FRAMING INSTALLATION
A. GENERAL: PROVIDE SINGLE BOTTOM PLATE AND DOUBLE TOP PLATES USING MEMBERS OF 2 INCH NOMINAL THICKNESS WHOSE WIDTHS EQUAL THAT OF STUDS. EXCEPTION: SINGLE TOP PLATE MAY BE USED FOR NON-LOAD-BEARING PARTITIONS. FASTEN PLATES TO SUPPORTING CONSTRUCTION, UNLESS OTHERWISE INDICATED.
1. FOR EXTERIOR BREAKAWAY WALLS, PROVIDE 2-BY INCH NOMINAL SIZE WOOD STUDS SPACED 24 INCHES ON CENTER, UNLESS OTHERWISE INDICATED. PROVIDE STRAIGHT, DRY NO.1 PT PINE

3.3 PROTECTION
A. PROTECT WOOD THAT HAS BEEN TREATED WITH INORGANIC BORON (SBX) FROM WEATHER. IF, DESPITE PROTECTION, INORGANIC BORON-TREATED WOOD BECOMES WET, APPLY EPA-REGISTERED BORATE TREATMENT. APPLY BORATE SOLUTION BY SPRAYING TO COMPLY WITH EPA-REGISTERED LABEL.
B. PROTECT ROUGH CARPENTRY FROM WEATHER. IF, DESPITE PROTECTION, ROUGH CARPENTRY BECOMES WET, APPLY EPA-REGISTERED BORATE TREATMENT. APPLY BORATE SOLUTION BY SPRAYING TO COMPLY WITH EPA-REGISTERED LABEL.

END OF SECTION 06 10 00

SECTION 06 17 53 - OPEN-WEB FOREST-GRADE WOOD TRUSSES

PART 1 - GENERAL

1.1 SUMMARY
A. SECTION INCLUDES:
1. WOOD ROOF TRUSSES.
2. METAL TRUSS ACCESSORIES.

1.2 ACTION SUBMITTALS
A. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION DETAILS FOR TRUSSES.
1. SHOW LOCATION, PITCH, SPAN, CAMBER, CONFIGURATION, AND SPACING FOR EACH TYPE OF TRUSS REQUIRED.
2. INDICATE SIZES, STRESS GRADES, AND SPECIES OF LUMBER.
3. INDICATE LOCATIONS OF PERMANENT BRACING REQUIRED TO PREVENT BUCKLING OF INDIVIDUAL TRUSS MEMBERS DUE TO DESIGN LOADS.
4. INDICATE LOCATIONS, SIZES, AND MATERIALS FOR PERMANENT BRACING REQUIRED TO PREVENT BUCKLING OF INDIVIDUAL TRUSS MEMBERS DUE TO DESIGN LOADS.
5. INDICATE TYPE, SIZE, MATERIAL, FINISH, DESIGN VALUES, ORIENTATION, AND LOCATION OF METAL CONNECTOR PLATES.
B. DELEGATED-DESIGN SUBMITTAL: FOR METAL-PLATE-CONNECTED WOOD TRUSSES INDICATED TO COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA, INCLUDING AND WITH DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

1.3 DELIVERY, STORAGE, AND HANDLING
A. HANDLE AND STORE TRUSSES TO COMPLY WITH RECOMMENDATIONS IN TPI 1, "BCSI: BUILDING COMPONENT SAFETY INFORMATION: GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING, & BRACING METAL PLATE CONNECTED WOOD TRUSSES."
1. STORE TRUSSES FLAT, OFF OF GROUND, AND ADEQUATELY SUPPORTED TO PREVENT LATERAL BENDING.
2. PROTECT TRUSSES FROM WEATHER BY COVERING WITH WATERPROOF SHEETING, SECURELY ANCHORED.
3. PROVIDE FOR AIR CIRCULATION AROUND STACKS AND UNDER COVERINGS.
B. INSPECT TRUSSES SHOWING DISCOLORATION, CORROSION, OR OTHER EVIDENCE OF DETERIORATION. DISCARD AND REPLACE TRUSSES THAT ARE DAMAGED OR DEFECTIVE.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. DEFINED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER, AS DEFINED IN DIVISION 01 SECTION "QUALITY REQUIREMENTS," TO DESIGN METAL-PLATE-CONNECTED WOOD TRUSSES.
B. STRUCTURAL PERFORMANCE: PROVIDE METAL-PLATE-CONNECTED WOOD TRUSSES CAPABLE OF WITHSTANDING DESIGN LOADS WITHIN LIMITS AND UNDER CONDITIONS INDICATED. COMPLY WITH REQUIREMENTS IN TPI 1, UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED BELOW.
1. DESIGN LOADS, AS INDICATED.
2. MAXIMUM DEFLECTION UNDER DESIGN LOADS:
a. ROOF TRUSSES: VERTICAL DEFLECTION OF 1/360 OF SPAN.
C. COMPLY WITH APPLICABLE REQUIREMENTS AND RECOMMENDATIONS OF THE FOLLOWING PUBLICATIONS:
1. TPI 1, "NATIONAL DESIGN STANDARDS FOR METAL PLATE CONNECTED WOOD TRUSS CONSTRUCTION."
2. TPI DSB, "RECOMMENDED DESIGN SPECIFICATION FOR TEMPORARY BRACING OF METAL PLATE CONNECTED WOOD TRUSSES."
3. TPI BCSI, "BUILDING COMPONENT SAFETY INFORMATION: GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING, RESTRAINING, & BRACING METAL PLATE CONNECTED WOOD TRUSSES."
D. WOOD STRUCTURAL DESIGN STANDARD: COMPLY WITH APPLICABLE REQUIREMENTS IN AF&PA "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION AND ITS "SUPPLEMENT."

2.2 DIMENSION LUMBER
A. LUMBER: DOC PS 20 AND APPLICABLE RULES OF GRADING AGENCIES IND CATED. IF NO GRADING AGENCY IS INDICATED, PROVIDE LUMBER THAT COMPLIES WITH THE APPLICABLE RULES OF ANY RULES-WRITING AGENCY CERTIFIED BY THE ALSC BOARD OF REVIEW. PROVIDE LUMBER GRADED BY AN AGENCY CERTIFIED BY THE ALSC BOARD OF REVIEW TO INSPECT AND GRADE LUMBER UNDER THE RULES INDICATED.
1. FACTORY MARK EACH PIECE OF LUMBER WITH GRADE STAMP OF GRADING AGENCY.
2. FOR EXPOSED LUMBER IND CATED TO RECEIVE A STAINED OR NATURAL FINISH, GRADE STAMP OFFGRADES AND PROVIDE CERTIFICATES OF GRADE COMPLIANCE ISSUED BY GRADING AGENCY.
3. PROVIDE DRESSED LUMBER, S4S.
4. PROVIDE DRY LUMBER WITH 19 PERCENT MAXIMUM MOISTURE CONTENT AT TIME OF DRESSING.
B. MINIMUM GRADE SIZE FOR ROOF TRUSSES: 2 BY 6 INCHES NOMINAL FOR BOTH TOP AND BOTTOM CHORDS.
C. PERMANENT BRACING: PROVIDE WOOD BRACING THAT COMPLIES WITH REQUIREMENTS FOR MISCELLANEOUS LUMBER IN DIVISION 06, SECTION "ROUGH CARPENTRY."

2.3 METAL CONNECTOR PLATES
A. SOURCE LIMITATIONS: OBTAIN METAL CONNECTOR PLATES FROM SINGLE MANUFACTURER.
B. GENERAL: FABRICATE CONNECTOR PLATES TO COMPLY WITH TPI 1.
C. HOT-DIP GALVANIZED-STEEL SHEET: ASTM A 653/A 653M, STRUCTURAL STEEL (SS), HIGH-STRENGTH LOW-ALLOY STEEL TYPE II (HSLAS TYPE A), OR HIGH-STRENGTH LOW-ALLOY STEEL TYPE II (HSLAS TYPE B), G185 ASTM B 6, G185 COATING DESIGNATION, AND NOT LESS THAN 0.036 INCH THICK.
1. USE FOR WOOD PRESERVATIVE TREATED LUMBER AND WHERE INDICATED.

2.4 FASTENERS
A. GENERAL: PROVIDE FASTENERS OF SIZE AND TYPE INDICATED THAT COMPLY WITH REQUIREMENTS SPECIFIED IN THIS ARTICLE FOR MATERIAL AND MANUFACTURE.
1. PROVIDE FASTENERS FOR USE WITH METAL FRAMING ANCHORS THAT COMPLY WITH WRITTEN RECOMMENDATIONS OF METAL FRAMING MANUFACTURER.
2. WHERE TRUSSES ARE EXPOSED TO WEATHER, IN GROUND CONTACT, MADE FROM PRESSURE-PRESERVATIVE TREATED WOOD, OR IN AREA OF HIGH RELATIVE HUMIDITY, PROVIDE FASTENERS WITH HOT-DIP ZINC COATING COMPLYING WITH ASTM A 153/A 153M.
B. NAILS, BROAD, AND STAPLES: ASTM F 1667

2.5 METAL FRAMING ANCHORS AND ACCESSORIES
A. ALLOWABLE DESIGN LOADS: PROVIDE PRODUCTS WITH ALLOWABLE DESIGN LOADS, AS PUBLISHED BY MANUFACTURERS THAT MEET OR EXCEED THOSE INDICATED. MANUFACTURER'S PUBLISHED VALUES SHALL BE DETERMINED FROM EMPIRICAL DATA OR BY RATIONAL ENGINEERING ANALYSIS AND DEMONSTRATED BY COMPREHENSIVE TESTING PERFORMED BY A QUALIFIED INDEPENDENT TESTING AGENCY.
B. HOT-DIP GALVANIZED STEEL SHEET: ASTM A 653/A 653M, STRUCTURAL (SS), HIGH-STRENGTH LOW-ALLOY STEEL TYPE II (HSLAS TYPE A), OR HIGH STRENGTH LOW-ALLOY STEEL TYPE II (HSLAS TYPE B); G 185 COATING DESIGNATION, AND NOT LESS THAN 0.036 INCH THICK.
1. USE FOR WOOD PRESERVATIVE TREATED LUMBER AND WHERE INDICATED.

2.6 MISCELLANEOUS MATERIALS
A. GALVANIZED REPAIR PAINT: SSPC-PAINT 20, WITH DRY FILM CONTAINING A MINIMUM OF 94 PERCENT ZINC DUST BY WEIGHT.

2.7 FABRICATION
A. CUT TRUSS MEMBERS TO ACCURATE LENGTHS, ANGLES AND SIZES TO PRODUCE CLOSE FITTING JOINTS.
B. FABRICATE METAL CONNECTOR PLATES TO SIZES, CONFIGURATIONS, THICKNESS, AND ANCHORING DETAILS REQUIRED TO WITHSTAND DESIGN LOADS FOR TYPES OF JOINT DESIGNS INDICATED.
C. ASSEMBLE TRUSS MEMBERS IN DESIGN CONFIGURATION INDICATED; USE JIGS OR OTHER MEANS TO ENSURE UNIFORMITY AND ACCURACY OF ASSEMBLY WITH JOINTS CLOSELY FITTED TO COMPLY WITH TOLERANCES IN TPI 1. FOR TRUSS MEMBERS TO PRODUCE DESIGN CAMBER INDICATED:
1. FABRICATE WOOD TRUSSES WITH MANUFACTURING TOLERANCES IN TPI 1.

PART 3 - EXECUTION

3.1 INSTALLATION
A. INSTALL WOOD TRUSSES ONLY AFTER SUPPORTING CONSTRUCTION IS IN PLACE AND IS BRACED AND ANCHORED.
B. IF TRUSSES ARE DELIVERED TO PROJECT SITE IN MORE THAN ONE PIECE, ASSEMBLE TRUSSES BEFORE INSTALLING.
C. HOIST TRUSSES IN PLACE BY LIFTING EQUIPMENT SUITED TO SIZES AND TYPES OF TRUSSES REQUIRED, EXERCISING CARE NOT TO DAMAGE TRUSS MEMBERS OR JOINTS BY OUT-OF-PLANE BENDING OR OTHER CAUSES.
D. INSTALL AND BRACE TRUSSES ACCORDING TO TPI RECOMMENDATIONS AND AS INDICATED.
E. INSTALL TRUSSES PLUMB, SQUARE AND TRUE TO LINE AND SECURELY FASTEN TO SUPPORTING CONSTRUCTION.
F. BRACE TRUSSES AS INDICATED. ADJUST AND ALIGN TRUSSES IN LOCATION BEFORE PERMANENTLY FASTENING.
G. ANCHOR TRUSSES SECURELY AT BEARING POINTS. USE METAL TRUSS TIE-DOWNS OR FLOOR TRUSS HANGERS AS APPLICABLE. INSTALL FASTENERS THROUGH EACH FASTENER HOLE IN METAL FRAMING ANCHORS ACCORDING TO MANUFACTURER'S FASTENING SCHEDULES AND WRITTEN INSTRUCTIONS.
H. ARCHITECT CONNECT EACH TRUSS PLY REQUIRED FOR FORMING BUILT-UP GIRDER TRUSSES.
I. INSTALL AND FASTEN PERMANENT BRACING DURING TRUSS ERECTION AND BEFORE CONSTRUCTION LOADS ARE APPLIED, AND FOR ENDS OF PERMANENT BRACING WHEN TERMINATING ALL WALL OR BEAMS.
1. INSTALL BRACING TO COMPLY WITH DIVISION 06 SECTION "ROUGH CARPENTRY".
J. INSTALL WOOD TRUSSES WITH INSTALLATION TOLERANCES IN TPI 1.
K. DO NOT ALTER TRUSS MEMBERS OR PLATES. DO NOT CUT, DRILL, NOTCH, OR REMOVE TRUSS MEMBERS.
L. REPLACE WOOD TRUSSES THAT ARE DAMAGED OR DO NOT MEET REQUIREMENTS.
1. DAMAGED TRUSSES MAY BE REPAIRED ACCORDING TO TRUSS REPAIR DETAILS SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR TRUSS DESIGN, WHEN APPROVED BY ARCHITECT.

3.2 REPAIRS AND PROTECTION
A. PROTECT WOOD THAT HAS BEEN TREATED WITH INORGANIC BORON (SBX) FROM WEATHER. IF, DESPITE PROTECTION, INORGANIC BORON-TREATED WOOD BECOMES WET, APPLY EPA-REGISTERED BORATE TREATMENT. APPLY BORATE SOLUTION BY SPRAYING TO COMPLY WITH EPA REGISTERED LABEL.
B. PROTECT WOOD TRUSSES FROM WEATHER. IF, DESPITE PROTECTION, WOOD TRUSSES BECOME WET, EPA REGISTERED BORATE TREATMENT. APPLY BORATE SOLUTION BY SPRAYING TO COMPLY WITH EPA REGISTERED LABEL.
C. REPAIR DAMAGED GALVANIZED COATINGS ON EXPOSED SURFACES WITH GALVANTEK REPAIR PAINT ACCORDING TO ASTM A 780 AND MANUFACTURER'S WRITTEN INSTRUCTION.
D. DAMAGED TRUSSES MAY BE REPAIRED ACCORDING TO TRUSS REPAIR DETAILS SIGNED AND SEALED BY

END OF SECTION 06 17 53

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SECTION 07 41 13 - METAL ROOF PANELS

PART 1 - GENERAL

1.1 SECTION INCLUDES
A. RV CRIMP EXPOSED FASTENER METAL ROOF PANELS, WITH RELATED METAL TRIM AND ACCESSORIES.

1.2 REFERENCES
A. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA): WWW.AAMANET.ORG:
1. AAMA 621 - VOLUNTARY SPECIFICATIONS FOR HIGH PERFORMANCE ORGANIC COATINGS ON COIL COATED ARCHITECTURAL HOT DIPPED GALVANIZED (HDG) & 2 NO-ALUMINUM COATED STEEL SUBSTRATES.
2. AAMA 808.3 - VOLUNTARY SPECIFICATION NON-CURING SEALANTS.
B. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE): WWW.ASCE.ORG/CODE-STANDARDS/:
1. ASCE 7 - MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
C. ASTM INTERNATIONAL (ASTM): WWW.ASTM.ORG:
1. ASTM A 792/A 792M - STANDARD SPECIFICATION FOR STEEL SHEET, 55 % ALUMINUM-ZINC ALLOY-COATED BY THE HOT-DIP PROCESS.
2. ASTM C 645 - SPECIFICATION FOR NONSTRUCTURAL STEEL FRAMING MEMBERS.
3. ASTM C 920 - SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS.
4. ASTM D 2244 - TEST METHOD FOR CALCULATION OF COLOR DIFFERENCES FROM INSTRUMENTALLY.
D. UNDERWRITERS LABORATORIES, INC. (UL): WWW.UL.COM:
1. UL 580 - TESTS FOR UPLIFT RESISTANCE OF ROOF ASSEMBLIES

1.3 ADMINISTRATIVE REQUIREMENTS
A. PRE-INSTALLATION MEETING: PRIOR TO INSTALLATION OF FRAMING, CONDUCT PRE-INSTALLATION MEETING AT SITE ATTENDED BY OWNER, ARCHITECT, MANUFACTURER'S TECHNICAL REPRESENTATIVE, INSPECTION AGENCY AND RELATED TRADE CONTRACTORS.
1. COORDINATE BUILDING FRAMING IN RELATION TO METAL PANEL SYSTEM.
2. COORDINATE OPENINGS AND PENETRATIONS OF METAL PANEL SYSTEM.
3. COORDINATE WORK OF DIVISION 07 SECTIONS "ROOF SPECIALTIES" AND "ROOF ACCESSORIES" AND PROVIDE SECTIONS OF GRADE COMPLIANCE ISSUED BY GRADING AGENCY.
4. PROVIDE DRESSED LUMBER, S4S.
5. PROVIDE DRY LUMBER WITH 19 PERCENT MAXIMUM MOISTURE CONTENT AT TIME OF DRESSING.
B. MINIMUM GRADE SIZE FOR ROOF TRUSSES: 2 BY 6 INCHES NOMINAL FOR BOTH TOP AND BOTTOM CHORDS.
C. PERMANENT BRACING: PROVIDE WOOD BRACING THAT COMPLIES WITH REQUIREMENTS FOR MISCELLANEOUS LUMBER IN DIVISION 06, SECTION "ROUGH CARPENTRY."

1.4 QUALITY ASSURANCE
A. MANUFACTURER/SOURCE: PROVIDE METAL ROOF PANEL, ASSEMBLY AND ACCESSORIES FROM A SINGLE MANUFACTURER PROVIDING FIXED BASE ROLL FORMING AND ADDRESSED UNDER ASC AC 472 PART B.
B. MANUFACTURER QUALIFICATIONS: APPROVED MANUFACTURER LISTED IN THIS SECTION WITH MINIMUM FIVE YEARS EXPERIENCE IN MANUFACTURE OF SIMILAR PRODUCTS IN SUCCESSFUL USE IN SIMILAR APPLICATIONS.
C. APPROVAL OF COMPARABLE PRODUCTS: SUBMIT TO ENGINEER IN ACCORDANCE WITH PROJECT SUBSTITUTION REQUIREMENTS, WITHIN TIME ALLOWED FOR SUBMITTION APPROVAL:
a. PRODUCT DATA, INCLUDING CERTIFIED INDEPENDENT TEST DATA INDICATING COMPLIANCE WITH REQUIREMENTS.
b. SAMPLES OF EACH COMPONENT.
c. SAMPLE SUBMITTAL FROM SIMILAR PROJECT.
d. SAMPLE WARRANTY.
e. IAS AC 472 CERTIFICATE.
2. APPROVED MANUFACTURERS MUST MEET SEPARATE REQUIREMENTS OF SUBMITTALS ARTICLE.
C. INSTALLER QUALIFICATIONS: EXPERIENCED INSTALLER WITH MINIMUM OF FIVE YEARS EXPERIENCE WITH SUCCESSFULLY COMPLETED PROJECTS OF A SIMILAR NATURE AND SCOPE.
1. INSTALLER'S FIELD SUPERVISOR: EXPERIENCED MECHANIC, ABLE TO COMMUNICATE WITH OWNER, ARCHITECT, AND INSTALLERS, SUPERVISING WORK ON SITE WHENEVER WORK IS UNDERWAY.

1.5 ACTION SUBMITTALS
A. PRODUCT DATA: MANUFACTURER'S DATA & SHEETS FOR SPECIFIED PRODUCTS.
B. SHOP DRAWINGS: SHOW LAYOUT OF METAL PANELS. INCLUDE DETAILS OF EACH CONDITION OF INSTALLATION, PANEL PROFILES, AND ATTACHMENT TO BUILDING. PROVIDE DETAILS OF EDGE CONDITIONS, JOINTS, FASTENER AND SEALANT PLACEMENT, FLASHING, OPENINGS, PENETRATIONS, ROOF ACCESSORIES, LIGHTNING ARRESTING EQUIPMENT, AND SPECIAL DETAILS. MAKE DISTINCTIONS BETWEEN FACTORY AND FIELD ASSEMBLED WORK.
1. INDICATE POINTS OF SUPPORTING STRUCTURE THAT MUST COORDINATE WITH METAL PANEL SYSTEM INSTALLATION.
2. INCLUDE DATA INDICATING COMPLIANCE WITH PERFORMANCE REQUIREMENTS.
C. SAMPLES FOR INITIAL SELECTION: FOR EACH EXPOSED PRODUCT SPECIFIED INCLUDING SEALANTS. PROVIDE REPRESENTATIVE COLOR CHARTS OF MANUFACTURER'S FULL RANGE OF COLORS.
D. SAMPLES FOR VERIFICATION: PROVIDE 12-INCH-LONG SECTION OF EACH METAL PANEL PROFILE. PROVIDE COLOR CHIP VERIFYING COLOR SELECTION.

1.6 INFORMATIONAL SUBMITTALS
A. PRODUCT TEST REPORTS: INDICATING COMPLIANCE OF PRODUCTS WITH REQUIREMENTS, WITNESSED BY A PROFESSIONAL ENGINEER.
B. QUALIFICATION INFORMATION: FOR INSTALLER'S FIELD SUPERVISOR.
C. IAS ACCREDITATION CERTIFICATE: INDICATING THAT MANUFACTURER IS ACCREDITED UNDER PROVISIONS OF IAS AC 472.
D. FLORIDA PRODUCT APPROVAL.
E. MANUFACTURER'S WARRANTY: SAMPLE COPY OF MANUFACTURER'S STANDARD WARRANTY.

1.7 CLOSEOUT SUBMITTALS
A. MAINTENANCE DATA.
B. MANUFACTURER'S WARRANTY: EXECUTED COPY OF MANUFACTURER'S STANDARD WARRANTY.

1.8 DELIVERY, STORAGE, AND HANDLING
A. PROTECT PRODUCTS OF METAL PANEL SYSTEM DURING SHIPPING, HANDLING, AND STORAGE TO PREVENT STAINING, DENTING, DETERIORATION OF COMPONENTS OR OTHER DAMAGE. PROTECT PANELS AND TRIM BUNDLES DURING SHIPPING.
1. DELIVER, UNLOAD, STORE, AND ERECT METAL PANEL SYSTEM AND ACCESSORY ITEMS WITHOUT MISSHAPING PANELS OR EXPOSING PANELS TO SURFACE DAMAGE FROM WEATHER OR CONSTRUCTION OPERATIONS.
2. STORE IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. PROVIDE WOOD COLLARS FOR STACKING AND HANDLING IN THE FIELD.

1.9 COORDINATION
A. COORDINATE SIZES, PROFILES, AND LOCATIONS OF ROOF CURBS AND OTHER ROOF MOUNTED EQUIPMENT AND ROOF PENETRATIONS, BASED UPON SIZES OF ACTUAL SELECTED EQUIPMENT.

1.10 WARRANTY
A. SPECIAL MANUFACTURER'S WARRANTY: ON MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE METAL PANELS, ASSEMBLIES THAT FAIL WITHIN 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PART 2 - PRODUCTS

2.1 MANUFACTURER
A. BASIS OF DESIGN MANUFACTURER: S-5! METAL ROOF AND WALL SYSTEMS, DIVISION OF NCI GROUP, INC.; HOUSTON TX. TEL: (877)715-8724, EMAIL: INFO@NCI.COM, WEB: WWW.NCI-BC.COM.
1. PROVIDE BASIS OF DESIGN PRODUCT, OR COMPARABLE PRODUCT APPROVED BY ARCHITECT PRIOR TO BID.

2.2 PERFORMANCE REQUIREMENTS
A. GENERAL: PROVIDE METAL ROOF PANEL SYSTEM MEETING PERFORMANCE REQUIREMENTS AS DETERMINED BY APPLICATION OF SPECIFIED TESTS BY A QUALIFIED TESTING FACILITY OR MANUFACTURER'S STANDARD ASSEMBLIES.
B. THERMAL MOVEMENTS: ALLOW FOR THERMAL MOVEMENTS FROM VARIATIONS IN BOTH AMBIENT AND INTERNAL TEMPERATURES. ACCOMMODATE MOVEMENT OF SUPPORT STRUCTURE CAUSED BY THERMAL EXPANSION AND CONTRACTION. ALLOW FOR DEFLECTION AND DEFORM FOR THERMAL STRESSES CAUSED BY TEMPERATURE DIFFERENCES FROM ONE SIDE OF THE PANEL TO THE OTHER.
C. STRUCTURAL PERFORMANCE: PROVIDE METAL PANEL ASSEMBLIES CAPABLE OF WITHSTANDING THE EFFECTS OF INDICATED LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED.
1. WIND LOADS: PER THE CRITERIA LISTED IN THE PROFESSIONAL ENGINEER PROVIDED SEALED STRUCTURAL CALCULATIONS.
D. FLORIDA STATE BUILDING CODE COMPLIANCE: COMPLY WITH REQUIREMENTS OF FLORIDA STATE BUILDING CODE: WWW.FLORIDABUILDING.ORG/PUBS.APP.-BROCHURE.
E. WATER PENETRATION: ASTM E 331: NO UNCONTROLLED WATER PENETRATION AT A STATIC PRESSURE OF 15.46 LBS/SQ. FT. (738 PA)

2.3 METAL PANEL MATERIALS
A. ALUMINUM-ZINC ALLOY-COATED STEEL SHEET: ASTM A 792/A 792M, STRUCTURAL QUALITY, GRADE 50, COATING CLASS AZ55 (GRADE 340), COATING CLASS AZM150 (UNPAINTED GALVALUME PLUS COATING).

2.4 METAL ROOF PANELS
1. SV CRIMP
2. NOMINAL COATED THICKNESS: 0.032 INCH (18 GAGE) (0.94

SECTION 07 46 00 - FIBER CEMENT PRODUCTS

PART 1 - GENERAL

1.1 SECTION INCLUDES:
A. FIBER CEMENT SOFFIT PANELS, FASCIA, MOLDINGS AND ACCESSORIES.

1.2 SUBMITTALS
A. PRODUCT DATA: MANUFACTURS DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:
1. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS
3. INSTALLATION METHODS.
B. SELECT ON SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO COMPLETE SETS OF COLOR CHIPS REPRESENTING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS.
C. VERIFICATION SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO SAMPLES, MINIMUM SIZE 4 BY 8 INCHES (100 BY 150 MM), REPRESENTING ACTUAL PRODUCT, COLOR, AND PATTERNS.

1.3 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: MINIMUM OF 2 YEARS EXPERIENCE WITH INSTALLATION OF SIMILAR PRODUCTS.
B. MOCK-UP: PROVIDE A MOCK-UP FOR EVALUATION OF SURFACE PREPARATION TECHNIQUES AND APPLICATION WORKMANSHIP.
1. FINISH AREAS DESIGNATED BY ARCHITECT.
2. DO NOT PROCEED WITH REMAINING WORK UNTIL WORKMANSHIP, COLOR, AND SHEEN ARE APPROVED BY ARCHITECT
3. REFINISH MOCK-UP AREA AS REQUIRED TO PRODUCE ACCEPTABLE WORK

1.4 DELIVERY, STORAGE, AND HANDLING
A. STORE PRODUCTS IN MANUFACTURERS UNOPENED PACKAGING UNTIL READY FOR INSTALLATION
B. STORE SIDING ON EDGE ON LEVEL FLAT, ON A SMOOTH LEVEL SURFACE. PROTECT EDGES AND CORNERS FROM CHIPPING. STORE SHEETS UNDER COVER AND KEEP DRY PRIOR TO INSTALLING.
C. STORE AND DISPOSE OF SOLVENT-BASED MATERIALS, AND MATERIALS USED WITH SOLVENT-BASED MATERIALS, IN ACCORDANCE WITH REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION.

1.5 PROJECT CONDITIONS
A. MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN LIMITS RECOMMENDED BY MANUFACTURER FOR OPTIMUM RESULTS. DO NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE MANUFACTURER'S ABSOLUTE LIMITS.

1.6 WARRANTY
A. PRODUCT WARRANTY: LIMITED PRODUCT WARRANTY AGAINST MANUFACTURING DEFECTS.
1. HARDIEPLANK LAP AND HARDIEPANEL VERTICAL SIDING FOR 50 YEARS.
2. HARDIETRIM FOR 10 YEARS.
B. FINISH WARRANTY: LIMITED PRODUCT WARRANTY AGAINST MANUFACTURING FINISH DEFECTS
1. WHEN USED FOR ITS INTENDED PURPOSE, PROPERLY INSTALLED AND MAINTAINED ACCORDING TO HARDIE'S PUBLISHED INSTALLATION INSTRUCTIONS, JAMES HARDIE'S COLORPLUS FINISH WITH COLORPLUS TECHNOLOGY, FOR A PERIOD OF 15 YEARS FROM THE DATE OF PURCHASE, WILL NOT PEEL, WILL NOT CRACK, AND WILL NOT CHIP.
C. WORKMANSHIP WARRANTY: APPLICATION LIMITED WARRANTY FOR 2 YEARS.

PART 2 - PRODUCTS

2.1 MANUFACTURING
A. ACCEPTABLE MANUFACTURER: JAMES HARDIE BUILDING PRODUCTS INC; 26300 LA ALAMEDA, SUITE 230, MISSION VIEJO, CA 92691. AKA: TOLL FREE: (866) JAMHARDI; TOLL FREE COMMERCIAL: (866) 274-3484; TEL: (949) 348-1800; FAX: (949) 367-0185; EMAIL: INFO@JAMESHARDIE.COM; WEB - RESIDENTIAL: HTTP://WWW.JAMESHARDIE.COM; HTTP://WWW.JAMESHARDIECOMMERCIAL.COM

2.2 FINISHES
A. FACTORY PRIMER: PROVIDE FACTORY APPLIED UNIVERSAL PRIMER.

PART 3 - EXECUTION

3.1 EXAMINATION
A. DO NOT BEGIN INSTALLATION UNTIL SUBSTRATES HAVE BEEN PROPERLY PREPARED
B. IF FRAMING PREPARATION IS THE RESPONSIBILITY OF ANOTHER INSTALLER, NOTIFY ARCHITECT OF UNSATISFACTORY PREPARATION BEFORE PROCEEDING.
C. NOMINAL 2 INCH BY 4 INCH (51 MM BY 102 MM) WOOD FRAMING SELECTED FOR MINIMAL SHRINKAGE AND COMPLYING WITH LOCAL BUILDING CODES. MINIMUM 1-1/2 INCHES (38 MM) FACE AND STRAIGHT, TRUE, OF UNIFORM DIMENSIONS AND PROPERLY ALIGNED.
1. PROTECT SIDING FROM OTHER TRADES.

3.2 PREPARATION
A. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION.
B. PREPARE SURFACES USING THE METHODS RECOMMENDED BY THE MANUFACTURER FOR ACHIEVING THE BEST RESULT FOR THE SUBSTRATE UNDER THE PROJECT CONDITIONS.

END OF SECTION 07 46 00

SECTION 07920 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY
A. SECTION INCLUDES:
1. SILICONE JOINT SEALANTS.
2. LATEX JOINT SEALANTS.

1.2 QUALITY ASSURANCE
A. INSTALLER QUALIFICATIONS: MANUFACTURER'S AUTHORIZED REPRESENTATIVE WHO IS TRAINED AND APPROVED FOR INSTALLATION OF UNITS REQUIRED FOR THIS PROJECT.
B. SOURCE LIMITATIONS: OBTAIN EACH KIND OF JOINT SEALANT FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL
A. COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH EACH OTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY JOINT SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
B. LIQUID-APPLIED JOINT SEALANTS: COMPLY WITH ASTM C 920 AND OTHER REQUIREMENTS INDICATED FOR EACH LIQUID-APPLIED JOINT SEALANT SPECIFIED, INCLUDING THOSE REFERENCING ASTM C 920 CLASSIFICATIONS FOR TYPE, GRADE, CLASS, AND USES RELATED TO EXPOSURE AND JOINT SUBSTRATES.
C. COLOR OF EXPOSED JOINT SEALANTS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

2.2 SILICONE JOINT SEALANTS
A. MILDEW-RESISTANT, SINGLE-COMPONENT, ACID-CURING SILICONE JOINT SEALANT; ASTM C 920, TYPE S, GRADE NS, CLASS 25, FOR USE NT.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. BASF BUILDING SYSTEMS; OSIN PLUS.
b. DOW CORNING CORPORATION; 786 MILDEWRESISTANT.
c. GE ADVANCED MATERIALS; SILICONES; SANITARY SCS1700
d. MAY NATIONAL ASSOCIATES, INC.; BOSTSAFLEX SIL 100 WF.
e. TRUMBO INCORPORATED; TRUMBAR 200 SANITARY.

2.3 LATEX JOINT SEALANTS
A. LATEX JOINT SEALANT: ACRYLIC LATEX OR SILICONIZED ACRYLIC LATEX, ASTM C 834, TYPE OP, GRADE NF.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. BASF BUILDING SYSTEMS; SONOLAC.
b. BOSTIK, INC.; CHEMICAL K 188
c. PECORA CORPORATION; AC-20+
d. SCHAEFER-MCREHEAD, INC.; SM 8200
e. TRUMBO INCORPORATED; TRUMPLEX 834.

2.4 JOINT SEALANT BACKING
A. GENERAL: PROVIDE SEALANT BACKINGS OF MATERIAL THAT ARE NON-STAINING, ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; AND ARE APPROVED FOR APPLICATIONS INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING.
B. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, TYPE O CLOSED-CELL MATERIAL WITH A SURFACE SKIN, AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE.

2.5 MISCELLANEOUS MATERIALS
A. MASKING TAPE: NON-STAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

PART 3 - EXECUTION

3.1 EXAMINATION
A. EXAMINE JOINTS INDICATED TO RECEIVE JOINT SEALANTS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR JOINT CONFIGURATION, INSTALLATION TOLERANCES, AND OTHER CONDITIONS AFFECTING JOINT-SEALANT PERFORMANCE.
B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION
A. SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE FOLLOWING REQUIREMENTS:
1. REMOVE ALL FOREIGN MATERIAL FROM JOINT SUBSTRATES THAT COULD INTERFERE WITH ADHESION OF JOINT SEALANT, INCLUDING DUST, PAINTS (EXCEPT FOR PERMANENT, PROTECTIVE COATINGS TESTED AND APPROVED FOR SEALANT ADHESION AND COMPATIBILITY BY SEALANT MANUFACTURER), OLD JOINT SEALANTS, OIL, GREASE, WATER-REPELLENTS, WATER, SURFACE DIRT, AND FROST.
2. CLEAN POROUS JOINT SUBSTRATES SURFACES BY BRUSHING, GRINDING, MECHANICAL ABRADING, OR A COMBINATION OF THESE METHODS TO PRODUCE A CLEAN, SOUND SUBSTRATE CAPABLE OF DEVELOPING OPTIMUM BOND WITH JOINT SEALANTS. REMOVE LOOSE PARTICLES REMAINING AFTER CLEANING OPERATIONS ABOVE BY VACUUMING OR BLOWING OUT JOINTS WITH OIL-FREE COMPRESSED AIR. POROUS JOINT SUBSTRATES INCLUDE THE FOLLOWING:
a. UNGLAZED SURFACES OF CERAMIC TILE.
B. MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTACT OF SEALANT OR PRIMER WITH ADJOINING SURFACES THAT OTHERWISE WOULD BE PERMANENTLY STAINED OR DAMAGED BY SUCH CONTACT OR BY CLEANING METHODS REQUIRED TO REMOVE SEALANT SMEARS. REMOVE TAPE IMMEDIATELY AFTER TOOLING WITHOUT DISTURBING JOINT SEAL.

3.3 INSTALLATION OF JOINT SEALANTS
A. GENERAL: COMPLY WITH JOINT SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PRODUCTS AND APPLICATIONS INDICATED, UNLESS MORE STRINGENT REQUIREMENTS APPLY.
B. SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.
C. INSTALL SEALANT BACKINGS OF KIND INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
1. DO NOT LEAVE GAPS BETWEEN ENDS OF SEALANT BACKINGS.
2. DO NOT STRETCH, TWIST, PUNCTURE, OR TEAR SEALANT BACKINGS.
3. REMOVE ABSORBENT SEALANT BACKINGS THAT HAVE BECOME WET BEFORE SEALANT APPLICATION AND REPLACE THEM WITH DRY MATERIALS.
D. INSTALL BOND-BREAKER TAPE BEHIND SEALANTS WHERE SEALANT BACKINGS ARE NOT USED BETWEEN SEALANTS AND BACKS OF JOINTS.
E. INSTALL SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:
1. PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
2. COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION
3. PROVIDE UNIFORM, CROSS SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
F. TOOL JOINTS OF NON-SAG SEALANTS: IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO REQUIREMENTS SPECIFIED IN SUBPARAGRAPHS BELOW TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED, TO ELIMINATE AIR POCKETS, AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.
1. REMOVE EXCESS SEALANT FROM SURFACES ADJACENT TO JOINTS.
2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.
3. PROVIDE CONCAVE JOINT PROFILE PER FIGURE 8 IN ASTM C 1193, UNLESS OTHERWISE INDICATED
a. USE MASKING TAPE TO PROTECT SURFACES ADJACENT TO RECESSED TOOL JOINTS.

3.4 JOINT-SEALANT SCHEDULE
A. JOINT SEALANT APPLICATION: EXTERIOR JOINTS IN VERTICAL SURFACES AND HORIZONTAL NO TRAFFIC SURFACES
1. JOINT LOCATIONS:
a. PERIMETER JOINTS OF FRAMES OF DOORS.
2. JOINT SEALANT COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS
B. JOINT-SEALANT APPLICATION: MILDEW-RESISTANT SILICONE JOINTS IN VERTICAL SURFACES AND HORIZONTAL NON-TRAFFIC SURFACES.
1. JOINT SEALANT LOCATION
a. JOINTS BETWEEN PLUMBING FIXTURES AND ADJOINING WALLS, FLOORS, AND COUNTERS.
2. JOINT SEALANT: SINGLE COMPONENT, NONSAG, MILDEW-RESISTANT, ACID-CURING
3. JOINT SEALANT COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF COLORS.

END OF SECTION 07 92 00

DIVISION 8 – OPENINGS

SECTION 08 11 16 - ALUMINUM FLUSH DOORS AND FRAMES

PART 1 - GENERAL

1.1 SECTION INCLUDES:
A. ALUMINUM FLUSH DOORS.
B. ALUMINUM DOOR FRAMES.

1.2 RELATED SECTIONS
A. SECTION - JOINT SEALERS.
B. SECTION – DOOR HARDWARE.

1.3 REFERENCES
A. ALUMINUM ASSOCIATION, INC. (AA)
1. AA 3005-H14 - SHEET ARCHITECTURAL
2. AA 6061-T6 - HEAVY DUTY STRUCTURES
3. AA 6063-T5 - EXTRUSIONS, PIPE, ARCHITECTURAL.
4. AA DAF-45 - DESIGNATION SYSTEM FOR ALUMINUM FINISHES
B. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA).
1. AAMA 2603-98 - PIGMENTED ORGANIC COATINGS (POLYCRON)
2. AAMA 2605-98 - SUPERIOR PERFORMING ORGANIC COATINGS (KYNAR).
3. AAMA 609 - ANODIZED ARCHITECTURAL FINISHES CLEANING AND MAINTENANCE.
4. AAMA 610-02 - PAINTED ARCHITECTURAL PRODUCTS CLEANING AND MAINTENANCE
5. AAMA 611-98 - ANODIZED ARCHITECTURAL STANDARDS.
6. AAMA 701 - PILE WEATHER STRIP.
C. AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM).
1. A 123 - ZINC (HOT-DIP GALVANIZED) COATINGS.
2. C 726-97 - INPLACE ARCH GRADE, MINERAL ESPONGE
3. E 330-97E1 - STRUCTURAL PERFORMANCE OF EXTERIOR DOORS

1.4 TESTING AND PERFORMANCE REQUIREMENTS
A. STRUCTURAL TEST UNIT: MINIMUM SIZE OF SPECIMEN 81.44 (SF) BY 7-FEET (213.36 CM) WITH 34-INCH (86.36 CM) BY 84-INCH (86.36 CM) VISION LIGHT SHALL BE EVALUATED COMPLIANT WITH ASTM E 330 TEST NG METHOD.
B. TEST PROCEDURES AND PERFORMANCE:
1. WITH DOOR CLOSED AND LOCKED, TEST UNIT IN ACCORDANCE WITH ASTM E 330 AT STATIC AIR PRESSURE DIFFERENCE OF 60.0 POUNDS PER SQUARE FOOT (3.83 KPA) POSITIVE PRESSURE AND 60.0 POUNDS PER SQUARE FOOT NEGATIVE PRESSURE WITH 150 MILES (240.5 KM) PER HOUR WIND LOAD
2. AT CONCLUSION OF TEST THERE SHALL BE NO GLASS BREAKAGE, PERMANENT DAMAGE TO FASTENERS, HARDWARE PARTS, SUPPORT ARMS OR ACTUATING MECHANISM, NOR ANY OTHER DAMAGE THAT WOULD CAUSE THE DOOR TO BE INOPERABLE.

1.5 SUBMITTALS
A. SUBMIT UNDER PROVISIONS OF SECTION 01
B. PRODUCT DATA: MANUFACTURER'S DESCRIPTIVE LITERATURE FOR EACH TYPE DOOR AND FRAME INCLUDE THE FOLLOWING INFORMATION
1. FABRICATION METHODS
2. FINISHES.
3. HARDWARE PREPARATION
4. ACCESSORIES.
C. SHOP DRAWINGS: INDICATE THE FOLLOWING:
1. ELEVATIONS AND DETAILS OF EACH DOOR AND FRAME TYPE.
2. SCHEDULE OF DOORS AND FRAMES
3. CONDITIONS AT OPENINGS WITH VARIOUS WALL THICKNESSES AND MATERIALS
4. LOCATION AND INSTALLATION REQUIREMENTS FOR HARDWARE
5. TRACKNESSES OF MATERIALS, JOINTS.
6. CONNECTIONS AND TRIM.
D. SAMPLES: TWO SETS OF COLOR CHIPS REPRESENTING SPECIFIED COLORS AND FINISHES, TO BE FOR MILL FINISH AND ANODIZED ALUMINUM.
E. VERIFICATION SAMPLES:
1. SUBMIT SAMPLES FOR EACH TYPE, CONSISTING OF ALUMINUM DOOR CORNER CONSTRUCTION, MINIMUM 5-INCH BY 5-INCH (150 MM) LENGTH
2. WARRP COLOR OR TEXTURE VARIATIONS ARE ANTICIPATED, SUCH AS ANODIZED FINISHES, INCLUDE TWO OR MORE UNITS IN EACH SET OF SAMPLES TO CATCH EXTREME LIMITS OF VARIATIONS
F. HARDWARE TEMPLATES: PROVIDE FINISH HARDWARE MOUNTING DETAILS.
G. MANUFACTURER'S INSTALLATION INSTRUCTIONS: PRINTED INSTALLATION INSTRUCTIONS FOR EACH PRODUCT, INCLUDING PRODUCT STORAGE REQUIREMENTS.
H. OPERATION AND MAINTENANCE DATA: PRINTED INSTRUCTIONS FOR EACH PRODUCT.

1.6 QUALITY ASSURANCE
A. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING ALUMINUM DOOR AND FRAME SYSTEMS OF THE TYPE REQUIRED FOR THIS PROJECT, WITH MINIMUM TEN CONTINUOUS YEARS DOCUMENTED EXPERIENCE.
B. PRODUCT QUALIFICATIONS: WIND LOAD TEST CERTIFICATION CONFORMING TO ASTM E 330 ON SAMPLES OF PREVIOUS PRODUCTS SHALL BE PROVIDED FOR THE TYPE OF DOOR TO BE USED.
C. INSTALLERS QUALIFICATIONS: WORKMEN SKILLED IN HANDLING ALUMINUM DOOR AND FRAME SYSTEMS OF THE TYPE REQUIRED FOR THIS PROJECT.
D. INSTRUCTION: THE MANUFACTURER OR HIS REPRESENTATIVE WILL BE AVAILABLE FOR CONSULTATION TO ALL PARTIES ENGAGED IN THE PROJECT, INCLUDING INSTRUCTION TO INSTALLATION PERSONNEL.

1.7 DELIVERY, STORAGE AND HANDLING
A. DELIVER DOORS AND FRAMES PALLETED, WRAPPED OR INDIVIDUALLY CRATED. DOORS SHALL BE SIDE PROTECTED WITH SURROUNDING CARDBOARD 2-INCH (50.8 MM) BY 4-INCH (101.6 MM) WOOD FRAME AND COVERED WITH 275-POUND (124.74 KG) TEST CORRUGATED CARDBOARD.
B. INSPECT DELIVERED DOORS AND FRAMES FOR DAMAGE. UNLOAD AND STORE WITH MINIMUM HANDLING. REPAIR MINOR DAMAGE IF REFINISHED ITEMS ARE FOUND. IN ALL RESPECTS TO NEW WORK. OTHERWISE, REMOVE DAMAGED ITEMS AND REPLACE WITH NEW.
C. STORE PRODUCTS OF THIS SECTION UNDER COVER IN MANUFACTURER'S UNOPENED PACKAGING UNTIL INSTALLATION.
1. PLACE UNITS ON MINIMUM 4-INCH (101.6 MM) WOOD BLOCKING.
2. AVOID NON-VENTED PLASTIC OR CANVAS COVERS.
3. REMOVE PACKAGING IMMEDIATELY IF PACKAGING BECOMES WET.
4. PROVIDE 0.25-INCH (6.35 MM) AIR SPACES BETWEEN STACKED DOORS.

1.8 PROJECT CONDITIONS
A. FIELD MEASUREMENTS: TAKE FIELD MEASUREMENTS OF AREAS TO RECEIVE ALUMINUM FRAMES. NOTE DISCREPANCIES ON SUBMITTED SHOP DRAWINGS.

1.9 SCHEDULING
A. ENSURE THAT ALL APPROVALS AND/OR SHOP DRAWINGS ARE SUPPLIED OR RETURNED TO THE MANUFACTURER IN TIME FOR FABRICATION WITHOUT AFFECTING CONSTRUCTION PROGRESS SCHEDULE.
B. ENSURE THAT TEMPLATES AND/OR ACTUAL HARDWARE REQUESTED BY MANUFACTURER ARE AVAILABLE IN TIME FOR FABRICATION WITHOUT AFFECTING CONSTRUCTION PROGRESS SCHEDULE.

1.10 WARRANTY
A. MANUFACTURER: TEN YEAR WARRANTY AGAINST DEFECTS IN WORKMANSHIP AND MATERIALS, INCLUDING WARPING, PITTING, DECAYING OR SOWING.
B. INSTALLER: WARRANTY INSTALLATION PROCEDURES AND PERFORMANCE FOR FIVE YEARS AGAINST DEFECTS DUE TO WORKMANSHIP AND MATERIALS HANDLING.

PART 2 - PRODUCTS

2.1 MANUFACTURER'S BASIS OF DESIGN:
A. ACCEPTABLE MANUFACTURER; MODEL: SERIES 1600E
CLINE ALUMINUM DOORS, INC.
112 - 32ND AVENUE WEST, BRADENTON, FLORIDA 34205-8607
TELEPHONE: (800) 634-5738; (941) 748-4104; FAX: (941) 748-5151
WEBSITE: WWW.CLINEDOORS.COM; EMAIL: INQUIRY@CLINEDOORS.COM
OR APPROVED EQUAL.

2.2 COMPONENTS
A. ALUMINUM MEMBERS: ALLOY AND TEMPER RECOMMENDED BY MANUFACTURER FOR STRENGTH, CORROSION RESISTANCE, AND APPLICATION OF REQUIRED FINISH.
B. ALUMINUM DOOR COMPONENTS: MINIMUM 5-PLY COMPOSITE LAMINATED CONSTRUCTION TO INCLUDE:
1. FACING: ONE-PIECE 0.040-INCH (1.02 MM) SMOOTH INSIDE 14 STRETCHER-LEVELED ALUMINUM ALLOY.
2. SUBSTRATE: ONE-PIECE OIL-TEMPERED HARDBOARD BACKER.
3. CORE: ORGANIC MATERIALS SHALL BE USED TO FORM A MARINE GRADE HONEYCOMB CORE WITH HIGH COMPRESSION STRENGTH OF 64.8 PSI (447KN CRW), AND INTERNAL ALUMINUM HARDWARE BACKUP TUBE.
4. HARDWARE BACKUP: THE HARDWARE BACKUP TUBE SHALL BE A MINIMUM OF 4-INCHES (101.06 MM) IN WIDTH, 1.375-INCHES (34.93 MM) IN DEPTH WITH A WALL THICKNESS OF 0.0125 INCHES (0.18 MM), CONTIGUOUS FOR THE FULL PERIMETER OF THE DOOR TO ALLOW FOR ALL SPECIFIED AND NON SPECIFIED HARDWARE REINFORCEMENT.
5. HARDWARE PREP: BASIC TO INCLUDE MORTISE LOCK EDGE PREP OR CYLINDRICAL LOCK PREP, AND FACE PREPPED FOR FLUSH BOLTS, IF REQUIRED
6. BOND NO AGENT: ENVIRONMENTALLY FRIENDLY ADHESIVE WITH STRENGTH BUILDUP OF 350 POUNDS PER SQUARE INCH (24.6 KG/CM2).
7. PERIMETER DOOR TRIM, WALL THICKNESS OF 0.050-INCH (1.25 MM) MINIMUM IN 6063-T5 EXTRUDED ALUMINUM ALLOY WITH SPECIAL BEVELED EDGE CAP DESIGN AND INTEGRAL WEATHER STRIPPING ON LOCK STILE.
8. REPLACEABLE DOOR TRIM: MECHANICALLY FASTENED TO THE HARDWARE BACKUP TUBE, ALLOWING FOR REPLACEMENT IN THE FIELD, IF DAMAGED.
9. TRIM FINISH: TO HAVE MINIMUM OF A CLASS I ANODIZED FINISH.
10. WEATHER STRIPPING: REPLACEABLE WOOL PILE WITH NYLON FABRIC, POLYPROPYLENE BACKING MEETING AAMA 701STANDARDS. APPLIED WEATHER STRIPPING IS NOT ACCEPTABLE.
11. MATERIALS: ONLY NONFERROUS, NON-RUST MS MEMBERS SHALL BE ACCEPTABLE, INCLUDING TIE RODS, SCREWS AND REINFORCEMENT PLATES.
12. REGULATIONS: ALL COMPONENTS AND AGENTS TO MEET EPA STANDARDS.
C. GLAZING: NONE
D. DOOR LOUVERS:
1. BLADES AND FRAMES: 6063-T5 EXTRUDED ALUMINUM ALLOY, 0.050-INCH (1.27 MM) MINIMUM THICKNESS. LOUVER BLADES SHALL BE INVERTED "V" TYPE.
2. INSECT SCREENS: 14-18 MESH, 0.011-INCH (0.28 MM) DIAMETER ALUMINUM, SET IN 6063-T5 EXTRUDED ALUMINUM ALLOY FRAME, 0.050-INCH (1.25 MM) MINIMUM THICKNESS.
3. LOUVER SHALL HAVE A MINIMUM OF 50-PERCENT FREE AIRFLOW.
E. ALUMINUM FRAMES:
1. FRAME COMPONENTS: EXTRUDED CHANNEL 6063-T5 ALUMINUM ALLOY, MINIMUM WALL THICKNESS 0.125-INCH (3.18 MM); CUT CORNERS SQUARE AND JOINERY SHALL BE MECHANICAL WITH NO EXPOSED FASTENERS.
2. PROFILE: OPEN BACK WITH APPLIED STOP (CBW), 1.75-INCH BY 5-INCH (44 X 127 MM).
3. HINGE AND STRIKE MOUNTING PLATES: EXTRUDED ALUMINUM ALLOY BAR STOCK, 0.1875-INCH (4.75 MM) THICK MOUNTED IN A CONCEALED INTERNAL CHANNEL WITH NO EXPOSED FASTENERS.
4. REPLACEABLE WEATHER STRIPPING: AAMA 701, WOOL PILE WITH NYLON FABRIC, POLYPROPYLENE BACKING, AT HEAD AND JAMBS.
5. DOOR STOP: NO SCREW ON STOPS ACCEPTABLE.

2.3 FINISH (NOTE: RETAIN ONE OR MORE OF THE FOLLOWING PARAGRAPHS TO SPECIFY FINISH.)
A. FINISH: CLEAR ANODIC COATING, AA-M10C22A31 (CLASS II MED-HANICAL FINISH, NON-SPECULAR, WITH CHEMICAL MEDIUM-MATTE ETCH, MINIMUM THICKNESS 0.4-MIL (0.01 MM).
1. COLOR: SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS.

2.4 FABRICATION
A. GENERAL: RECEIVE HARDWARE IF REQUIRED BY MANUFACTURER.
B. ALUMINUM FLUSH DOOR CONSTRUCTION OF TYPE, SIZE AND DESIGN INDICATED:
1. MINIMUM THICKNESS: 1.75-INCH (44 MM), 5-PLY COMPOSITE LAMINATE SYSTEM.
2. DOOR SIZE: SIZES SHOWN ARE NOMINAL. PROVIDE STANDARD CLEARANCES AS FOLLOWS:
b. HINGE AND LOCK STILES: 0.125-INCH (3.18 MM).
c. BETWEEN MEETING STILES: 0.25-INCH (6.35 MM)
d. AT TOP RAILS: 0.125-INCH (3.18 MM).
e. BETWEEN DOOR BOTTOM AND THRESHOLD: 0.125-INCH (3.18 MM).

2.5 ACCESSORIES
A. FASTENERS: ALUMINUM, NONMAGNETIC STAINLESS STEEL, OR OTHER MATERIAL WARRANTED BY MANUFACTURER AS NON-CORROSIVE AND COMPATIBLE WITH ALUMINUM COMPONENTS
1. DO NOT USE EXPOSED FASTENERS.
B. BRACKETS AND REINFORCEMENTS: MANUFACTURER'S HIGH-STRENGTH ALUMINUM UNITS WHERE FEASIBLE, OTHERWISE, NONFERROUS STANDARD STEEL.
C. BITUMINOUS COATING: COLD-APPLIED ASPHALTIC MASTIC, COMPOUNDED FOR 30-MIL (0.76 MM) THICKNESS PER COAT.

PART 3 - EXECUTION

3.1 EXAMINATION
A. VERIFY THAT WALL SURFACES AND OPENINGS ARE READY TO RECEIVE FRAMES AND ARE WITHIN TOLERANCES SPECIFIED IN MANUFACTURER'S INSTRUCTIONS.
B. VERIFY THAT FRAMES INSTALLED BY OTHER TRADES FOR INSTALLATION OF DOORS OF THIS SECTION ARE IN STRICT ACCORDANCE WITH RECOMMENDATIONS AND APPROVED SHOP DRAWINGS AND WITHIN TOLERANCES SPECIFIED IN MANUFACTURER'S INSTRUCTIONS.

3.2 PREPARATION
A. PERFORM CUTTING, FITTING, FORMING, DRILLING, AND GRINDING OF FRAMES AS REQUIRED FOR PROJECT CONDITIONS; DO NOT DAMAGE EXPOSED FINISHES.
B. SEPARATE DISSIMILAR METALS TO PREVENT ELECTROLYTIC ACTION BETWEEN METALS

3.3 INSTALLATION
A. INSTALL DOORS AND FRAMES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS. SET FRAMES PLUMB, SQUARE, LEVEL, AND ALIGNED TO RECEIVE DOORS.
B. ANCHOR FRAMES TO ADJACENT CONSTRUCTION IN STRICT ACCORDANCE WITH RECOMMENDATIONS AND APPROVED SHOP DRAWINGS AND WITHIN TOLERANCES SPECIFIED IN MANUFACTURER'S INSTRUCTIONS.
1. SEAL METAL-TO-METAL JOINTS BETWEEN FRAMING MEMBERS USING GOOD QUALITY ELASTOMERIC SEALANT.
C. WHERE ALUMINUM SURFACES CONTACT WITH METALS OTHER THAN STAINLESS STEEL, ZINC OR SMALL AREAS OF WHITE BRONZE, TO PROTECT FROM DIRECT CONTACT BY ONE OR MORE OF THE FOLLOWING METHODS:
1. PAINT DISSIMILAR METAL WITH ONE COAT OF HEAVY-BODIED BITUMINOUS PAINT.
2. APPLY GOOD QUALITY ELASTOMERIC SEALANT BETWEEN ALUMINUM AND DISSIMILAR METAL
3. PAINT DISSIMILAR METAL WITH ONE COAT OF PRIMER AND ONE COAT OF PAINT RECOMMENDED FOR ALUMINUM SURFACE APPLICATIONS.
4. USE NON ABSORPTIVE TAPE OR GASKET IN PERMANENTLY DRY LOCATIONS.
D. HANG DOORS WITH REQUIRED CLEARANCES AS FOLLOWS:
1. HINGE AND LOCK STILES: 0.125 INCH (3.18 MM).
2. BETWEEN MEETING STILES: 0.250 INCH (6.35 MM).
3. AT TOP RAILS: 0.125 INCH (3.18 MM).
4. BETWEEN DOOR BOTTOM AND THRESHOLD: 0.125 INCH (3.18 MM)
E. ADJUST DOORS AND HARDWARE TO OPERATE PROPERLY.
F. INSTALLATION OF DOOR HARDWARE IS SPECIFIED IN SECTION 08.

3.4 CLEANING
A. UPON COMPLETION OF INSTALLATION, THOROUGHLY CLEAN DOOR AND FRAME SURFACES IN ACCORDANCE WITH AAMA 609.
B. DO NOT USE ABRASIVE, CAUSTIC OR ACID CLEANING AGENTS.

3.5 PROTECTION
A. PROTECT PRODUCTS OF THIS SECTION FROM DAMAGE CAUSED BY SUBSEQUENT CONSTRUCTION UNTIL SUBSTANTIAL COMPLETION.
B. REPAIR DAMAGED OR DEFECTIVE PRODUCTS TO ORIGINAL SPECIFIED CONDITION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
C. REPLACE DAMAGED OR DEFECTIVE PRODUCTS THAT CANNOT BE REPAIRED TO ARCHITECT'S ACCEPTANCE.

END OF SECTION 08 11 16

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5591
FAX (941)729-5592
WWW.UGARTEARCHITECT.NET COM
– AA-C001684 –

SPECIFIC

DIVISION 9 – FINISHES

SECTION 09 22 00 - PORTLAND CEMENT PLASTER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. THIS SECTION INCLUDES THE FOLLOWING:
1. EXTERIOR PORTLAND CEMENT PLASTERWORK (STUCCO) ON SOLID - PLASTER BASES.

1.3 DELIVERY, STORAGE, AND HANDLING
A. STORE MATERIALS INDOOR UNDER COVER AND KEEP THEM DRY AND PROTECTED AGAINST DAMAGE FROM WEATHER, DIRECT SUNLIGHT, SURFACE CONTAMINATION, CORROSION, CONSTRUCTION TRAFFIC, AND OTHER CAUSES.

1.4 PROJECT CONDITIONS
A. COMPLY WITH ASTM C 926 REGULREMENTS
B. EXTERIOR PLASTERWORK:
1. APPLY AND CURE PLASTER TO PREVENT PLASTER DRYING OUT DURING CURING PERIOD. USE PROCEDURES REQUIRED BY CLIMATIC CONDITIONS, INCLUDING MOIST CURING, PROVIDING COVERINGS, AND PROVIDING BARRIERS TO DEFLECT SUNLIGHT AND WIND.
2. APPLY PLASTER WHEN AMBIENT TEMPERATURE IS GREATER THAN 40 DEG F.
3. PROTECT PLASTER COATS FROM FREEZING FOR NOT LESS THAN 48 HOURS AFTER SET OF PLASTER COAT HAS OCCURRED.

PART 2 - PRODUCTS

2.1 METAL LATH
A. EXPANDED METAL LATH: ASTM C 847 WITH ASTM A 653/A 653M, (G3), HOT DIP GALVANIZED ZINC COATING
1. DIAMOND-MESH LATH; FLAT.
a. WEIGHT: 2.5 LBS/SQ. YD.

2.2 ACCESSORIES
A. GENERAL: COMPLY WITH ASTM C 926 AND COORDINATE DEPTH OF TRIM AND ACCESSORIES WITH THICKNESSES AND NUMBER OF PLASTER COATS REQUIRED.

2.3 MISCELLANEOUS MATERIALS
A. WATER FOR MIXING: POTABLE AND FREE OF SUBSTANCES CAPABLE OF AFFECTING PLASTER SET OR OF DAMAGING PLASTER, LATH, OR ACCESSORIES.
B. FIBER FOR BASE COAT: ALKALINE-RESISTANT GLASS OR POLYPROPYLENE FIBERS, 1/2 INCH LONG, FREE OF CONTAMINANTS, MANUFACTURED FOR USE IN PORTLAND CEMENT PLASTER.
C. FOAMING COMPOUND: ASTM C 842.
D. STEEL DRILL SCREWS: FOR METAL-TO METAL FASTENING, ASTM C 1002 OR ASTM C 954, AS REQUIRED BY THICKNESS OF METAL BEING FASTENED; WITH FLAT HEAD THAT IS SUITABLE FOR APPLICATION; IN LENGTHS REQUIRED TO ACHIEVE PENETRATION THROUGH ADJOINED MATERIALS OF NOT FEWER THAN THREE EXPOSED THREADS.
E. FASTENERS FOR ATTACHING METAL LATH TO SUBSTRATES: COMPLYING WITH ASTM C 1063

2.4 PLASTER MATERIALS
A. PORTLAND CEMENT: ASTM C 150, TYPE I OR II
1. COLOR FOR FINISH COATS: WHITE.
B. LIME: ASTM C 206, TYPE S; OR ASTM C 207, TYPE S.
C. SAND AGGREGATE: ASTM C 897
1. COLOR FOR JOB-MIXED FINISH COATS: WHITE.

2.5 PLASTER MIXES
A. GENERAL: COMPLY WITH ASTM C 926 FOR APPLICATIONS INDICATED.
1. FIBER CONTENT: ADD FIBER TO BASE COAT MIXES AFTER INGREDIENTS HAVE MIXED AT LEAST TWO MINUTES. COMPLY WITH FIBER MANUFACTURER'S WRITTEN INSTRUCTIONS FOR FIBER QUANTITIES IN MIXES, BUT DO NOT EXCEED 1 LB. OF FIBER/CU. FT. OF CEMENTITIOUS MATERIALS. REDUCE AGGREGATE QUANTITIES ACCORDINGLY TO MAINTAIN WORKABILITY.
B. BASE-COAT MIXES FOR USE OVER MONOLITHIC CONCRETE: SINGLE BASE COATS FOR TWO-COAT PLASTERWORK AS FOLLOWS:
1. PORTLAND CEMENT MIX: FOR CEMENTITIOUS MATERIAL, MIX 1 PART PORTLAND CEMENT AND 5 TO 6 PARTS LIME. USE 4-1/2 TO 5 PARTS AGGREGATE PER PART OF CEMENTITIOUS MATERIAL (SUM OF SEPARATE VOLUMES OF EACH COMPONENT MATERIAL).
C. JOB MIXED FINISH COAT MIXES:
1. PORTLAND CEMENT MIX: FOR CEMENTITIOUS MATERIALS, MIX 1 PART PORTLAND CEMENT AND 3/4 TO 1-1/2 PARTS LIME. USE 4-1/2 TO 5 PARTS AGGREGATE PER PART OF CEMENTITIOUS MATERIAL (SUM OF SEPARATE VOLUMES OF EACH COMPONENT MATERIAL).
D. MODIFIED CEMENT PLASTER SHALL BE EQUAL TO STUCSILCO SHIELD AND REINFORCING MESH.

PART 3 - EXECUTION

3.1 EXAMINATION
A. EXAMINE AREAS AND SUBSTRATES, WITH INSTALLER PRESENT, AND INCLUDING WELDED HOLLOW-METAL FRAMES, CAST-IN ANCHORS, AND STRUCTURAL FRAMING, FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE.
1. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION
A. PROTECT ADJACENT WORK FROM SOILING, SPATTERING, MOISTURE DETERIORATION, AND OTHER HARMFUL EFFECTS CAUSED BY PLASTERING.
B. PREPARE SOLID-PLASTER BASES THAT ARE SMOOTH OR THAT DO NOT HAVE THE SUCTION CAPABILITY REQUIRED TO BOND WITH PLASTER ACCORDING TO ASTM C 926.
C. COORDINATION WITH SPRAYED FIRE-RESISTIVE MATERIALS:
1. BEFORE SPRAYED FIRE-RESISTIVE MATERIALS ARE APPLIED, ATTACH OFFSET ANCHOR PLATES OR CEILING RUNNERS (TRACKS) TO SURFACES INDICATED TO RECEIVE SPRAYED FIRE-RESISTIVE MATERIALS. WHERE OFFSET ANCHOR PLATES ARE REQUIRED, PROVIDE CONTINUOUS PLATES FASTENED TO BUILDING STRUCTURE NOT MORE THAN 24 INCHES O.C.

3.3 INSTALLING METAL LATH
A. EXPANDED-METAL LATH: INSTALL ACCORDING TO ASTM C 1063.
1. ON SOLID SURFACES, NOT OTHERWISE FURRED, INSTALL SELF-FURRING DIAMOND-MESH LATH.

3.4 INSTALLING ACCESSORIES
A. INSTALL ACCORDING TO ASTM C 1063 AND AT LOCATIONS INDICATED ON DRAWINGS.

3.5 PLASTER APPLICATION
A. GENERAL: COMPLY WITH ASTM C 926.

3.6 CUTTING AND PATCHING
A. CUT, PATCH, REPLACE, AND REPAIR PLASTER AS NECESSARY TO ACCOMMODATE OTHER WORK AND TO REMOVE CRACKS, DENTS, AND IMPERFECTIONS. REPAIR OR REPLACE WORK TO ELIMINATE SUBSTERIAL HAIRLINE CRAZING AND CHECK CRACKING, DRY OUTS, EFFLORESCENCE, SWEAT OUTS, AND SIMILAR DEFECTS AND WHERE BOND TO SUBSTRATE HAS FAILED.

3.7 CLEANING AND PROTECTION
A. REMOVE TEMPORARY PROTECTION AND ENCLOSURE OF OTHER WORK. PROMPTLY REMOVE PLASTER FROM DOOR FRAMES, WINDOWS, AND OTHER SURFACES NOT INDICATED TO BE PLASTERED. REPAIR FLOORS, WALLS, AND OTHER SURFACES STAINED, MARRED, OR OTHERWISE DAMAGED DURING PLASTERING.

END OF SECTION 09 22 00

SECTION 09 91 00 - PAINTING

PART 1- GENERAL

1.1 RELATED DOCUMENTS
A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.

1.2 SUMMARY
A. THIS SECTION INCLUDES SURFACE PREPARATION AND THE APPLICATION OF PAINT SYSTEMS ON THE FOLLOWING SUBSTRATES:
1. CONCRETE (STUCCO)
2. HARDBOARD (COMPOSITION SIDING, TRIM AND SOFFIT).

PART 2- PRODUCTS

2.1 MANUFACTURERS
A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. BENJAMIN MOORE & CO.
2. SHERWIN-WILLIAMS COMPANY (THE).
3. COLOR WHEEL

2.2 PAINT, GENERAL
A. MATERIAL COMPATIBILITY
1. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
2. FOR EACH COAT IN A PAINT SYSTEM, PROVIDE PRODUCTS RECOMMENDED IN WRITING BY MANUFACTURERS OF TOPCOAT FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED.
B. COLORS: SHOWN ON DRAWINGS. INTENT IS TO MATCH COLORS TO THE EXISTING "MARINE RESCUE" BUILDING ADJACENT.

2.3 PRIMERS/SEALERS
A. INTERIOR / EXTERIOR LATEX PRIMER/SEALER: FRESH START LATEX PRIMER 023 (3.8 MILS WET, 1.1 MILS DRY)

2.4 INTERIOR PAINTS (WALLS AND CEILING)
A. SEMI GLOSS FINISH
1. 1ST COAT: MOORE'S FRESH START 023 ACRYLIC PRIMER
2. 2ND COAT MOORECRAFT SUPER SPEC ACRYLIC EPOXY COATING 288 (4 MILS WET, 1.5 MILS DRY PER COAT)

2.5 EXTERIOR CONCRETE OR STUCCO (WALLS AND EAVES)
A. MATTE FINISH
1. 1ST COAT: MOORE'S FRESH START 023 ACRYLIC PRIMER
2. 2ND COAT MOORE'S SUPER SPEC HP ALIPHATIC ACRYLIC URETHANE GLOSS P74 (2.8 MILS WET, 2 MILS DRY PER COAT)

2.6 CONCRETE FLOORING
A. CLEAR FINISH
1. 1ST COAT: MOORE'S SUPER SPEC HP FAST DRY EPOXY FLOOR SEALER/FINISH P41 (4.0 MILS WET, 1.5 MILS DRY PER COAT)
2. AGGREGATE: MOORE'S ASUPER SPEC HP ANTI-SLIP AGGREGATE P97

PART 3- EXECUTION

3.1 EXAMINATION
A. EXAMINE SUBSTRATES AND CONDITIONS, WITH APPLICATOR PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR MAXIMUM MOISTURE CONTENT AND OTHER CONDITIONS AFFECTING PERFORMANCE OF WORK.
B. VERIFY SUITABILITY OF SUBSTRATES, INCLUDING SURFACE CONDITIONS AND COMPATIBILITY WITH EXISTING FINISHES AND PRIMERS.
C. RESIN COATING APPLICATION ONLY: AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND SURFACES ARE DRY.
1. BEGINNING COATING APPLICATION CONSTITUTES CONTRACTOR'S ACCEPTANCE OF SUBSTRATES AND CONDITIONS.

3.2 PREPARATION
A. COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN NAPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL APPLICABLE TO SUBSTRATES INDICATED.
B. REMOVE PLATES, MACHINED SURFACES, AND SIMILAR ITEMS ALREADY IN PLACE THAT ARE NOT TO BE PAINTED. IF REMOVAL IS IMPRACTICAL OR IMPOSSIBLE BECAUSE OF SIZE OR WEIGHT OF ITEM, PROVIDE SURFACE-APPLIED PROTECTION BEFORE SURFACE PREPARATION AND PAINTING.
1. AFTER COMPLETING PAINTING OPERATIONS, USE WORKERS SKILLED IN THE TRADES INVOLVED TO REINSTALL ITEMS THAT WERE REMOVED. REMOVE SURFACE-APPLIED PROTECTION IF ANY.
2. DO NOT PAINT OVER LABELS OF INDEPENDENT TESTING AGENCIES OR EQUIPMENT NAME, IDENTIFICATION, PERFORMANCE RATING, OR NOMENCLATURE PLATES.
C. CLEAN SUBSTRATES OF SUBSTANCES THAT COULD IMPAIR BOND OF PAINT, INCLUDING DIRT, OIL, GREASE, AND INCOMPATIBLE PAINTS.
1. REMOVE INCOMPATIBLE PRIMERS AND RE-PRIME SUBSTRATE WITH COMPATIBLE PRIMERS AS REQUIRED TO PROVIDE PAINT SYSTEMS INDICATED.
D. MASONRY SUBSTRATES:
1. CONCRETE AND MASONRY SUBSTRATES SHOULD BE CLEAN, DRY AND FREE OF OIL, GREASE, FORM RELEASE AGENTS AND CURING COMPOUNDS.
2. NEW CONCRETE AND MASONRY MUST BE ALLOWED TO CURE 28 DAYS
3. PRIME ALL EXPOSED EDGES OF MASONRY.

3.3 APPLICATION
A. APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. USE APPLICATORS AND TECHNIQUES SUITED FOR PAINT AND SUBSTRATE INDICATED.
2. PAINT SURFACES BEHIND MOVABLE EQUIPMENT AND FURNITURE SAME AS SIMILAR EXPOSED SURFACES. BEFORE FINAL INSTALLATION, PAINT SURFACES BEHIND PERMANENTLY FIXED EQUIPMENT OR FURNITURE WITH PRIME COAT ONLY.
B. TINT EACH UNDERCOAT A LIGHTER SHADE TO FACILITATE IDENTIFICATION OF EACH COAT IF MULTIPLE COATS OF SAME MATERIAL ARE TO BE APPLIED. TINT UNDERCOATS TO MATCH COLOR OF TOPCOAT, BUT PROVIDE SUFFICIENT DIFFERENCE IN SHADE OF UNDERCOATS TO DISTINGUISH EACH SEPARATE COAT.
C. IF UNDERCOATS OR OTHER CONDITIONS SHOW THROUGH TOPCOAT, APPLY ADDITIONAL COATS UNTIL CURED FILM HAS A UNIFORM PAINT FINISH, COLOR, AND APPEARANCE.
D. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.

3.4 CLEANING AND PROTECTION
A. AT END OF EACH WORKDAY, REMOVE RUBBISH, EMPTY CANS, RAGS, AND OTHER DISCARDED MATERIALS FROM PROJECT SITE.
B. AFTER COMPLETING PAINT APPLICATION, CLEAN SPATTERED SURFACES. REMOVE SPATTERED PAINTS BY WASHING, SCRAPING, OR OTHER METHODS. DO NOT SCRATCH OR DAMAGE ADJACENT FINISHED SURFACES.
C. PROTECT WORK OF OTHER TRADES AGAINST DAMAGE FROM PAINT APPLICATION. CORRECT DAMAGE TO WORK OF OTHER TRADES BY CLEANING, REPAIRING, REPLACING, AND REFINISHING, AS APPROVED BY ARCHITECT, AND LEAVE IN AN UNDAMAGED CONDITION.
D. AT COMPLETION OF CONSTRUCTION ACTIVITIES OF OTHER TRADES, TOUCH UP AND RESTORE DAMAGED OR DEFACED PAINTED SURFACES.

3.5 INTERIOR PAINTING SCHEDULE
A. MASONRY SUBSTRATES: INCLUDING HARD CEILINGS
1. EPOXY SYSTEM
a. PRIME COAT: ACRYLIC-BASED PRIMER.
b. TOPCOAT ACRYLIC EPOXY COATING (SEMI-GLOSS).

B. CONCRETE SUBSTRATES (FLOORING):
1. EPOXY SYSTEM:
a. PRIME COAT: EPOXY SEALER.
b. TOPCOAT EPOXY SEALER WITH NON SLIP AGGREGATE

3.6 EXTERIOR SYSTEMS
A. MASONRY: INCLUDING HARD CEILINGS
1. ACRYLIC URETHANE SYSTEM
a. PRIME COAT: ACRYLIC-BASED PRIMER.
b. TOPCOAT ACRYLIC URETHANE (SLOSS).

END OF SECTION 09 91 00

DIVISION 10 – SPECIALTIES
BY OTHERS

DIVISION 11 – EQUIPMENT
BY OTHERS

DIVISION 12 – FURNISHINGS
BY OTHERS

DIVISION 22 – PLUMBING
SEE "P" SHEETS

DIVISION 23 – HEATING VENTILATION AND AIR CONDITIONING
SEE "M" SHEETS

DIVISION 26 – ELECTRICAL
SEE "E" SHEETS

DIVISION 31 – BUILDING EARTHWORK
SEE STRUCTURAL DRAWINGS

△1 10/01/15
RE-ISSUED. EDITED TO REMOVE BATH ACCESSORIES

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)728-5991
FAX (941)728-5992
WWW.UGARTEARCHITECT.BIZ.COM
– AA-C001664 –

SPECIFICATIONS

MC COQUINA NORTH STORAGE BLDG
GULF DRIVE SOUTH BRADENTON BEACH, FLORIDA 34217

REVISIONS
△1 10/01/15

PROJECT NO: 2013-31
DATE: 04/02/15
DRAWN BY: CL/BL
CHKD BY: CL/DB

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

CARLOS D. UGARTE
LIC. NO. AR-0010725

SHEET
A903

9/29/2015 10:15 AM CAD DWG FILE: A903 SPECIFICATIONS.DWG

GENERAL NOTES:

STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS. CONSULT TRUSS DRAWINGS FOR SLEEVES, DEPRESSIONS, AND OTHER DETAILS NOT SHOWN ON STRUCTURAL DRAWINGS.

ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE IMPORTANT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.

THE STRUCTURE IS DESIGNED FOR THE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE, IT IS THE CONTRACTORS RESPONSIBILITY TO BE LIKWISE EXECUTION PROCEDURES AND SEQUENCE TO INSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION INCLUDING THE ADDITION OF NECESSARY BRACING, SHEETING, TEMPORARY BRACING, GUYS OR TIEDOWNS.

DESIGN CRITERIA:

THE STRUCTURAL SYSTEM FOR THIS BUILDING HAS BEEN DESIGNED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, 2010 EDITION (FBC2010). THE FOLLOWING DESIGN PARAMETERS HAVE BEEN UTILIZED:

ROOF:

LIVE LOAD	-	20 psf
DEAD LOAD	-	20 psf
DEAD LOAD	-	5 psf (AVAILABLE TO RESIST UPLIFT)

WIND: ASCE 7-10

ULTIMATE WIND SPEED	-	110 mph
ALLOWABLE WIND SPEED	-	110 mph
EXPOSURE =		
ENCLOSED STRUCTURE		
RISK FACTOR I		

SHOP DRAWING REVIEW:

SHOP DRAWINGS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS ONLY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY COMPLIANCE WITH THE CONTRACT DOCUMENTS AS TO QUANTITY, LENGTH, ELEVATIONS, DIMENSIONS, ETC.

ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMITTAL TO THE ARCHITECT/ENGINEER. DRAWINGS SUBMITTED WITHOUT REVIEW WITH CONTRACTOR WILL BE RETURNED UNREVIEWED.

ONE SET OF PRINTS WILL BE RETURNED BY THE ENGINEER AND ONE BY THE ARCHITECT, THE CONTRACTOR SHALL RECEIVE THE DRAWINGS PRIOR TO FABRICATION, TO THE BUILDING DEPARTMENT AND AS REQUIRED FOR DISTRIBUTION.

NOTE: INSTANCES THE CONTRACT DOCUMENTS WILL CONVEN OVER THE SHOP DRAWINGS UNLESS CITIC PRIOR TO IN A REQUEST FOR INFORMATION (RFI) OR TRIAL AND DOCUMENTATION BY THE ENGINEER.

SHOP DRAWINGS SHOULD BE SUBMITTED FOR ALL COMPONENTS OF THE STRUCTURAL FRAMING SYSTEM, AS REQUIRED BY THE ARCHITECT, AND AS NOTED ELSEWHERE IN THESE NOTES, INCLUDING, BUT NOT LIMITED TO:

CONCRETE MIX DESIGNS
MASONRY BLOCK
MASONRY BLOCK ACCESSORIES
MASONRY REINFORCING
CONCRETE REINFORCEMENT
PRE ENGINEERED WOOD TRUSSES
PRECAST DRIVEN PILE LAYOUT AND DETAILS
PRECAST CONCRETE COMPONENTS
ANY ALTERNATE MATERIAL/PRODUCT SUBSTITUTIONS

FOUNDATIONS:

SEE THE FOLLOWING REPORT FOR COMPLETE GEOTECHNICAL RECOMMENDATIONS AND INSTALLATION PROCEDURES. SITE PREPARATION AND FOUNDATION INSTALLATION SHALL COMPLY WITH
REPORT No.: 11-378
DATED: February 12, 2014
PREPARED BY: ARCHMAN & ASSOCIATES, INC.
TITLED: GEOTECHNICAL FOUNDATION FOR PROPOSED MIXED USE MOTEL RAMP GOLF DRIVE, BRADENTON BEACH, MANATEE COUNTY, FL

FOUNDATION DESIGN IS BASED ON A NOTIONAL BEARING PRESSURE OF 2,000 psf.

PRESTRESSED CONCRETE PILES:

SHALL BE MANUFACTURED WITH A MIX DESIGNED BY A RECOGNIZED TESTING LABORATORY TO ATTAIN A STRENGTH OF 5,000 psi AT DRAWING. CONCRETE SHALL ATTAIN A STRENGTH OF 3,000 psi, MINIMUM BEFORE STRANDS ARE RELEASED. THE USE OF HIGH EARLY CEMENT OR ADMIXTURES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND EVALUATION PRIOR TO FABRICATION. STRAND SHALL COMPLY WITH ASTM A 416. PROVISIONS SHALL BE MADE TO TEST ONE STRAND SPECIMEN FROM EACH ROLL OF STRAND USED. THE TEST SHALL BE MADE BY AN APPROVED TESTING LABORATORY WHICH SHALL INSPECT TENSIONING AND PLACEMENT OF STRANDS, PLACEMENT OF STIRRUPS, PLACEMENT OF CONCRETE, CURING OF TEST CYLINDERS AND SHALL INSCRIBE THEIR MARK AND DATE AFTER CONCRETE HAS HAD TIME TO SET UP. TESTING LABORATORY SHALL SUBMIT PRINTS WITH THEIR MARK WHEN LOADED OUT AT THE CASTING YARD ASSERTING THAT THE PRINTS HAVE ATTAINED DESIGN STRENGTH. ALL PILING SHALL BE DRIVEN OR JETTED AND DRIVEN TO A SAFE BEARING CAPACITY OF 22 TONS IN COMPRESSION AND 4 TONS IN TENSION FOR 12"X12" PILES USING AN APPROPRIATE DRIVING FORMULA.

PRICE OF PILING SHALL INCLUDE COST OF RE"APPING, PILES TO BE CUT OFF SQUARE AT PROPER ELEVATIONS ALLOWING A MINIMUM OF 18" OF PILE STEEL TO PROJECT INTO GRADE BEAMS AND/OR PILE CAPS.

PILE TESTING: LOAD TESTS SHALL BE MADE ON THE PILING IN PLACE, IF REQUIRED BY THE LOCAL BUILDING DEPARTMENT OR THE GEOTECHNICAL ENGINEER. LOAD TESTED PILES MAY BE USED AS PRODUCTION PILES IF APPROVED BY THE GEOTECHNICAL ENGINEER. THE CRITERIA AS SET FORTH IN THE STANDARD BUILDING CODE SHALL BE USED TO ESTABLISH ACCEPTABILITY OF TESTED PILES. LOAD TESTING APPARATUS AND PROCEDURE SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE BEGINNING OF THE TEST. LOCATION OF THE LOAD TEST SHALL BE AT THE DIRECTION OF THE ENGINEER. VERIFICATION THAT THE LOAD TEST REQUIREMENTS HAVE BEEN MET SHALL BE MADE BY AN INDEPENDENT GEOTECHNICAL CONSULTANT EMPLOYED BY THE OWNER AND APPROVED BY THE ENGINEER.

AN AS BUILT SURVEY OF PILE LOCATIONS SHALL BE PERFORMED BY A FLORIDA REGISTERED LAND SURVEYOR. PILES SHALL BE LOCATED ON THE AS BUILT DRAWINGS HORIZONTALLY AND VERTICALLY FROM THE COLUMN CENTERLINES AND BE SUBMITTED IN AUTOCAD "DWG" FORMAT. SUBMIT THE AS BUILT DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL.

PRECAST CONCRETE PILES: TO BE REINFORCED CONCRETE POURED UNDER HIGH CONTROL OR APPROVED TESTING LABORATORY ACHIEVING A STRENGTH OF 5,000 psi AT DRAWING. NON STRESSED PILES MAY BE VERTICAL, BATTER PILES MUST BE SUPPLIED TO THE PILE DRIVER. PILES SHALL BE ATTACHED AT TOP. PILES TO BE CUT OFF SQUARE AT PROPER ELEVATIONS ALLOWING A MINIMUM OF 18" OF PILE REINFORCING TO PROJECT INTO THE PILE CAPS AND/OR GRADE BEAMS.

FORMWORK AND BRACING:

NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO THIRDS OF THE 28 DAY DESIGN STRENGTH. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND HOLDERS SHALL MEET THE REQUIREMENTS SET FORTH IN ACI STANDARDS 347 AND 301.

PLUMBING SLEEVES:

MINIMUM BUTTING SPACING SHALL BE THREE DIAMETERS CENTER TO CENTER OF THE LARGER SLEEVE OR 6" CLEAR BETWEEN SLEEVES WHICHEVER IS GREATER. PRIOR TO CONSTRUCTION SLEEVE LOCATIONS AND SIZES SHALL BE APPROVED BY THE ENGINEER.

REINFORCING STEEL:

SHALL BE ASTM A615 GRADE 60 DEFORMED BARS, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL REINFORCING BAR AND PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS. SECURE APPROVAL OF SHOP DRAWINGS PRIOR TO COMMENCING FABRICATION.

WELDED WIRE FABRIC:

TO CONFORM TO ASTM A 185, FREE FROM OIL, SCALE AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS. MINIMUM LAP SHALL BE ONE SPACE PLUS TWO INCHES.

CONCRETE:

SHALL BE PER AN APPROVED MIX DESIGN PROPORTIONED TO ACHIEVE A STRENGTH AT 28 DAYS AS LISTED BELOW WITH A PLASTIC AND WORKABLE MIX

3000 psi FOR FOUNDATIONS AND SLABS ON GRADE.
4000 psi FOR ALL OTHER STRUCTURAL CONCRETE.

CONCRETE SHALL BE PLACED AND CURED ACCORDING TO ALL STANDARDS AND SPECIFICATIONS.

SUBMIT PROPORTIONS DESIGN WITH REGISTERED FIELD CYLINDERS OR LAB TESTS FOR REVIEW PRIOR TO USE. MIX SHALL BE UNIQUELY IDENTIFIED BY MIX NUMBER OR OTHER POSITIVE IDENTIFICATION. MIX SHALL MEET THE REQUIREMENTS OF ASTM C94 FOR COARSE AGGREGATE. FOR ALL FLATWORK, AT LEAST 70% OF LARGE AGGREGATE SHALL CONSIST OF 3/4" STONE. CONCRETE SHALL COMPLY WITH ALL THE REQUIREMENTS OF ASTM STANDARD C94 FOR MIXING, MIXING, TRANSPORTING, ETC. CONCRETE TICKETS SHALL BE TIME STAMPED WHEN CONCRETE IS BATCHED.

THE MAXIMUM TIME ALLOWED FROM THE TIME THE WATER IS ADDED UNTIL IT IS DEPOSITED IN ITS FINAL POSITION SHALL NOT EXCEED ONE AND ONE HALF (1.5) HOURS. IF FOR ANY REASON THERE IS A LONGER DELAY THAN THAT STATED ABOVE, THE CONCRETE SHALL BE DISCARDED. IT SHALL BE THE RESPONSIBILITY OF THE TESTING LAB TO NOTIFY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR OF ANY NONCOMPLIANCE WITH THIS ABOVE. ALL SLABS SHALL BE CURED USING A CURES PAINTING CURING COMPOUND MEETING ASTM STANDARD C309 TYPE 1-D AND SHALL HAVE A FUGITIVE DYE. THE COMPOUND SHALL BE PLACED AS SOON AS THE FINISHING HAS COMPLETED AND SHALL BE PROTECTED FROM WATER. WATER HAS LEFT THE UNFINISHED CONCRETE. ALL SCUFFED OR BROKEN AREAS IN THE CURING MEMBRANE SHALL BE REPAIRED IMMEDIATELY. CALCIUM CHLORIDES SHALL NOT BE UTILIZED. OTHER ADMIXTURES MAY BE USED ONLY WITH THE APPROVAL OF THE ENGINEER.

ALL CONCRETE MIX DESIGNS SHALL INCLUDE A WRITTEN DESCRIPTION INDICATING WHERE EACH PARTICULAR MIX IS TO BE PLACED WITHIN THE STRUCTURE.

ALL CONCRETE DESIGN MIX ELEMENTS SHALL INCLUDE TESTED, START BEFORE, SHOP, UP DATA AS PER CHAPTER 5 OF ACI 318. 05.

UNLESS NOTED OTHERWISE ON PLANS, THE FOLLOWING CONCRETE CLEAR COVER SHALL BE PROVIDED FOR ALL NON-PRESTRESSED CONCRETE REINFORCEMENT PER ACI 318:

CONCRETE CAST AGAINST EARTH	ALL BARS	- 3"
CONCRETE EXPOSED TO EARTH (FORMED FACE):	ALL BARS	- 2"
CONCRETE EXPOSED TO WEATHER	#6 BARS AND GREATER	- 2"
	#5 BARS AND SMALLER	- 1 1/2"
WHERE NOT EXPOSED TO EARTH OR WEATHER		
SLABS, WALLS, AND JOISTS:	#14 & #18 BARS	- 1 1/2"
	#11 BARS AND SMALLER	- 3/4"
BEAMS AND COLUMNS:	ALL BARS	- 1 1/2"

SEE ACI 318 FOR ADDITIONAL REQUIREMENTS AND MORE INFORMATION.

CONCRETE TESTING:

AN INDEPENDENT TESTING LABORATORY SHALL PERFORM THE FOLLOWING TESTS ON CASTING PLACE CONCRETE:

A) ASTM C143 - "STANDARD TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE" MAXIMUM SLUMP SHALL BE 4.5 INCHES PRIOR TO ADDING A SUPER PLASTICIZER.
B) ASTM C39 - "STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF CYLINDRICAL CONCRETE SPECIMENS" A SEPARATE TEST SHALL BE CONDUCTED FOR EACH CLASS, FOR EVERY 50 CUBIC YARDS (OR FRACTION THEREOF), PLACED PER DAY. REQUIRED CYLINDERS QUANTITIES AND TEST AGE ARE AS FOLLOWS
1 AT 7 DAYS
2 AT 28 DAYS

ONE ADDITIONAL RESERVE CYLINDER TO BE TESTED UNDER THE DIRECTION OF THE ENGINEER, IF REQUIRED. IF 28 DAY STRENGTH IS ACHIEVED, THE ADDITIONAL CYLINDER(S) MAY BE DISCARDED.

NON SHRINK GROUT:

NON SHRINK GROUT SHALL BE A HIGH-STRENGTH MORTAR OR GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 4000 psi AT 28 DAYS. THE GROUT IS TO BE NONMETALLIC, NON CORROSIVE, CEMENT-BASED AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1107. IT SHALL BEND PERMANENTLY TO A CLEAN METAL BASEPLATE AND CONCRETE SUBSTRATE AND WILL NOT SHRINK IN ITS PLASTIC STATE, AS TESTED IN ACCORDANCE WITH ASTM C827.

CHEMICAL ANCHORS:

SHALL BE AN EQUAL TWO PART EPOXY POLYMER INJECTION SYSTEM, SUCH AS SIMPSON SET-XP "STRUCTURAL ANCHORING ADHESIVE", HILTI HIT-RY 100 MAX-SR OR ENGINEER APPROVED SUBSTITUTION, INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE. BRUSH AND BLOW OUT ALL HOLES.

MASONRY WALLS:

MASONRY UNITS SHALL MEET ASTM C 90 FOR HOLLOW LOAD BEARING TYPE MASONRY WITH UNIT STRENGTH OF 1900 psi ON THE NET AREA (f'm = 1500 psi). MORTAR SHALL BE TYPE "M" OR "S" AND MEET ASTM C 270. GROUT SHALL BE 3000 psi MINIMUM COMPRESSIVE STRENGTH AND MEET ASTM C476. PROVIDE HOOKED DOWELS TO FOOTINGS FOR ALL VERTICAL RE INFORCING ABOVE. LAP SPLICES 48 BARDIAMETERS.

BLOCK CELLS AS SHOWN ON PLANS SHALL BE GROUT FILLED WITH VERTICAL REINFORCING BARS. SEE PLAN NOTES FOR BARS SIZE AND SPACING. DOWELS SHALL BE USED TO PROVIDE CONTINUITY INTO THE STRUCTURE ABOVE AND/OR BELOW, UNLESS NOTED OTHERWISE. USE METAL LATH, MORTAR, OR SPECIAL WIRE TIES TO CONFINE CONCRETE AND GROUT TO AREA REQUIRED.

PROVIDE 3 PIECE GALVANIZED HOT-DIPPED JOINT REINFORCING (DUR-O-WALL OR ENGINEER APPROVED BURS STRUTURE) AT ALTERNATE BLOCK COURSES, BEGINNING 8" ABOVE FOOTINGS AND FLOOR LEVELS.

GROUT LIFT: AN INCREMENT OF GROUT HEIGHT WITHIN A TOTAL GROUT POUR.
GROUT POUR: THE TOTAL HEIGHT OF MASONRY TO BE GROUTED PRIOR TO ERECTION OF ADDITIONAL MASONRY. A GROUT POUR CONSISTS OF ONE OR MORE GROUT LIFTS. GROUT POURS SHALL REST FOR A MINIMUM OF 4 HOURS BEFORE ANY ADDITIONAL GROUT PLACEMENT.

GROUT SHALL HAVE A SLUMP BETWEEN 8 AND 11 INCHES, EXCEPT SELF-CONSOLIDATING GROUT. JOB-SITE PROPORTIONING OF SELF-CONSOLIDATING GROUT IS NOT PERMITTED.

MASONRY GROUTING WORK REQUIREMENTS:

1. FIELD-MIXED GROUT SHALL BE PLACED WITHIN 1-1/2 HOURS FROM INTRODUCING WATER WITH THE MIXTURE AND BEFORE INITIAL SET.
2. GROUT SLUMP DEPENDS ON:
   a. FOR GROUT SLUMP BETWEEN 8 AND 10 INCHES, THE MAXIMUM GROUT LIFT HEIGHT IS 5 FEET.
   b. FOR GROUT SLUMP BETWEEN 10 AND 11 INCHES, THE MAXIMUM GROUT LIFT HEIGHT IS 10 FEET.
   c. FOR SELF-CONSOLIDATING GROUT, THE GROUT LIFT HEIGHT SHALL NOT EXCEED THE GROUT POUR HEIGHT (64 FEET MAX.)
3. GROUT LIFT HEIGHTS EXCEEDING 5 FEET SHALL MEET THE FOLLOWING REQUIREMENTS:
   a. MASONRY MORTAR HAS 28 DAYS STRENGTH AT 2,500 PSI AT 2 HOURS.
   b. GROUT PLUMP IS BETWEEN 8 AND 11 INCHES.
   c. NO INTERMEDIATE BOND BREAKS ARE PLACED BETWEEN THE TOP AND BOTTOM OF THE GROUT LIFT HEIGHT.
4. EACH GROUT LIFT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION AT THE TOP OF PLACEMENT. CONSOLIDATION IS NOT REQUIRED FOR SELF-CONSOLIDATING GROUT.
5. EACH GROUT LIFT SHALL BE RECONSOLIDATED BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED, AND BEFORE ADDING THE SUBSEQUENT GROUT LIFT. RECONSOLIDATION IS NOT REQUIRED FOR SELF-CONSOLIDATING GROUT.
6. THE TIME BETWEEN PLACING GROUT LIFTS SHALL NOT EXCEED 1 HOUR.
7. THE MAXIMUM POUR HEIGHT IS 24 FEET.
8. A GROUT KEY SHALL BE PROVIDED AT THE TOP OF EACH GROUT LIFT AND GROUT POUR. GROUT KEYS SHOULD BE FORMED BY TERMINATING THE GROUT 1-1/2 INCHES BELOW A MORTAR JOINT.

TIE BEAMS:

BEAMS WITH THE PREFIX "TB" SHALL BE OF CONCRETE POURED AFTER THE FLOOR WALLS BELOW ARE IN PLACE. REINFORCING SHALL BE CONTINUOUS THROUGH TIE BEAMS WITH MINIMUM LAP SPLICES OF 48 BAR DIAMETERS AND HOOK BARS AT CORNERS. USE METAL LATH, MORTAR, OR SPECIAL LIMITS TO CONFINE CONCRETE TO AREA REQUIRED, IN ACCORDANCE WITH ACI 530.1, SECTION 4.3.3.3 (MOLD METAL OR FLAT GRATE CAPS ARE PROHIBITED).

LINTELS:

MASONRY OPENINGS LESS THAN 4 FEET SHALL BE SPANNED WITH AN IP SPAN PRESTRESSED PRECAST/PRESTRESSED CONCRETE LINTEL WITH MINIMUM CONTINUOUS PRECAST LINTEL AND ALL CELLS ABOVE, TO THE BOTTOM OF THE TIE BEAM OR BOND BEAM SHALL BE GROUTED SOLID. ALL PRECAST LINTELS SHALL HAVE A MINIMUM OF 8" AT EACH END ON A GROUT FILLED CELL.

MASONRY OPENINGS 4 FEET OR GREATER SHALL BE SPANNED WITH AN IP SPAN PRESTRESSED PRECAST/PRESTRESSED CONCRETE LINTEL WITH MINIMUM CONTINUOUS PRECAST LINTEL AND ALL CELLS ABOVE, TO THE BOTTOM OF THE TIE BEAM OR BOND BEAM SHALL BE GROUTED SOLID. ALL PRECAST LINTELS SHALL HAVE A MINIMUM OF 8" AT EACH END ON A GROUT FILLED CELL.

WHERE A CONCRETE COLUMN OR CONCRETE TIE COLUMN IS WITHIN 8" OF A MASONRY OPENING, THE LINTEL SHALL BE AN 8"x16" CONCRETE CAST-IN-PLACE BEAM WITH (2) #5 BARS TOP AND BOTTOM, AND #3 STIRRUPS AT 18" ON CENTER.

WOOD:

STRUCTURAL WOOD COMPONENTS (BEAMS, JOISTS, RAFTERS, ETC.) SHALL HAVE THE FOLLOWING MINIMUM ALLOWABLE FIBER STRESSES FOR NO. 2 SOUTHERN PINE CONFORMING TO 2005 NDS WITH 2013 SUPPLEMENT, AS FOLLOWS

SHEAR	Fv	= 175 psi.	
BENDING	2x6	Fb	= 1,099 psi.
BENDING	2x8	Fb	= 925 psi.
BENDING	2x10	Fb	= 825 psi.
BENDING	2x12	Fb	= 725 psi

WOOD IN CONTACT WITH CONCRETE OR MASONRY, AND AT OTHER LOCATIONS AS SHOWN ON STRUCTURAL DRAWINGS, SHALL BE PROTECTED OR PRESSURE TREATED IN ACCORDANCE WITH AITC_100. MEMBER SIZES SHOWN ARE NOMINAL UNLESS NOTED OTHERWISE.

ALL NAILS SHOWN ON PLANS ARE NAIL COMMON WIRE NAILS UNLESS SPECIFICALLY NOTED ON DRAWINGS.

ENGINEERED WOOD TRUSS SYSTEMS SHALL BE DESIGNED BY SUPPLIER'S PROFESSIONAL ENGINEER TO CONFORM ON AND LOAD CARRYING CAPACITY SHOWN ON DRAWINGS AND SPECIFICATIONS. ALL INDIVIDUAL TRUSS MEMBERS, TRUSS PLANE CONNECTIONS, TRUSS-TO-TRUSS CONNECTIONS, COMMON TRUSSES AND GIRDER TRUSSES SHALL BE DESIGNED FOR COMPONENT AND CLADDING WIND LOADING, EXCEPT THOSE TRUSSES EXCEEDING 700 SQUARE FEET IN TRIBUTARY AREA. ALTERNATE TRUSS LAYOUTS ARE ACCEPTABLE ONLY AS A CHANGE ORDER WHICH WILL INCLUDE ENGINEERING CHANGES FOR RECEPTION OF THE STRUCTURE BY THE ENGINEER OF RECORD. SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWINGS SHALL SHOW AND SPECIFY ALL CONNECTOR TYPES UTILIZED WITHIN TRUSSES, AS WELL AS CONNECTORS UTILIZED SHALL OWNER CONNECTORS AND ATTACHMENTS BETWEEN TRUSSES OR COMPONENTS SUPPLIED AS PART OF THE ENGINEERED TRUSS SYSTEM. AN ERECTION DRAWING SHALL BE INCLUDED, IDENTIFYING ALL TRUSS SYSTEM COMPONENTS, AS WELL AS ALL PERMANENT BRACING REQUIRED FOR TRUSS DESIGN.

ENGINEERED SHOP DRAWINGS SHALL BEAR THE SIGNATURE AND IMPRESSED SEAL OF A FLORIDA REGISTERED PROFESSIONAL ENGINEER AS THE SPECIALTY ENGINEER. THE FOLLOWING LOAD DURATION FACTORS SHALL BE USED:

DEAD LOAD	0.90
DEAD LOAD + FLOOR LIVE LOAD	1.00
DEAD LOAD + ROOF LIVE LOAD	1.25
DEAD LOAD + WIND LOAD	1.60

THE SUPERIMPOSED DEAD LOAD, AS SPECIFIED IN THE DESIGN CRITERIA SECTION ABOVE, INCLUDES THE OVERALL WEIGHT OF THE FIRE SPRINKLER SYSTEM PIPES. THE GENERAL CONTRACTOR SHALL PROVIDE THE TRUSS MANUFACTURER WITH THE LOCATIONS OF THE FIRE SUPPORTS AND THEIR LOADS FROM ALL SPRINKLER SYSTEMS DESIGNED THAN 2" DIAMETER.

PLYWOOD ROOF, FLOOR, AND WALL SHEATHING ARE DESIGNED AS DIAPHRAGMS AND SHALL COMPLY WITH APPLICABLE PROVISIONS OF CHAPTER 23 OF THE FLORIDA BUILDING CODE AND SHALL BE FASTENED IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF TABLE 2304.9.1 OR 2306.3, UNLESS SHOWN OTHERWISE. PLYWOOD SHALL BE INSTALLED WITH THE STRENGTH AXIS OF EACH PANEL PERPENDICULAR TO THE SUPPORTS IN ALL CASES. PLYWOOD ROOF PANELS SHALL BE INSTALLED AS SHOWN IN CASE 1 THROUGH 4 IN TABLE 2306.2.1 (CONT.).

WOOD FRAMING CONNECTORS:

ALL CONNECTORS SHALL BE GALVANIZED. CONNECTOR MODEL NUMBERS SHOWN ARE STRONG-TIE CONNECTORS AS MANUFACTURED BY SIMPSON STRONG-TIE CO., STAR W. LAKE PORTER BLVD., P.O. BOX 10789, PLEASANTON, CA 94588, 800-999-5991, WWW.STRONGTIE.COM. SUBSTITUTIONS ARE ACCEPTABLE WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. UNLESS SHOWN OTHERWISE, INSTALL SIZE AND "MAXIMUM" NUMBER OF FASTENERS SHOWN IN LATEST SIMPSON CATALOG.

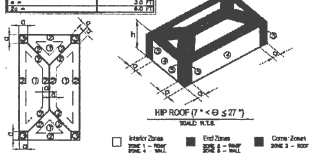
WIND LOAD SCHEDULE

SCHEDULE OF COMPONENTS AND CLADDING LOADS

ZONE	ZONE DESCRIPTION	TRIBUTARY AREA (sf)	IN (PRESSURE) (+PSF)	OUT (PRESSURE) (-PSF)
1	ROOF INTERIOR ZONE	LESS THAN 20	21.6	-24.4
		20 -- 100	20.0	-22.5
		MORE THAN 100	18.2	-21.1
2	ROOF, EDGE ZONE	LESS THAN 20	21.6	-88.6
		20 -- 100	20.0	-84.9
		MORE THAN 100	18.2	-81.8
3	ROOF, OVERHANG EDGE ZONE	LESS THAN 20		-75.5
		20 -- 100		-73.0
		MORE THAN 100		-70.5
	ROOF, CORNER ZONE	LESS THAN 20	21.6	-98.2
		20 -- 100	20.0	-92.8
		MORE THAN 100	18.2	-88.3
4	ROOF, OVERHANG CORNER ZONE	LESS THAN 20		-133.1
		20 -- 100		-110.4
		MORE THAN 100		-98.0
5	WALL, INTERIOR ZONE	LESS THAN 20	37.4	-40.8
		20 -- 100	35.0	-38.0
		MORE THAN 100	31.7	-35.3
6	WALL, ROOF ZONE	LESS THAN 20	37.4	-50.1
		20 -- 100	35.0	-47.0
		MORE THAN 100	31.7	-42.0

NOTE: WIND PRESSURES SHOWN ARE BASED ON Vmed

CODE	ASCE 7-10
ULTIMATE WIND SPEED, Vult =	130 MPH
ALLOWABLE WIND SPEED, Vasd =	110 MPH
RISK CATEGORY =	II
WIND SPEED MAP =	110MPH
EXPOSURE =	B
EFFECTIVE CLASSIFICATION =	ENCLOSED
STRUCTURAL CLASSIFICATION =	BC-NB
e =	3.0 FT
Kz =	0.57 FT



UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5891
FAX (941)729-5892
WWW.UGARTEARCHITECTURE.COM
— AA-C001664 —

STRUCTURAL NOTES & WIND SCHEDULE

MC COQUINA NORTH STORAGE BLDG

GULF DRIVE SOUTH, BRADENTON BEACH, FL 34217

REVISIONS

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

PROJECT NO. 2013-31
DATE: 04/02/15
DRAWN BY: ARW
CHKD BY: RDW

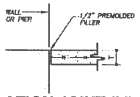
9/29/2015

PRINTER OF RECORD
RICHARD D. WILSON
FL P.E. # 37784

SHEET
S1.00

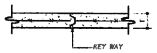
9/29/2015 11:13 AM CAD DWG FILE: STRUCTURAL NOTES.DWG

Wilson Consul
Cert. of Authorization #9099



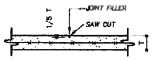
ISOLATION JOINT (IJ)

SCALE: NTS



CONSTRUCTION JOINT (KJ)

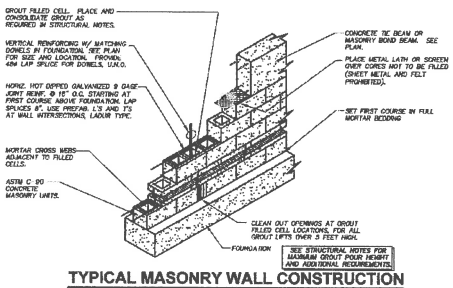
SCALE: NTS



CONTROL JOINT (CJ)

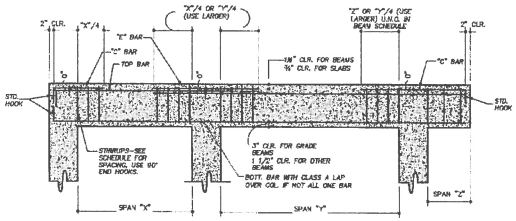
SCALE: NTS

SAW CUT AS SOON AS POSSIBLE WITHOUT RAVELING CONCRETE. (4 TO 18 HOURS AFTER POUR)



TYPICAL MASONRY WALL CONSTRUCTION

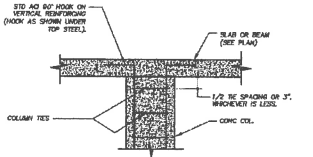
SCALE: NTS



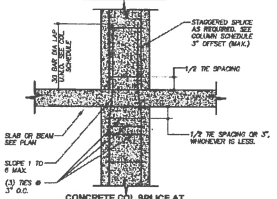
NOTES:
1. START STIRRUP SPACING AT FACE OF SUPPORT.
2. ADD 1/4 LONGITUDINAL WHERE CORNER OF STIRRUP IS VACANT.

TYPICAL BENDING DIAGRAM FOR BEAMS AND ONE WAY SLABS

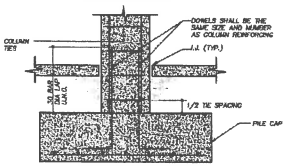
SCALE: NTS



CONCRETE COL TERMINATION AT SLAB OR BEAM



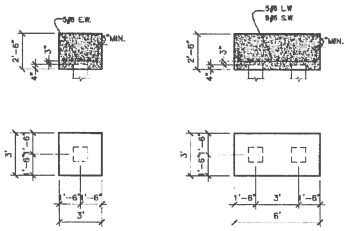
CONCRETE COL SPLICE AT SLAB OR BEAM



CONCRETE COLUMN BASE

TYPICAL COLUMN REINFORCEMENT DETAIL

SCALE: NTS



12"x12" - 32 TON 1PC PILECAP

NTS

12"x12" - 32 TON 2PC PILECAP

NTS

TYPICAL PILE CAP DETAILS

SCALE: NTS

Wilson Structural Consul
Cert. of Authorization #6099

9/29/2015 11:13 AM CAD DWG FILE: STRUCTURAL NOTES.DWG

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5691
FAX (941)729-5892
WWW.UGARTEARCHITECTURE.COM
— AA-C001684 —

TYPICAL DETAILS

MC COQUINA NORTH STORAGE BLDG

GULF DRIVE SOUTH, BRADENTON BEACH, FL 34217

REVISIONS

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

PROJECT NO: 2013-31
DATE: 04/02/15
DRAWN BY: ARW
CHK'D BY: RDW

9/29/2015

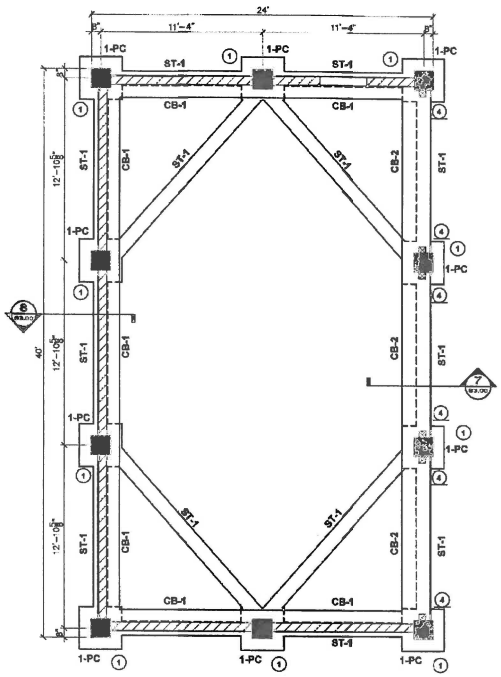
ENGINEER OF RECORD
RICHARD D. WILSON
FL.P.E. # 37784

SHEET

S1.01

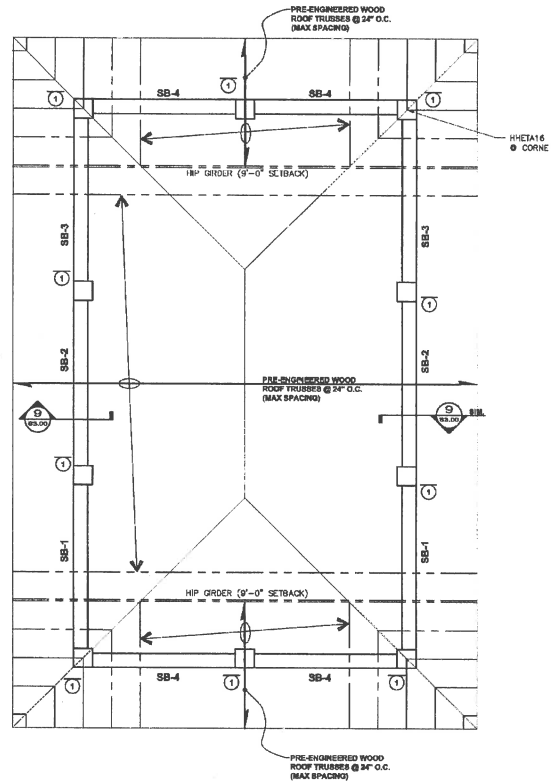
FOUNDATION & GROUND FLOOR PLAN NOTES:

1. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL AND MEP FOR ADDITIONAL INFORMATION.
2. ELEVATIONS SHOWN ARE N.A.V.D. FINISHED FLOOR TO BE (4'-6" N.A.V.D.).
3. GROUND FLOOR SHALL BE A 4" CONCRETE SLAB ON GRADE REINFORCE W/ FIBERMESH 650 AT THE SUPPLIER RECOMMENDED DOSAGE RATE. PROVIDE SLAB ON GRADE CONTROL JOINTS TO BE TOOLED OR SAWCUT. THE PATTERN SHALL BE APPROXIMATELY SQUARE AND LIMITED TO 16 SQUARE FEET. COORDINATE PATTERN WITH WALLS AND FLOOR FINISHES. 1
4. (1) INDICATES A 16"x16" CONCRETE COLUMN. PROVIDE (8)#6 VERTICAL REINFORCING BARS & #3 TIES @ 12" O.C. (MAX SPACING). PROVIDE CLASS B LAP LENGTHS FOR VERTICAL REINFORCING BARS.
5. "ST-1" INDICATES A 12" WIDE x 16" DEEP CONCRETE STRAP BEAM W/ (2)#5 REINFORCING BARS TOP & BOTTOM AND #3 HOOPS @ 18" O.C. (MAX SPACING). EXTEND TOP AND BOTTOM STEEL CONTINUALLY THRU CAPS OR TO FAR SIDE OF CAPS & HOOK. TOP OF BEAM AT 1'-0"(N.A.V.D.).
6. "PC-#" INDICATES A CONCRETE PILE CAP. TOP OF CAP TO BE AT 1'-0" (N.A.V.D.) SEE PILE CAP DETAILS ON SHEET S1.01 FOR ADDITIONAL INFORMATION.
7. INDICATES A NON-LOAD BEARING 2x8 WOOD STUD BREAK-AWAY WALL. PROVIDE SINGLE PT BOTTOM PLATE AND DOUBLE PT TOP PLATE. ATTACH PLATES TO CONCRETE WITH ⅜"ø HILTI KWIK BOLT 3 ANCHORS (3½" EMBED INTO CONCRETE) @ 24" O.C. ATTACH STUDS TO BOTTOM PLATE W/ (2)RSP4 EA. STUD AND TO TOP PLATE W/ (2)H5 EA. STUD. PROVIDE 4'-0" O.C. SOLID BLOCKING FOR HEIGHT OF STUD AND PROVIDE ⅞" APA RATED EXTERIOR PLYWOOD SHEATHING AT EXTERIOR, ATTACHED W/ 10d NAILS @ 12" O.C. (MAX SPACING).
8. "CB-1" INDICATES AN 18"xCONTINUOUSx18"d CONCRETE CURB. REINFORCE W/ (2)#5 CONTINUOUS TOP AND BOTTOM AND #3 TIES @ 18" O.C. MAX SPACING. CURB MUST BE ISOLATED FROM CONCRETE COLUMNS.
9. "CB-2" INDICATES A 24"CONTINUOUSx18"d CONCRETE CURB. REINFORCE W/ (2)#5 CONTINUOUS TOP AND BOTTOM AND #3 TIES @ 18" O.C. MAX SPACING. CURB MUST BE ISOLATED FROM CONCRETE COLUMNS.
10. (4) INDICATES A 6x6 PT POST TO BE ATTACHED TO CONCRETE COLUMN W/ ⅝"ø THREADED A.B.s @ 36" O.C. (MAX SPACING). DRILL & EPOXY INTO CONCRETE COLUMN (4½" MIN. EMBED IN CONCRETE) PROVIDE HILTI HIT-RE 500 EPOXY ADHESIVE.



STORAGE GROUND FLOOR PLAN

SCALE 1/4" = 1'-0"



STORAGE ROOF FRAMING PLAN

SCALE 1/4" = 1'-0"

STORAGE BEAM SCHEDULE

BEAM NUMBER	ELEV. TOP OF BEAM	SIZE W x H (INCH)	REINFORCING BOT	REINFORCING TOP	REINFORCING "C"	REINFORCING "E"	CLOSED HOOP SIZE AND SPACING.
SB-1	21'-1½"	12 X 24	2#5	2#5	–	–	# 3 @10"
SB-2	21'-1½"	12 X 24	2#5	2#5	–	–	# 3 @10"
SB-3	21'-1½"	12 X 24	2#5	2#5	–	–	# 3 @10"
SB-4	21'-1½"	12 X 24	2#5	2#5	–	–	# 3 @10" 1

BEAM SCHEDULE NOTES:

1. TOP STEEL CONTINUOUS UNLESS OTHERWISE NOTED.
2. TOP STEEL IN CONTINUOUS BEAMS SHALL TAKE PRECEDENT OVER INTERSECTING SINGLE-SPAN BEAMS AT INTERSECTIONS.
3. TOP OF BEAM ELEVATIONS GIVEN IN N.A.V.D.

ROOF FRAMING PLAN NOTES:

1. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH ARCHITECTURAL DRAWINGS. SEE ARCHITECTURAL AND MEP FOR ADDITIONAL INFORMATION.
2. ELEVATIONS SHOWN ARE RELATIVE TO THE GROUND FLOOR SLAB SURFACE SET AT 0'-0".
3. ROOF FRAMING SHALL BE PRE-ENGINEERED WOOD TRUSSES AS SHOWN. PROVIDE ⅞" APA RATED EXTERIOR PLYWOOD SHEATHING. PROVIDE BLOCKING AT ALL PANEL EDGES. ATTACH SHEATHING W/ 10d NAILS AT 6" O.C. AT SUPPORTED EDGES AND 12" O.C. AT INTERIOR SUPPORTS. PROVIDE 4" O.C. SPACING @ EDGES AND INTERIOR SUPPORTS IN ZONE 3.
4. SEE BEAM SCHEDULE THIS SHEET
5. TYPICAL TRUSS TIE DOWN TO BE HETAL 16. PROVIDE HETAL 16 TRUSS UPLIFT CONNECTION UNLESS OTHERWISE INDICATED ON PLAN.

COLUMN SYMBOLS

- INDICATES COLUMN BELOW
- INDICATES COLUMN THRU
- INDICATES COLUMN ABOVE

STEEL SYMBOLS

4 / 12 T

BAR SIZE
BAR SPACING
BAR PLACEMENT

T = TOP
B = BOTTOM
C = C
E = E

Wilson Consul
Cert. of Authorization #3099

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5691
FAX (941)729-5692
WWW.UGARTEARCHITECTURE.COM
AA-C001664

STORAGE BUILDING FOUNDATION AND FRAMING PLANS

MC COQUINA NORTH STORAGE BLDG

GULF DRIVE SOUTH, BRADENTON BEACH, FL 34217

REVISIONS
1 10/01/2015 CLIENT REQUESTED REVISIONS

PROJECT NO. 2013-31
DATE 04/02/15
DRAWN BY. ARW
CHKD BY: RDW

9/29/2015

ENGINEER OF RECORD
RICHARD D. WILSON
FL.P.E. # 37784

SHEET
S2.01

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

9/29/2015 11:13 AM CAD DWG FILE:STRUCTURAL PLANS.DWG

NOT USED

SECTION 1 / S3.00
SCALE: 3/4"= 1'-0"

NOT USED

SECTION 2 / S3.00
SCALE: 3/4"= 1'-0"

NOT USED

SECTION 3 / S3.00
SCALE: 3/4"= 1'-0"

NOT USED

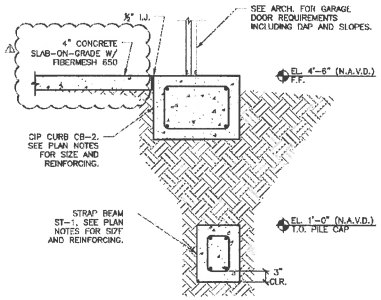
SECTION 4 / S3.00
SCALE: 3/4"= 1'-0"

NOT USED

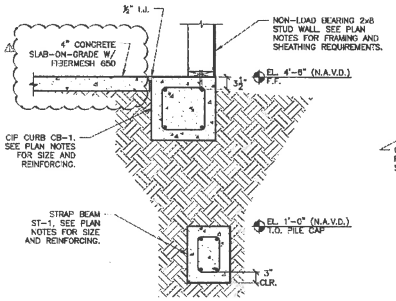
SECTION 5 / S3.00
SCALE: 3/4"= 1'-0"

NOT USED

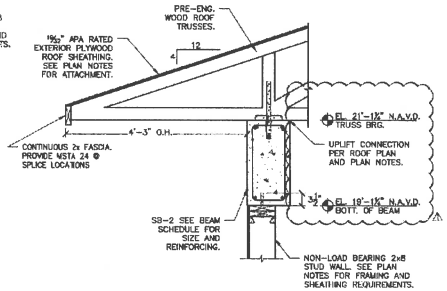
SECTION 6 / S3.00
SCALE: 3/4"= 1'-0"



SECTION 7 / S3.00
SCALE: 3/4"= 1'-0"



SECTION 8 / S3.00
SCALE: 3/4"= 1'-0"



SECTION 9 / S3.00
SCALE: 3/4"= 1'-0"

Wilson Consul
Cert. of Authorization #9089

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-8691
FAX (941)729-8692
WWW.UGARTEARCHITECTURE.COM
– AA-C001054 –

SECTIONS

MC COQUINA NORTH STORAGE BLDG

GULF DRIVE SOUTH, BRADENTON BEACH, FL 34217

REVISIONS
1 10/01/2015 CLIENT REQUESTED REVISIONS

PROJECT NO. 2013-31
DATE: 04/02/15
DRAWN BY: ARW
CHKD BY: RDW

9/29/2015

ENGINEER OF RECORD
RICHARD D. WILSON
FL P.E. # 37754

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

CAD DWG. FILE: STRUCTURAL SECTIONS.DWG

9/29/2015 11:13 AM

SHEET
S3.00

EXHAUST FAN SCHEDULE

DIRECT DRIVE CENTRIFUGAL INLINE FAN — MARK: EF-1

QTY	GREENHECK MODEL	VOLUME (CFM)	ESP (in wg)	RPM	POWER (hp)	WEIGHT (Lb.)	MOTOR INFORMATION SIZE (hp)	VOLT	ENCL.	MOTOR RPM	WINDINGS	FLA
1	SQ-95-U	720	0.25	1,550	0.1	44	0.125	115/60/1	TA	1550	1	NA

OPTIONS AND ACCESSORIES

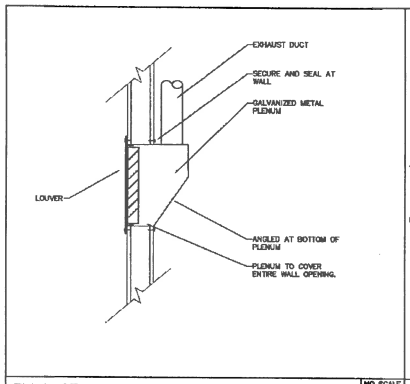
SWITCH, NEMA-1, TOGGLE, JUNCTION BOX MOUNTED & WIRED
NO MOTOR COVER
SOLID STATE SPEED CONTROL, 5 AMP (PN 3M5201) SHIPPED LOOSE
EXHAUST FAN TO RUN 24/7

LOUVER SCHEDULE

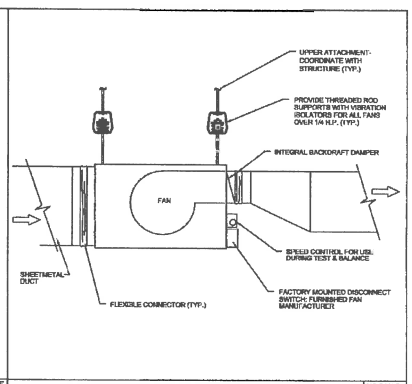
MARK	MANUFACTURER	MODEL	SIZE (WxH)	CFM	FREE AREA	FACE VELOCITY
LV-1	GREENHECK	EBH-501X	22x22	720	1.1	653

LOUVER NOTES:

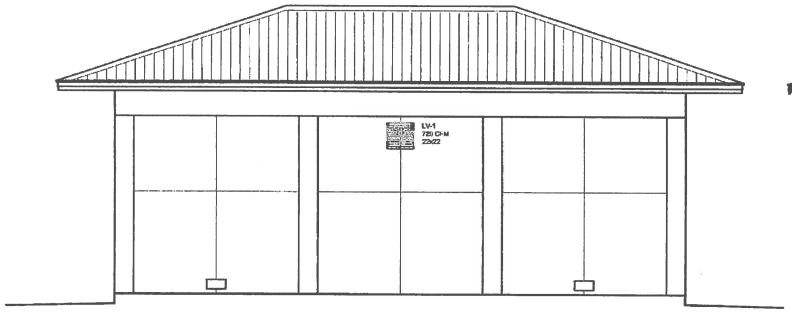
1. PAINT TO MATCH WALL COLOR.
2. LOUVER TO BE PROVIDED WITH UP TO DATE FLORIDA PRODUCT APPROVAL NUMBER AND NOA.

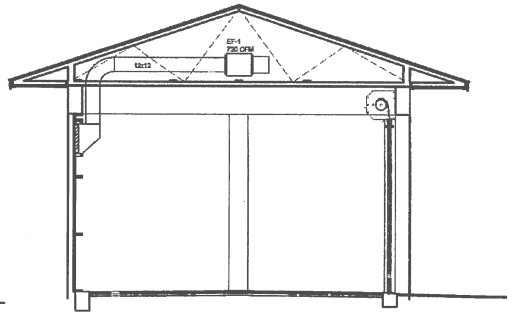


EXHAUST AIR PLENUM BEHIND LOUVER — NO SCALE — 1

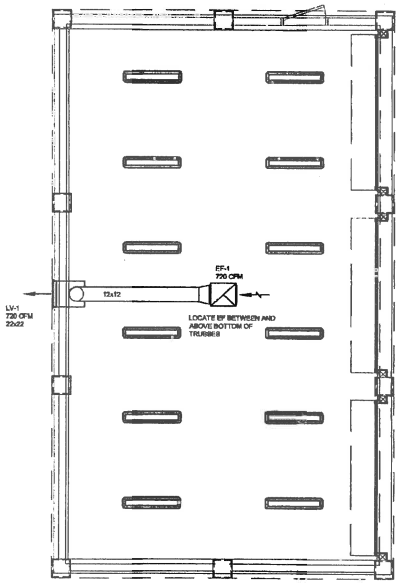


INLINE FAN MOUNTING DETAIL — NO SCALE — 2





2 M201 MECHANICAL STORAGE BUILDING ELEVATION 1/4"=1'0"



1 M201 MECHANICAL STORAGE BUILDING FLOOR PLAN 1/4"=1'0"

ME3 CONSULTING ENGINEERS, LLC
5300 PAYLOR LANE
SARASOTA, FL 34240
Tel: 941-748-1319
www.me3-engr.com
Fax: 941-748-1348
aldney@me3-engr.com
ME3 Job No: 13-0472
Designed: S.T.P.
Checked: K.C.C.
Drawn: S.T.P.
Date: 04/02/2015
C.O.A. 27552

Copyright 2015 ME3 All rights reserved

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5691
FAX (941)729-5692
WWW.UGARTEARCHITECTURE.COM
— AA-C001834 —

MECHANICAL STORAGE FLOOR PLAN

MC COQUINA RESTROOMS NORTH

GULF DRIVE SOUTH, BRADENTON BEACH, FLORIDA 34217

REVISIONS
1 10/01/15

PROJECT NO:
DATE: 04/02/15
DRAWN BY: STP
CHK'D BY: KCC

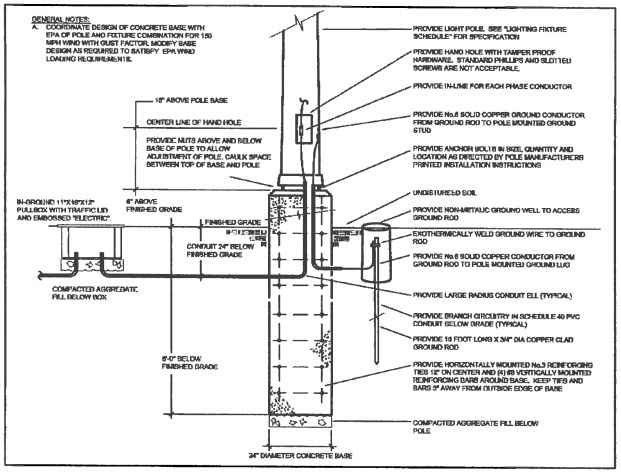
9/29/15

KAY C. CLEM, P.E.
FL LIC. NO. 53270

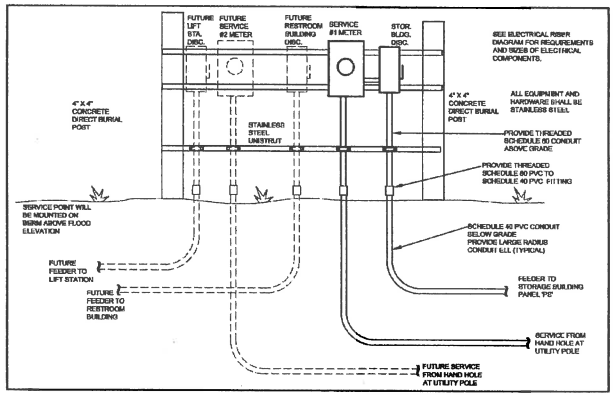
SHEET
M201

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

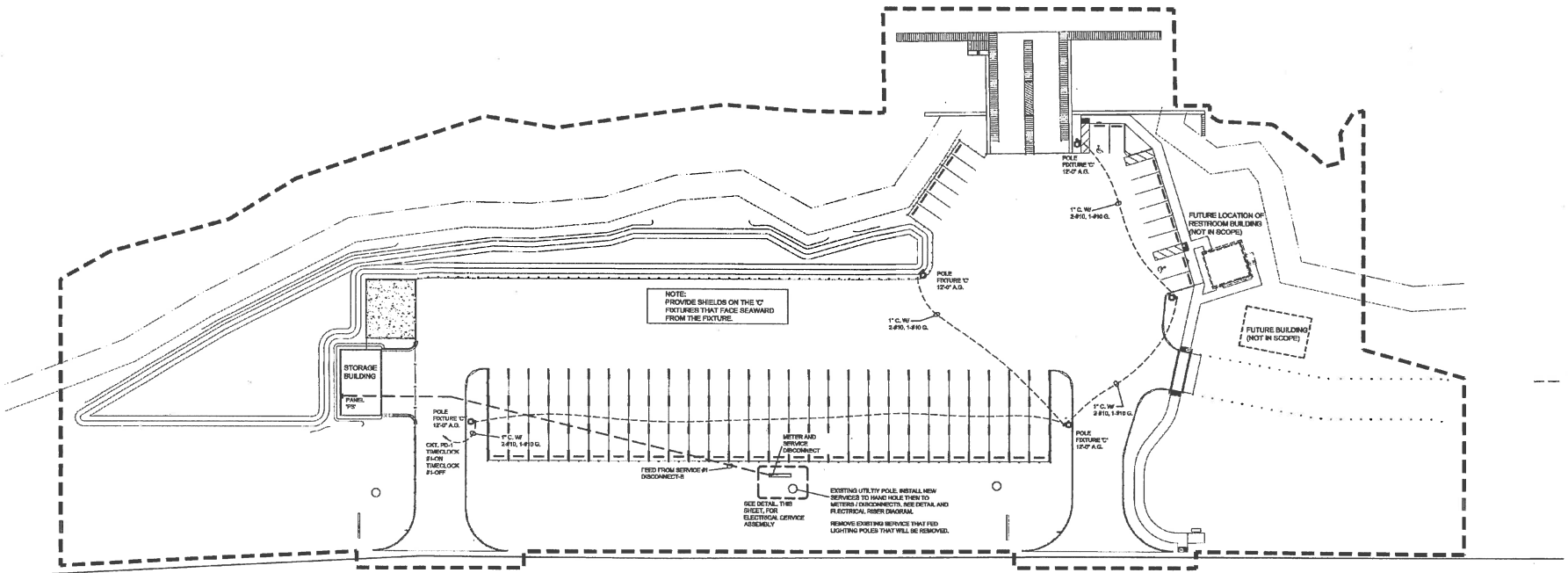
9/29/2015 12:40 PM CAD DWG FILE:13-0472 MECHANICAL-STORAGE BLDG.DWG



3 E101 LIGHTING POLE DETAIL
NO SCALE



2 E101 ELECTRICAL SERVICE DETAIL
NO SCALE



1 E101 ELECTRICAL SITE PLAN
1"=30'-0"

ME3
CONSULTING ENGINEERS, LLC
5300 PAYLOR LANE
SARASOTA, FL 34240
Tel: 941-748-1318 Fax: 941-748-1340
www.me3-engr.com sidney@me3-engr.com
Designed: B.A.K. ME3 Job No: 13-0472
Checked: B.P.Z. Date: 04/02/2015
Drawn: B.A.K. C.O.A. 27862

Copyright 2015 ME3 All rights reserved

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5691
FAX (941)729-5692
WWW.UGARTEARCHITECTURE.COM
– AA-C001884 –

ELECTRICAL SITE PLAN

MC COQUINA RESTROOMS NORTH

GULF DRIVE SOUTH, BRADENTON BEACH, FLORIDA 34217

REVISIONS
1 10/01/15

PROJECT NO:
DATE: 04/02/15
DRAWN BY: BAK
CHK'D BY: BPZ

BRYAN P. ZAPF, P.E.
FL LIC. NO. 48141

SHEET
E101

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

3/29/2015 12:56 PM CAD DWG FILE: 13-0472 ELECTRICAL-STORAGE BLDG.DWG

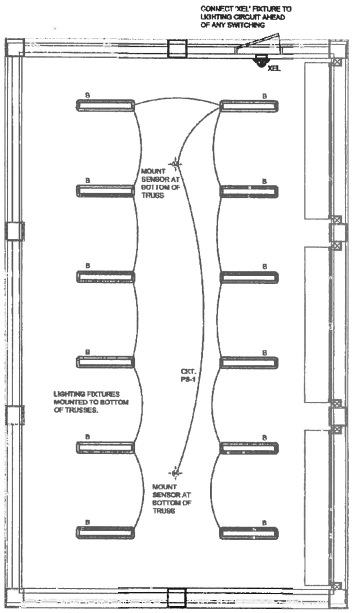
ME3
CONSULTING ENGINEERS, LLC
8500 PAYLOR LANE
SARASOTA, FL 34240
Tel: 941-745-1319 Fax: 941-745-1349
www.me3-engr.com sidney@me3-engr.com
Designed: B.A.K. ME3 Job No: 13-0472
Checked: B.P.Z. Date: 04/02/2015
Drawn: B.A.K. C.D.A. 27692
Copyright 2010 ME3 All rights reserved

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5691
FAX (941)729-5692
WWW.UGARTEARCHITECTURE.COM
— AA-C001654 —

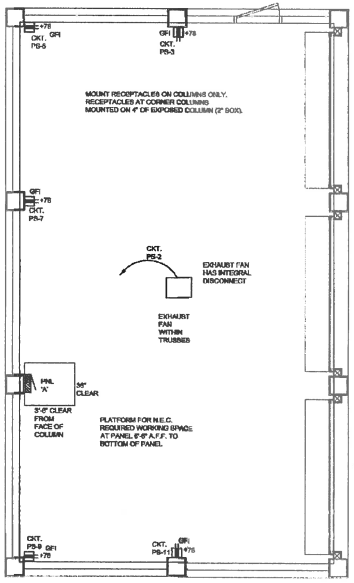
ELECTRICAL FLOOR PLANS

MC COQUINA RESTROOMS NORTH

GULF DRIVE SOUTH, BRADENTON BEACH, FLORIDA 34217



2 P201 LIGHTING STORAGE BUILDING PLAN
1/4"=1'0"



1 P201 ELECTRICAL STORAGE BUILDING PLAN
1/4"=1'0"

GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL COMPONENTS AT NON-WATERPROOFED STRUCTURES MUST BE MOUNTED ABOVE THE FEMA FLOOD ELEVATION OF 6'-0" A.F.F. (EXCEPT INTERIOR OF WATERPROOFED RESTROOMS BUILDING). VERIFY EXACT HEIGHT AT EACH STRUCTURE.
2. PROVIDE MACHINE ENGRAVED DEVICE COVERPLATES ON ALL DEVICES WITH THE PANEL AND CIRCUIT NUMBER PRIOR TO SUBSTANTIAL COMPLETION. INCLUDE DETAILS IN SUBMITTALS. COVERPLATES SHALL NOT BE LABELED IN THE FIELD.
3. PROVIDE ALL POWER AND SPECIAL COMPONENTS/CIRCUITS SHOWN. ALL CONDUIT MUST BE CONCEALED IN THE WALLS (EXCEPT DEVICES MOUNTED ON PUCRED COLUMNS IN STORAGE BUILDING), IN TRUSSES OR ABOVE THE CEILINGS.
4. PROVIDE ALL OCCUPANCY SENSORS AND TIMER SWITCHES SHOWN. PROVIDE SUBMITTALS TO ENGINEER IN AUTOCAD FORMAT TO INCLUDE ALL WIRING DIAGRAMS, DEVICE QUANTITIES AND COVERAGE AREAS. INCLUDE PROGRAMMING COSTS IN BID.
5. DO NOT SCALE FROM THESE DRAWINGS.
6. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
7. THE DIVISION 26 CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES TO ASSURE PROPER CLEARANCES FOR EQUIPMENT AND TO KEEP THE JOB PROGRESSING.
8. CONDUIT RUNS SHOWN ARE DIAGRAMMATIC IN NATURE. DIVISION 26 CONTRACTOR IS RESPONSIBLE FOR SIZING AND LOCATING PULL BOXES PER NEC AND FOR COORDINATION WITH OTHER DISCIPLINES.
9. PROVIDE 3#12AWG + 1#12AWG EQUIPMENT GROUND COPPER IN 3/4" CONDUIT FOR ALL 120V BRANCH CIRCUITS U.O.N. PROVIDE #10AWG COPPER CONDUCTORS + GN 20 AMPS/NL 120 VOLT BRANCH CIRCUITS LONGER THAN 75 FEET.

ELECTRICAL SYMBOL LIST

WIRING DEVICES

NOTE: ALL DEVICES SHALL BE WHITE IN COLOR. RECEPTACLES SHALL BE VERTICALLY MOUNTED WITH THE GROUND PIN HOLE LOCATED AT THE "TWELVE O'CLOCK" (TOP OF DEVICE) POSITION U.N.O.

NOTE: THE FOLLOWING ABBREVIATIONS APPLY TO WIRING DEVICES WHERE INDICATED:

"H" INDICATES HORIZONTALLY MOUNTED WIRING DEVICE.
"IG" INDICATES ISOLATED GROUND TYPE WIRING DEVICE.

"WP" INDICATES WEATHERPROOF FULLY GASKETED CAST ALUMINUM BACKBOX. INC RACEWAY WITH THREADED FITTINGS AND UL WET LABELED "IN-USE" COVER. PROVIDE INTERMATIC DIE-CAST WP10109MC SERIES WEATHERPROOF COVER.

GFCI TYPE DUPLEX RECEPTACLE, 20 AMP, HEAVY DUTY, RECESS MOUNT ABOVE SINK, COUNTER, CASEWORK, ETC. COORDINATE MOUNTING HEIGHT WITH ARCHITECTURAL ELEVATIONS AND/OR EXISTING CONDITIONS PRIOR TO ROUGH-IN

OCCUPANCY SENSOR SWITCHES

DUAL TECHNOLOGY OCCUPANCY SENSOR WALL SWITCH, ULTRASONIC AND PASSIVE INFRARED DETECTION. BUTTON FOR MANUAL "ON" AND MANUAL "OFF", HIGH HUMIDITY, 120V LINE VOLTAGE OPERATION. DEVICE WITH SMOOTH PLASTIC DECORA FACEPLATE. MOUNT 48"A.F. TO CENTER OF BACKBOX OR AS NOTED.
SENSOR SWITCH MODEL # WSX-PDT-IR-LT

DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR. ULTRASONIC AND PASSIVE INFRARED DETECTION. 360 DEGREE PATTERN. SELECTABLE OPERATION. HIGH HUMIDITY 120V LINE VOLTAGE OPERATION. WHITE DEVICE. WIRE IN PARALLEL IF TWO DEVICES ARE IN ONE ROOM.
SENSOR SWITCH MODEL # CMR-PDT-IR-LT

POWER DISTRIBUTION

PNL PANELBOARD, REFER TO THE "PANELBOARD SCHEDULE"

JUNCTION BOX. COORDINATE EXACT LOCATION AND MOUNTING WITH EQUIPMENT TO BE INSTALLED

REVISIONS
1 10/01/15

PROJECT NO:
DATE: 04/02/15
DRAWN BY: BAK
CHK'D BY: BPZ

BRYAN P. ZAPF, P.E.
FL LIC. NO. 48141

SHEET
E201

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

9/29/2015 1:25 PM CAD DWG FILE: 13-0472 ELECTRICAL-STORAGE BLDG.DWG

ME3
CONSULTING ENGINEERS, LLC
3900 PAYLOR LANE
SARASOTA, FL 34240
Tel: 941-748-1319 Fax: 941-748-1349
www.me3-engr.com aidney@me3-engr.com
Designed: B.A.K. ME3 Job No: 13-0472
Checked: B.P.Z. Date: 04/02/2015
Drawn: B.A.K. C.O.A. 27882
Copyright 2015 ME3 All rights reserved

UGARTE & ASSOCIATES, INC.
ARCHITECTURE PLANNING
434 9th AVENUE WEST
PALMETTO, FLORIDA 34221
PHONE (941)729-5697
FAX (941)729-5697
WWW.UGARTEARCHITECTURE.COM
AA-C001664

EST. FAULT CURRENT

CONDUCTOR LENGTH	275'
CONDUCTOR "C"	3,890
ESTIMATED TRANSFORMER SCA	10,417

275 X 10,417 / 3,890 X 240 = 3.0923

1 / 1 + 3.0923 = .2444

10,417 X .2444 = 2,545

2,545 SHORT CIRCUIT AMPS ESTIMATED AT SERVICE ENTRANCE

ELECTRICAL SERVICE CALCULATION

	CONNECTED	DEMAND
RECEPTACLE LOAD	900	900
LIGHTING >3 HR. LOAD	985	1,232
OTHER LOADS	147	147
TOTAL	2,032	2,279

9.5A DEMAND
100A SERVICE @ 240V, 1-PHASE PROVIDED

NOTE:
THE FUTURE RESTROOM BUILDING WILL BE FED FROM THE SAME SERVICE. ESTIMATED DEMAND FOR THE RESTROOM BUILDING IS 18 AMPS AT 240V, 1-PHASE.

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	FIXTURE DESCRIPTION	MANUFACTURER/ CATALOG NUMBER	VOLTS	LAMP INFORMATION QTY	LAMP INFORMATION TYPE	TOTAL INPUT WATTS	SEE SCHEDULE NOTE
B	4' LED VANDAL RESISTANT, PRISMATIC LENS, WHITE BODY, TAMPER RESISTANT.	LUMINARIE VRF34-SDWHR-4000-120-CF-WHT -TXSBD	120	LED	4,802 LUMEN 4000K	40W	2
C	LED TURTLE SAFE POLE MOUNTED AREA, BRONZE. LED COLOR MIN / MAX WAVELENGTH: 595nm / 595nm. FLAT GLASS LENS	STERNBERG CMRQA 1537 R AND F SERIES, AMBER LED FIXTURE HAS FWC APPROVAL #2005-002	120	LED	4700LUMEN WAVELENGTH: 595NM / 595NM	101W	1, 3, 6
XEL	EXIT SIGN / EGRESS LIGHTING COMBO UNIT WITH BATTERY BACKUP. WHITE BODY WITH RED LETTERS, SIDE MOUNT 6SRWSB HEADS	LITHONIA EHOM-SWGR	UNIV @ 120	LED/ 2	LED/ 6V, 5.4W	4W	4, 5

LIGHTING FIXTURE SCHEDULE GENERAL NOTES:

A. FIXTURES PROPOSED AS EQUIVALENT TO SPECIFIED FIXTURES SHALL BE JUDGED ON EFFICIENCY, PERFORMANCE AND CONSTRUCTION, NOT FIXTURE CONSTRUCTION ALONE. THE ENGINEER OF RECORD RESERVES THE RIGHT TO DETERMINE FIXTURE EQUIVALENTS AND THE DECISION OF THE ENGINEER IS FINAL. THE "C" FIXTURE SPECIFIED MATCHES OTHER EXISTING EXTERIOR FIXTURES NEAR THE PROJECT LOCATION AND SUBSTITUTIONS WILL BE JUDGED TO GLOBALLY MATCH THE EXISTING FIXTURES OR BE REJECTED.

B. LIGHTING FIXTURE SUBMITTAL CUT SHEETS SHALL INCLUDE INFORMATION ON HOW THE FIXTURE CATALOG NUMBER IS COMPILED AND SHALL INCLUDE CUT SHEETS OF ALL OPTIONAL COMPONENTS, SUCH AS FRAME-IN-KITS, BALLAST / DRIVER INFORMATION, INPUT WATTS, BALLAST FACTOR, SHIELD INFORMATION, LAMPS, ETC.

C. LIGHTING FIXTURE'S SHALL BE SUPPORTED PER NEC ARTICLE 410.

D. LIGHTING SYSTEMS, SESCO (TAMPA OFFICE), TAMPA BAY LIGHTING, AND WESTERN FLORIDA LIGHTING. THE ENGINEER RESERVES THE RIGHT TO DETERMINE FIXTURE EQUIVALENTS BASED ON THE CATALOG SERIES, APPEARANCE AND THE ENGINEER'S JUDGMENT AND MAY REJECT FIXTURES ON THESE GROUNDS.

SCHEDULE NOTES: (APPLICABLE WHERE REFERENCED)

1. FIXTURE SHALL BE TURTLE SAFE WITH A MINIMUM LAMP COLOR WAVELENGTH OF 595nm AND A MAXIMUM WAVELENGTH OF 595nm. FIXTURES AND LAMP COLOR WAVELENGTH MUST BE APPROVED AND CERTIFIED BY THE FLORIDA FISH AND WILDLIFE CONSERVATION COMMISION (FWC) PRIOR TO SUBMITTAL AND ORDERING. A SAMPLE FIXTURE MAY HAVE TO BE DIRECTLY TESTED BY THE FWC OFFICE. INCLUDE FWC APPOVAL NUMBER WITH SUBMITTAL. PROVIDE PHYSICAL SHIELD TO BLOCK LIGHT SOURCE AND DIRECTED LIGHT VISIBLE FROM THE SEAWARD SIDE OF THE FIXTURE. IN SOME CASES THE SHIELD WILL BE REQUIRED ON MULTIPLE SIDES OF THE FIXTURE. FIXTURE SPECIFIED HAS FWC APPROVAL NUMBER 2005-002.
2. MOUNTED AT CEILING.
3. FIXTURE SHALL HAVE SHIELD SO THAT NO DIRECT LIGHT IS VISIBLE WHEN FIXTURE IS OBSERVED FROM SEAWARD. PROVIDE SHIELD ON SIDES OF FIXTURE THAT FACE THE WATER.
4. WALL MOUNTED 7'-6" AFF TO CENTER.
5. CONNECT EMERGENCY EGRESS FIXTURE TO THE LINE SIDE OF THE LIGHTING CIRCUIT, AHEAD OF ANY SWITCHING.
6. PROVIDE POLE AND TENON / ARM FOR MOUNTING FIXTURE TO POLE. COLOR SHALL MATCH FIXTURE. BOTTOM OF FIXTURE MOUNTED 12'-0" ABOVE GRADE. SEE DETAIL FOR MOUNTING OF POLE.

CONDUIT AND WIRE SCHEDULE

CKT	POLE	WIRE SIZE	CONDUIT	PHASE	CKT	POLE	WIRE SIZE	CONDUIT	PHASE
20A	1	2-#12, 1-#12 G.	3/4"	1Ø 2W	50A	2	2-#8, 1-#10 G.	1"	1Ø 2W
20A	2	2-#12, 1-#12 G.	3/4"	1Ø 2W	50A	3	3-#8, 1-#10 G.	1"	3Ø 3W
20A	3	3-#12, 1-#12 G.	3/4"	3Ø 3W	50A	3	3-#8, 1-#8 N., 1-#10 G.	1"	3Ø 4W
25A	1	2-#10, 1-#10 G.	3/4"	1Ø 2W	60A	2	2-#6, 1-#10 G.	1"	1Ø 2W
25A	2	2-#10, 1-#10 G.	3/4"	1Ø 2W	60A	3	3-#6, 1-#10 G.	1"	3Ø 3W
25A	3	3-#10, 1-#10 G.	3/4"	3Ø 3W	60A	3	3-#6, 1-#6 N., 1-#10 G.	1 1/4"	3Ø 4W
30A	1	2-#10, 1-#10 G.	3/4"	1Ø 2W	70A	2	2-#4, 1-#6 G.	1"	1Ø 2W
30A	2	2-#10, 1-#10 G.	3/4"	1Ø 2W	70A	3	3-#4, 1-#6 G.	1 1/4"	3Ø 3W
30A	3	3-#10, 1-#10 G.	3/4"	3Ø 3W	70A	3	3-#4, 1-#4 N., 1-#6 G.	1 1/4"	3Ø 4W
30A	3	3-#10, 1-#10 N., 1-#10 G.	3/4"	3Ø 4W	80A	2	2-#3, 1-#6 G.	1"	1Ø 2W
35A	3	3-#8, 1-#10 G.	1"	3Ø 3W	80A	3	3-#3, 1-#6 G.	1 1/4"	3Ø 3W
35A	3	3-#8, 1-#8 N., 1-#10 G.	1"	3Ø 4W	80A	3	3-#3, 1-#4 N., 1-#6 G.	1 1/4"	3Ø 4W
40A	2	2-#8, 1-#10 G.	1"	1Ø 2W	90A	2	2-#3, 1-#6 G.	1 1/4"	1Ø 2W
40A	3	3-#8, 1-#10 G.	1"	3Ø 3W	90A	3	3-#3, 1-#6 G.	1 1/4"	3Ø 3W
40A	3	3-#8, 1-#8 N., 1-#10 G.	1"	3Ø 4W	90A	3	3-#3, 1-#3 N., 1-#6 G.	1 1/2"	3Ø 4W
45A	2	2-#8, 1-#10 G.	1"	1Ø 2W	100A	2	2-#3, 1-#6 G.	1 1/4"	1Ø 2W
45A	3	3-#8, 1-#10 G.	1"	3Ø 3W	100A	3	3-#3, 1-#6 G.	1 1/4"	3Ø 3W
45A	3	3-#8, 1-#8 N., 1-#10 G.	1"	3Ø 4W	100A	3	3-#3, 1-#3N., 1-#6 G.	1 1/2"	3Ø 4W

NOTES:
1. ALL CONDUCTORS SHALL BE COPPER.
2. ALL CONDUIT SHALL HAVE GROUNDING CONDUCTOR INSTALLED.
3. CONDUIT BELOW GRADE OUTSIDE OF BUILDING SHALL BE 1" MINIMUM.
4. SIZING OF CONDUCTORS MUST BE ALTERED FOR DERATING PER N.E.C. FOR VOLTAGE DROP CONSIDERATIONS. 120V CIRCUITS GREATER THAN 75 FEET IN LENGTH SHALL USE ONE WIRE SIZE LARGER.
5. SEE RISER DIAGRAM FOR SIZING OF CIRCUITS GREATER THAN 100A.
6. IF CONDUIT AND CONDUCTOR SIZES ARE SHOWN ON THE PLAN, THIS SCHEDULE DOES NOT APPLY.

PANELBOARD DESIGNATION: PS

VOLTAGE: 240/120V 1Ø/3-W MAINS RATING: 100 AMPS MAIN CB TRIP RATING: 100 AMPS
■ SURFACE ■ MCB ☐ FLUSH ☐ MLO FEED THRU LUGS
INTERRUPTING RATING: 10,000 AIC
ENCLOSURE: NEMA 1

SERVED	CB SIZE	LOAD VA	CKT#			CKT#	LOAD VA	CB SIZE	SERVED
LTG-INTERIOR	20	730	1			2	147	20	EXHAUST FAN
RECEPTACLES	20	180	3			4	269	20	LTG-PARKING
RECEPTACLES	20	180	5			6			
RECEPTACLES	20	180	7			8			
RECEPTACLES	20	180	9			10			
RECEPTACLES	20	180	11			12			
			13			14			
			15			16			
SURGE PROTECTION	30/2		17			18			
			19			20			
			21			22			
			23			24			
			25			26			
			27			28			
			29			30			
			A	B					DEMAND: 1.8 KW

ELECTRICAL RISER NOTES

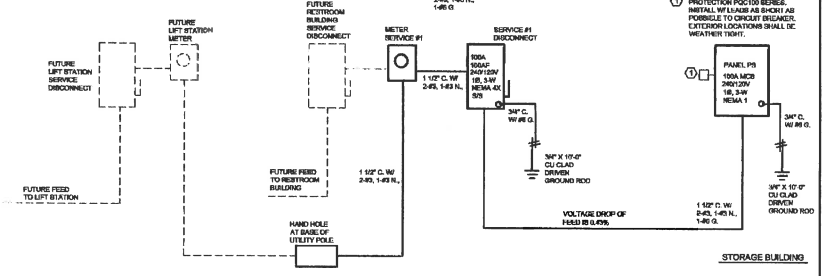
1. PROVIDE UTILITY COMPLIANT METER BASES ACCORDING TO UTILITY COMPANY GUIDELINES. SEE SITE PLAN FOR PROPOSED LOCATION. MODIFY LOCATION AS REQUIRED TO COMPLY WITH UTILITY COMPANY REQUIREMENTS.

2. PROVIDE 100KA PER PHASE (MINIMUM) SURGE PROTECTION DEVICE (SPD) CLOSE NIPPLED TO EQUIPMENT. PROVIDE PQ PROTECTION PQC100 SERIES DEVICES. PROVIDE CONFIGURATION TO MATCH THE ELECTRICAL SERVICE SERVED. PROVIDE HDPE SOLID INSULATED COPPER CONDUCTORS IN 3/4" CONDUIT BETWEEN "SPD" AND EQUIPMENT. DO NOT EXTEND MANUFACTURERS WIRE LEADS. KEEP LEAD LENGTHS AS SHORT AS POSSIBLE. BRAID ALL LEADS TOGETHER AND BIND WITH TIE WRAPS ON 6" CENTERS (MAX.). COORDINATE QUANTITY OF REQUIRED CONDUCTORS WITH MANUFACTURERS INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS.

3. PROVIDE ENGRAVED, PLASTIC LAMINATE NAMEPLATE ON ALL PANELBOARDS, CONTROL PANELS, TERMINAL CABINETS, DISCONNECT SWITCHES, EQUIPMENT, ETC. NAMEPLATE SHALL STATE EQUIPMENT NAME AS INDICATED ON THIS DRAWING, AS REQUIRED TO COMPLY WITH OWNERS STANDARD NAMING CONVENTION OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

4. BOND GROUNDING TO BUILDING REINFORCEMENT STEEL, METAL WATER PIPING, OR OTHER METALLIC COMPONENTS OF THE STRUCTURE.

5. ALL ELECTRICAL COMPONENTS MOUNTED AT / IN STRUCTURES SHALL BE INSTALLED ABOVE THE FEMA FLOOD ELEVATION. VERIFY HEIGHT OF FEMA FLOOD ELEVATION WHERE EQUIPMENT IS INSTALLED.



ELECTRICAL SERVICE POINT
SERVICE POINT WILL BE MOUNTED ON BERM ABOVE FLOOD ELEVATION

ELECTRICAL RISER DIAGRAM
NO SCALE

ELECTRICAL DETAILS

MC COQUINA RESTROOMS NORTH

GULF DRIVE SOUTH, BRADENTON BEACH, FLORIDA 34217

REVISIONS
1 10/01/15

PROJECT NO:
DATE: 04/02/15
DRAWN BY: BAK
CHKD BY: BPZ

COPYRIGHT: UGARTE & ASSOCIATES, INC. 2014

BRYAN P. ZAPF, P.E.
FL LIC. NO. 46141

SHEET
E501

9/29/2015 2:07 PM CAD DWG FILE: 13-0472 ELECTRICAL-STORAGE BLDG.DWG

ELECTRICAL SPECIFICATIONS (DIVISION 26)

SCOPE OF WORK AND GENERAL CONDITIONS:

THE SCOPE OF WORK SPECIFIED HEREIN CONSISTS OF PROVIDING (EFFTIMED) AS FURNISH AND INSTALL) ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE THE ELECTRICAL AND RELATED WORK INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN AND SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. ELECTRICAL WORK INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

PANELBOARDS
CIRCUIT BREAKERS
DISCONNECT SWITCHES
GROUNDING
RACEWAY FOR POWER DISTRIBUTION WIRING
CONDUCTORS FOR POWER DISTRIBUTION
WIRING DEVICES
LIGHTING FIXTURES
RACEWAY FOR COMMUNICATIONS WIRING (VOICE, DATA, TELEVISION)
CONNECTION OF MOTORS, CONTROL DEVICES AND ELECTRICAL EQUIPMENT FURNISHED BY OTHERS
TESTING
FINAL ACCEPTANCE/WARRANTY
RECORD DRAWINGS

ITEMS SPECIFIED HEREIN, SHOWN ON THE DRAWINGS, AND/OR REASONABLY INTERPRETED FROM THE DRAWINGS THAT ARE NECESSARY TO COMPLETE THE ELECTRICAL WORK SHALL BE PROVIDED BY THIS DIVISION, WHETHER ITEM IS SPECIFICALLY SHOWN OR NOT.

GENERAL:

CONTRACTOR SHALL BECOME THOROUGHLY ACQUAINTED WITH THE PROJECT SITE (e.g. EXISTING CONDITIONS) AND THE ENTIRE CONSTRUCTION DOCUMENTS PACKAGE (e.g. ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL DRAWINGS AND SPECIFICATIONS) BEFORE BID SUBMISSION. WORK OF THE ELECTRICAL CONTRACTOR MUST BE COORDINATED WITH THE WORK OF ALL TRADES.

CONTRACTOR SHALL REVIEW THE ENTIRE CONSTRUCTION DOCUMENTS PACKAGE AND SHALL SEARCH FOR EQUIPMENT, LIGHTING FIXTURES, ETC THAT REQUIRE ELECTRICAL SERVICE THAT ARE NOT SHOWN ON THE ELECTRICAL DRAWINGS. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ ENGINEER PRIOR TO BID IF EQUIPMENT, LIGHTING FIXTURES, ETC REQUIRING ELECTRICAL SERVICE APPEAR ON THE DRAWINGS OF OTHER TRADES THAT DO NOT APPEAR ON THE ELECTRICAL DRAWINGS.

INTENT:

THE INTENT OF THE DRAWINGS AND SPECIFICATIONS IS TO DESCRIBE THAT COMPLETE ELECTRICAL AND SPECIAL SYSTEMS ARE REQUIRED, HOWEVER, THE WORK SHALL BE COMPLETE EVEN THOUGH ITEMS MAY NOT BE SPECIFICALLY CALLED FOR OR SHOWN. INSTALLATIONS SHALL MEET ALL GOVERNING CODES, SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT ENGINEER AND ALL AGENCIES HAVING JURISDICTION.

WORK NOT COVERED IN THIS SECTION:

RECESSES, CHASES, AND OTHER PROVISIONS TO BE MADE IN THE STRUCTURE AS REQUIRED TO ACCOMMODATE ELECTRICAL ITEMS, SUCH AS CONDUIT, PANELS, SWITCHES, ETC, SHALL BE PROVIDED BY THE TRADES CONCERNED. THE ELECTRICIAN SHALL, HOWEVER, NOTIFY ALL SUCH TRADES OF HIS EXACT REQUIREMENTS AHEAD OF TIME AND SHALL PAY THE COSTS OF ANY CUTTING OR PATCHING CAUSED BY FAILURE TO DO SO. ALL SUCH REMEDIAL WORK SHALL BE DONE ONLY BY MECHANICS OF THE TRADES INVOLVED.

PERMITS, TAXES, FEES:

CONTRACTOR SHALL OBTAIN ALL GOVERNMENTAL PERMITS, PAY ALL SALES TAXES AND OTHER ASSOCIATED FEES INCLUDING COSTS FOR UTILITY CONNECTIONS, REQUIRED TO PERFORM THE INTENDED ELECTRICAL WORK. CONTRACTOR SHALL FILE ALL NECESSARY PLANS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION. CONTRACTOR SHALL OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTION FOR ELECTRICAL WORK AND DELIVER SAME TO THE OWNER AND ARCHITECT BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK.

CONTRACTOR SHALL INCLUDE IN THE WORK, WITHOUT EXTRA COST TO THE OWNER, ALL LABOR, MATERIALS, SERVICES, APPARATUS, OR DRAWINGS NECESSARY TO COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES AND REGULATIONS, WHETHER OR NOT SHOWN ON DRAWINGS AND/OR SPECIFIED.

ALL MATERIALS FURNISHED AND ALL WORK INSTALLED SHALL COMPLY WITH THE FOLLOWING:
NATIONAL ELECTRIC CODE (NEC)
2010 FLORIDA BUILDING CODE WITH ANY AMENDMENTS
NATIONAL BUREAU OF FIRE UNDERWRITERS
REGULATIONS OF THE SERVING UTILITY COMPANIES

ALL MATERIAL AND EQUIPMENT PROVIDED FOR THE ELECTRICAL WORK SHALL BEAR THE APPROVAL LABEL, OR SHALL BE LISTED, BY UNDERWRITERS' LABORATORIES, INC.

MEASUREMENTS:

SHOULD THE CONTRACTOR DISCOVER ANY DISCREPANCY BETWEEN ACTUAL MEASUREMENTS AND THOSE INDICATED ON THE DRAWINGS, WHICH PREVENTS FOLLOWING GOOD PRACTICE OR THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, HE SHALL NOTIFY THE ARCHITECT/ ENGINEER THROUGH THE GENERAL CONTRACTOR, AND SHALL NOT PROCEED WITH THIS WORK UNTIL HE HAS RECEIVED INSTRUCTIONS FROM THE ARCHITECT/ ENGINEER. ALL REQUESTS FOR INFORMATION (RFI) SHALL INCLUDE A PROPOSED SOLUTION.

PRIOR TO ROUGH-IN OF EQUIPMENT THE OWNER, ARCHITECT AND ENGINEER RESERVE THE RIGHT TO RELOCATE ANY PANELBOARD, DISCONNECT, STARTER, LIGHTING FIXTURE, WIRING DEVICE, COMMUNICATIONS OUTLET, WITHIN THREE (3) FEET IN ANY DIRECTION WITHOUT ANY ADDITIONAL CHARGE, FEE, OR CHANGE ORDER.

DRAWINGS:

DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF THE ELECTRICAL AND SPECIAL SYSTEMS WORK INCLUDED IN THE CONTRACT. THE ENTIRE CONSTRUCTION DOCUMENTS PACKAGE (DRAWINGS AND SPECIFICATIONS) SHALL BE EXAMINED FOR EXACT LOCATION OF FIXTURES, DEVICES AND EQUIPMENT. WHERE ITEMS ARE NOT LOCATED BY THE DRAWINGS OR SPECIFICATIONS OF OTHER CONSULTANTS THEN THE ITEMS SHALL BE LOCATED PER THE ENGINEERING DRAWINGS. HOWEVER, THE DRAWINGS ARE NOT TO BE SCALED.

CONTRACTOR SHALL FOLLOW THE ELECTRICAL DRAWINGS IN LAYING OUT WORK AND SHALL COORDINATE WITH THE DRAWINGS OF OTHER TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM AND SPACE AT ALL LOCATIONS. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED BEFORE PROCEEDING WITH INSTALLATION. ALL REQUESTS FOR INFORMATION (RFI) SHALL INCLUDE A PROPOSED SOLUTION.

IF DIRECTED BY THE ARCHITECT/ ENGINEER, THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LOCATIONS OF ELECTRICAL WORK AS NEEDED TO PREVENT CONFLICTS WITH WORK OF OTHER TRADES AND FOR PROPER INSTALLATION OF THE WORK.

COOPERATION WITH OTHER TRADES:

REFER TO THE "NATIONAL ELECTRICAL CODE REQUIRED WORKING SPACE NOTES" INCLUDED WITH THIS SERIES CONSTRUCTION DOCUMENTS FOR ADDITIONAL COORDINATION REQUIREMENTS

CONTRACTOR SHALL GIVE FULL COOPERATION TO OTHER TRADES AND SHALL FURNISH IN WRITING TO THE ARCHITECT/ENGINEER ANY INFORMATION NECESSARY TO PERMIT THE WORK OF OTHER TRADES TO BE INSTALLED SATISFACTORILY AND WITH THE LEAST POSSIBLE INTERFERENCE OR DELAY.

WHERE ELECTRICAL WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO, OR MAY INTERFERE WITH, WORK OF OTHER TRADES THE CONTRACTORS SHALL ASSIST EACH OTHER IN WORKING OUT A SATISFACTORY SPACE FOR EACH CONTRACTOR'S WORK. IF DIRECTED BY THE ARCHITECT/ENGINEER, THE CONTRACTOR SHALL PREPARE COMPOSITE WORKING DRAWINGS AND SECTIONS AT SUITABLE SCALE, NOT LESS THAN 1/8" = 1'-0", CLEARLY SHOWING HOW WORK IS TO BE INSTALLED IN RELATION TO WORK OF OTHER TRADES. IF THE CONTRACTOR INSTALLS HIS WORK BEFORE COORDINATING WITH OTHER TRADES, OR CAUSES ANY INTERFERENCE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE THE NECESSARY CHANGES IN THE ELECTRICAL WORK TO CORRECT THE CONDITIONS WITHOUT EXTRA CHARGE.

CONTRACTOR SHALL FURNISH TO OTHER TRADES, AS REQUIRED, ALL NECESSARY TEMPLATES, PATTERNS, AND ASSEMBLY DETAILS FOR THE PROPER INSTALLATION OF WORK AND FOR THE PURPOSE OF COORDINATING ADJACENT WORK.

SCAFFOLDING, RIGGING, HOISTING:

CONTRACTOR SHALL PROVIDE ALL SCAFFOLDING, RIGGING AND HOISTING NECESSARY FOR ERECTION AND DELIVERY INTO THE PREMISES OF ALL ELECTRICAL EQUIPMENT. REMOVE SAME FROM PREMISES WHEN NO LONGER REQUIRED.

EXCAVATING AND BACKFILLING:

CONTRACTOR SHALL PROVIDE ALL TRENCH AND PIT EXCAVATION AND BACKFILLING REQUIRED FOR WORK UNDER THIS SECTION OF THE SPECIFICATIONS, BOTH INSIDE AND OUTSIDE OF THE BUILDING, INCLUDING REPAIRING OF FINISHED SURFACES, ALL REQUIRED SHORING, BRACING, PUMPING, AND ALL PROTECTION FOR SAFETY OF PERSONS AND PROPERTY. LOCAL AND STATE SAFETY CODES SHALL BE FOLLOWED. IN ADDITION, THE CONTRACTOR SHALL CHECK THE ELEVATIONS OF THE UTILITIES ENTERING AND LEAVING THE BUILDING. IF SUCH ELEVATIONS REQUIRE EXCAVATIONS LOWER THAN THE FOOTING LEVELS, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED IF SUCH CONDITIONS BEFORE EXCAVATIONS COMMENCE. CONTRACTOR SHALL MAKE EXCAVATIONS AT THE MINIMUM REQUIRED DEPTHS IN ORDER NOT TO UNDERCUT THE FOOTINGS. CONFORM TO THE REQUIREMENTS OF THE STATE OF FLORIDA "TRENCH SAFETY ACT". FILLING, BACKFILLING AND COMPACTION SHALL BE AS SPECIFIED IN OTHER AREAS OF THE CONTRACT DOCUMENTS AND SPECIFICATIONS.

MATERIAL AND WORKMANSHIP:

ALL MATERIALS AND APPARATUS REQUIRED FOR ELECTRICAL WORK, EXCEPT AS SPECIFICALLY NOTED OTHERWISE, SHALL BE NEW, OF FIRST CLASS QUALITY, AND SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED AND FINISHED IN EVERY DETAIL AND SHALL BE SELECTED AND ARRANGED AS TO FIT PROPERLY INTO THE BUILDING SPACES. WHERE NO SPECIFIC KIND OR QUALITY OF MATERIAL IS GIVEN, A FIRST CLASS STANDARD ARTICLE, AS APPROVED BY THE ENGINEER, SHALL BE PROVIDED.

CONTRACTOR SHALL PROCURE THE SERVICES OF AN EXPERIENCED SUPERINTENDENT, WHO SHALL BE CONSTANTLY IN CHARGE OF THE INSTALLATION OF THE WORK, TOGETHER WITH ALL SKILLED WORK PERSONNEL, FITTERS, METAL WORKERS, WELDERS, HELPERS, AND LABOR REQUIRED TO UNLOAD, TRANSFER, ERECT, CONNECT, ADJUST, START, OPERATE AND TEST EACH SYSTEM.

ALL EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. THIS INCLUDES THE PERFORMANCE OF ALL TESTS RECOMMENDED BY THE MANUFACTURERS.

CUTTING AND PATCHING:

CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING NECESSARY TO INSTALL ELECTRICAL WORK. PATCHING SHALL MATCH ADJACENT SURFACES AND SHALL MEET THE APPROVAL OF THE ARCHITECT AND OWNER.

NO STRUCTURAL MEMBERS SHALL BE CUT OR MODIFIED IN ANY WAY WITHOUT THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER. ANY MODIFICATION SHALL BE DONE IN A MANNER APPROVED BY THE STRUCTURAL ENGINEER.

SLEEVES AND PLATES:

CONTRACTOR SHALL PROVIDE AND LOCATE ALL SLEEVES REQUIRED FOR ELECTRICAL WORK BEFORE THE FLOORS, WALLS AND CEILINGS ARE CONSTRUCTED, OR SHALL BE RESPONSIBLE FOR THE COST OF CUTTING AND PATCHING WHERE SLEEVES WERE NOT INSTALLED, OR WHERE INCORRECTLY LOCATED. CONTRACTOR SHALL PROVIDE ALL DRILLING REQUIRED FOR THE INSTALLATION OF HIS HANGERS. SLEEVES SHALL BE PROVIDED FOR ALL CONDUIT PASSING THROUGH CONCRETE FLOOR SLAB ABOVE GROUND AND CONCRETE BASEMENT, TILE AND STONE WALL CONSTRUCTION.

WHERE CONDUIT SLEEVES ARE PLACED IN EXTERIOR WALLS BELOW GRADE, THE SPACE BETWEEN THE CONDUIT AND THE SLEEVES SHALL BE SEALED WATERTIGHT.

WHERE CONDUIT MOTION DUE TO EXPANSION AND CONTRACTION WILL OCCUR, PROVIDE SLEEVES OF SUFFICIENT DIAMETER TO PERMIT FREE MOVEMENT OF THE CONDUIT. CHECK FLOOR AND WALL CONSTRUCTION PLANS FIRST TO DETERMINE PROPER LENGTH OF SLEEVES FOR VARIOUS LOCATIONS. PROVIDE ACTUAL LENGTHS TO SUIT THE FOLLOWING:
1. TERMINATE SLEEVES FLUSH WITH WALLS, PARTITIONS AND CEILING.
2. IN AREAS WHERE CONDUIT IS CONCEALED, AS IN CHASES, TERMINATE SLEEVES 1" ABOVE FLOOR.
3. IN AREAS WHERE CONDUIT IS EXPOSED, EXTEND SLEEVES 2" ABOVE FINISHED FLOOR.
4. SLEEVES SHALL BE CONSTRUCTED OF SCHEDULE 40 STEEL PIPE.

FASTEN SLEEVES SECURELY IN FLOORS AND WALLS SO THEY WILL NOT BECOME DISPLACED WHEN CONCRETE IS POURED OR WHEN OTHER CONSTRUCTION IS BUILT AROUND THEM. TAKE PRECAUTIONS TO PREVENT CONCRETE, PLASTER OR OTHER MATERIALS FROM BEING FORCED INTO THE SPACE BETWEEN PIPE AND SLEEVE DURING CONSTRUCTION.

PENETRATIONS:

ALL PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS SHALL BE PROVIDED WITH A UL APPROVED FIRESTOP RATED PENETRATION SYSTEM IN ACCORDANCE WITH NFPA 101-2006, LIFE SAFETY CODE.

PROVIDE WATERTIGHT ASSEMBLIES, MATERIALS, SEALANTS, ETC AROUND RACEWAY WHERE RACEWAY PASSES THROUGH INTERIOR/EXTERIOR OF BUILDING AT BOTH ABOVE AND BELOW GROUND RACEWAY PENETRATION LOCATIONS.

SUBSTITUTION OF SPECIFIED EQUIPMENT:

MATERIALS OR PRODUCTS SPECIFIED BY TRADE NAME, MANUFACTURER'S NAME OR CATALOG NUMBER SHALL BE PROVIDED AS SPECIFIED.

SUBSTITUTIONS ARE NOT PERMITTED WITHOUT WRITTEN APPROVAL TEN (10) WORKING DAYS PRIOR TO BID DATE FROM THE ENGINEER VIA THE ARCHITECT. APPROVALS OF "EQUIVALENT" MATERIALS OR PRODUCTS WILL BE MADE AVAILABLE TO ALL KNOWN BIDDERS AND ISSUED AS AN ADDENDUM (PRIOR TO BID) TO THE CONTRACT DOCUMENTS IF SUBSTITUTED MATERIALS OR PRODUCTS ARE APPROVED BY ARCHITECT/ ENGINEER.

ANY CONTRACTOR PROPOSING AN "EQUIVALENT" MATERIAL OR PRODUCT MUST SUBMIT, WITH THE REQUEST, COMPLETE CATALOG INFORMATION TO PERMIT EVALUATION OF THE PRODUCT. IN THE CASE OF LIGHTING FIXTURES, AN INDEPENDENT TESTING LABORATORY TEST REPORT (NOT THE MANUFACTURER'S) STATING FIXTURE EFFICIENCY AND PERFORMANCE, SHALL ACCOMPANY THE REQUEST.

CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE CORRECTIONS TO ALL SITUATIONS CREATED BY THE SUBSTITUTION OF MATERIALS OR PRODUCTS. THE ACCEPTANCE OF SUBSTITUTED MATERIALS OR PRODUCTS, EITHER PRIOR TO BID OR THEREAFTER, DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY TO PROVIDE CORRECTIONS, AT HIS/HER EXPENSE, FOR ALL DISCREPANCIES AND CONFLICTS CREATED BY THE SUBSTITUTION OF MATERIALS OR PRODUCTS.

SHOP DRAWINGS:

CONTRACTOR SHALL SUBMIT FOR REVIEW AND APPROVAL SHOP DRAWINGS OF ALL MATERIALS OR PRODUCTS REQUIRED TO COMPLETE THE PROJECT AND NO MATERIALS OR PRODUCTS SHALL BE DELIVERED TO THE JOB SITE OR INSTALLED UNTIL THE CONTRACTOR HAS ENGINEER APPROVED SHOP DRAWINGS.

SHOP DRAWINGS FOR ELECTRICAL MATERIALS AND PRODUCTS SHALL BE SUBMITTED AS ONE COMPLETE PACKAGE, AT ONE TIME AND NOT INDIVIDUAL SUBMITTALS. CONTRACTOR SHALL FURNISH THE NUMBER OF COPIES REQUIRED BY THE GENERAL AND SPECIAL CONDITIONS OF THE CONTRACT, BUT IN NO CASE LESS THAN SIX (6) IDENTICAL COPIES.

SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED BY THE ELECTRICAL AND GENERAL CONTRACTORS FOR COMPLIANCE WITH THE SPECIFIED MATERIALS AND PRODUCTS PRIOR TO SUBMISSION TO THE ARCHITECT/ ENGINEER.

CUT SHEETS, DRAWINGS, SPECIFICATIONS, ETC SUBMITTED FOR REVIEW SHALL BE PROPERLY LABELED AND SHALL CLEARLY IDENTIFY THE SPECIFIC ITEM(S) FOR WHICH THE CONTRACTOR IS PROPOSING TO PROVIDE. CUT SHEETS THAT ARE NOT MARKED TO IDENTIFY THE SPECIFIC ITEM BEING PROPOSED MAY BE RETURNED FOR CLARIFICATION.

"NO EXCEPTION" RENDERED ON SHOP DRAWINGS SHALL NOT BE CONSIDERED AS A GUARANTEE THAT THE MATERIAL OR PRODUCTS COMPLY WITH THE BUILDING CONDITIONS OR MEASUREMENTS. WHERE SHOP DRAWINGS ARE REVIEWED, "NO EXCEPTION" DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF PROVIDING LABOR, MATERIAL OR PRODUCTS REQUIRED TO PERFORM THE WORK AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

SHOP DRAWINGS SUBMITTALS ARE REQUIRED ON ELECTRICAL DISTRIBUTION EQUIPMENT, PANELBOARDS, TRANSFORMERS, CONDUIT, CONDUCTORS (WIRE), CIRCUIT BREAKERS, DISCONNECT SWITCHES, WIRING DEVICES, FLOOR BOXES, LIGHT FIXTURES, TRACLOCKS, CONTACTORS AND SURGE PROTECTION DEVICES (SPDs).

PANELBOARDS:

PROVIDE POWER DISTRIBUTION EQUIPMENT AS INDICATED ON THE ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULES. PANELBOARDS SHALL BE OF DEAD FRONT CONSTRUCTION AND SHALL BE MANUFACTURED BY CUTLER-HAMMER.

PANELBOARDS SHALL NOT BE LESS THAN 28" WIDE AND SHALL BE FABRICATED FROM CODE GAUGE STEEL WITH A POST FABRICATION APPLIED GRAY ENAMEL FINISH.

PANELBOARD INTERNAL COMPONENTS SHALL BE CONSTRUCTED AND ULL LISTED TO WITHSTAND THE SYMMETRICAL SHORT CIRCUIT AMPERES INDICATED ON THE ELECTRICAL RISER DIAGRAM OR PANEL SCHEDULES.

WIRE GUTTER SPACE SHALL COMPLY WITH UL AND NEC STANDARDS FOR PANELBOARDS.

PANELBOARDS SHALL BE SURFACE OR RECESS MOUNTED AS SHOWN ON PANEL SCHEDULES AND/OR FLOOR PLANS. PANEL SHALL BE EQUIPPED WITH RECESS MOUNTED HINGES AND KEY OPERATED LOCK. ALL LOCKS SHALL BE KEYED A LIKE. TURN OVER ALL KEYS TO OWNER.

PROVIDE TYPED CIRCUIT IDENTIFICATION CARD INSIDE EACH PANEL. BASE DESCRIPTION ON LOAD SERVED.

PROVIDE LAMINATED, ENGRAVED PLASTIC NAMEPLATE WITH WHITE LETTERS STATING PANELBOARD NAME MOUNTED ON FRONT OF EACH PANEL. MOUNT NAMEPLATE WITH METAL RIVETS. MINIMUM NAMEPLATE SIZE SHALL BE 3" WIDE BY 1-1/2" HIGH WITH 1 1/2" SIZE ENGRAVED LETTERS.

CIRCUIT BREAKERS:

CIRCUIT BREAKERS SHALL BE QUICK-MAKE, QUICK-CREAK, THERMAL MAGNETIC MOLDED CASE OF FRAME SIZE, NUMBER OF POLES AND TRIP RATINGS AS SHOWN ON THE ELECTRICAL RISER DIAGRAM AND/OR PANEL SCHEDULES. MULTI-POLE BREAKERS SHALL HAVE A SINGLE HANDLE TO TRIP ALL POLES AT ONCE. CIRCUIT BREAKERS SHALL BE FROM THE SAME MANUFACTURER AND COMPATIBLE WITH THE EXISTING PANELBOARD.

DISCONNECT SWITCHES:

DISCONNECT SWITCHES SHALL BE U.L. LISTED. SWITCH BLADES SHALL BE FULLY VISIBLE IN THE "OFF" POSITION WITH THE DOOR OPEN. ALL CURRENT CARRYING PARTS SHALL BE PLATED TO RESIST CORROSION.

SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK SUCH THAT, DURING NORMAL OPERATION, THE CONTACTS SHALL NOT BE CAPABLE OF BEING RESTRAINED BY THE OPERATING HANDLE AFTER THE CLOSING OR OPENING ACTION OF THE CONTACTS HAS STARTED. THE HANDLE AND MECHANISM SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER, WITH POSITIVE PADLOCKING PROVISIONS IN THE "OFF" POSITION.

PROVIDE HEAVY-DUTY, NEMA-1 ENCLOSURE UNLESS NEMA-3R (RAIN PROOF) IS REQUIRED BY THE SWITCH LOCATION. ENCLOSURES SHALL BE PROVIDED WITH A POST FABRICATION APPLIED GRAY ENAMEL FINISH.

FUSIBLE SWITCHES SHALL BE CAPABLE OF RFI/ TI CONVERSION FROM STANDARD CLASS-H FUSE SPACING TO CLASS-J FUSE SPACING WITHOUT AFFECTING THE U.L. LISTING. THE SWITCH MUST ALSO ACCEPT CLASS-R FUSES AND HAVE A FIELD INSTALLABLE U.L. LISTED REJECTION FEATURE TO REJECT ALL FUSES EXCEPT CLASS-R. THE U.L. LISTED SHORT CIRCUIT RATING, WHEN EQUIPPED WITH CLASS-J OR CLASS-R FUSES, SHALL BE 200,000 AMPERES RMS SYMMETRICAL.

GROUNDING:

PROVIDE A SINGLE, COMPLETE GROUNDING NETWORK FOR THE ENTIRE ELECTRICAL AND SPECIAL SYSTEMS WHICH COMPLIES WITH NEC REQUIREMENTS.

RACEWAY FOR POWER DISTRIBUTION WIRING:

WIRING FOR POWER DISTRIBUTION SHALL BE INSTALLED IN RIGID GALVANIZED STEEL (RGS), INTERMEDIATE METAL CONDUIT (IMC), ELECTRICAL METALLIC TUBING (EMT), FLEXIBLE METAL CONDUIT OR SCHEDULE 40/80 PVC CONDUIT. PROVIDE THE CONDUIT TYPE INDICATED IN THIS SPECIFICATION WHERE CONDUIT TYPE IS NOT NOTED ON THE DRAWINGS.

RIGID GALVANIZED STEEL (RGS) CONDUIT WITH THREADED FITTINGS SHALL BE PROVIDED ABOVE GROUND AT EXPOSED INTERIOR AND EXTERIOR LOCATIONS WHERE CONDUIT MAY BE SUBJECTED TO PHYSICAL DAMAGE FROM VEHICLES, MAINTENANCE EQUIPMENT, ETC. PROVIDE LARGE RADIUS BENDS ELBOWS FOR RGS CONDUIT.

IMC CONDUIT WITH THREADED FITTINGS SHALL BE PROVIDED IN ABOVE GROUND, EXPOSED INTERIOR AND EXTERIOR LOCATIONS WHERE CONDUIT WILL NOT BE SUBJECTED TO PHYSICAL DAMAGE, BUT WILL BE EXPOSED TO RAIN WATER, HAZARDOUS CONDITIONS, ETC. THREADLESS FITTINGS FOR IMC SHALL NOT ACCEPTABLE

EMT CONDUIT WITH SET SCREW FITTINGS SHALL BE PROVIDED IN ABOVE GROUND, INTERIOR LOCATIONS WHERE CONDUIT WILL NOT BE SUBJECTED TO PHYSICAL DAMAGE AND WILL REMAIN COMPLETELY DRY DURING ALL WEATHER CONDITIONS.

EMT CONDUIT WITH COMPRESSION FITTINGS CAN BE PROVIDED IN PROTECTED, DAMP EXTERIOR LOCATIONS WHERE CONDUIT WILL NOT BE SUBJECTED TO DIRECT/INDIRECT RAINWATER/LIQUIDS (E.G. UNDER CANOPIES). SET SCREW FITTINGS ARE NOT ACCEPTABLE FOR ANY EXTERIOR LOCATION. PROVIDE IMC CONDUIT WITH THREADED FITTINGS WHERE CONDUIT WILL BE EXPOSED TO DIRECT/INDIRECT RAINWATER/LIQUIDS.

EMT CONDUIT SHALL NOT BE USED IN LOCATIONS WHERE CONDUIT COULD BE EXPOSED TO DIRECT/INDIRECT RAINWATER/LIQUIDS, WIND DRIVEN RAIN, HOSE DOWN AREAS, OPEN AIR AREAS WITHOUT AIR CONDITIONING (UNLESS CONDUIT WILL REMAIN COMPLETELY DRY DURING ALL WEATHER CONDITIONS) AND AREAS WHERE RAINWATER/LIQUIDS MIGHT DRIP OR RUN INTO CONDUIT.

SCHEDULE 80 PVC CONDUIT SHALL BE USED FOR UNDERGROUND SERVICE ENTRANCE FEEDERS AND ALL CONDUIT BELOW BOARDWALKS U.N.O. ON THE RISER DIAGRAMS AND/OR FLOOR PLANS. PROVIDE LARGE RADIUS RGS/ GALVANIZED STEEL ELBOWS FOR SCHEDULE 80 PVC CONDUIT. COAT RGS ELBOWS WITH BLACK MASTIC.

SCHEDULE 40 PVC CONDUIT SHALL BE USED FOR ALL UNDERGROUND FEEDERS AND WIRING EXCEPT FOR SERVICE ENTRANCE FEEDERS AND UNDER ROADWAYS. PROVIDE LARGE RADIUS RGS/ GALVANIZED STEEL ELBOWS FOR SCHEDULE 40 PVC CONDUIT WHERE OVERALL CONDUIT RUN IS GREATER THAN 100 FEET. COAT RGS ELBOWS WITH BLACK MASTIC.

PVC CONDUIT SHALL NOT BE USED MORE THAN SIX INCHES ABOVE FINISHED GRADE IN EITHER INTERIOR OR EXTERIOR LOCATIONS. PVC CONDUIT IS ALL TRANSITION TO METAL CONDUIT NO MORE THAN SIX INCHES ABOVE GRADE.

ALL PVC CONNECTIONS SHALL BE WATERTIGHT.

FLEXIBLE METAL CONDUIT SHALL BE USED TO CONNECT LIGHTING FIXTURES AND EQUIPMENT SUBJECT TO VIBRATION, INCLUDING ARC EQUIPMENT, MOTORS, TRANSFORMERS, ETC. OR AT INACCESSIBLE LOCATIONS. PROVIDE LIQUID TIGHT FLEXIBLE METAL CONDUIT AND FITTINGS FOR EXTERIOR APPLICATIONS

CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, OR CEILINGS IN FINISHED AREAS. CONDUIT SHALL NOT BE EXPOSED IN FINISHED AREAS EXCEPT WHEN ABSOLUTELY NECESSARY. CONDUIT SHALL BE STRAIGHT AND PARALLEL TO BUILDING LINES.

PROVIDE ALL CONDUIT, BOTH NEW AND EXISTING, WITH PROTECTION AGAINST DAMAGE AND ENTRANCE OF WATER, DIRT, FOREIGN MATERIAL, ETC WITH WATERTIGHT CAPS. PROVIDE WATERTIGHT ASSEMBLIES, SEALANTS, ETC WHERE CONDUIT PASSES THROUGH INTERIOR/ EXTERIOR OF BUILDING AT BOTH ABOVE AND BELOW GROUND LOCATIONS.

FIRE RATED ASSEMBLIES SHALL BE PROVIDED WHERE CONDUIT PASSES THROUGH FIRE RATED CONSTRUCTION. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF FIRE RATED CONSTRUCTION. REFER TO THE FIRST STOP PENETRATION DETAILS ON THE ELECTRICAL DRAWINGS.

CONDUIT SIZES SHOWN ON THE DRAWINGS AND SCHEDULES ARE THE MINIMUM SIZES REQUIRED. LARGER SIZE CONDUIT TO FACILITATE WIRE PULLS, ETC, IS PERMITTED.

INSULATING BUSHINGS:

INSULATING BUSHINGS WITH DOUBLE LOCK NUTS SHALL BE PROVIDED WHEREVER A CONDUCTOR No.4 AWG OR LARGER ENTERS AN ENCLOSURE, PANEL, DISCONNECT OR ELECTRICAL EQUIPMENT (PER N.E.C. 300.4F).

CONDUCTORS:

PROVIDE 75 DEGREE CELSIUS (167 DEGREE FAHRENHEIT) TYPE THHW, THW, THWN, OR XHHW INSULATED COPPER CONDUCTORS RATED AT 600V FOR POWER DISTRIBUTION WIRING. CONDUIT WIRE FILL SHOWN ON THE DRAWINGS AND FEEDER SCHEDULES ARE BASED ON TYPE THW WIRE UNLESS NOTED OTHERWISE.

CONDUCTORS UP TO AND INCLUDING No. 10 AWG SHALL BE SOLID AND CONDUCTORS No. 8 AWG AND LARGER SHALL BE STRANDED. MINIMUM CONDUCTOR SIZE SHALL BE No.12 AWG. CONDUCTORS SHALL BE CONTINUOUS BETWEEN EQUIPMENT AND DEVICES. SPLICES ARE TO BE MADE ONLY IN ACCESSIBLE JUNCTION OR OUTLET BOXES AND SHOULD BE KEPT TO A MINIMUM. SPLICES ON No.12 AND No.10 WIRE SHALL BE MADE WITH PRESSURE CONNECTORS CAPABLE OF CARRYING FULL WIRE CAPACITY. SPLICES ON No.8 WIRE AND LARGER SHALL BE MADE WITH SOLDERLESS LUGS WRAPPED WITH BOTH RUBBER AND PLASTIC ELECTRICAL TAPE. CONNECTIONS TO PROTO EQUIPMENT TERMINALS ARE TO BE MADE WITH SOLDERLESS LUGS.

ALL CONDUIT USED FOR POWER DISTRIBUTION SHALL CONTAIN A GROUNDING CONDUCTOR. CONDUIT RACEWAY SHALL NOT BE USED IN PLACE OF A GROUNDING CONDUCTOR.

WIRING DEVICES:

THE EXTENT OF WIRING DEVICE WORK IS INDICATED ON THE DRAWINGS. WIRING DEVICES ARE DEFINED AS SINGLE DISCRETE UNITS OF ELECTRICAL DISTRIBUTION SYSTEMS THAT ARE INTENDED TO CARRY BUT NOT UTILIZE ELECTRICAL ENERGY. TYPES OF WIRING DEVICES IN THIS SECTION INCLUDE:
RECEPTACLES,
GROUND FAULT CIRCUIT INTERRUPTERS,
ARC FAULT CIRCUIT INTERRUPTERS, AND
LIGHTING AND CONTROL SWITCHES.

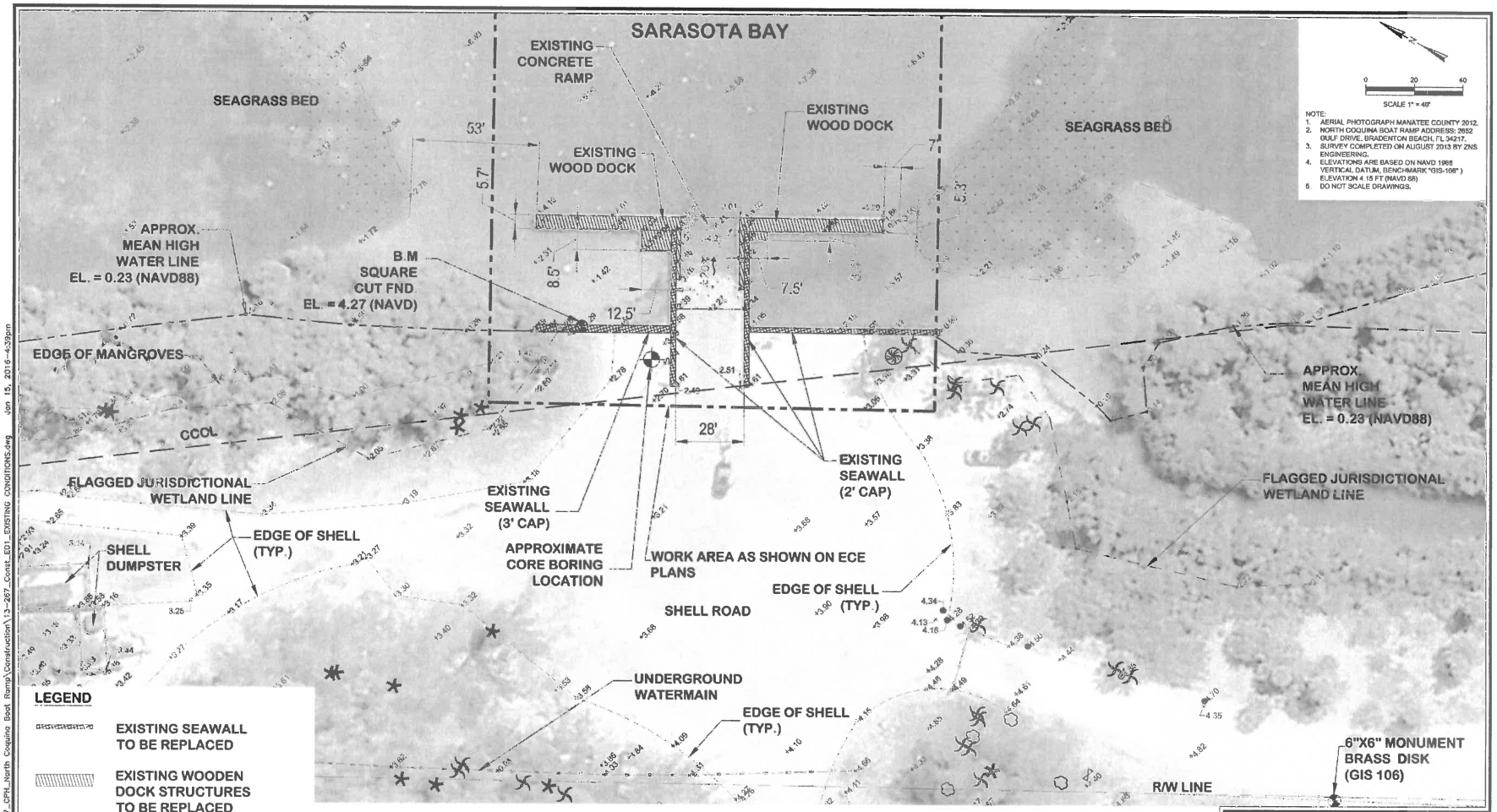
PROVIDE WHITE COLORED WIRING DEVICES AND MATCH END THERMOPLASTIC COVER PLATES UNLESS NOTED OTHERWISE. FINAL COLOR SELECTION SHALL BE COORDINATED WITH OWNER/ ARCHITECT PRIOR TO BID.

QUALITY ASSURANCE:

NEC COMPLIANCE: COMPLY WITH NEC AS APPLICABLE TO INSTALLATION AND WIRING OF ELECTRICAL WIRING DEVICES.

UL COMPLIANCE: COMPLY WITH APPLICABLE REQUIREMENTS OF U.L. 20, 498A, 498 AND 943 PERTAINING TO INSTALLATION OF WIRING DEVICES. PROVIDE WIRING DEVICES WHICH ARE U.L. LISTED AND LABELED.

IEEE COMPLIANCE: COMPLY WITH APPLICABLE REQUIREMENTS OF IEEE STANDARD 241, "RECOMMENDED PRACTICE FOR ELEC



LEGEND

- EXISTING SEAWALL TO BE REPLACED
- EXISTING WOODEN DOCK STRUCTURES TO BE REPLACED
- EXISTING WATERMAIN
- OVERHEAD ELECTRIC
- BURIED ELECTRIC
- BURIED TELEPHONE
- EXISTING SPOT ELEVATION
- MEAN HIGH WATER LINE (MHWL)
- EDGE OF MANGROVES
- JURISDICTIONAL WETLAND LINE
- EDGE OF SEAGRASS BED
- COASTAL CONSTRUCTION CONTROL LINE (CCCL)
- CHAIN LINK FENCE
- SIGN
- WATER VALVE
- FIRE HYDRANT
- AUSTRALIAN PINE
- PALM TREE
- ORNAMENTAL TREE
- SEA GRAPE

Karyn M Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES CA 2, ou=Corporate Representative, ou=ERICKSON CONSULTING ENGINEERS, INC, cn=Karyn M Erickson, 1.3.6.1.4.1.6449.2.1.5.1.3=[illegible]3091D99E800008577
2016.01.15 18:19:07 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REV. No.	DATE	Drawn BY	CHKD BY	REMARKS
1	1/15/16	BRC	JMC	ISSUED TO COUNTY

DESIGNED	DRAWN	CHECKED
BRC	JCC	KMC
DATE 01-15-2016		
JOB NO. 13 267		
SCALE AS NOTED		

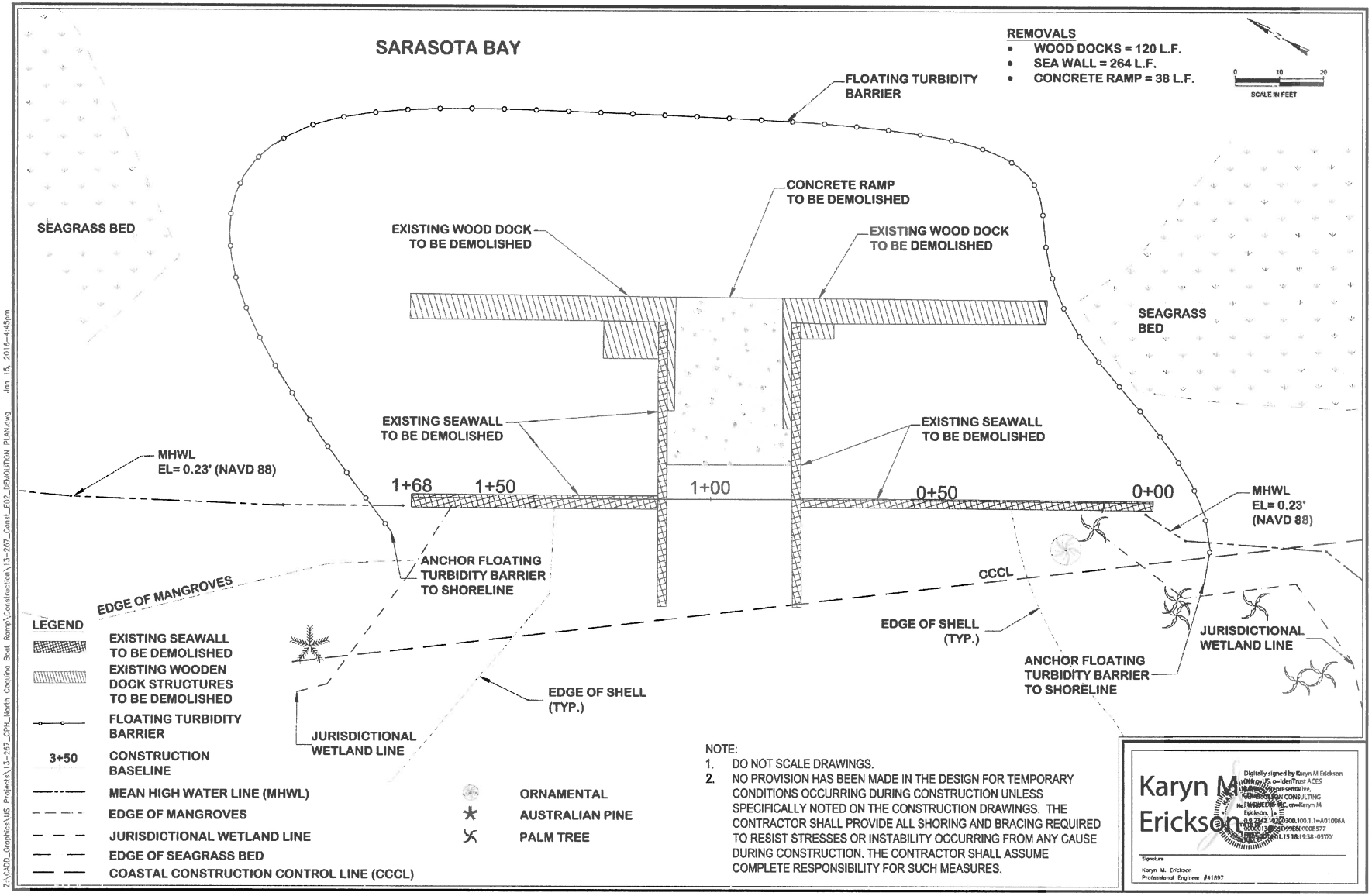
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

EXISTING CONDITIONS

Erickson Consulting Engineers, Inc.
7201 Delchney Court
Sarasota, FL 34240
(941) 373-6460

DRAWING NUMBER
E1

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E01_EXISTING CONDITIONS.dwg Jan 15, 2016-4:39pm



NOTE:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.

Karyn M Erickson

Digitally signed by Karyn M Erickson
DN: cn=Karyn M Erickson, o=Erickson Consulting Engineers, Inc., ou=Karyn M Erickson, Inc., c=US
2.16.840.1.113883.3.4.1=A01096A00000127A9D9968000008577
2016.01.15 18:19:38 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS
1	1/15/16	BRC	KME	ISSUED TO COUNTY

PROJECT MGR. BRC | DRAWN ACC | CHECKED KME
DATE: 01-15-2016
JOB NO. 13-267
SCALE: AS NOTED

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

DEMOLITION PLAN

Erickson Consulting Engineers, Inc.
7201 Desoto Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
E 2

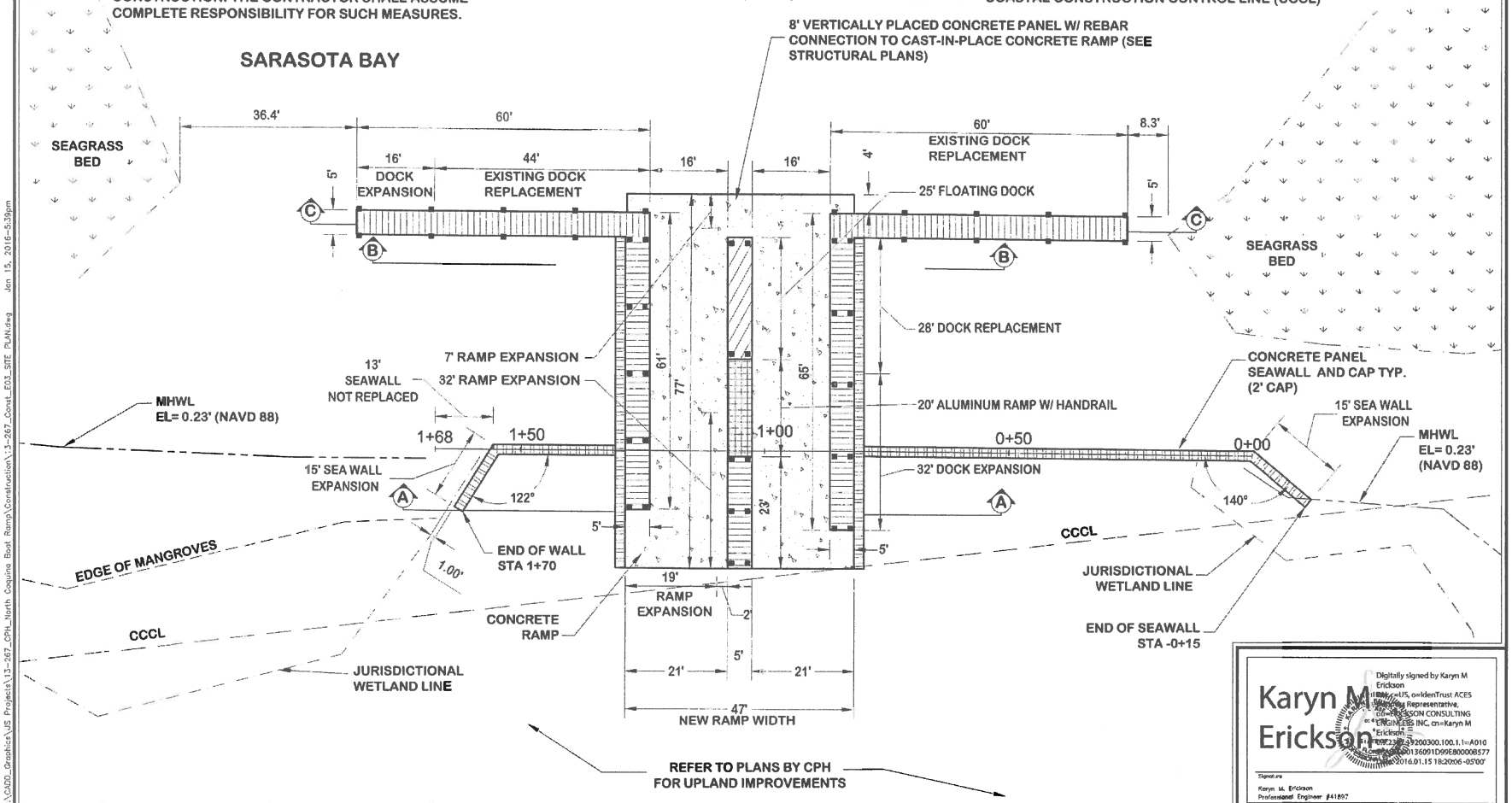
Z:\CADD_Graphics\US Projects\13-267_CPN_North Coquina Boat Ramp\Construction\13-267_Const_E02_DEMOLITION PLAN.dwg Jan 15, 2016-4:45pm

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.

LEGEND

- NEW SEAWALL STRUCTURE (267 L.F.)
- NEW DOCK STRUCTURE (237 L.F.)
- NEW ALUMINUM RAMP WITH HANDRAIL (20 L.F.)
- NEW ALUMINUM FLOATING DOCK WITH CONCRETE DECK (25 L.F.)
- 3+50 CONSTRUCTION BASELINE
- MEAN HIGH WATER LINE (MHWL)
- EDGE OF MANGROVES
- JURISDICTIONAL WETLAND LINE
- EDGE OF SEAGRASS BED
- COASTAL CONSTRUCTION CONTROL LINE (CCCL)

0 10 20
SCALE IN FEET



Karyn M Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES Business Representative, ou=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson
2.16.840.1.113200300.100.1.1=A010
2.16.840.1.113200300.100.1.3=00136091D99E800008577
Date: 2016.01.15 18:20:06 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

NO.	DATE	DRWN BY	CHKD BY	REVISIONS
1	1/15/16	BRC	KME	ISSUED TO COUNTY

DESIGNED	DRAWN	CHECKED
BRC	JCC	KME
DATE: 01-15-2016		
JOB NO. 13-267		
SCALE: AS NOTED		

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

SITE PLAN

Erickson Consulting Engineers, Inc.
7261 Desoney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
E 3

Z:\CADD_Graphics\JS Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E03_SITE PLAN.dwg Jan 15, 2016-5:39pm

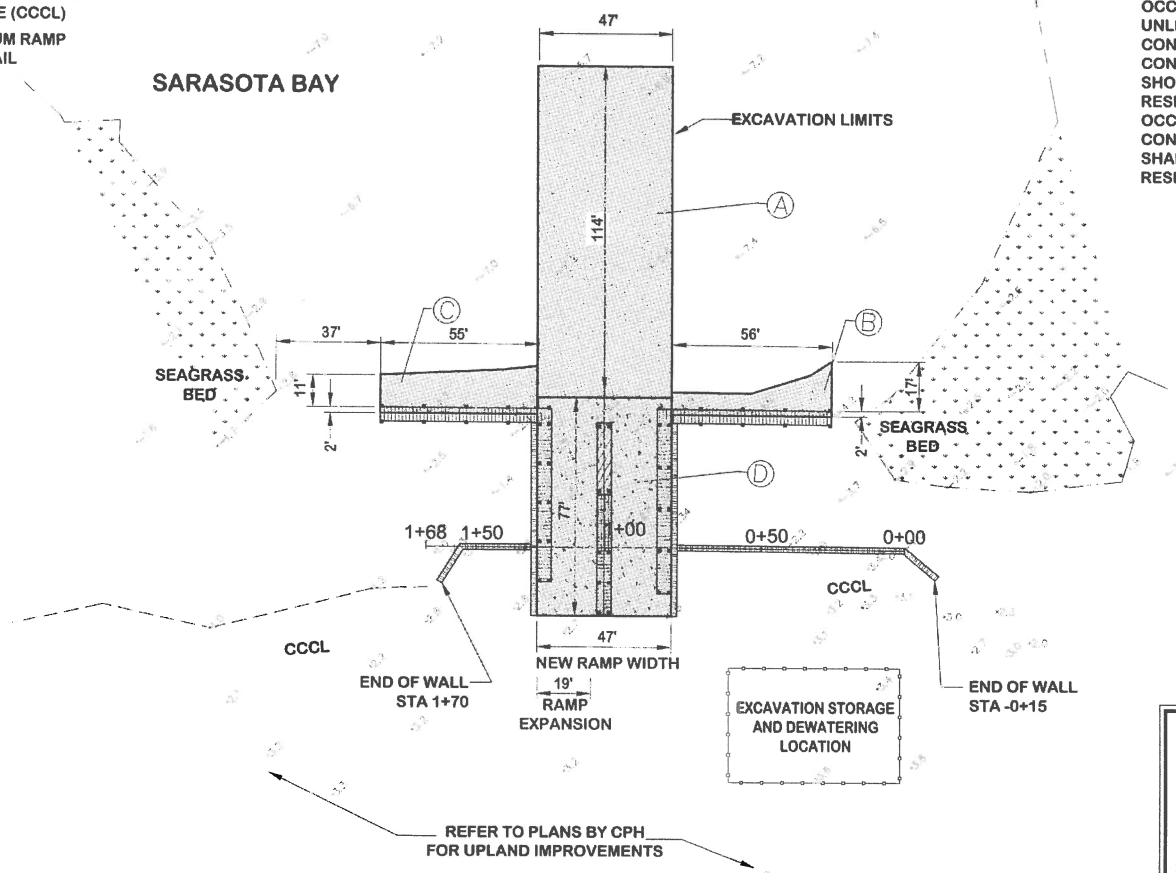
LEGEND

- LIMITS OF EXCAVATION
- CONSTRUCTION BASELINE
- SILT FENCE (TYPE III)
- JURISDICTIONAL WETLAND LINE
- MEAN HIGH WATER LINE (MHWL)
- COASTAL CONSTRUCTION CONTROL LINE (CCCL)
- NEW ALUMINUM RAMP WITH HANDRAIL
- EDGE OF SEAGRASS BED
- NEW SEAWALL STRUCTURE (267 L.F.)
- NEW DOCK STRUCTURE (236.5 L.F.)
- EXISTING SPOT ELEVATION
- EDGE OF MANGROVES
- NEW ALUMINUM FLOATING DOCK WITH CONCRETE DECK

Excavation Volumes		
Area	Excavation Depth (ft-NAVD88)	Volume (CY)
A	-7.2	200
B	-5.2	10
C	-5.2	20
D	-2.8 TO -7.2 (RAMP)	200
Total		430

0 20 40
SCALE IN FEET

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.



Karyn M. Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES Subscriber Representative, ou=ERICKSON CONSULTING ENGINEERS, INC, cn=Karyn M Erickson
2.16.840.1.113733.1.7.23.6.5.9200300.100.1.1=A0109 [illegible] 1D99E8000008577
Date: 2016.01.15 18:20:30 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REV. No.	DATE	DRAWN BY	CHKD BY	REMARKS
1	1/15/16	SRC	CMC	ISSUED TO COUNTY

DESIGNED	DRAWN	CHECKED
SRC	JCC	VME
DATE: 01-15-2016		
JOB NO. 13-267		
SCALE: AS NOTED		

NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

EXCAVATION AREAS

Erickson Consulting Engineers, Inc.
7201 Desoto Court
Sarasota, FL 32420
(941) 373-6480

DRAWING NUMBER
E 4

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E04_EXCAVATION AREAS.dwg Jan 15, 2016-5:28pm

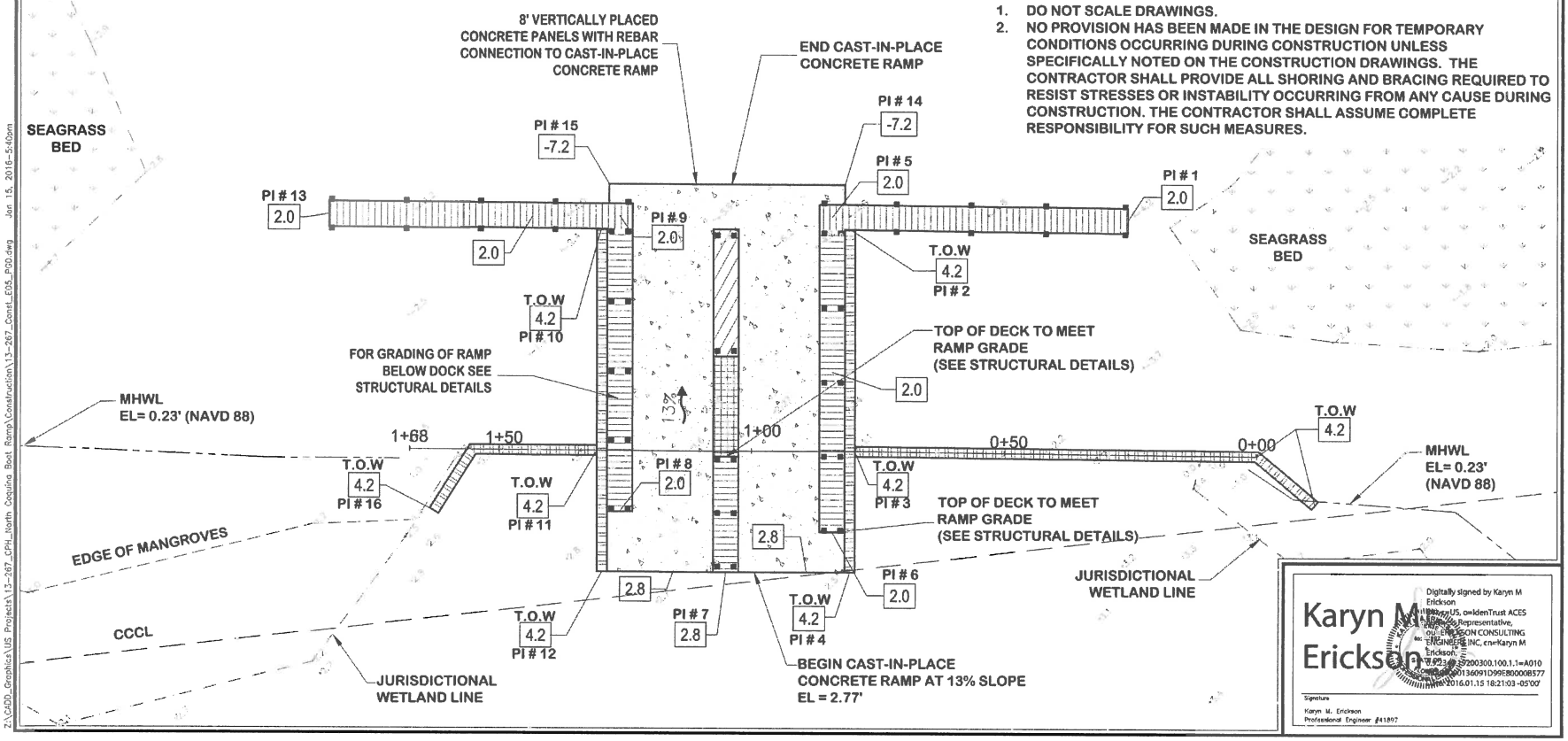
LEGEND

- NEW SEAWALL STRUCTURE
- NEW DOCK STRUCTURE
- NEW ALUMINUM RAMP WITH HANDRAIL
- NEW ALUMINUM FLOATING DOCK WITH CONCRETE DECK
- 3+50 CONSTRUCTION BASELINE
- MEAN HIGH WATER LINE (MHWL)
- EDGE OF MANGROVES
- JURISDICTIONAL WETLAND LINE
- EDGE OF SEAGRASS BED
- COASTAL CONSTRUCTION CONTROL LINE (CCCL)
- T.O.W TOP OF WALL
- 4.2 PROPOSED ELEVATION
- EXISTING ELEVATION

0 10 20
SCALE IN FEET

P.I.#	STATION	OFFSET	P.I.#	STATION	OFFSET
PI #1	STA. 0+26	46.37 FT	PI #9	STA. 1+26	46.37 FT
PI #2	STA. 0+80.5	43.87 FT	PI #10	STA. 1+29.5	43.87 FT
PI #3	STA. 0+79.5	0.00 FT	PI #11	STA. 1+30.5	0.00 FT
PI #4	STA. 0+80.5	-24.13 FT	PI #12	STA. 1+29.5	-24.13 FT
PI #5	STA. 0+84.5	46.37 FT	PI #13	STA. 1+84.25	46.37 FT
PI #6	STA. 0+84.5	-16.15 FT	PI #14	STA. 0+81.56	52.72 FT
PI #7	STA. 1+05	-24.13 FT	PI #15	STA. 1+28.57	52.72 FT
PI #8	STA. 1+26	-12.10 FT	PI #16	STA. 1+63.12	-12.29 FT

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.



Karyn M Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES CA 6, ou=Representative, ou=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson, 2.16.840.1.113730.3=0000040000000136091D99E800008577, 2.5.4.5=3200300.100.1.1=A010 Date: 2016.01.15 18:21:03 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REV. NO.	DATE	DRAWN BY	CHKD BY	REMARKS
1	1/16/16	SRC	CMC	ISSUED TO COUNTY

DESIGNED SRC | DRAWN CCC | CHECKED CMC
DATE 01-15-2016
JOB NO. 13-267
SCALE AS NOTED

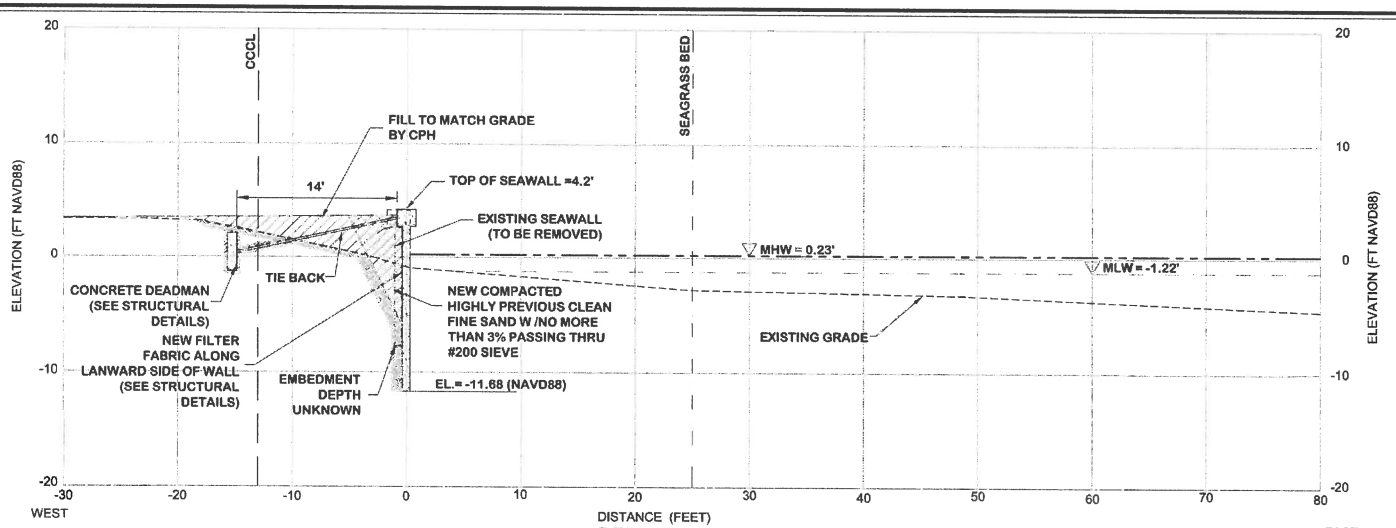
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

PAVING, GRADING AND DRAINAGE PLAN

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-5460

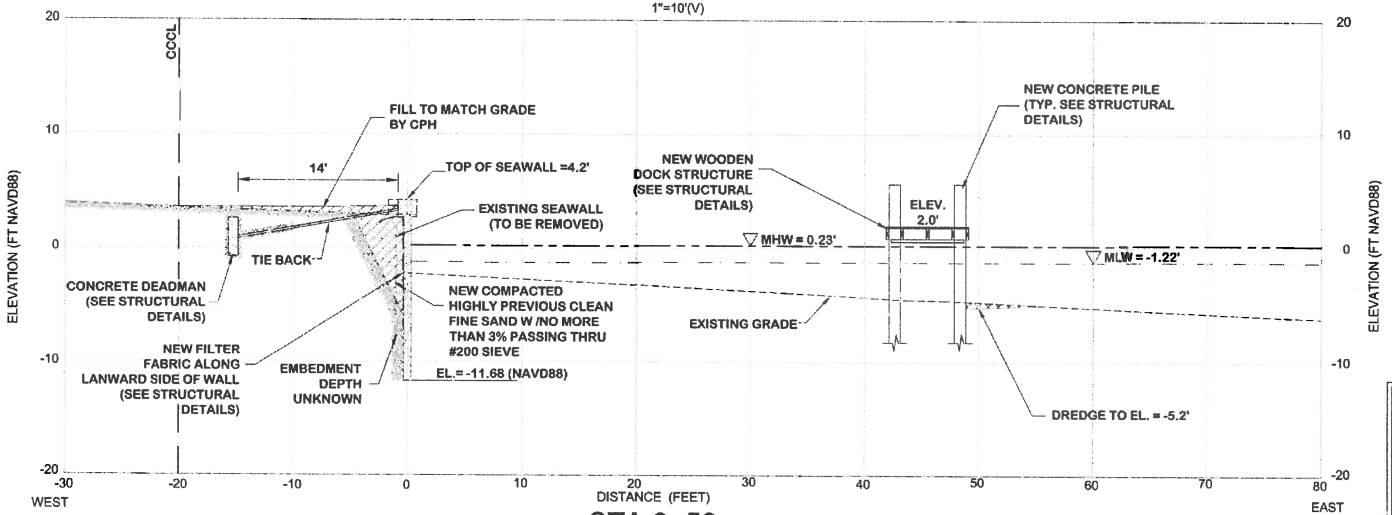
DRAWING NUMBER
E 5

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E05_P00.dwg Jan 15, 2016-5:40pm



STA 0+00

SCALE 1"=10'(H)
1"=10'(V)



STA 0+50

SCALE 1"=10'(H)
1"=10'(V)

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.

LEGEND
- CUT
- FILL
- MHW
- MLW

Karyn M. Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES Business Representative, ou=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson, 2.16.840.1.113733.1.8.1=200300.100.1.1=A010 [illegible] 1.3.6.1.4.1.311.60.2.1.3=US, 2.5.4.5=[illegible]13609D99E80000B577
2016.01.15 18:21:28 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REV. NO.	DATE	DRAWN BY	CHKD BY	REVISIONS
1	1/15/16	ERC	KME	ISSUED TO COUNTY

DESIGNED ERC | DRAWN CC | CHECKED KME
DATE 01-15-2016
JOB NO. 13-267
SCALE AS NOTED

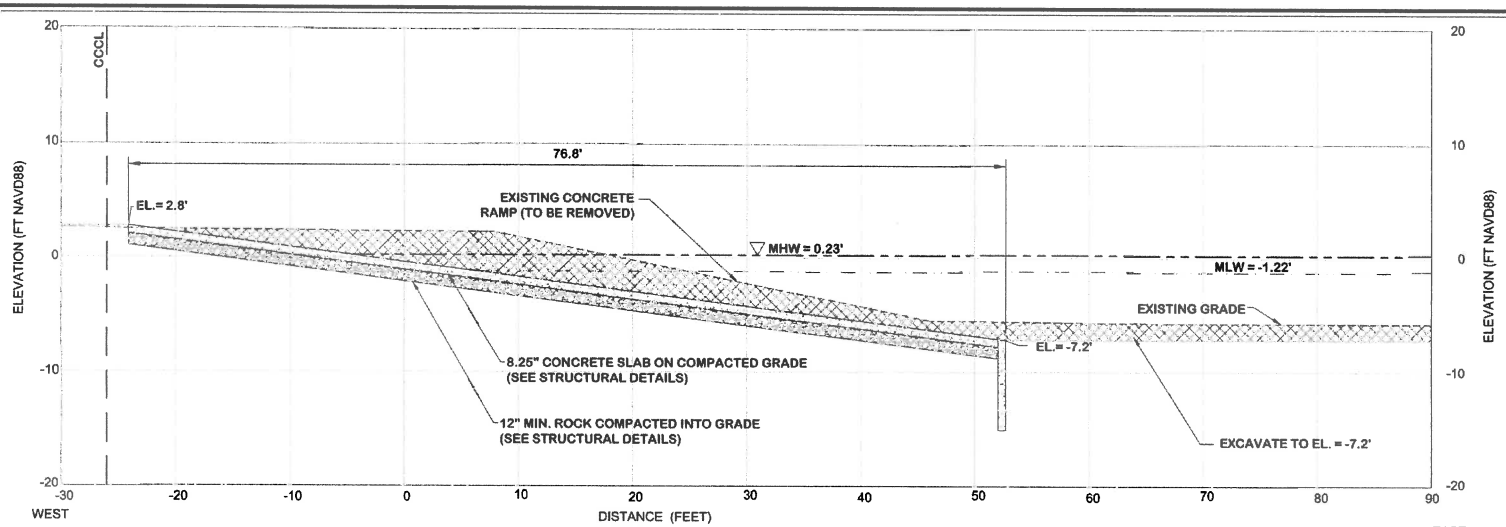
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS
(SHORE PERPENDICULAR)

Erickson Consulting Engineers, Inc.
7201 Deidrey Court
Sarasota, FL 34240
(941) 373-6460

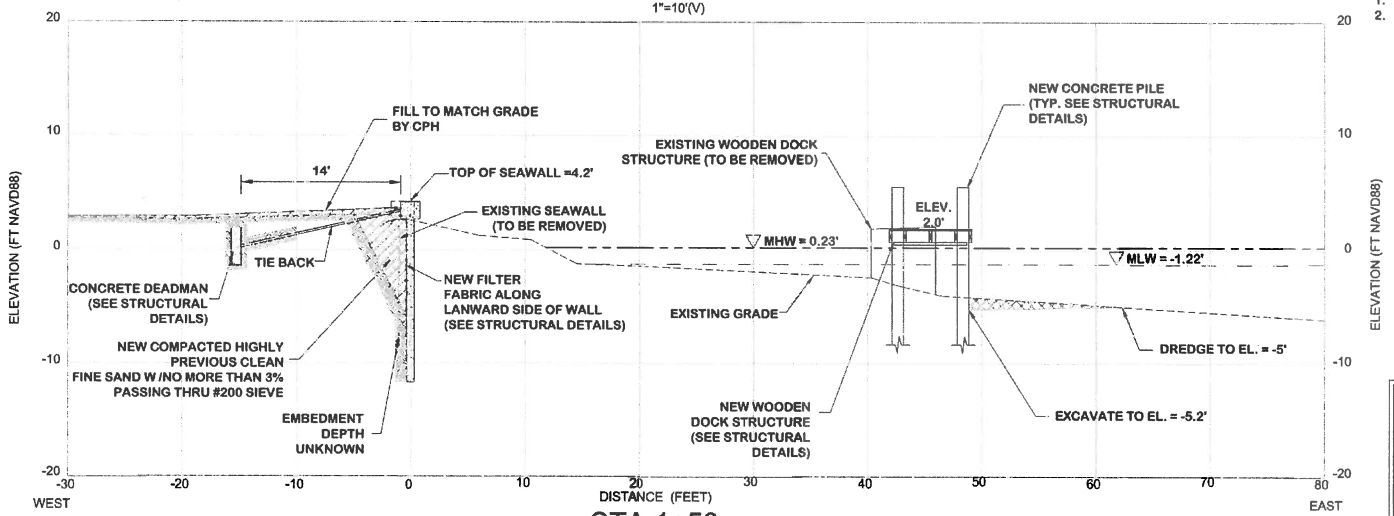
DRAWING NUMBER
E 6

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E06-E10_CROSS SECTIONS.dwg Jan 15, 2016-5:52pm



STA 1+00

SCALE 1"=10'(H)
1"=10'(V)



STA 1+50

SCALE 1"=10'(H)
1"=10'(V)

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.

LEGEND
- CUT
- FILL
- MHW
- MLW
- 8.25" CONCRETE SLAB ON COMPACTED GRADE
- 12" MIN. ROCK COMPACTED INTO GRADE

Karyn M Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES CA 2, ou=Representative, ou=ERICKSON CONSULTING ENGINEERS, INC, cn=Karyn M Erickson, 1.3.6.1.4.1.6334.1.100.1.1=RFC4683.0842.0000300.100.1.1=A010 1.3.6.1.4.1.6334.1.0.1=3E6091D99E800008577
2016.01.15 18:21:58 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REV.	DATE	DRWN BY	CHKD BY	REMARKS
1	1/15/16	BRC	KME	ISSUED TO COUNTY

DESIGNED	DRAWN	CHECKED
BRC	BRC	KME
DATE 01-15-2016		
JOB NO. 13-267		
SCALE AS NOTED		

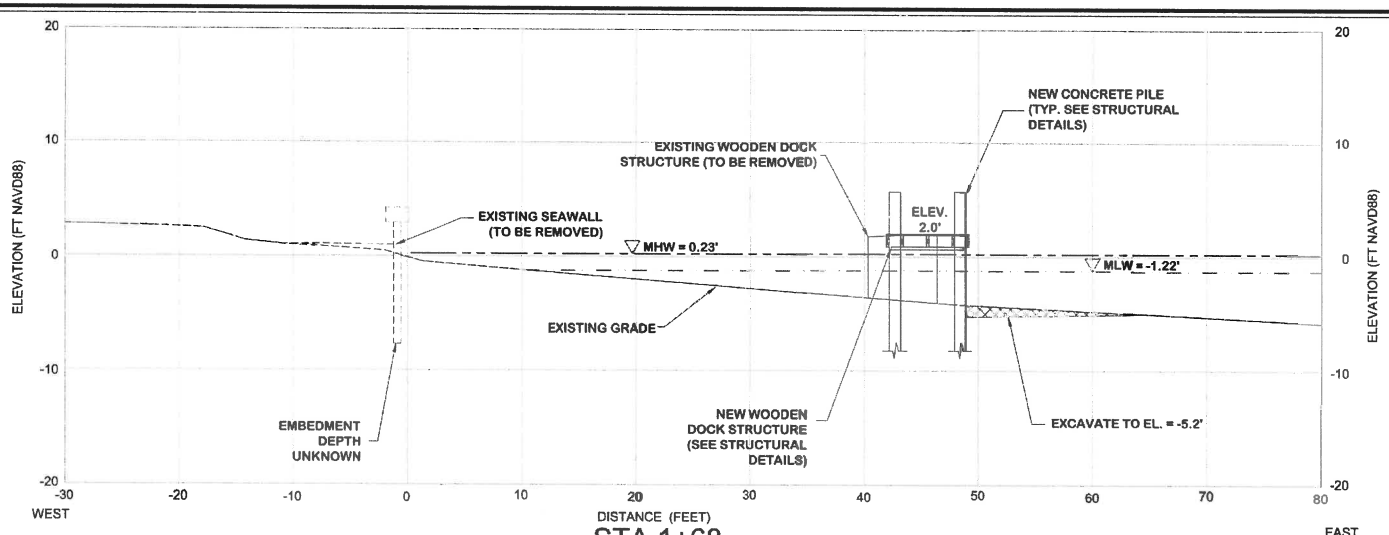
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS
(SHORE PERPENDICULAR)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-8460

DRAWING NUMBER
E 7

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E06-E10_CROSS SECTIONS.dwg Jan 15, 2016-5:57pm



STA 1+68

SCALE 1"=10'(H)
1"=10'(V)

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.

LEGEND

- CUT
- FILL
- MHW
- MLW

Karyn M. Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES Federal Bridge Representative, ou=ERICKSON CONSULTING ENGINEERS, INC, cn=Karyn M Erickson, 1.3.6.1.4.1.16.95.2.3.4.9.2.200300.100.1.1=A0109 [illegible] 36091D99E800008577 [illegible] 2016.01.15 18:22:23 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41857

NO.	DATE	DRAWN BY	CHKD BY	REMARKS
1	1/15/16	ERC	KME	ISSUED TO COUNTY

ISSUED SPEC	DRAWN JCC	CHECKED KME
DATE: 01-15-2016		
JOB NO. 13-267		
SCALE: AS NOTED		

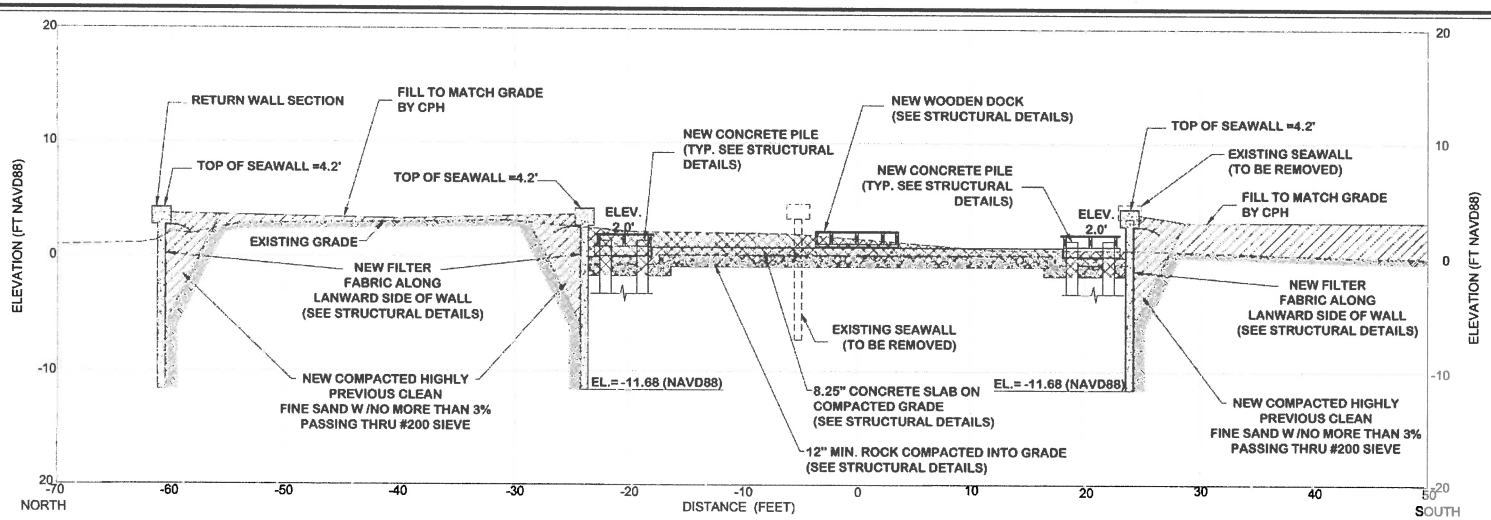
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS (SHORE PERPENDICULAR)

Erickson Consulting Engineers, Inc.
7261 Delaney Court
Sarasota, FL 32420
(941) 373-6460

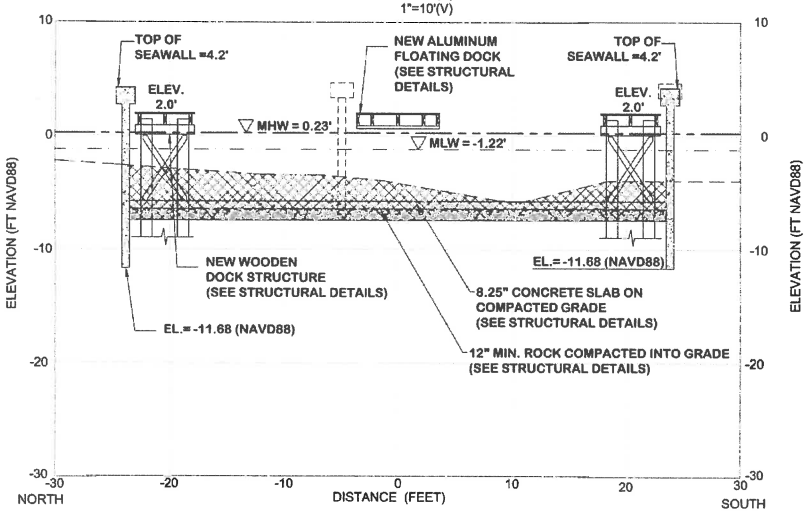
DRAWING NUMBER
E 8

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E08-E10_CROSS SECTIONS.dwg Jan 15, 2016-5:59pm



SECTION A-A

SCALE 1"=10'(H)
1"=10'(V)



SECTION B-B

SCALE 1"=10'(H)
1"=10'(V)

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.

LEGEND

- CUT
- FILL
- MHW
- MLW
- 8.25" CONCRETE SLAB ON COMPACTED GRADE
- 12" MIN. ROCK COMPACTED INTO GRADE

Karyn M. Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES Business Representative, ou=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson
Date: 2016.01.15 18:22:54 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REVISIONS			
NO.	DATE	DWN BY	CKD BY
1	1/18/16	BPC	KMC

ISSUED TO COUNTY

PROJECT	DRAWN	CHECKED
	BPC	KMC
DATE: 01-15-2016		
JOB NO. 13-267		
SCALE: AS NOTED		

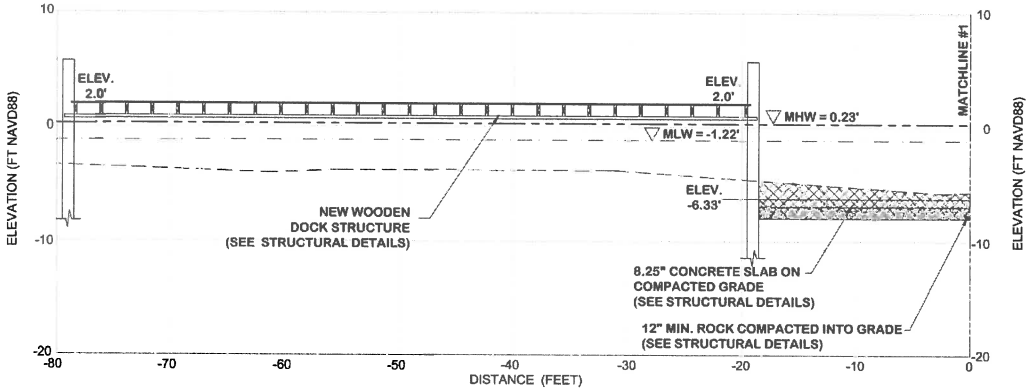
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS (SHORE PARALLEL)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

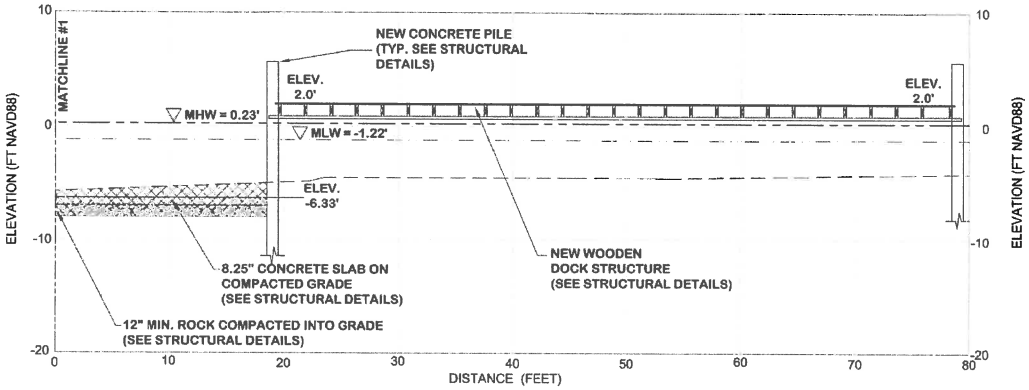
DRAWING NUMBER
E 9

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E09-E10_CROSS SECTIONS.dwg Jan 15, 2016-6:00pm



SECTION C-C (NORTH OF RAMP)

SCALE 1"=10'(H)
1"=10'(V)



SECTION C-C (SOUTH OF RAMP)

SCALE 1"=10'(H)
1"=10'(V)

NOTES:
1. DO NOT SCALE DRAWINGS.
2. NO PROVISION HAS BEEN MADE IN THE DESIGN FOR TEMPORARY CONDITIONS OCCURRING DURING CONSTRUCTION UNLESS SPECIFICALLY NOTED ON THE CONSTRUCTION DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL SHORING AND BRACING REQUIRED TO RESIST STRESSES OR INSTABILITY OCCURRING FROM ANY CAUSE DURING CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR SUCH MEASURES.

LEGEND
- CUT
- FILL
- MHW
- MLW
- 8.25" CONCRETE SLAB ON COMPACTED GRADE
- 12" MIN. ROCK COMPACTED INTO GRADE

Karyn M Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES Federal Bridge Representative, ou=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson, 1.2.16.953.1.2.200300.100.1.1=A010 [illegible] 00136091D99E800008577
2016.01.15 18:24:43 -05'00'

Signature
Karyn M. Erickson
Professional Engineer #41897

REV. NO.	DATE	DRWN BY	CHKD BY	REMARKS
1	1/15/16	BRC	KME	ISSUED TO COUNTY

ENGINEER	DRWN	CHECKED
BRC	KME	KME
DATE: 01-15-2016		
JOB NO. 13-267		
SCALE: AS NOTED		

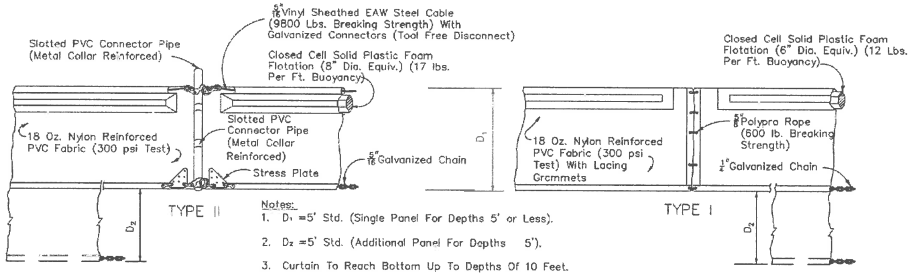
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CROSS SECTIONS
(SHORE PARALLEL)

Erickson Consulting Engineers, Inc.
7201 Delaney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
E 10

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E09-E10_CROSS SECTIONS.dwg Jan 15, 2016-6:00pm

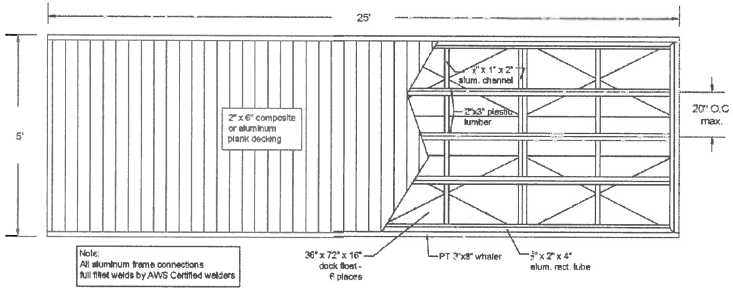


Notes:

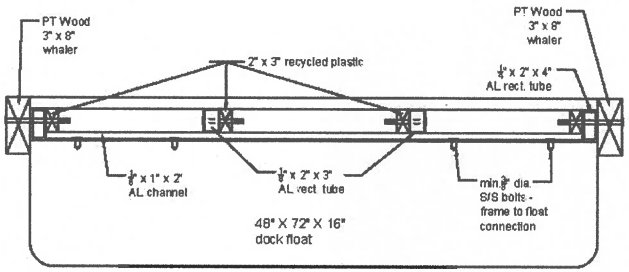
1. D_1 =5' Std. (Single Panel For Depths 5' or Less).
2. D_2 =5' Std. (Additional Panel For Depths 5').
3. Curtain To Reach Bottom Up To Depths Of 10 Feet.
4. Two (2) Panels To Be Used For Depths Greater Than 10 Feet Unless Special Depth Curtains Specifically Called For In The Plans Or As Determined By The Engineer.
5. Refer to FDOT Standard Spec #104 for Floating Turbidity Barriers.

NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

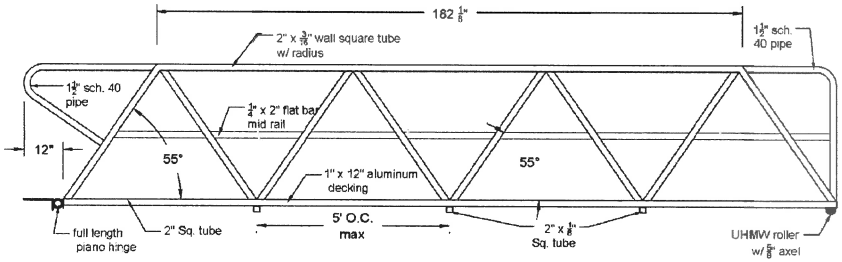
FLOATING TURBIDITY BARRIER
FDOT INDEX #103
NOT TO SCALE



FLOATING DOCK
PLAN VIEW
NOT TO SCALE



FLOATING DOCK
SECTION VIEW
NOT TO SCALE



4'x20' ALUMINUM GANGWAY
SIDE ELEVATION
NOT TO SCALE

Karyn M. Erickson

Digitally signed by Karyn M Erickson
DN: c=US, o=IdenTrust ACES Business Representative, ou=ERICKSON CONSULTING ENGINEERS INC, cn=Karyn M Erickson, 1.3.6.1.4.1.6334.1.100.1.1=CS200300.100.1.1=A0109 1000000316091D99E800008577
Date: 2016.01.15 18:25:14 -05'00'

Signature

Karyn M. Erickson
Professional Engineer #41897

REV.	DATE	DRAWN BY	CHKD BY	REMARKS
1	1/15/16	EMC	DMC	ISSUED TO COUNTY

DESIGNED	DRAWN	CHECKED
EMC	ADC	DMC

DATE: 01-15-2016
JOB NO. 13-267
SCALE: AS NOTED

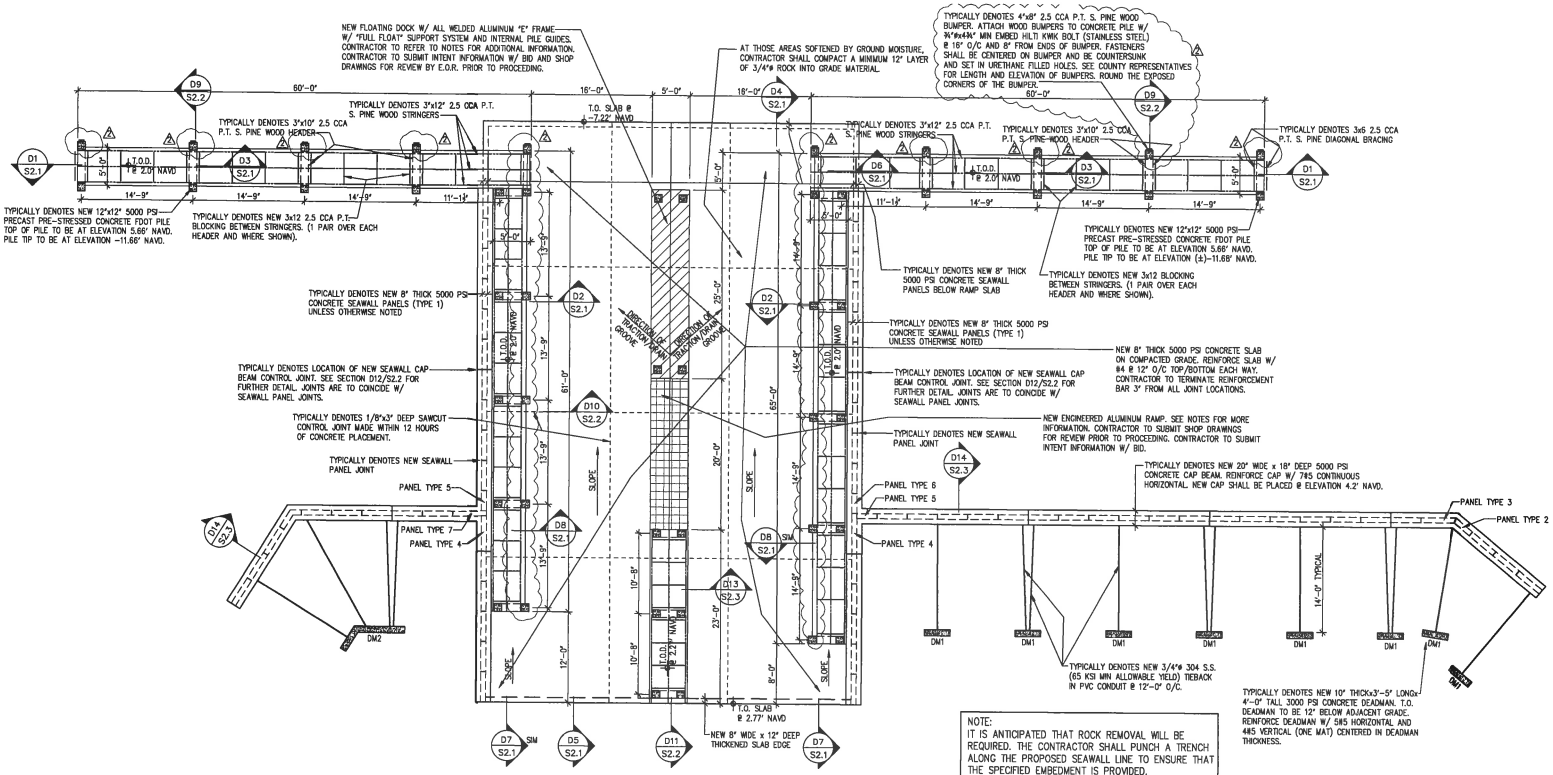
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FLORIDA

CONSTRUCTION DETAILS

Erickson Consulting Engineers, inc.
7201 Desoney Court
Sarasota, FL 32420
(941) 373-6460

DRAWING NUMBER
E 11

Z:\CADD_Graphics\US Projects\13-267_CPH_North Coquina Boat Ramp\Construction\13-267_Const_E11_DETAILS.dwg Jan 15, 2016-6:05pm



BOAT RAMP PLAN
1/16"=1'-0"

STIRLING & WILBUR
ENGINEERING GROUP

7085 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 929-1552 FAX (941) 929-1553
email: cad@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group

EB8402

PROJECT NAME
NORTH COQUINA BOAT RAMP
MANATEE COUNTY, FL

ISSUED FOR
CONSTRUCTION 12-21-15

PROJECT NUMBER
S2013-103

SIGN/SEAL
BRIAN STIRLING, PE 34927

REVISIONS

NO.	ITEM	DATE
1	ISSUED FOR BIDDING	12/29/15
2	OWNER REVISIONS	02/23/16

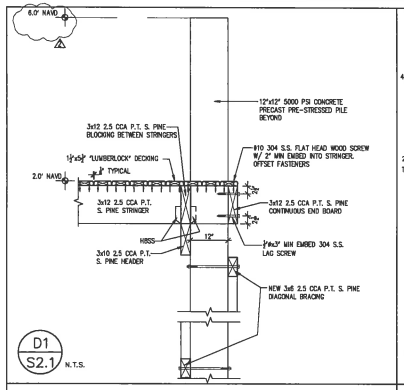
DRAWN BY RTR
CHECKED BY BHS
DATE 12-21-15
PLOT SCALE AS NOTED
THIS DRAWING IS NOT TO BE SCALED.

SHEET TITLE
STRUCTURAL SITE PLAN

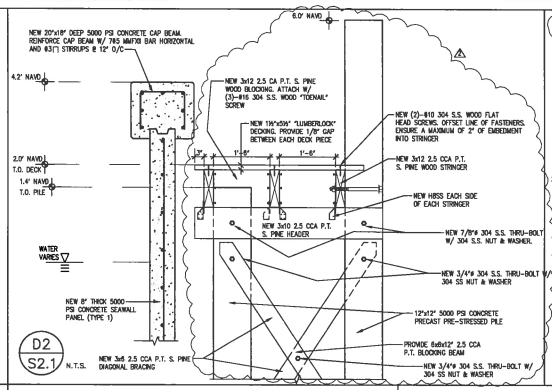
SHEET NUMBER
S1.1

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg 3/24/2016 4:09:53 PM, 1:1

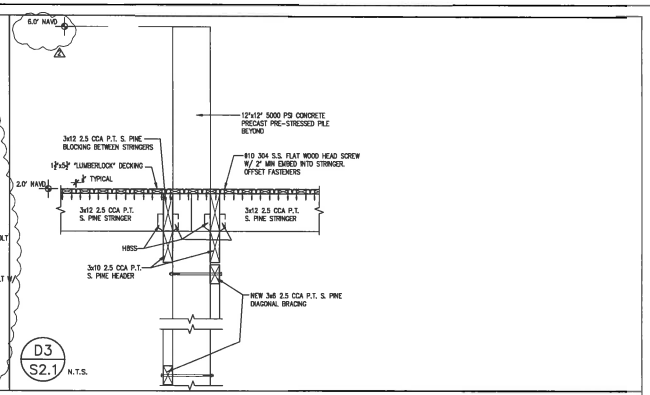
X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg Mar 24, 2016-4:09pm



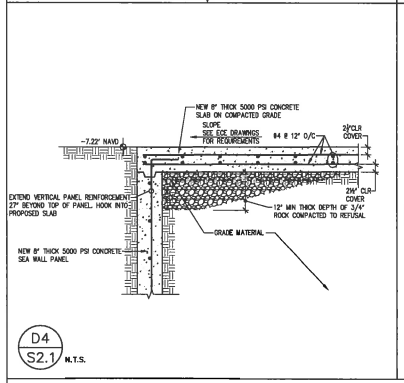
D1 S2.1 N.T.S.



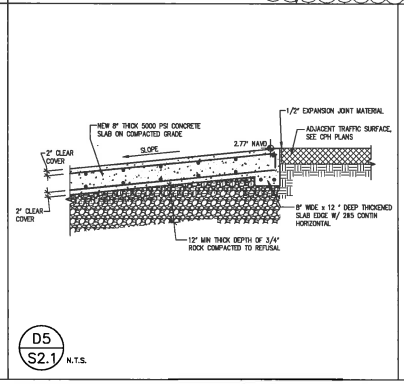
D2 S2.1 N.T.S.



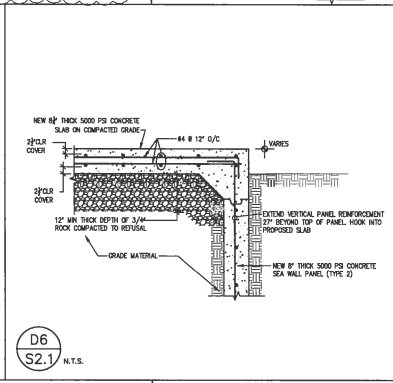
D3 S2.1 N.T.S.



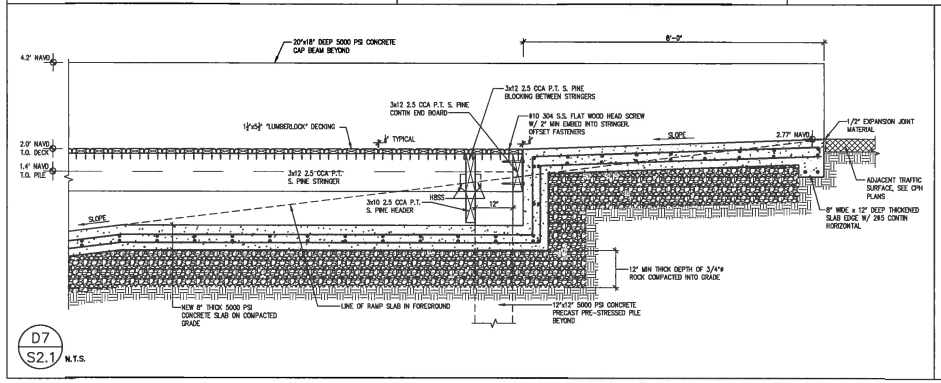
D4 S2.1 N.T.S.



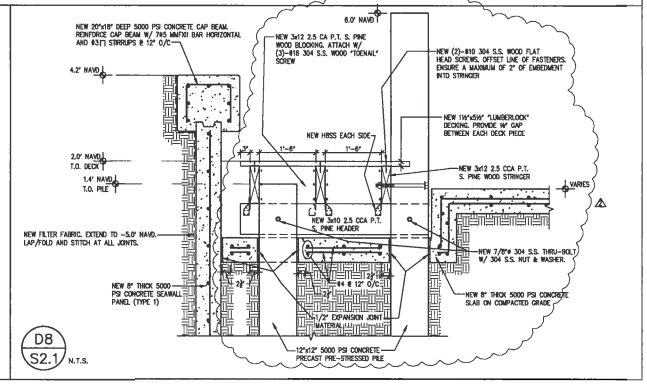
D5 S2.1 N.T.S.



D6 S2.1 N.T.S.



D7 S2.1 N.T.S.



D8 S2.1 N.T.S.

BRIAN STIRLING LICENSE No. 34927 STATE OF FLORIDA PROFESSIONAL ENGINEER

STIRLING & WILBUR
ENGINEERING GROUP

7085 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 929-1552 FAX (941) 929-1553
email: cadd@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group

ISSUED

PROJECT NAME

NORTH COQUINA
BOAT RAMP
MANATEE COUNTY, FL

ISSUED FOR

CONSTRUCTION 12-21-15

PROJECT NUMBER

S2013-103

SIGN/SEAL

BRIAN STIRLING, PE 34927

REVISIONS

NO.	ITEM	DATE
1	ISSUED FOR BIDDING	12/28/16
2	OWNER REVISIONS	03/22/16

DRAWN BY RTR

CHECKED BY BHS

DATE 12-21-15

PLOT SCALE AS NOTED

THIS DRAWING IS NOT TO BE SCALED.

SHEET TITLE

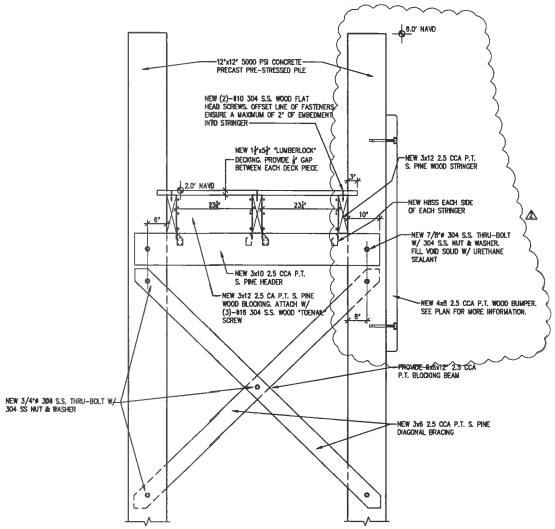
STRUCTURAL SECTIONS

SHEET NUMBER

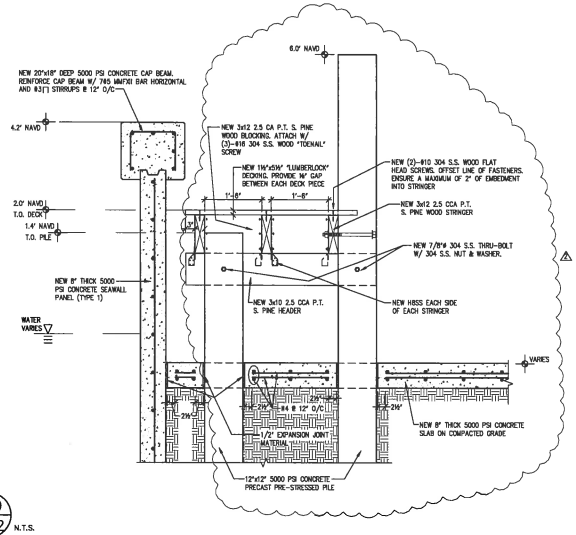
S2.1

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg Mar 24, 2016-4:10pm

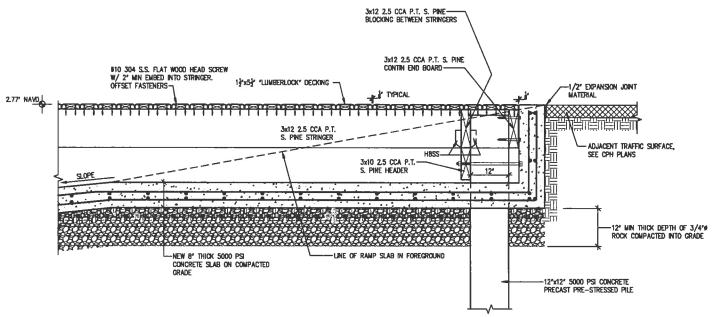
X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg, 3/24/2016 4:10:09 PM, 1:1



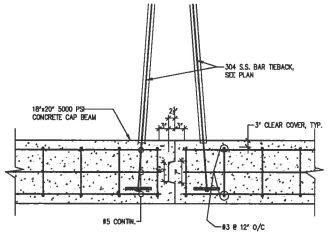
D9 / S2.2 N.T.S.



D10 / S2.2 N.T.S.



D11 / S2.2 N.T.S.



PLAN VIEW OF CAP BEAM CONSTRUCTION JOINT

D12 / S2.2 N.T.S.

STIRLING & WILBUR
ENGINEERING GROUP

7085 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 929-1552 FAX (941) 929-1553
email: cad@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group

EB9412

PROJECT NAME

NORTH COQUINA
BOAT RAMP
MANATEE COUNTY, FL

ISSUED FOR

CONSTRUCTION 12-21-15

PROJECT NUMBER

S2013-103

SIGN/SEAL

BRIAN STIRLING, PE 34927

BRIAN STIRLING LICENSE No. 34927 STATE OF FLORIDA PROFESSIONAL ENGINEER

REVISIONS

NO.	ITEM	DATE
1	ISSUED FOR BIDDING	12/21/15
2	OWNER REVISIONS	03/23/16

DRAWN BY RTR

CHECKED BY BHB

DATE 12-21-15

PLOT SCALE AS NOTED

THIS DRAWING IS NOT TO BE SCALED.

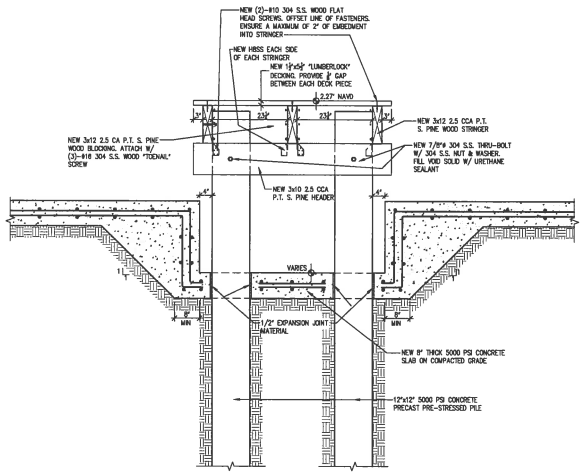
SHEET TITLE

STRUCTURAL SECTIONS

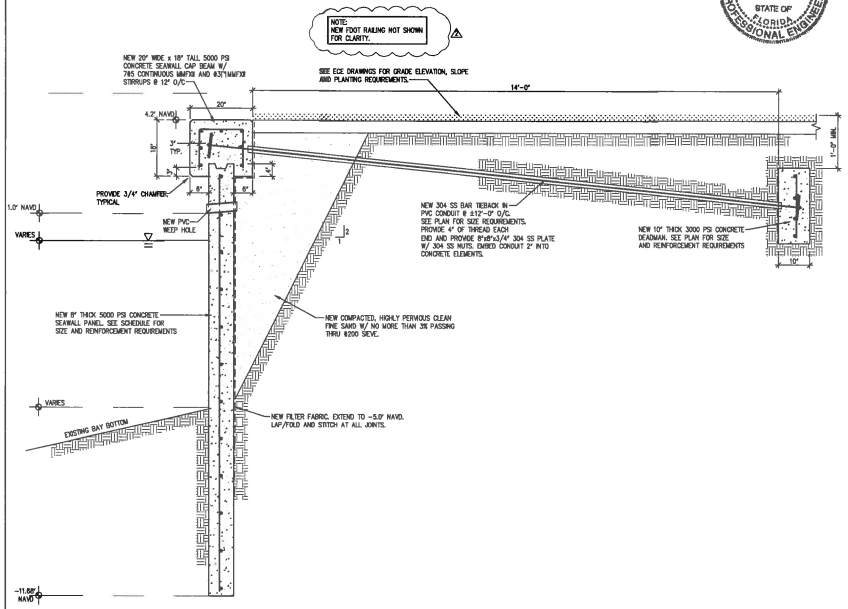
SHEET NUMBER

S2.2

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg Mar 24, 2016-4:10pm
X:\2013\2013-103\12-22-15\13-267_Construction S1.1 S2.6 STRUCTURAL SHEETS.dwg, 3/24/2016 4:10:39 PM, 1:1



D13 / S2.3 3/4"=1'-0"



D14 / S2.3 3/4"=1'-0"

BRIAN STIRLING LICENSE No. 34927 STATE OF FLORIDA PROFESSIONAL ENGINEER

STIRLING & WILBUR
ENGINEERING GROUP

7285 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 929-1552 FAX (941) 929-1553
email: cad@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group
EB4462

PROJECT NAME
NORTH COQUINA
BOAT RAMP
MANATEE COUNTY, FL

ISSUED FOR
CONSTRUCTION 12-21-15

PROJECT NUMBER
S2013-103

SIGN/SEAL
BRIAN STIRLING, PE 34927

REVISIONS

NO.	ITEM	DATE
1	ISSUED FOR BIDDING	12/28/15
2	OWNER REVISIONS	03/23/16

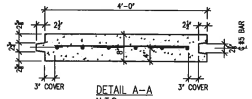
DRAWN BY RTR
CHECKED BY BHS
DATE 12-21-15
PLOT SCALE AS NOTED
THIS DRAWING IS NOT TO BE SCALED.

SHEET TITLE
STRUCTURAL SECTIONS

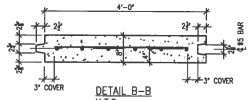
SHEET NUMBER
S2.3

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg Mar 24, 2016-4:10pm

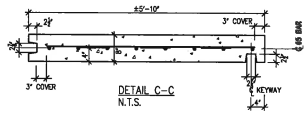
X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg, 3/24/2016 4:10:48 PM, L1



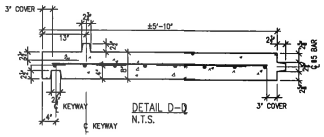
DETAIL A–A
N.T.S.



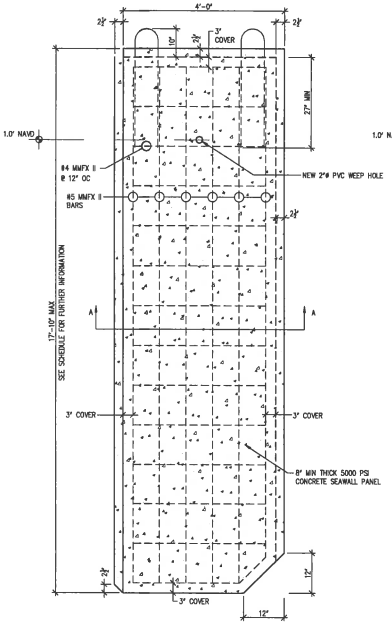
DETAIL B–B
N.T.S.



DETAIL C–C
N.T.S.

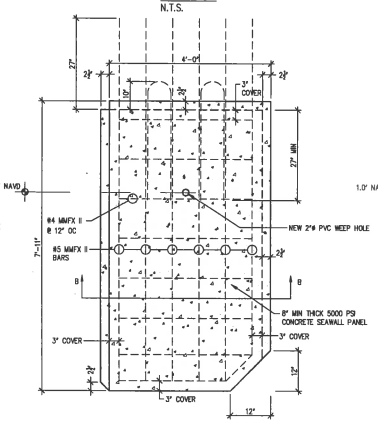


DETAIL D–D
N.T.S.



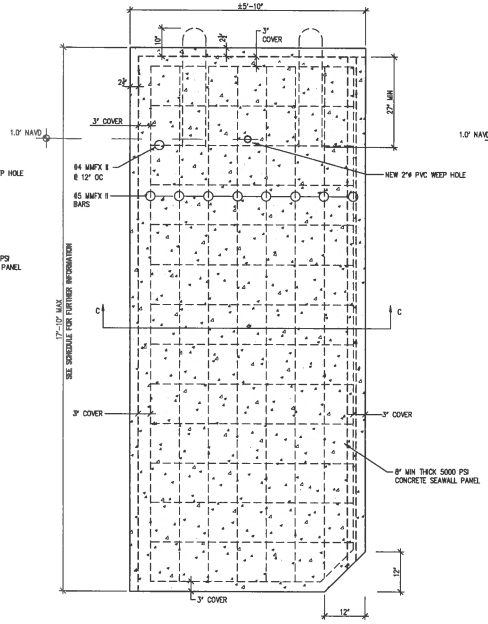
TYPE 1 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.



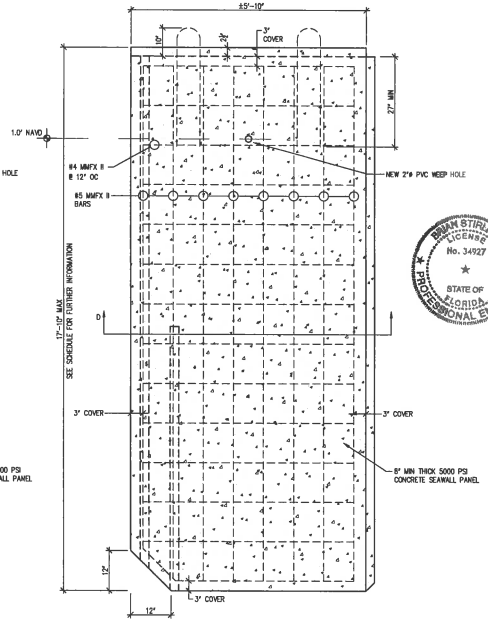
TYPE 2 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.



TYPE 3 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.



TYPE 4 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.

BRIAN STIRLING LICENSE No. 34927 STATE OF FLORIDA PROFESSIONAL ENGINEER

STIRLING & WILBUR
ENGINEERING GROUP

7095 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 929-1552 FAX (941) 929-1553
email: cad@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group
EB8442

PROJECT NAME
NORTH COQUINA
BOAT RAMP
MANATEE COUNTY, FL

ISSUED FOR
CONSTRUCTION 12-21-15

PROJECT NUMBER
S2013-103

SIGNIBEAL

BRIAN STIRLING, PE 34927

REVISIONS

NO.	ITEM	DATE
1	ISSUED FOR BIDDING	12/30/15
2	OWNER REVISIONS	03/22/16

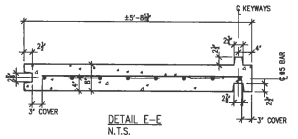
DRAWN BY RTR
CHECKED BY BHS
DATE 12-21-15
PLOT SCALE AS NOTED
THIS DRAWING IS NOT TO BE SCALED.

SHEET TITLE
STRUCTURAL DETAILS

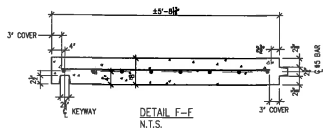
SHEET NUMBER
S2.4

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg Mar 24, 2016-4:11pm

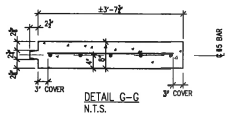
X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg, 3/24/2016 4:11:26 PM, 1:1



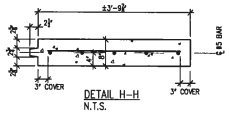
DETAIL E–E
N.T.S.



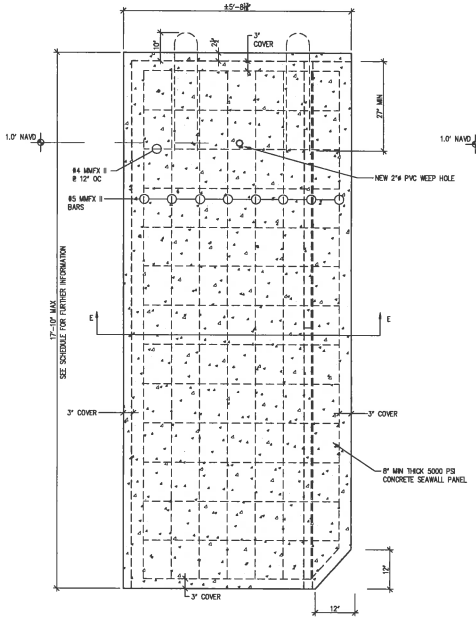
DETAIL F–F
N.T.S.



DETAIL G–G
N.T.S.

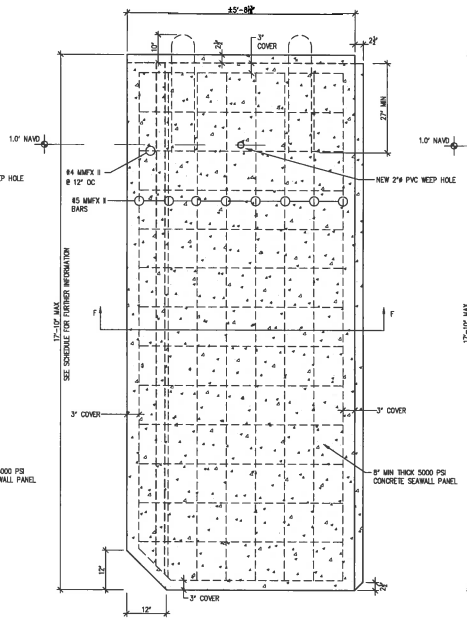


DETAIL H–H
N.T.S.



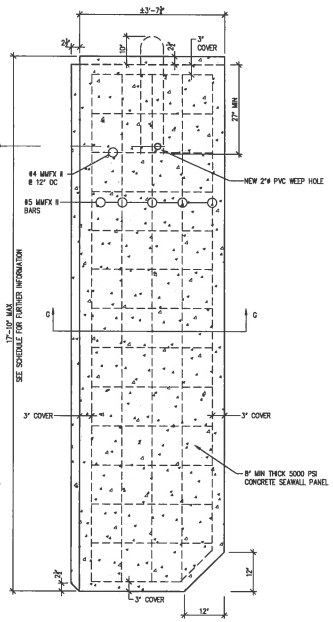
TYPE 5 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.



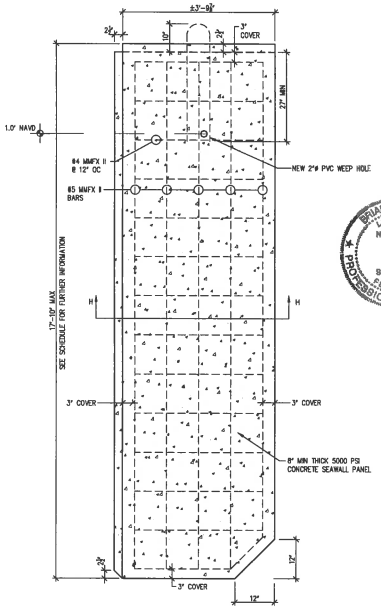
TYPE 6 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.



TYPE 7 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.



TYPE 8 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.

BRIAN STIRLING LICENSE No. 34927 STATE OF FLORIDA PROFESSIONAL ENGINEER

STIRLING & WILBUR
ENGINEERING GROUP

7095 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 929-1552 FAX (941) 929-1553
email: cadd@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group
1394482

PROJECT NAME
NORTH COQUINA
BOAT RAMP
MANATEE COUNTY, FL

ISSUED FOR
CONSTRUCTION 12-21-15

PROJECT NUMBER
S2013-103

SIGN/SEAL
BRIAN STIRLING, PE 34927

REVISIONS

NO.	ITEM	DATE
1	ISSUED FOR BIDDING	12/28/15
2	OWNER REVISIONS	03/22/16

DRAWN BY RTR
CHECKED BY BHS
DATE 12-21-15
PLOT SCALE AS NOTED
THIS DRAWING IS NOT TO BE SCALED.

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S2.5

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg Mar 24, 2016-4:11pm

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg, 3/24/2016 4:11:48 PM, 1:1

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), D46 (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 MWFX 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 (CRS, CLASS2).
11. ALL CONCRETE SHALL BE WET CURED FOR A MINIMUM OF 3 DAYS.
12. PROVIDE CONCRETE TESTING OF CONCRETE MATERIAL CONFIRMING DESIGN STRENGTHS.

TIEBACK:

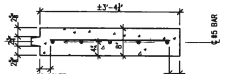
1. PVC:
   TYPE I, GRADE I SCHEDULE 40 PVC, CONFORMING TO SECTION 948 OF FDOT "STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, 2010".
2. GREASE:
   MEET REQUIREMENTS OF SECTION 3.2.5 OF THE POST TENSIONING INSTITUTE SPECIFICATION FOR UNBONDED SINGLE STRAND TENDONS, PER SECTION 451 OF FDOT "STANDARD SPECIFICATIONS FOR RAOD & BRIDGE CONSTRUCTION, 2010".

NOTES

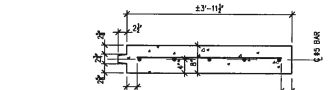
1. SUBMIT TO ENGINEER FOR REVIEW, COMPLETE DETAILS AND SPECIFICATION OF THE PROPOSED PILES AND A WRITTEN STATEMENT DESCRIBING THE EQUIPMENT TO BE USED.
2. INSTALL PILES/SHEET PILES TO -11.8' NAVD.
3. REPRESENTATIVE FROM ARDAMAN & ASSOCIATES, INC. TO BE PRESENT DURING PILE INSTALLATION TO PROVIDE THE NECESSARY ENGINEERING DOCUMENTATION OF PILE CAPACITIES. NO STRUCTURAL CONCRETE SHALL BE POURED AT PILES WHERE DOCUMENTATION HAS NOT BEEN SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.
4. REMOVE EXISTING DOCK STRUCTURE, SEAWALL, RAMP, PLUMBING, AND ELECTRICAL COMPONENTS AND DISPOSE OF LEGALLY.
5. THE DOCK WAS DESIGNED TO CARRY A LIVE LOAD OF 40 PSF.
6. PROVIDE THE FOLLOWING MISCELLANEOUS ACCESSORIES, PROVIDE PRODUCT DATA SHEET FOR OWNER REVIEW AND ACCEPTANCE PRIOR TO PURCHASE AND INSTALLATION. ALL ATTACHMENT FASTENERS SHALL BE OF STAINLESS STEEL MATERIAL. (CONICAL PILING CAPS, CONCRETE PILE RUB RAILS. REFER TO HIGHLAND SHORES BOAT RAMP FACILITY AT 3535 SHORE DRIVE, ELLENTON FLORIDA). 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 W/ BID. ALL ITEMS SHALL BE IN BASE BID, HOWEVER, SINCE SPECIFIED MODELS HAVE NOT BEEN SELECTED BY OWNER, CONTRACTOR SHALL PROVIDE ALLOWANCE FIGURE AND PRODUCT DATA ASSOCIATED WITH SAID ALLOWANCE WITH BID.
7. CONTRACTOR TO ADHERE TO THE FOLLOWING INSTALLATION TOLERANCES:
   A. CONCRETE SHEET PILE: OUT OF PLANE PLUMBNESS- 1/8" IN 4'.
   B. CONCRETE SHEET PILE: IN PLANE PLUMBNESS- INTERLOCK SEPARATION 1/2" MAXIMUM.
   C. STRAIGHTNESS OF CONCRETE SHEETPILE LINE- 1/4" IN 4'.
   D. TOP OF SHEETPILE ELEVATION ±1/2".
8. FILTER FABRIC SHALL CONFORM TO FDOT SPECIFICATION STANDARD INDEX 199, US 230 (WOVEN).

FRAMING NOTES:

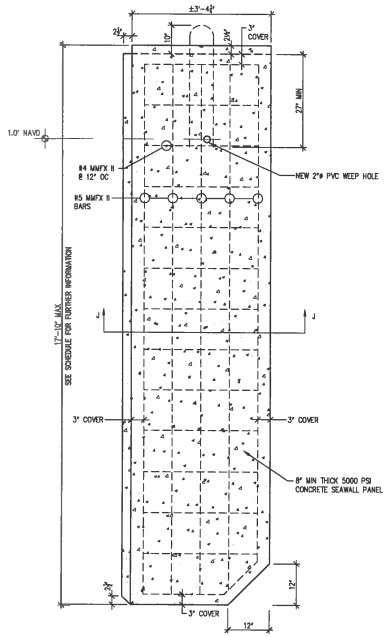
1. CONNECTIONS, MATERIALS AND WORKMANSHIP SHALL BE IN STRICT ACCORDANCE WITH CHAPTER 17, WOOD CONSTRUCTION, OF THE MOST RECENT STANDARD BUILDING CODE AND THE TIMBER CONSTRUCTION MANUAL BY THE NATIONAL FOREST PRODUCTS ASSOCIATION (NFPA) OR SOUTHERN PINE INSPECTION BUREAU (SPIB). MOISTURE CONTENT SHALL NOT BE MORE THAN 19% AT THE TIME OF INCORPORATION INTO STRUCTURE.
2. ALL STRINGER MATERIAL SHALL BE #1 SOUTHERN PINE FRAMING (UNLESS NOTED OTHERWISE), AS DESCRIBED IN THE SPIB GRADING RULES.
3. IF STANDARDS FOR WOOD PRODUCTS TREATMENT IS NOT CONSISTENT W/ THE FOLLOWING, THE LATEST STANDARDS WILL PREVAIL.
4. PROCESS FOR PRESERVATIVE TREATMENT SHALL BE IN CONFORMANCE TO THE AMERICAN WOOD PRESERVER'S ASSOCIATION (AWPA) STANDARDS C2-90, C9-91, AND C18-91.
5. THE PURCHASE, INSPECTION, AND HANDLING OF ALL NEW WOOD MATERIAL SHALL BE IN CONFORMANCE W/ THE APPLICABLE SECTIONS OF THE AWPA STANDARDS M1, M2, AND M4, LATEST EDITION.
6. THE CONTRACTOR SHALL PROVIDE A LETTER(S) FROM AN EXPERIENCED INSPECTOR(S) QUALIFIED IN THE RESPECTIVE FIELD, THAT THE WOOD PRODUCTS, PRESERVATIVES, AND TREATMENT, MEET THE SPECIFICATIONS AND THAT THE METHODS AND FACILITIES OF PRODUCTION CONFORM W/ THE APPLICABLE AWPA STANDARDS OF RECOMMENDED PRACTICE.
7. AN INSPECTORS TAG/STAMP SHALL BE REQUIRED ON EACH PIECE OF ACCEPTED MATERIAL WHEN SAID MATERIAL ARRIVES ON SITE. THE TAG/STAMP SHALL BE PLACED ON THOSE PIECES CONFORMING TO ALL STAGES OF PROCESSING. THE INSPECTION TAG/STAMP SHALL REMAIN ON MATERIAL, AS A MINIMUM, UNTIL ENGINEER-OF-RECORD HAS VERIFIED MATERIAL.
8. STEP-BY-STEP WORK SHEETS ARE REQUIRED FOR USE IN RECORDING PRESERVATIVE ANALYSIS AND RETENTION ASSAYS. REFER TO SECTION 7.0 OF AWPA STANDARD M2 FOR MORE INFO.
9. ALL COMMENTS WITHIN THE AWPA STANDARDS STATED AS AN OPTION SHALL BE INTERPRETED BY THE CONTRACTOR AS A SPECIFIC REQUIREMENTS OF THESE DOCUMENTS.
10. BRANDS SHALL BE IN ACCORDANCE WITH AWPA M6 AND SHALL BE PLACED CLEARLY AND PERMANENTLY ON EACH STRINGER. MEMBERS SHALL BE BRANDED AT A MAXIMUM OF 6'-0" O/C.
11. TREATED MATERIAL SHALL NOT BE DRAGGED ALONG THE GROUND.
12. PRIOR TO USE, TREATED MATERIAL SHALL BE STACKED ON TREATED OR NON-DECAYING SKIDS OF SUCH DIMENSIONS AND SO ARRANGED AS TO SUPPORT THE MATERIAL WITHOUT PRODUCING NOTICEABLE DISTORTION.
13. ALL TREATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER SO THAT THERE IS AIR SPACE BENEATH THE MATERIAL.
14. STORAGE AREAS SHALL BE FREE OF DEBRIS, DECAYED WOOD AND DRY VEGETATION (FIRE HAZARD) AND SHALL HAVE SUFFICIENT DRAINAGE TO PREVENT WOOD PRODUCTS FROM BEING SUBJECTED TO STANDING WATER.
15. ALL CUTS, HOLES, AND INJURIES OF THE SURFACE OF TREATED MATERIAL SHALL BE FIELD-PROTECTED BY THOROUGHLY SATURATING ALL AREAS WITH A FIELD-TREATING SOLUTION PRIOR TO ERECTION AND PLACEMENT OF FASTENERS.
16. COPPER NAPHTENATE SOLUTIONS SHALL BE USED AS FIELD TREATMENTS. THE PRESERVATIVE SOLUTION SHALL BE PREPARED BY BLENDING COPPER NAPHTENATE PRESERVATIVE MEETING AWPA STANDARD P9. THE SOLUTION SHALL CONTAIN A MIN OF 2% COPPER METAL.
17. ALL UNUSED BORE HOLES AND NAIL HOLES SHALL BE POURED FULL OF PRESERVATIVE AND PLUGGED WITH TIGHT-FITTING TREATED PLUGS OF THE SAME MATERIAL.
18. ALL DIMENSIONS SHOWN ON THE PLAN SHALL BE FIELD VERIFIED PRIOR TO FABRICATION/ERECTION.
19. ALL FASTENER HOLES SHALL BE PRE-DRILLED AND TREATED PRIOR TO INSTALLATION OF FASTENERS.



DETAIL J-J
N.T.S.

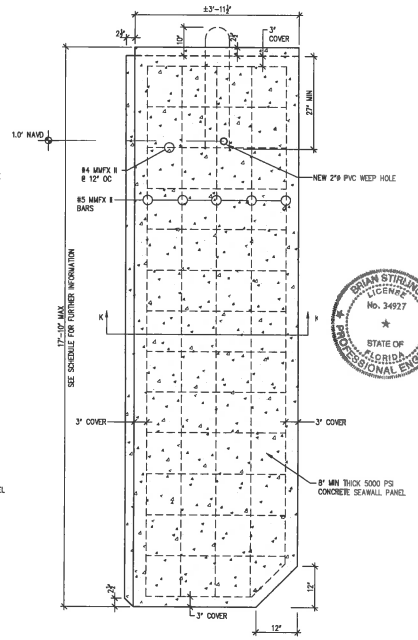


DETAIL K-K
N.T.S.



TYPE 9 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.



TYPE 10 PANEL DESIGN
N.T.S.

NOTE: MINOR CHANGES TO PANEL WIDTH WILL OCCUR ALONG LENGTH OF SEAWALL. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW BY ENGINEER DETAILING ALL REQUIRED SIZES. CONTRACTOR TO MAINTAIN EQUAL OR GREATER VERTICAL REINFORCEMENT PERCENTAGES.

BRIAN STIRLING LICENSE No. 34927 STATE OF FLORIDA PROFESSIONAL ENGINEER

STIRLING & WILBUR
ENGINEERING GROUP

7095 SOUTH TAMIAMI TRAIL, SARASOTA, FL 34231
PHONE (941) 929-1552 FAX (941) 929-1553
email: cad@stirlingwilbur.com

Copyright © 2014 Stirling & Wilbur Engineering Group

EB8432

PROJECT NAME

NORTH COQUINA
BOAT RAMP
MANATEE COUNTY, FL

ISSUED FOR

CONSTRUCTION 12-21-15

PROJECT NUMBER

S2013-103

3ARBEAL

BRIAN STIRLING, PE 34927

VISIONS

NO.	ITEM	DATE
1	ISSUED FOR BIDDING	12/28/15
2	OWNER REVISIONS	05/22/16

DRAWN BY	RTR
CHECKED BY	BHB
DATE	12-21-15
PLOT SCALE	AS NOTED

THIS DRAWING IS NOT TO BE SCALED.

SHEET TITLE

STRUCTURAL
NOTES AND
DETAILS

SHEET NUMBER

S2.6

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg Mar 24, 2016-4:12pm

X:\2013\2013-103\12-22-15\13-267_Construction_S1.1_S2.6_STRUCTURAL SHEETS.dwg, 3/24/2016 4:12:07 PM, 1:1

CONSTRUCTION AGREEMENT

for

STIPULATED SUM

between

MANATEE COUNTY (AS OWNER)

and

_____ (AS CONTRACTOR)

Agreement #16-2806OV
North Coquina Boat Ramp Improvements
and Parking Lot Expansion
1343 Gulf Drive South (SR 789)
City of Bradenton Beach
Manatee County, FL

CONSTRUCTION AGREEMENT FOR
STIPULATED SUM
IFB16-2806OV, North Coquina Boat Ramp Improvements and Parking Lot Expansion
1343 Gulf Drive South (SR 789) City of Bradenton Beach, Manatee County, FL

THIS AGREEMENT ("Agreement") is made and entered into by and between Manatee County, a political subdivision of the State of Florida, referred to herein as "Owner", and the firm of _____, incorporated in the State of _____ and registered and licensed to do business in the State of Florida (license #_____), referred to herein as "Contractor."

WHEREAS, the Owner intends to construct **[Southeast Water Reclamation Facility (SEWRF) Septage / Grease Receiving Station Project]**, the aforementioned improvements being hereinafter referred to and defined as the "Project"; and

WHEREAS, in response to Owner's **Invitation for Bid No. 16-2806OV** (the "IFB"), Contractor has submitted its Bid (the "Contractor's Bid") to provide the aforementioned construction services.

NOW THEREFORE, the Owner and the Contractor, in consideration of the mutual covenants hereinafter set forth, the sufficiency of which is hereby acknowledged, agree as follows:

1. Contract Documents. The Contract Documents consist of this Agreement and attached Exhibits, the attached General Conditions of the Construction Agreement, Supplementary Conditions (if any), Special Conditions (if any), Drawings (the titles of which are attached hereto as Exhibit A), Specifications (the titles of which are attached hereto as Exhibit B), Addenda issued prior to execution of this Agreement, the Invitation for Bid (including any Instructions to Bidders, Scope of Work, Bid Summary, Supplements, and Technical Specifications), any interpretations issued pursuant to the Invitation for Bid, the Contractor's Bid, permits, notice of intent to award, Notice to Proceed, purchase order(s), any other documents listed in this Agreement, and Modifications [to include written Amendment(s), Change Order(s), Work Directive Change(s) and Field Directive(s)] issued after execution of this Agreement. These form the Agreement, and are as fully a part of the Agreement as if attached or repeated herein. This Agreement represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. No other documents shall be considered Contract Documents.

2. Work. The Contractor shall fully execute the Work described in the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

3. Date of Commencement and Substantial Completion.

A. Date of Commencement. The date of commencement of the Work shall be the date fixed in a Notice to Proceed issued by the Owner.

B. Contract Time. The Contract Time shall be measured from the date of commencement.

C. Substantial Completion. The Contractor shall achieve Substantial Completion of the entire Work not later than ___ days from the date of commencement, or as follows:

Portion of Work **Substantial Completion Date**

subject to adjustments of this Contract Time as provided in the Contract Documents.

Time is of the essence in the Contract Documents and all obligations thereunder. If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time and as otherwise required by the Contract Documents, the Owner shall be entitled to retain or recover from the Contractor, as liquidated damages and not as a penalty, the sum of **$1,584.00 per calendar day**, commencing upon the first day following expiration of the Contract Time and continuing until the actual date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable estimate of damages the Owner will incur as a result of delayed completion of the Work. The Owner may deduct liquidated damages as described in this paragraph from any unpaid amounts then or thereafter due the Contractor under this Agreement. Any liquidated damages not so deducted from any unpaid amounts due the Contractor shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at the maximum allowable rate.

4. Contract Sum.

A. Payment. The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be _____ Dollars and Zero Cents ($_____), subject to additions and deductions as provided in the Contract Documents.

B. Alternates. The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner. *(State the numbers or other identification of accepted alternates. If decisions on other alternates are to be made by the Owner subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)*

C. Unit Prices. Unit prices, if any, are reflected in the Contractor's Bid.

5. Payments.

A. Progress Payments.

(1) Based upon Applications for Payment submitted to the Architect/Engineer by the Contractor and Certificates for Payment issued by the Architect/Engineer, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

(2) The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

(3) Payments shall be made by Owner in accordance with the requirements of Section 218.735, Florida Statutes.

(4) Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect/Engineer may require. This schedule, unless objected to by the Owner or Architect/Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment.

(5) Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

(6) Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

i. Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of ten percent (10.00%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 3.3.B. of the General Conditions;

ii. Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), supported by paid receipts, less retainage of ten percent (10.00%);

iii. Subtract the aggregate of previous payments made by the Owner; and

iv. Subtract amounts, if any, for which the Architect/Engineer has withheld or nullified an Application for Payment, in whole or in part as provided in Section 3.3.C. of the General Conditions.

(7) The progress payment amount determined in accordance with Section 5.A(6) shall be further modified under the following circumstances:

i. Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect/Engineer shall determine for incomplete Work, retainage applicable to such work and unsettled claims.

ii. Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 3.2.B. of the General Conditions.

(8) Reduction or limitation of retainage, if any, shall be as follows:

Notwithstanding the foregoing, upon completion of at least 50% of the Work, as determined by the Architect/Engineer and Owner, the Owner shall reduce to five percent (5%) the amount of retainage withheld from each subsequent progress payment.

(9) Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

B. Final Payment. Final Payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when:

(1) The Contractor has fully performed the Work except for the Contractor's responsibility to correct Work as provided in Section 2.4.C. of the General Conditions, and to satisfy other requirements, if any, which extend beyond final payment; and

(2) A final Application for Payment has been approved by the Architect/Engineer.

6. Termination or Suspension.

A. Termination. The Agreement may be terminated by the Owner or the Contractor as provided in Article XIV of the General Conditions.

B. Suspension by Owner. The Work may be suspended by the Owner as provided in Article XIV of the General Conditions.

7. Other Provisions.

A. Substantial Completion Defined. Substantial Completion shall be defined as provided in Article I of the General Conditions. In the event a temporary certificate of occupancy or completion is issued establishing Substantial Completion, the Contractor shall diligently pursue the issuance of a permanent certificate of occupancy or completion.

B. Project Meetings. There shall be a project meeting, at the jobsite or other location acceptable to the parties, on a regularly scheduled basis. The meeting will be attended by a representative of the Contractor, Architect/Engineer and Owner. These representatives shall be authorized to make decisions that are not otherwise contrary to the requirements of this Agreement.

C. Weather. Any rainfall, temperatures below 32 degrees Fahrenheit or winds greater than 25 m.p.h. which actually prevents Work on a given day, shall be considered lost time and an additional day added to the Contract Time, provided no work could be done on site, and provided written notice has been submitted to the Owner by the Contractor documenting same.

D. Shop Drawings; Critical Submittals. In consideration of the impact of timely review of submittals and shop drawings on the overall progress of the Work, it is hereby agreed that the Owner shall cause his agents and design professionals to accomplish the review of any particular "critical" submittals and/or shop drawings and return same to the Contractor within fourteen (14) days.

E. Applications for Payment. Applications for Payment shall be submitted once monthly at regular intervals and shall include detailed documentation of all costs incurred.

F. Punch List. Within 30 days after obtainment of Substantial Completion, the Owner shall generate a "punch list" of all work items requiring remedial attention by the Contractor. Within 5 days thereafter the Architect/Engineer shall assign a fair value to the punch list items, which sum shall be deducted from the next scheduled progress payment to the Contractor. Upon satisfactory completion of the punch list items, as certified by the Architect/Engineer, the previously deducted sum shall be paid to the Contractor.

G. Closeout documentation. Within 30 days after obtainment of Substantial Completion and before final payment, Contractor shall gather and deliver to Owner all warranty documentation, all manufacturer's product and warranty literature, all manuals (including parts and technical manuals), all schematics and handbooks, and all as-built drawings.

H. Governing Provisions; Conflicts. In the event of a conflict between this Agreement and the Specifications or as between the General Conditions and the Specifications, the Specifications shall govern.

I. E-Verify. The Contractor's employment of unauthorized aliens is a violation of Section 274(e) of the Federal Immigration and Employment Act. The Contractor shall utilize the U.S. Department of Homeland Security E-Verify system to verify the employment eligibility of all new employees hired during the term of this Agreement, and shall require the same verification procedure of all Subcontractors.

8. Insurance and Bonding. If and to the extent required by the Invitation for Bid documents, the Contractor shall furnish insurance coverage for (but not necessarily limited to) workers' compensation, commercial general liability, auto liability, excess liability, and builder's risk. The Contractor shall furnish to the Owner all appropriate policies and Certificate(s) of Insurance. The Contractor shall also post a Payment and Performance Bond for

the Contract Sum, within **ten (10) days** following notification of intent to award, and otherwise in accordance with the Invitation for Bid documents.

9. **Independent Contractor.** The Contractor acknowledges that it is functioning as an independent contractor in performing under the terms of this Agreement, and it is not acting as an employee of the Owner.

10. **Entire Agreement.** This Agreement (inclusive of the Contract Documents incorporated herein by reference) represents the full agreement of the parties.

11. **Amendments; Waivers; Assignment.**

A. Amendments. This Agreement may be amended only pursuant to an instrument in writing that has been jointly executed by authorized representatives of the parties hereto.

B. Waivers. Neither this Agreement nor any portion of it may be modified or waived orally. However, each party (through its governing body or properly authorized officer) shall have the right, but not the obligation, to waive, on a case-by-case basis, any right or condition herein reserved or intended for the benefit or protection of such party without being deemed or considered to have waived such right or condition for any other case, situation, or circumstance and without being deemed or considered to have waived any other right or condition. No such waiver shall be effective unless made in writing with an express and specific statement of the intent of such governing body or officer to provide such waiver.

C. Assignment. The rights and obligations of either party to this Agreement may be assigned to a third party only pursuant to a written amendment hereto.

12. **Validity.** Each of the Owner and Contractor represents and warrants to the other its respective authority to enter into this Agreement.

13. **Covenant To Defend.** Neither the validity of this Agreement nor the validity of any portion hereof may be challenged by any party hereto, and each party hereto hereby waives any right to initiate any such challenge. Furthermore, if this Agreement or any portion hereof is challenged by a third party in any judicial, administrative, or appellate proceeding (each party hereby covenanting with the other party not to initiate, encourage, foster, promote, cooperate with, or acquiesce to such challenge), the parties hereto collectively and individually agree, at their individual sole cost and expense, to defend in good faith its validity through a final judicial determination or other resolution, unless all parties mutually agree in writing not to defend such challenge or not to appeal any decision invalidating this Agreement or any portion thereof.

14. **Disclaimer of Third-Party Beneficiaries; Successors and Assigns.** This Agreement is solely for the benefit of the parties hereto, and no right, privilege, or cause of action shall by reason hereof accrue upon, to, or for the benefit of any third party. Nothing in this Agreement is intended or shall be construed to confer upon or give any person, corporation, partnership, trust, private entity, agency, or other governmental entity any right, privilege, remedy, or claim under or by reason of this Agreement or any provisions or conditions hereof.

This Agreement shall be binding upon, and its benefits and advantages shall inure to, the successors and assigns of the parties hereto.

15. Construction.

A. Headings and Captions. The headings and captions of articles, sections, and paragraphs used in this Agreement are for convenience of reference only and are not intended to define or limit their contents, nor are they to affect the construction of or be taken into consideration in interpreting this Agreement.

B. Legal References. All references to statutory sections or chapters shall be construed to include subsequent amendments to such provisions, and to refer to the successor provision of any such provision. References to "applicable law" and "general law" shall be construed to include provisions of local, state and federal law, whether established by legislative action, administrative rule or regulation, or judicial decision.

16. Severability. The provisions of this Agreement are declared by the parties hereto to be severable. In the event any term or provision of this Agreement shall be held invalid by a court of competent jurisdiction, such invalid term or provision should not affect the validity of any other term or provision hereof; and all such terms and provisions hereof shall be enforceable to the fullest extent permitted by law as if such invalid term or provision had never been part of this Agreement; provided, however, if any term or provision of this Agreement is held to be invalid due to the scope or extent thereof, then, to the extent permitted by law, such term or provision shall be automatically deemed modified in order that it may be enforced to the maximum scope and extent permitted by law.

17. Governing Law; Venue. This Agreement shall be governed by the laws of the State of Florida. Venue for any petition for writ of certiorari or other court action allowed by this Agreement shall be in the Circuit Court of the Twelfth Judicial Circuit in and for Manatee County, Florida.

18. Attorney's Fees and Costs. In any claim dispute procedure or litigation arising from this Agreement, each party hereto shall be solely responsible for paying its attorney's fees and costs.

19. Notices. All notices, comments, consents, objections, approvals, waivers, and elections under this Agreement shall be in writing and shall be given only by hand delivery for which a receipt is obtained, or certified mail, prepaid with confirmation of delivery requested, or by electronic mail with delivery confirmation. All such communications shall be addressed to the applicable addressees set forth below or as any party may otherwise designate in the manner prescribed herein.

To the Owner:

Property Management Department
1112 Manatee Avenue West, Suite 802
Bradenton, FL 34205
Attn: Ms. Angela Honts, Project Manager
Phone: 941-748-4501, Ext. 5844
Email: Angela.Honts@mymanatee.org

To the Contractor:

_____
_____
_____
_____
Email: _____

Notices, comments, consents, objections, approvals, waivers, and elections shall be deemed given when received by the party for whom such communication is intended at such party's address herein specified, or such other physical address or email address as such party may have substituted by notice to the other.

20. Exhibits. Exhibits to this Agreement are as follows:

Exhibit A—Title(s) of Drawings

Exhibit B—Title(s) of Specifications

Exhibit C—Affidavit of No Conflict

Exhibit D—Certificate(s) of Insurance

Exhibit E—Payment and Performance Bond

Exhibit F—Standard Forms

1- Application for Payment
2- Contract Change Order
3- Administrative Contract Adjustment (ACA)
4- Certificate of Substantial Completion
5- Final Reconciliation / Warranty Period Declaration and Contractor's Affidavit
6- Public Construction Bond

WHEREFORE, the parties hereto have executed this Agreement as of the date last executed below.

_____
Name of Contractor

By: _____

Printed Name: _____

Title: _____

Date: _____

MANATEE COUNTY, a political subdivision of the State of Florida

By: _____

Printed Name: _____

Title: _____

Date: _____

Exhibit A
Title(s) of Drawings

Construction Plans for North Coquina Boat Ramp Parking Lot Expansion

1343 Gulf Drive South (SR 789)

City of Bradenton Beach

Manatee County, FL

(52 total pages, dated March 29, 2016)

Exhibit B

Title(s) of Specifications

Project Manual

NORTH COQUINA BOAT RAMP IMPROVEMENTS

Manatee County

CPH Job No. M13110

Dated January 15, 2016 / Updated March 15, 2016

Project Manual Includes:

A. Geotechnical Data
B. Permits
C. Construction Plans

(363 total pages)

Exhibit C

Affidavit of No Conflict

COUNTY OF _____,

STATE OF _____,

BEFORE ME, the undersigned authority, this day personally appeared, _____, a principal with full authority to bind _____hereinafter the "Contractor"), who being first duly sworn, deposes and says:

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

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

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

Affiant makes this affidavit for the purpose of inducing Manatee County, a political subdivision of the State of Florida, to enter into this Agreement for

_____
Signature

_____
Print Name

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

[Notary Seal]

Notary Public

My commission expires: _____ _____

_____
Notary Signature

_____
Print Name

_____

Personally Known _____or Produced Identification_____
Type of Identification Produced _____

Exhibit D

Contractor's Certificate(s) of Insurance

Exhibit E

Contractor's Payment and Performance Bond

Exhibit F

Standard Forms

1. Application for Payment
2. Contract Change Order
3. Administrative Contract Adjustment (ACA)
4. Certificate of Substantial Completion
5. Final Reconciliation, Warranty Period Declaration and Contractor's Affidavit
6. Public Construction Bond

APPLICATION FOR PAYMENT

Project: _____
From: _____ To: _____

Request No.: ____ Project No.: _____
Purchase Order No.: _____
County Bid No.: _____
Consultant: _____

CONTRACT PAYMENT SUMMARY

Original Contract Amount:				$ -
Change Order(s):				$ -
Change order summary:				
Number	Date Approved	Additive	Deductive	
SUBTOTALS:		$ -	$ -	
Net change order subtotal (Additive less Deductive):				$ -
Current Contract Amount (CCA): (Original Amount + Change Order(s))				$ -
		Previous Status	Total WIP	
Value of the Work in Place (WIP)		$ -	$ -	
Value of Stored Materials		$ -	$ -	
Total Earned ($ and % of CCA)		$ -	$ -	
Retainage ($ and % of CCA)		$ -	$ -	
Net Earned (Total earned minus retainage)				$ -
TOTAL PREVIOUS PAYMENTS				$ -
AMOUNT DUE THIS PAYMENT (Net Earned minus Previous Payments)				$ -

CONTRACTOR'S AFFIDAVIT OF NOTICE

CERTIFICATE: The undersigned CONTRACTOR certifies that all items and amounts shown on this Application for Payment are on account of work performed, materials supplied and/or materials stored on site and paid for by Contractor in accordance with the Contract Documents with due consideration for previous Payment(s), if any, received by the Contractor from the County, and that the Amount Due this Payment shown is now due.

NOTARY:

State of Florida, County of _____

Sworn to (or affirmed) and subscribed before me this _____ day of _____ by

_____
(Name of person giving notice)

_____
(Signature of Notary Public - State of Florida)
Print, Type or Stamp Commissioned Name of Notary Public:

Personally Known: _____ or Produced Identification ____
Type of Identification Produced: _____

CONTRACTOR:

_____
Name of person authorized to sign Affidavit of Notice

_____
TITLE

Contractor name, address and telephone no.:

_____
_____
_____
_____
_____

VERIFICATION, RECOMMENDATION, CONCURRENCES AND APPROVALS

	(Signatures)	(Date)
Quantities verified by:		
Consultant/Engineer:		
Project Manager:		
Department Head:		
Payment approved by the Board of County Commissioners:		
Attested to by the Clerk of Circuit Court:		

CONTRACT CHANGE ORDER

PROJECT:

Change Order No.:

Contract Amount:
(Present Value)

Project Number:

NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	BY EXECUTION OF THIS CHANGE ORDER THE CONTRACTOR AGREES THAT ALL CLAIMS FOR ADDITIONAL CONTRACT TIME AND FEES FOR THE ITEMS IN THIS CHANGE ORDER HAVE BEEN SATISFIED.		
		TOTAL DECREASE:	TOTAL INCREASE:

Contractor: _____
Address: _____
City / State: _____
Contractor Signature: _____ Date _____

THE NET CHANGE OF
ADJUSTS THE CURRENT CONTRACT AMOUNT FROM
TO

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
Consultant / Engineer		
Project Manager:		
Department Head:		
Approved by the Manatee County Board of County Commissioners:	Chairman	
Attest Clerk of the Circuit Court:		

ADMINISTRATIVE CONTRACT ADJUSTMENT

Project Name: _____

Contract Adjustment No.: _____

Contract Amount: _____

Project Number: _____

ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	BY EXECUTION OF THIS ADMINISTRATIVE CONTRACT ADJUSTMENT, THE CONTRACTOR AGREES THAT ALL CLAIMS FOR ADDITIONAL CONTRACT TIME AND FEES FOR THE ITEMS IN THIS ADMINISTRATIVE CONTRACT ADJUSTMENT HAVE BEEN SATISFIED.		
		TOTAL DECREASE:	TOTAL INCREASE:

Contractor: _____

Address: _____

City/State: _____

Contractor Signature: _____ Date: _____

THE NET CHANGE OF

ADJUSTS THE CURRENT CONTRACT AMOUNT FROM

TO

CALENDAR DAYS ARE ADDED TO THE SCHEDULE WHICH CHANGES THE FINAL COMPLETION DATE FROM

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
Consultant / Engineer:		
Project Manager:		
Division Manager:	Jeff Streitmatter III, P.E., Project Management Division Manager	
Department Director / Deputy Director	Sia Mollanazar, P.E., Deputy Director, Engineering Services	

JUSTIFICATION FOR CHANGE	Contract Adjustment No.: _____ Project Number: _____

1. Necessity for Change:

2. Does this change alter the scope of work?
   (If yes, explain)

3. Effect of this change on other "Prime" contractors.

4. It is the contractor's responsibility to notify the bonding agency.

CERTIFICATE OF SUBSTANTIAL COMPLETION (S.C.)	CHECK ONE: Partial	Total
Project Title:	Date Submitted:	
Contractor Data: Name: Address: City/State/Zip:	Project No: S. C. Date (Proposed)	

If the "Partial" completion box above is checked, the following description applies to the work for which substantial completion is being sought. Otherwise, the work described in the Contract including approved changes, if any, is certified to be substantially complete:
(Description of the portion of work substantially completed):

(USE CONTINUATION SHEETS IF NECESSARY)

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item does not alter the Contractor's responsibility to complete all of the contract work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by the Contractor within _____ days of substantial completion. The approved substantial completion date is: _____

Contractor Signature	Date	Engineer's Approval	Date
Printed Name and Title		Printed Name and Title	

The Contractor shall be responsible for security, operation, safety, maintenance, HVAC, insurance and warranties in accordance with the Contract. The County will assume the responsibility for paying the cost of electrical power from midnight of the date of Engineer's approval as indicated above.

ATTACH THE INSPECTOR'S FINAL WALKTHROUGH LIST OF DEFICIENCIES.

CERTIFICATE OF SUBSTANTIAL COMPLETION (S.C.)	CHECK ONE: Partial	Total
Project Title:	Date Submitted:	
Contractor Data: Name: Address: City/State/Zip:	Project No: S. C. Date (Proposed)	

If the "Partial" completion box above is checked, the following description applies to the work for which substantial completion is being sought. Otherwise, the work described in the Contract including approved changes, if any, is certified to be substantially complete:
(Description of the portion of work substantially completed):

(USE CONTINUATION SHEETS IF NECESSARY)

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item does not alter the Contractor's responsibility to complete all of the contract work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by the Contractor within _____ days of substantial completion. The approved substantial completion date is: _____

Contractor Signature	Date	Engineer's Approval	Date
Printed Name and Title		Printed Name and Title	

The Contractor shall be responsible for security, operation, safety, maintenance, HVAC, insurance and warranties in accordance with the Contract. The County will assume the responsibility for paying the cost of electrical power from midnight of the date of Engineer's approval as indicated above.

ATTACH THE INSPECTOR'S FINAL WALKTHROUGH LIST OF DEFICIENCIES.

FINAL RECONCILIATION, WARRANTY PERIOD DECLARATION AND CONTRACTOR'S AFFIDAVIT

Project Title:	Date Submitted:
Contractor Data: Name: Address: City/State/Zip:	Project No: Warranty (months):

This Final Reconciliation is for the work performed for Manatee County by the above named contractor, hereinafter called CONTRACTOR, pursuant to the contract dated _____ as amended, and acts as an addendum thereto.

It is agreed that all quantities and prices in the attached Final Pay Estimate No. _____ are correct and that the amount of $ _____ including retainage is due to the CONTRACTOR, that no claims are outstanding as between the parties, and that the above stated sum represents the entirety of monies owed the CONTRACTOR.

It is further agreed that the warranty period for CONTRACTOR'S work pursuant to the Contract is from _____ to _____

As (title) _____ for CONTRACTOR, I have authority to bind said CONTRACTOR, and as such make this final reconciliation, declaration and affidavit for the purpose of inducing Manatee County to make final payment to CONTRACTOR for work done at/upon _____ under said contract:

CONTRACTOR has paid all social security and withholding taxes accrued in connection with the construction project.

CONTRACTOR has paid all workers' compensation and other insurance premiums incurred in connection with this construction project.

CONTRACTOR has paid for all required permits in connection with this construction project.

All laborers, material, men, suppliers, subcontractors and service professionals who worked for and/or supplied materials, equipment and/or services to the CONTRACTOR under this construction contract have been paid in full.

_____
(Affiant Signature)

NOTARY:
State of Florida, County of _____ , Sworn to (or affirmed) and subscribed before me this _____ day of _____ , ____, by _____ (person giving notice).

Signature of Notary Public - State of Florida: _____
Print, Type or Stamp Commissioned Name of Notary Public:

Personally Known ☐ or Produced Identification ☐
Type of Identification Produced _____

MANATEE COUNTY GOVERNMENT
PUBLIC CONSTRUCTION BOND

Bond No. _____
(Enter bond number)

BY THIS BOND, We_____, located at _____, as
(Name of Contractor) (Address)

Principal and _____, a corporation, whose address is
(Name of Surety)

_____

are bound to Manatee County, a political subdivision of the State of Florida, herein called County, in the sum of $ _____, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

WHEREAS, the Contractor has entered into Contract No. 16-2806OV with the County for the project titled North Coquina Boat Ramp Improvements and Parking Lot Expansion, 1343 Gulf Drive South (SR 789), City of Bradenton Beach, Manatee County, FL, with conditions and provisions as are further described in the aforementioned Contract, which Contract is by reference made a part hereof for the purposes of explaining this bond.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs Contract No. 16-2806OV, between Principal and County for construction of

North Coquina Boat Ramp Improvements and Parking Lot Expansion, 1343 Gulf Drive South (SR 789), City of Bradenton Beach, Manatee County, FL,
(Title of Project)

the Contract being made a part of this bond by reference, at the times and in the manner prescribed in the Contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract; and

3. Pays County all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that County sustains because of a default by Principal under the Contract; and

4. Performs the guarantee of all Work and materials furnished under the Contract for the time specified in the Contract, then this bond is void; otherwise it remains in full force.

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the Contract documents and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this bond.

DATED ON _____.

CONTRACTOR AS PRINCIPAL	**SURETY**
_____	_____
Company Name	Company Name
_____	_____
Signature	Signature
_____	_____
Print Name & Title	Print Name & Title
(Corporate Seal)	*(Corporate Seal)*

AGENT or **BROKER**

_____
Company Name

_____
Address

_____

_____
Telephone

Licensed Florida Insurance Agent? ☐ **Yes** ☐ **No**

License #: _____

State of: _____

County of: _____

City of: _____

GENERAL CONDITIONS

of the

CONSTRUCTION AGREEMENT

TABLE OF CONTENTS FOR GENERAL CONDITIONS

Page

Article I-- Definitions GC-1

1.1 Definitions GC-1
A. Acceptance GC-1
B. Application for Payment GC-1
C. Architect/Engineer GC-1
D. Change Order GC-1
E. Compensable Delay GC-1
F. Contractor's Personnel GC-1
G. Construction Services GC-1
H. Contract Sum GC-1
I. Construction Team GC-1
J. Contract Time GC-1
K. Days GC-1
L. Defective GC-2
M. Excusable Delay GC-2
N. Field Directive GC-2
O. Final Completion Date GC-2
P. Float or Slack Time GC-2
Q. Force Majeure GC-2
R. Inexcusable Delay GC-2
S. Non-prejudicial Delay GC-2
T. Notice to Proceed GC-2
U. Owner GC-2
V. Owner's Project Representative GC-2
W. Payment and Performance Bond GC-3
X. Permitting Authority GC-3
Y. Prejudicial Delay GC-3
Z. Progress Report GC-3
AA. Project GC-3
BB. Project Costs GC-3
CC. Project Manager GC-3
DD. Project Plans and Specifications GC-3
EE. Project Schedule GC-3
FF. Project Site GC-3
GG. Pre-operation Testing GC-3
HH. Procurement Ordinance GC-4
II. Punch List Completion Date GC-4
JJ. Subcontractor GC-4
KK. Substantial Completion and Substantially Complete GC-4
LL. Substantial Completion Date GC-4
MM. Unit Price Work GC-4
NN. Work GC-4
OO. Work Directive Change GC-4

Article II-- Relationship and Responsibilities GC-5

2.1 Relationship between Contractor and Owner GC-5
A. Purpose GC-5
B. Construction Team GC-5
C. Owner's Reliance on Bid (or GMP) GC-5
2.2 General Contractor Responsibilities GC-5
A. Personnel GC-5
B. Cooperation with Architect/Engineer GC-6
C. Timely Performance GC-6
D. Duty to Defend Work GC-6
E. Trade and Industry Terminology GC-6
2.3 Project Schedule GC-6
2.4 Construction Services GC-7
A. Construction of Project GC-7
B. Notice to Proceed GC-7
C. Quality of Work GC-7
D. Materials GC-8
E. Accountability for Work GC-8
F. Contract Sum GC-8
G. Governing Specifications GC-8
H. Adherence to Project Schedule GC-8
I. Superintendent *GC-8*
J. Work Hours GC-9
K. Overtime-Related Costs GC-9
L. Insurance, Overhead and Utilities GC-9
M. Cleanliness GC-9
N. Loading GC-9
O. Safety and Protection GC-10
P. Emergencies GC-10
Q. Substitutes GC-10
R. Surveys and Stakes GC-11
S. Suitability of Project Site GC-11
T. Project Specification Errors GC-12
U. Remediation of Contamination GC-12
V. Interfacing GC-13
W. Job Site Facilities GC-13
X. Weather Protection GC-14
Y. Performance and Payment Bond GC-14
Z. Construction Phase; Building Permit; Code Inspection GC-14
(1) Building Permit GC-14
(2) Code Inspections GC-14
(3) Contractor's Personnel GC-15
(4) Lines of Authority GC-15
AA. Quality Control GC-15
BB. Management of Subcontractors GC-15
CC. Job Requirements GC-16
DD. As-Built Drawings GC-17
EE. Progress Reports GC-18
FF. Contractor's Warranty GC-18
GG Apprentices GC-18
HH Schedule of Values GC-18

II. Other Contracts GC-19

Article III-- Compensation **GC-19**

3.1 Compensation GC-19
A. Adjustments GC-19
B. Valuation GC-19
C. Unit Price Work GC-19
3.2 Schedule of Compensation GC-20
A. Periodic Payments for Services GC-20
B. *Payment for Materials and Equipment* GC-20
C. Credit toward Contract Sum GC-20
3.3 Invoice and Payment GC-20
A. Invoices GC-20
B. Additional Information; Processing of Invoices GC-20
C. Architect/Engineer's Approval GC-21
D. Warrants of Contractor with Respect to Payments GC-21
E. All Compensation Included GC-21

Article IV-- Subcontractors **GC-21**

4.1 Subcontracts GC-21
A. Subcontracts Generally GC-21
B. No Damages for Delay GC-22
C. Subcontractual Relations GC-22
D. Insurance; Acts & Omissions GC-22
4.2 Relationship and Responsibilities GC-22
4.3 Payments to Subcontractors; Monthly Statements GC-22
A. Payment GC-23
B. Final Payment of Subcontractors GC-23
4.4 Responsibility for Subcontractors GC-23
4.5 Contingent Assignment of Subcontractors GC-23

Article V-- Changes in Work **GC-24**

5.1 General GC-24
5.2 Minor Changes in the Work GC-24
5.3 Emergencies GC-24
5.4 Concealed Conditions GC-24
5.5 Hazardous Materials GC-25
5.6 Change Orders; Adjustments to Contract Sum GC-25
A. Change Orders Generally GC-25
5.7 Unit Prices GC-26
5.8 Owner-Initiated Changes GC-26
5.9 Unauthorized Work GC-26
5.10 Defective Work GC-26
5.11 Estimates for Changes GC-26
5.12 Form of Proposed Changes GC-26
5.13 Changes to Contract Time GC-26

Article VI-- Role of Architect/Engineer GC-27

6.1 General GC-27
A. Retaining GC-27
B. Duties GC-27
C. Termination GC-27
6.2 Administration GC-27
A. Site Visits GC-27
B. Reporting GC-28
6.3 Interpretation of Project Plans and Specifications GC-28
6.4 Rejection of Non-Conforming Work GC-28
6.5 Correction of Work GC-28
6.6 Timely Performance of Architect/Engineer GC-28

Article VII-- Owner's Rights and Responsibilities GC-29

7.1 Project Site; Title GC-29
7.2 Project Plans and Specifications; Architect/Engineer GC-29
7.3 Surveys; Soil Tests and Other Project Site Information GC-29
7.4 Information; Communication; Coordination GC-30
7.5 Governmental Body GC-30
7.6 Pre-Completion Acceptance GC-30
7.7 Ownership and Use of Drawings, Specifications and Other Instruments of Service GC-30
7.8 Owner's Project Representative GC-31
A. Responsibilities GC-31
B. Limitations GC-31

Article VIII-- Resolution of Disagreements; Claims for Compensation GC-32

8.1 Owner to Decide Disputes GC-32
8.2 Finality GC-32
8.3 No Damages for Delay GC-32
8.4 Permitted Claims Procedure GC-32
8.5 Contract Claims and Disputes GC-33
8.6 Claims for Consequential Damages GC-33

Article IX—Indemnity GC-34

9.1 Indemnity GC-34
A. Indemnification Generally GC-34
B. Claims by Employees GC-34
9.2 Duty to Defend GC-34

Article X-- Accounting Records; Ownership of Documents GC-35

10.1 Accounting Records GC-35
10.2 Inspection and Audit GC-35
10.3 Access GC-35
10.4 Ownership of Documents GC-35

Article XI-- Public Contract Laws GC-35

11.1 Equal Opportunity Employment GC-35
A. Employment GC-35
B. Participation GC-36
11.2 Immigration Reform and Control Act of 1986 ..... GC-36
11.3 No Conflict of Interest GC-36
A. No Interest in Business Activity GC-36
B. No Appearance of Conflict GC-36
11.4 Truth in Negotiations GC-36
11.5 Public Entity Crimes GC-37

Article XII-- Force Majeure, Fire or Other Casualty GC-37

12.1 Force Majeure GC-37
A. Unavoidable Delays GC-37
B. Concurrent Contractor Delays GC-37
C. Notice; Mitigation GC-37
12.2 Casualty; Actions by Owner and Contractor GC-37
12.3 Approval of Plans and Specifications GC-38
12.4 Notice of Loss or Damage GC-38

Article XIII-- Representations, Warranties and Covenants GC-38

13.1 Representations and Warranties of Contractor GC-38
13.2 Representations of the Owner GC-41

Article XIV-- Termination and Suspension GC-42

14.1 Termination for Cause by Owner GC-42
A. Nonperformance GC-43
B. Insolvency GC-43
C. Illegality GC-43
D. Rights of Owner GC-43
14.2 Termination without Cause by Owner GC-43
A. Release of Contractor GC-43
B. Waiver of Protest GC-44
14.3 Suspension without Cause GC-44
14.4 Termination Based Upon Abandonment, Casualty or Force Majeure GC-44
14.5 Vacation of Project Site; Delivery of Documents GC-44
14.6 Termination by the Contractor GC-44

GENERAL CONDITIONS
ARTICLE I
DEFINITIONS

1.1 Definitions. For purposes of the Contract Documents, the following terms shall have the following meanings.

A. Acceptance: The acceptance of the Project into the Owner's operating public infrastructure.

B. Application for Payment: The form approved and accepted by the Owner, which is to be used by Contractor in requesting progress payments or final payment and which is to include such supporting documentation as is required by the Contract Documents.

C. Architect/Engineer: **Daniel Moyer, P.E., with CPH Inc., Sarasota, FL registered and licensed to do business in the State of Florida.**

D. Change Order: A written order signed by the Owner, the Architect/Engineer and the Contractor authorizing a change in the Project Plans and/or Specifications and, if necessary, a corresponding adjustment in the Contract Sum and/or Contract Time, pursuant to Article V.

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

F. Contractor's Personnel: The Contractor's key personnel designated by Contractor.

G. Construction Services: The Construction Services to be provided by Contractor pursuant to Section 2.4, in accordance with the terms and provisions of the Contract Documents.

H. Contract Sum: The total compensation to be paid to the Contractor for Construction Services rendered pursuant to the Contract Documents, as set forth in Contractor's Bid (or Guaranteed Maximum Price Addendum), unless adjusted in accordance with the terms of the Contract Documents.

I. Construction Team: The working team established pursuant to Section 2.1.B.

J. Contract Time: The time period during which all Construction Services are to be completed pursuant to the Contract Documents, to be set forth in the Project Schedule.

K. Days: Calendar days except when specified differently. When time is referred to in the Contract Documents by days, it will be computed to exclude the first and

include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or legal holiday, such day will be omitted from the computation.

L. Defective: When modifying the term "Work", referring to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or that does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or that has been damaged prior to Owner's approval of final payment (unless responsibility for the protection thereof has been assumed by Owner).

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

N. Field Directive: A written order issued by Owner which orders minor changes in the Work not involving a change in Contract Time, to be paid from the Owner's contingency funds.

O. Final Completion Date: The date upon which the Project is fully constructed and all Work required on the Project and Project Site is fully performed as verified in writing by the Owner.

P. Float or Slack Time: The time available in the Project Schedule during which an unexpected activity can be completed without delaying substantial completion of the Work.

Q. Force Majeure: Those conditions constituting excuse from performance as described in and subject to the conditions described in Article XII.

R. 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.

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

T. Notice to Proceed: Written notice by Owner (after execution of Contract) to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform the Work.

U. Owner: Manatee County, a political subdivision of the State of Florida.

V. Owner's Project Representative: The individual designated by Owner to perform those functions set forth in Section 7.8.

W. Payment and Performance Bond: The Payment and Performance Bond security posted pursuant to Section 2.4.Y to guarantee payment and performance by the Contractor of its obligations hereunder.

X. Permitting Authority: Any applicable governmental authority acting in its governmental and regulatory capacity which is required to issue or grant any permit, certificate, license or other approval which is required as a condition precedent to the commencement or approved of the Work, or any part thereof, including the building permit.

Y. Prejudicial Delay: Any excusable or compensable delay impacting the Work and exceeding the total float available in the Project Schedule, thus preventing completion of the Work within the Contract Time unless the Work is accelerated.

Z. Progress Report: A report to Owner that includes all information required pursuant to the Contract Documents and submitted in accordance with Section 2.4.EE, hereof.

AA. Project: The total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by Owner and by separate contractors. For the purposes of the Contract Documents, the term Project shall include all areas of proposed improvements and all areas which may reasonably be judged to have an impact on the Project.

BB. Project Costs: The costs incurred by the Contractor to plan, construct and equip the Project and included within, and paid as a component of, the Contract Sum.

CC. Project Manager: Subject to the prior written consent of Owner, the individual designated to receive notices on behalf of the Contractor, or such other individual designated by the Contractor, from time to time, pursuant to written notice in accordance with the Contract Documents.

DD. Project Plans and Specifications: The one hundred percent (100%) construction drawings and specifications prepared by the Architect/Engineer, and any changes, supplements, amendments or additions thereto approved by the Owner, which shall also include any construction drawings and final specifications required for the repair or construction of the Project, as provided herein.

EE. Project Schedule: The schedule and sequence of events for the commencement, progression and completion of the Project, developed pursuant to Section 2.3., as such schedule may be amended as provided herein.

FF. Project Site: The site depicted in the Project Plans and Specifications, inclusive of all rights of way, temporary construction easements or licensed or leased sovereign lands.

GG. 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.

HH. Procurement Ordinance: The Manatee County Procurement Code, Chapter 2-26 of the Manatee County Code of Laws, as amended from time to time.

II. Punch List Completion Date: The date upon which all previously incomplete or unsatisfactory items, as identified by the Contractor, the Architect/Engineer and/or the Owner are completed in a competent and workmanlike manner, consistent with standards for Work of this type and with good building practices in the State of Florida.

JJ. Subcontractor: Any individual (other than a direct employee of the Contractor) or organization retained by Contractor to plan, construct or equip the Project pursuant to Article IV.

KK. Substantial Completion and Substantially Complete: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Owner has received all certificates of occupancy or completion and other permits, approvals, licenses, and other documents from any governmental authority which are necessary for the beneficial occupancy of the Project.

LL. Substantial Completion Date: The date on which the Project is deemed to be Substantially Complete, as evidenced by receipt of (i) the Architect/Engineer's certificate of Substantial Completion, (ii) written Acceptance of the Project by the Owner, and (iii) approvals of any other authority as may be necessary or otherwise required.

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

NN. Work: The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

OO. Work Directive Change: A written directive to Contractor, issued on or after the effective date of the Agreement pursuant to Section 5.8 and signed by Owner's Project Representative, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or responding to emergencies.

ARTICLE II
RELATIONSHIP AND RESPONSIBILITIES

2.1 Relationship between Contractor and Owner. The Contractor accepts the relationship of trust and confidence established with Owner pursuant to the Contract Documents. The Contractor shall furnish its best skill and judgment and cooperate with Owner and Owner's Project Representative in furthering the interests of the Owner. The Contractor agrees to provide the professional services required to complete the Project consistent with the Owner's direction and the terms of the Contract Documents. All services provided hereunder by Contractor, either directly or through Subcontractors, shall be provided in accordance with sound construction practices and applicable professional construction standards.

A. Purpose. The purpose of the Contract Documents is to provide for the provision of construction services for the Project on the Project Site by the Contractor, and construction of the Project by the Contractor in accordance with the Project Plans and Specifications. The further purpose of the Contract Documents is to define and delineate the responsibilities and obligations of the parties to the Contract Documents and to express the desire of all such parties to cooperate together to accomplish the purposes and expectations of the Contract Documents.

B. Construction Team. The Contractor, Owner and Architect/Engineer shall be called the "Construction Team" and shall work together as a team commencing upon full execution of the Contract Documents through Substantial Completion. As provided in Section 2.2, the Contractor and Architect/Engineer shall work jointly through completion and shall be available thereafter should additional services be required. The Contractor shall provide leadership to the Construction Team on all matters relating to construction. The Contractor understands, acknowledges and agrees that the Architect/Engineer shall provide leadership to the Construction Team on all matters relating to design.

C. Owner's Reliance on Bid (or Guaranteed Maximum Price Addendum). The Contractor acknowledges that the representations, statements, information and pricing contained in its Bid (or Guaranteed Maximum Price Addendum) have been relied upon by the Owner and have resulted in the award of this Project to the Contractor.

2.2 General Contractor Responsibilities. In addition to the other responsibilities set forth herein, the Contractor shall have the following responsibilities pursuant to the Contract Documents:

A. Personnel. The Contractor represents that it has secured, or shall secure, all personnel necessary to perform the Work, none of whom shall be employees of the Owner. Primary liaison between the Contractor and the Owner shall be through the Owner's Project Representative and Contractor's Project Manager. All of the services required herein shall be performed by the Contractor or under the Contractor's supervision, and all personnel engaged in the Work shall be fully qualified and shall be authorized or permitted under law to perform such services.

B. Cooperation with Architect/Engineer. The Contractor's services shall be provided in conjunction with the services of the Architect/Engineer. In the performance of professional services, the Contractor acknowledges that time is critical for Project delivery. The Contractor acknowledges that timely construction utilizing the services of an Architect/Engineer and a Contractor requires maximum cooperation between all parties.

C. Timely Performance. The Contractor shall perform all services as expeditiously as is consistent with professional skill and care and the orderly progress of the Work, in accordance with the Project Schedule. Verification of estimated Project Schedule goals will be made as requested by the Owner.

D. Duty to Defend Work. In the event of any dispute between the Owner and any Permitting Authority that relates to the quality, completeness or professional workmanship of the Contractor's services or Work, the Contractor shall, at its sole cost and expense, cooperate with the Owner to defend the quality and workmanship of the Contractor's services and Work.

E. Trade and Industry Terminology. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or at the time of execution of the Guaranteed Maximum Price Addendum), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of Owner or Contractor, or any of their agents or employees from those set forth in the Contract Documents. Computed dimensions shall govern over scaled dimensions.

2.3 Project Schedule. The Contractor, within ten (10) days after being awarded the Contract, shall prepare and submit for the Owner's and Architect/Engineer's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of Work.

A. The Project Schedule shall show a breakdown of all tasks to be performed, and their relationship in achieving the completion of each phase of Work, subject to review of Owner and Architect/Engineer and approval or rejection by Owner. The Project Schedule shall show, at a minimum, the approximate dates on which each segment of the Work is expected to be started and finished, the proposed traffic flows during each month, the anticipated earnings by the Contractor for each month and the approximate

number of crews and equipment to be used. The Project Schedule shall include all phases of procurement, approval of shop drawings, proposed Change Orders in progress, schedules for Change Orders, and performance testing requirements. The Project Schedule shall include a construction commencement date and Project Substantial Completion Date, which dates shall accommodate known or reasonably anticipated geographic, atmospheric and weather conditions.

B. The Project Schedule shall serve as the framework for the subsequent development of all detailed schedules. The Project Schedule shall be used to verify Contractor performance and to allow the Owner's Project Representative to monitor the Contractor's efforts.

C. The Project Schedule may be adjusted by the Contractor pursuant to Article V. The Owner shall have the right to reschedule Work provided such rescheduling is in accord with the remainder of terms of the Contract Documents.

D. The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect/Engineer's approval. The Architect/Engineer's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect/Engineer reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

E. The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect/Engineer.

2.4 Construction Services. The Contractor shall provide the following Construction Services:

A. Construction of Project. The Contractor shall work from the receipt of a Notice to Proceed through the Substantial Completion of the Project in accordance with the terms of the Contract Documents to manage the construction of the Project. The Construction Services provided by the Contractor to construct the Project shall include without limitation (1) all services necessary and commensurate with established construction standards, and (2) all services described in the Invitation for Bid (or Request for Proposal) and the Bid (or Guaranteed Maximum Price Addendum).

B. Notice to Proceed. A Notice to Proceed may be given at any time within thirty (30) days after the effective date of the Agreement. Contractor shall start to perform the Work on the date specified in the Notice to Proceed, but no Work shall be done at the site prior to the issuance of the Notice to Proceed.

C. Quality of Work. If at any time the labor used or to be used appears to the Owner as insufficient or improper for securing the quality of Work required or the required rate of progress, the Owner may order the Contractor to increase its efficiency or to improve the character of its Work, and the Contractor shall conform to such an order. Any such order shall not entitle Contractor to any additional compensation or any increase in Contract Time. The failure of the Owner to demand any increase of such efficiency or any improvement shall not release the Contractor from its obligation to secure the quality of Work or the rate of progress necessary to complete the Work within the limits imposed by the Contract Documents. The Owner may require the Contractor to remove such personnel as the Owner deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Project is deemed to be contrary to the Owner's interest. The Contractor shall provide good quality workmanship and shall promptly correct construction defects without additional compensation. Acceptance of the Work by the Owner shall not relieve the Contractor of the responsibility for subsequent correction of any construction defects.

D. Materials. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by Architect/Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable supplier except as otherwise provided in the Contract Documents.

E. Accountability for Work. The Contractor shall be solely accountable for its Work, including plans review and complete submittals. The Contractor shall be solely responsible for means and methods of construction.

F. Contract Sum. The Contractor shall construct the Project so that the Project can be built for a cost not to exceed the Contract Sum.

G. Governing Specifications. The Project shall be constructed in accordance with applicable Owner design standards and guidelines. In the absence of specified Owner design standards or guidelines, the Architect/Engineer shall use, and the Contractor shall comply with, the most recent version of the applicable FDOT or AASHTO design standards. In general, the Project shall be constructed by the Contractor in accordance with applicable industry standards. The Contractor shall be responsible for utilizing and maintaining current knowledge of any laws, ordinances, codes, rules, regulations, standards, guidelines, special conditions, specifications or other mandates relevant to the Project or the services to be performed.

H. Adherence to Project Schedule. The development and equipping of the Project shall be undertaken and completed in accordance with the Project Schedule, and within the Contract Time described therein.

I. Superintendent. The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project Site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

(1) The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect/Engineer the name and qualifications of the proposed superintendent. The Architect/Engineer may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect/Engineer has reasonable objection to the proposed superintendent or (2) that the Architect/Engineer requires additional time to review. Failure of the Architect/Engineer to reply within 14 days shall constitute notice of no reasonable objection.

(2) The Contractor shall not employ a proposed superintendent to whom the Owner or Architect/Engineer has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not be unreasonably withheld or delayed.

J. Work Hours. Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and Contractor shall not permit overtime work or the performance of Work on a Saturday, Sunday or legal holiday without Owner's written consent given after prior notice to Architect/Engineer (at least seventy-two (72) hours in advance).

K. Overtime-Related Costs. Contractor shall pay for all additional Architect/Engineering charges, inspection costs and Owner staff time for any overtime work which may be authorized. Such additional charges shall be a subsidiary obligation of Contractor and no extra payment shall be made by Owner on account of such overtime work. At Owner's option, such overtime costs may be deducted from Contractor's monthly payment request or Contractor's retainage prior to release of final payment.

L. Insurance, Overhead and Utilities. Unless otherwise specified, Contractor shall furnish and assume full responsibility for all bonds, insurance, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

M. Cleanliness. The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project Site. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from Contractor.

N. Loading. Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

O. Safety and Protection. Contractor shall comply with 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:

(1) All employees on the Work and other persons and organizations who may be affected thereby;

(2) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Project Site; and

(3) Other property at the Project Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss, and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for the protection required by public authority or local conditions. Contractor shall provide reasonable maintenance of traffic for the public and preservation of the Owner's business, taking into full consideration all local conditions. Contractor's duties and responsibilities for safety and protection with regard to the Work shall continue until such time as all the Work is completed.

P. Emergencies. In emergencies affecting the safety or protection of persons or the Work or property at the Project Site or adjacent thereto, Contractor, without special instruction or authorization from Architect/Engineer or Owner, shall act to prevent threatened damage, injury or loss. Contractor shall give Owner prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Owner determines that a change in the Project is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variation.

Q. Substitutes. For substitutes not included with the Bid (or Guaranteed Maximum Price Addendum), but submitted after the effective date of the Agreement (or Guaranteed Maximum Price Addendum), Contractor shall make written application to Architect/Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will also contain an itemized estimate of all costs and delays or schedule impacts that will result directly or indirectly from review, acceptance and 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 Architect/Engineer in evaluating the proposed substitute. Architect/Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed substitute. In rendering a decision, Owner, Architect/Engineer and

Contractor shall have access to any available Float Time in the Project Schedule. In the event that substitute materials or equipment not included as part of the Bid (or Guaranteed Maximum Price Addendum), but proposed after the effective date of the Contract Documents, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the Owner and an appropriate Change Order executed to adjust the Contract Sum.

(1) If a specific means, method, technique, sequence of 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 Architect/Engineer if Contractor submits sufficient information to allow Architect/Engineer to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents.

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

(3) Contractor shall reimburse Owner for the charges of Architect/Engineer and Architect/Engineer's Consultants for evaluating each proposed substitute submitted after the effective date of the Contract Documents and all costs resulting from any delays in the Work while the substitute was undergoing review.

R. Surveys and Stakes. The Contractor shall furnish, free of charge, all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the Work. Where rights-of-way, easements, property lines or any other conditions which make the lay-out of the Project or parts of the Project critical are involved, the Contractor shall employ a competent surveyor who is registered in the State of Florida for lay-out and staking. These stakes and marks shall constitute the field control by and in accord with which the Contractor shall govern and execute the Work. The Contractor shall be held responsible for the preservation of all stakes and marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they shall be immediately and accurately replaced by the Contractor.

S. Suitability of Project Site. The Contractor has, by careful examination, satisfied itself as to the nature and location of the Work and all other matters which can in any way affect the Work, including, but not limited to details pertaining to borings, as shown on the drawings. Such boring information is not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the Project Site, approximately at the locations indicated. The Contractor has examined boring data, where available, made its own interpretation of the subsurface conditions and other preliminary data, and has based its Bid (or

Guaranteed Maximum Price Addendum) on its own opinion of the conditions likely to be encountered. Except as specifically provided in Sections 2.4.U., 5.4 and 5.5, no extra compensation or extension of time will be considered for any Project Site conditions that existed at the time of bidding (or at the time of execution of the Guaranteed Maximum Price Addendum). No verbal agreement or conversation with any officer, agent or employee of the Owner, before or after the execution of the Agreement, shall affect or modify any of the terms or obligations herein contained.

T. Project Specification Errors. If the Contractor, in the course of the Work, finds that the drawings, specifications or other Contract Documents cannot be followed, the Contractor shall immediately inform the Owner in writing, and the Owner shall promptly check the accuracy of the information. Any Work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's sole risk of non-payment and delay.

U. Remediation of Contamination: Owner and Contractor recognize that remediation of subsurface conditions may be necessary due to potential hazardous materials contamination. Because the presence or extent of any contamination is not known, Contractor shall include no cost in the Contract Sum, and no time in the Project Schedule, for cost or delays that might result from any necessary remediation. The Project Schedule will provide a period of time between demolition activities and the start of the next activity to commence any remediation if needed. Contractor shall use all reasonable efforts in scheduling the Project to minimize the likelihood that remediation delays construction. Any hazardous materials remediation Work which Contractor agrees to perform shall be done pursuant to a Change Order or amendment consistent with the following:

(1) The dates of Substantial Completion shall be equitably adjusted based on delays, if any, incurred in connection with remediation efforts.

(2) Contractor, and any Subcontractors which have mobilized on the Project Site, shall be paid for demonstrated costs of overhead operations at the Project Site during any period of delay in excess of seven (7) days, except to the extent that Work proceeds concurrently with remediation. The categories of costs to be reimbursed are limited to those reasonably incurred at the jobsite during the delay period (such as trailers or offices, telephones, faxes, and the like); equipment dedicated to the Project and located at the Project Site; salaries and associated costs of personnel dedicated to the Project to the extent that they do not perform Work on other projects; and other jobsite costs that are reasonable and which are incurred during the delay period. Subcontractors and suppliers which have not mobilized are limited to the costs set forth in Section 2.4.U(3).

(3) Contractor and any Subcontractor or supplier on the Project who is eligible for compensation shall be paid any demonstrated costs of escalation in materials or labor, and reasonable costs of off-site storage of materials identified to the Project, arising as a result of any delay in excess of seven (7) days. Such Contractor, Subcontractors and suppliers are obligated to take all reasonable steps to mitigate escalation costs, such as through early purchase of materials.

(4) Contractor, for itself and all Subcontractors and suppliers on the Project, hereby agrees that the extension of time for delays under Section 2.4.U(1), and payment of the costs identified in Sections 2.4.U(2) and/or Section 2.4.U(3), are the sole remedies for costs and delays described in this Section, and waives all claims and demands for extended home office overhead (including, but not limited to, "Eichleay" claims), lost profit or lost opportunities, and any special, indirect, or consequential damages arising as a result of delays described in this Section. The Contract Sum shall be adjusted to reflect payment of allowable costs.

(5) If any delay described in this section causes the time or cost for the Project to exceed the Contract Time or the Contact Sum, then the Owner may terminate the Agreement pursuant to Section 14.2.

(6) Contractor and any Subcontractor or supplier seeking additional costs under this Section 2.4.U. shall promptly submit estimates or any costs as requested by Owner, and detailed back-up for all costs when payment is sought or whenever reasonably requested by Owner. All costs are auditable, at Owner's discretion. Bid, estimate and pricing information reasonably related to any request for additional compensation will be provided promptly upon request.

(7) Contractor shall include provisions in its subcontracts and purchase orders consistent with this Section.

V. Interfacing.

(1) The Contractor shall take such measures as are necessary to ensure proper construction and delivery of the Project, including but not limited to providing that all procurement of long-lead items, the separate construction Subcontractors, and the general conditions items are performed without duplication or overlap to maintain completion of all Work on schedule. Particular attention shall be given to provide that each Subcontractor bid package clearly identifies the Work included in that particular separate subcontract, its scheduling for start and completion, and its relationship to other separate contractors.

(2) Without assuming any design responsibilities of the Architect/Engineer, the Contractor shall include in the Progress Reports required under this Section 2.4 comments on overlap with any other separate subcontracts, omissions, lack of correlation between drawings, and any other deficiencies noted, in order that the Architect/Engineer may arrange for necessary corrections.

W. Job Site Facilities. The Contractor shall arrange for all job site facilities required and necessary to enable the Contractor and Architect/Engineer to perform their

respective duties and to accommodate any representatives of the Owner which the Owner may choose to have present on the job.

X. Weather Protection. The Contractor shall provide temporary enclosures of building areas in order to assure orderly progress of the Work during periods when extreme weather conditions are likely to be experienced. The Contractor shall also be responsible for providing weather protection for Work in progress and for materials stored on the Project Site. A contingency plan shall be prepared upon request of the Owner for weather conditions that may affect the construction.

Y. Payment and Performance Bond. Prior to the construction commencement date, the Contractor shall obtain, for the benefit of and directed to the Owner, a Payment and Performance Bond satisfying the requirements of Section 255.05, Florida Statutes, covering the faithful performance by the Contractor of its obligations under the Contract Documents, including but not limited to the construction of the Project on the Project Site and the payment of all obligations arising thereunder, including all payments to Subcontractors, laborers, and materialmen. The surety selected by the Contractor to provide the Payment and Performance Bond shall be approved by the Owner prior to the issuance of such Bond, which approval shall not be unreasonably withheld or delayed provided that the surety is rated A or better by Best's Key Guide, latest edition.

Z. Construction Phase; Building Permit; Code Inspections. Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work.

(1) Building Permit. The Owner and Architect/Engineer shall provide such information to any Permitting Authority as is necessary to obtain approval from the Permitting Authority to commence construction prior to beginning construction. The Contractor shall pull any required building permit, and shall be responsible for delivering and posting the building permit at the Project Site prior to the commencement of construction. The cost of the building permit is included in the Contract Sum. The Owner and Architect/Engineer shall fully cooperate with the Contractor when and where necessary.

(2) Code Inspections. The Project requires detailed code compliance inspection during construction in disciplines determined by any Permitting Authority. These disciplines normally include, but are not necessarily limited to, structural, mechanical, electrical, plumbing general building and fire. The Contractor shall notify the appropriate inspector(s) and the Architect/Engineer, no less than 24 hours in advance, when the Work is ready for inspection and before the Work is covered up. All inspections shall be made for conformance with the applicable ordinances and building codes. Costs for all re-inspections of Work found defective and subsequently repaired shall not be included as Project Costs and shall be borne by the Contractor or as provided in the contract between Contractor and Subcontractor.

(3) Contractor's Personnel. The Contractor shall maintain sufficient off-site support staff and competent full-time staff at the Project Site authorized to act on behalf of the Contractor to coordinate, inspect, and provide general direction of the Work and progress of the Subcontractors. At all times during the performance of the Work, the Owner shall have the right to demand replacement of Contractor Personnel to whom the Owner has reasonable objection, without liability to the Contractor.

(4) Lines of Authority. To provide general direction of the Work, the Contractor shall establish and maintain lines of authority for its personnel and shall provide this information to the Owner and all other affected parties, such as the code inspectors of any Permitting Authority, the Subcontractors, and the Architect/Engineer. The Owner and Architect/Engineer may attend meetings between the Contractor and his Subcontractors; however, such attendance is optional and shall not diminish either the authority or responsibility of the Contractor to administer the subcontracts.

AA. Quality Control. The Contractor shall develop and maintain a program, acceptable to the Owner and Architect/Engineer, to assure quality control of the construction. The Contractor shall be responsible for and supervise the Work of all Subcontractors, providing instructions to each when their Work does not conform to the requirements of the Project Plans and Specifications, and the Contractor shall continue to coordinate the Work of each Subcontractor to ensure that corrections are made in a timely manner so as to not affect the efficient progress of the Work. Should a disagreement occur between the Contractor and the Architect/Engineer over the acceptability of the Work, the Owner, at its sole discretion and in addition to any other remedies provided herein, shall have the right to determine the acceptability, provided that such determination is consistent with standards for construction projects of this type and generally accepted industry standards for workmanship in the State of Florida.

BB. Management of Subcontractors. All Subcontractors shall be compensated in accordance with Article IV. The Contractor shall solely control the Subcontractors. The Contractor shall negotiate all Change Orders and Field Orders with all affected Subcontractors and shall review the costs and advise the Owner and Architect/Engineer of their validity and reasonableness, acting in the Owner's best interest. When there is an imminent threat to health and safety, and Owner's Project Representative concurrence is impractical, the Contractor shall act immediately to remove the threats to health and safety and shall subsequently fully inform Owner of all such action taken. The Contractor shall also carefully review all shop drawings and then forward the same to the Architect/Engineer for review and actions. The Architect/Engineer will transmit them back to the Contractor, who will then issue the shop drawings to the affected Subcontractor for fabrication or revision. The Contractor shall maintain a suspense control system to promote expeditious handling. The Contractor shall request the Architect/Engineer to make interpretations of the drawings or specifications requested of him by the Subcontractors and shall maintain a business system to promote timely response. The Contractor shall inform the Architect/Engineer which shop drawings or requests for clarification have the greatest urgency, so as to enable the Architect/Engineer to prioritize requests coming from the Contractor.

The Contractor shall advise the Owner and Architect/Engineer when timely response is not occurring on any of the above.

CC. Job Requirements.

(1) The Contractor shall provide each of the following as a part of its services hereunder:

(a) Maintain a log of daily activities, including manpower records, equipment on site, weather, delays, major decisions, etc;

(b) Maintain a roster of companies on the Project with names and telephone numbers of key personnel;

(c) Establish and enforce job rules governing parking, clean-up, use of facilities, and worker discipline;

(d) Provide labor relations management and equal opportunity employment for a harmonious, productive Project;

(e) Provide and administer a safety program for the Project and monitor for subcontractor compliance without relieving them of responsibilities to perform Work in accordance with best acceptable practice;

(f) Provide a quality control program as provided under Section 2.4.C above;

(g) Provide miscellaneous office supplies that support the construction efforts which are consumed by its own forces;

(h) Provide for travel to and from its home office to the Project Site and to those other places within Manatee County as required by the Project;

(i) Verify that tests, equipment, and system start-ups and operating and maintenance instructions are conducted as required and in the presence of the required personnel and provide adequate records of same to the Architect/Engineer;

(j) Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and sample submissions, reproductions of original Contract Documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the Agreement, Owner/Architect/Engineer's clarifications and interpretations of the Contract Documents, progress reports, as-built drawings, and other project related documents;

(k) Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions; list of visiting officials and representatives or manufacturers, fabricators, suppliers and distributors; daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures, and provide copies of same to Owner/Architect/Engineer;

(l) Record names, addresses and telephone numbers of all Contractors, Subcontractors and major suppliers of materials and equipment;

(m) Furnish Owner/Architect/Engineer periodic reports, as required, of progress of the Work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions;

(n) Consult with Owner/Architect/Engineer in advance of scheduling major tests, inspections or start of important phases of the Work;

(o) Verify, during the course of the Work, that certificates, maintenance and operations manuals and other data required to be assembled and furnished are applicable to the items actually installed, and deliver same to Owner/Architect/Engineer for review prior to final Acceptance of the Work; and

(p) Cooperate with Owner in the administration of grants.

(2) The Contractor shall provide personnel and equipment, or shall arrange for separate Subcontractors to provide each of the following as a Project Cost:

(a) Services of independent testing laboratories, and provide the necessary testing of materials to ensure conformance to contract requirements; and

(b) Printing and distribution of all required bidding documents and shop drawings, including the sets required by Permitting Authority inspectors.

DD. As-Built Drawings. The Contractor shall continuously review as-built drawings and mark up progress prints to provide as much accuracy as possible. Prior to, and as a requirement for authorizing final payment to the Contractor due hereunder, the Contractor shall provide to the Owner an original set of marked-up, as-built Project Plans and Specifications and an electronic format of those records showing the location and dimensions of the Project as constructed, which documents shall be certified as being correct by the Contractor and the Architect/Engineer. Final as-built drawings shall be signed and sealed by a registered Florida surveyor.

EE. Progress Reports. The Contractor shall forward to the Owner, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the Work 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 Owner's review and approval. In addition, more detailed schedules may be required by the Owner for daily traffic control.

FF. Contractor's Warranty. The Contractor warrants to the Owner and Architect/Engineer that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements will be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect/Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

(1) Contractor shall use its best efforts and due diligence to ensure that during the warranty period, those entities or individuals who have provided direct warranties to the Owner as required by the Contract Documents perform all required warranty Work in a timely manner and at the sole cost and expense of such warranty providers. Any such cost or expense not paid by the warranty providers shall be paid by the Contractor, to include any costs and attorney's fees incurred in warranty-related litigation between Contractor and any Subcontractors.

(2) The Contractor shall secure guarantees and warranties of Subcontractors, equipment suppliers and materialmen, and assemble and deliver same to the Owner in a manner that will facilitate their maximum enforcement and assure their meaningful implementation. The Contractor shall collect and deliver to the Owner any specific written guaranties or warranties given by others as required by subcontracts.

(3) At the Owner's request, the Contractor shall conduct, jointly with the Owner and the Architect/Engineer, no more than two (2) warranty inspections within three (3) years after the Substantial Completion Date.

GG. Apprentices. If Contractor employs apprentices, their performance of Work shall be governed by and comply with the provisions of Chapter 446, Florida Statutes.

HH. Schedule of Values. Unit prices shall be established for this Contract by the submission of a schedule of values within ten (10) days of receipt of the Notice to Proceed. The schedule shall include quantities and prices of items equaling the Contract Sum and will subdivide the Work into components in sufficient detail to serve as the basis for progress payments during construction. Such prices shall include an appropriate amount of

overhead and profit applicable to each item of Work. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

II. Other Contracts. The Owner reserves the right to let other Contracts in connection with this Work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and execution of their Work, and promptly connect and coordinate the Work with theirs.

ARTICLE III
COMPENSATION

3.1 Compensation. The Contract Sum constitutes the total compensation (subject to authorized adjustments) payable to Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at Contractor's expense without change in the Contract Sum.

A. Adjustments. The Contract Sum may only be changed by Change Order or by a written amendment. Any claim for an increase or decrease in the Contract Sum shall be based on written notice delivered by the party making the claim to the other party. Notice of the amount of the claim with supporting data shall be delivered within fifteen (15) days from the beginning of such occurrence and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event. Failure to deliver a claim within the requisite 15–day period shall constitute a waiver of the right to pursue said claim.

B. Valuation. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Sum shall be determined in one of the following ways (at Owner's discretion):

(1) In the case of Unit Price Work, in accordance with Section 3.1.C, below; or

(2) By mutual acceptance of lump sum; or

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

C. Unit Price Work. The unit price of an item of Unit Price Work shall be subject to re-evaluation and adjustment pursuant to a requested Change Order under the following conditions:

(1) If the total cost of a particular item of Unit Price Work amounts to 5% or more of the Contract Sum and the variation in the quantity of the particular item of Unit Price Work performed by Contractor differs by more than 15% from the estimated quantity of such item indicated in the Agreement; and

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

(3) If Contractor believes that it has incurred additional expense as a result thereof; or

(4) If Owner believes that the quantity variation entitles it to an adjustment in the unit price; or

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

3.2 Schedule of Compensation. All payments for services and material under the Contract Documents shall be made in accordance with the following provisions.

A. Periodic Payments for Services. The Contractor shall be entitled to receive payment for Construction Services rendered pursuant to Section 2.4 in periodic payments which shall reflect a fair apportionment of cost and schedule of values of services furnished prior to payment, subject to the provisions of this Section.

B. Payment for Materials and Equipment. In addition to the periodic payments authorized hereunder, payments may be made for material and equipment not incorporated in the Work but delivered and suitably stored at the Project Site, or another location, subject to prior approval and acceptance by the Owner on each occasion.

C. Credit toward Contract Sum. All payments for Construction Services made hereunder shall be credited toward the payment of the Contract Sum as Contractor's sole compensation for the construction of the Project.

3.3 Invoice and Payment. All payments for services and materials under the Contract Documents shall be invoiced and paid in accordance with the following provisions.

A. Invoices. The Contractor shall submit to the Owner periodic invoices for payment, in a form acceptable to the Owner, which shall include a sworn statement certifying that, to the best of the Contractor's knowledge, information and belief, the construction has progressed to the point indicated, the quality and the Work covered by the invoice is in accord with the Project Plans and Specifications, and the Contractor is entitled to payment in the amount requested, along with the cost reports required pursuant to Article II, showing in detail all monies paid out, Project Costs accumulated, or Project Cost incurred during the previous period. This data shall be attached to the invoice.

B. Additional Information; Processing of Invoices. Should an invoiced amount appear to exceed the Work effort believed to be completed, the Owner may, prior to processing of the invoice for payment, require the Contractor to submit satisfactory evidence to support the invoice. All progress reports and invoices shall be delivered to the attention of the Owner's Project Representative. Invoices not properly prepared (mathematical errors, billing not reflecting actual Work done, no signature, etc.) shall be returned to the Contractor for correction.

C. Architect/Engineer's Approval. Payment for Work completed shall be subject to the Architect/Engineer approving the payment requested by the Contractor and certifying the amount thereof that has been properly incurred and is then due and payable to the Contractor, and identifying with specificity any amount that has not been properly incurred and that should not be paid. .

D. Warrants of Contractor with Respect to Payments. The Contractor warrants that (1) upon payment of any retainage, materials and equipment covered by a partial payment request will pass to Owner either by incorporation in construction or upon receipt of payment by the Contractor, whichever occurs first; (2) Work, materials and equipment covered by previous partial payment requests shall be free and clear of liens, claims, security interests, or encumbrances, hereinafter referred to as "liens"; and (3) no Work, materials or equipment covered by a partial payment request which has been acquired by the Contractor or any other person performing Work at the Project Site, or furnishing materials or equipment for the Project, shall be subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or any other person.

E. All Compensation Included. Contractor's compensation includes full payment for services set forth in the Contract Documents, including but not limited to overhead, profit, salaries or other compensation of Contractor's officers, partners and/or employees, general operating expenses incurred by Contractor and relating to this Project, including the cost of management, supervision and data processing staff, job office equipment and supplies, and other similar items.

ARTICLE IV
SUBCONTRACTORS

4.1 Subcontracts. At the Owner's request, the Contractor shall provide Owner's Project Representative with copies of all proposed and final subcontracts, including the general and supplementary conditions thereof.

A. Subcontracts Generally. All subcontracts shall: (1) require each Subcontractor to be bound to Contractor to the same extent Contractor is bound to Owner by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor, (2) provide for the assignment of the subcontracts from Contractor to Owner at the election of Owner, upon termination of Contractor, (3) provide that Owner will be an additional indemnified party of the subcontract, (4) provide that Owner will be an additional insured on all insurance policies required to be provided by the Subcontractor, except workers' compensation, (5) assign all warranties directly to Owner, and (6) identify Owner as an intended third-party beneficiary of the subcontract.

(1) A Subcontractor is a person or entity who has a direct contract with Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

(2) A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

B. No Damages for Delay. Except when otherwise expressly agreed to by Owner in writing, all subcontracts shall provide:

> "LIMITATION OF REMEDIES – NO DAMAGES FOR DELAY. The Subcontractor's exclusive remedy for delays in the performance of the contract caused by events beyond its control, including delays claimed to be caused by the Owner or Architect/Engineer or attributable to the Owner or Architect/Engineer and including claims based on breach of contract or negligence, shall be an extension of its contract time and shall in no way involve any monetary claim."

Each subcontract shall require that any claims by the Subcontractor for delay must be submitted to the Contractor within the time and in the manner in which the Contractor must submit such claims to the Owner, and that failure to comply with the conditions for giving notice and submitting claims shall result in the waiver of such claims.

C. Subcontractual Relations. The Contractor shall require each Subcontractor to assume all the obligations and responsibilities which the Contractor owes the Owner pursuant to the Contract Documents, by the parties to the extent of the Work to be performed by the Subcontractor. Said obligations shall be made in writing and shall preserve and protect the rights of the Owner and Architect/Engineer, with respect to the Work to be performed by the Subcontractor, so that the subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with its sub-subcontractors.

D. Insurance; Acts and Omissions. Insurance requirements for Subcontractors shall be no more stringent than those requirements imposed on the Contractor by the Owner. The Contractor shall be responsible to the Owner for the acts and omissions of its employees, agents, Subcontractors, their agents and employees, and all other persons performing any of the Work or supplying materials under a contract to the Contractor.

4.2 Relationship and Responsibilities. Except as specifically set forth herein with respect to direct materials acquisitions by Owner, nothing contained in the Contract Documents or in any Contract Document does or shall create any contractual relation between the Owner or Architect/Engineer and any Subcontractor. Specifically, the Contractor is not acting as an agent of the Owner with respect to any Subcontractor. The utilization of any Subcontractor shall not relieve Contractor from any liability or responsibility to Owner, or obligate Owner to the payment of any compensation to the Subcontractor or additional compensation to the Contractor.

4.3 Payments to Subcontractors; Monthly Statements. The Contractor shall be responsible for paying all Subcontractors from the payments made by the Owner to Contractor pursuant to Article III, subject to the following provisions:

A. Payment. The Contractor shall, no later than ten (10) days after receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's Work, pay to each Subcontractor the amount to which the Subcontractor is entitled in accordance with the terms of the Contractor's contract with such Subcontractor. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to sub-Subcontractors in a similar manner. After receipt of payment from Owner, if the need should arise to withhold payments to Subcontractors for any reason, as solely determined by Contractor, the Contractor shall promptly restore such monies to the Owner, adjusting subsequent pay requests and Project bookkeeping as required.

B. Final Payment of Subcontractors. The final payment of retainage to Subcontractors shall not be made until the Project has been inspected by the Architect/Engineer or other person designated by the Owner for that purpose, and until both the Architect/Engineer and the Contractor have issued a written certificate that the Project has been constructed in accordance with the Project Plans and Specifications and approved Change Orders. Before issuance of final payment to any Subcontractor without any retainage, the Subcontractor shall submit satisfactory evidence that all payrolls, material bills, and other indebtedness connected with the Project have been paid or otherwise satisfied, warranty information is complete, as-built markups have been submitted, and instruction for the Owner's operating and maintenance personnel is complete. Final payment may be made to certain select Subcontractors whose Work is satisfactorily completed prior to the completion of the Project, but only upon approval of the Owner's Project Representative.

4.4 Responsibility for Subcontractors. As provided in Section 2.4.BB, Contractor shall be fully responsible to Owner for all acts and omissions of the Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect Contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions.

4.5 Contingent Assignment of Subcontracts. Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that:

(1) assignment is effective only after termination of the Contract by the Owner for cause pursuant to Article XIV and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and

(2) assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Agreement.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract. Upon such assignment, if the Work has been suspended for more than thirty (30) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension. Upon such assignment to the Owner, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner

shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE V
CHANGES IN WORK

5.1 General. Changes in the Work may be accomplished after execution of the Agreement, and without invalidating the Agreement, by Change Order, Work Directive Change or order for a minor change in the Work, subject to the limitations stated in this Article V and elsewhere in the Contract Documents. A Change Order shall be based upon agreement among the Owner, Contractor and Architect/Engineer; a Work Directive Change requires agreement by the Owner and Architect/Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect/Engineer alone. Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Work Directive Change or order for a minor change in the Work.

5.2 Minor Changes in the Work. The Owner or Architect/Engineer shall have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such change will be effected by written order signed by the Architect/Engineer and shall be binding on the Owner and Contractor. The Contractor shall abide by and perform such minor changes. Such changes shall be effected by a Field Directive or a Work Directive Change. Documentation of changes shall be determined by the Construction Team, and displayed monthly in the Progress Reports. Because such changes shall not affect the Contract Sum to be paid to the Contractor, they shall not require a Change Order pursuant to Section 5.6.

5.3 Emergencies. In any emergency affecting the safety of persons or property, the Contractor shall act at its discretion to prevent threatened damage, injury, or loss. Any increase in the Contract Sum or extension of time claimed by the Contractor on account of emergency Work shall be determined as provided in Section 5.6. However, whenever practicable, the Contractor shall obtain verbal concurrence of the Owner's Project Representative and Architect/Engineer where the act will or may affect the Contract Sum or Contract Time.

5.4 Concealed Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect/Engineer before conditions are disturbed and in no event later than ten (10) days after first observance of the conditions. The Architect/Engineer will promptly investigate such conditions and, if the Architect/Engineer determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect/Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect/Engineer

shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect/Engineer's determination or recommendation, that party may proceed as provided in Article VIII.

5.5 Hazardous Materials. In the event the Contractor encounters on the Project Site material reasonably believed to be hazardous, petroleum or petroleum related products, or other hazardous or toxic substances, except as provided in Section 2.4.U, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and the Architect/Engineer in writing. The Work in the affected area shall not thereafter be resumed except by written amendment, if in fact the material or substance has not been rendered harmless. The Work in the affected area shall be resumed when the Project Site has been rendered harmless, in accordance with the final determination by the Architect/Engineer or other appropriate professional employed by Owner. The Contractor shall not be required to perform without its consent any Work relating to hazardous materials, petroleum or petroleum related products, or other hazardous or toxic substances. In the event the Contractor encounters on the Project Site materials believed in good faith to be hazardous or contaminated material, and the presence of such hazardous or contaminated material was not known and planned for at the time the Contractor submitted its Bid (or Guaranteed Maximum Price proposal), and it is necessary for the Contractor to stop Work in the area affected and delays Work for more than a seven (7) day period, adjustments to the Contract Sum and/or Contract Time shall be made in accordance with this Article V.

5.6 Change Orders; Adjustments to Contract Sum.

A. Change Orders Generally. The increase or decrease in the Contract Sum resulting from a change authorized pursuant to the Contract Documents shall be determined:

(1) By mutual acceptance of a lump sum amount properly itemized and supported by sufficient substantiating data, to permit evaluation by the Architect/Engineer and Owner; or

(2) By unit prices stated in the Agreement or subsequently agreed upon; or

(3) By any other method mutually agreeable to Owner and Contractor.

If Owner and Contractor are unable to agree upon increases or decreases in the Contract Sum and the Architect/Engineer certifies that the work needs to be commenced prior to any such agreement, the Contractor, provided it receives a written Change Order signed by or on behalf of the Owner, shall promptly proceed with the Work involved. The cost of such Work shall then be determined on the basis of the reasonable expenditures of those performing the Work attributed to the change. However, in the event a Change Order is issued under these conditions, the Owner, through the Architect/Engineer, will establish an estimated cost of the Work and the Contractor shall not perform any Work whose cost exceeds that estimated without prior written approval by the Owner. In such case, the Contractor shall keep and present in such form as the Owner may prescribe an itemized accounting, together with appropriate supporting data of the increase in overall costs of the Project. The amount of any decrease in the Contract Sum to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in costs will be the amount of the actual net decrease.

5.7 Unit Prices. If unit prices are stated in the Contract Documents or subsequently agreed upon, and if the quantities originally contemplated are so changed in a proposed Change Order that application of the agreed unit prices to the quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices and Contract Sum shall be equitably adjusted.

5.8 Owner-Initiated Changes. Without invalidating the Agreement and without notice to any Surety, Owner may, at any time, order additions, deletions or revisions in the Work. These will be authorized by a written amendment, a Field Directive, a Change Order, or a Work Directive Change, as the case may be. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided). A Work Directive Change may not change the Contract Sum or the Contract Time; but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Sum or Contract Time.

5.9 Unauthorized Work. Contractor shall not be entitled to an increase in the Contract Sum or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents.

5.10 Defective Work. Owner and Contractor shall execute appropriate Change Orders (or written amendments) covering changes in the Work which are ordered by Owner, or which may be required because of acceptance of defective Work, without adjustment to the Contract Sum.

5.11 Estimates for Changes. At any time Architect/Engineer may request a quotation from Contractor for a proposed change in the Work. Within twenty-one (21) calendar days after receipt, Contractor shall submit a written and detailed proposal for an increase or decrease in the Contract Sum or Contract Time for the proposed change. Architect/Engineer shall have twenty one (21) calendar days after receipt of the detailed proposal to respond in writing. The proposal shall include an itemized estimate of all costs and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in sufficient detail to reasonably permit an analysis by Architect/Engineer of all material, labor, equipment, subcontracts, overhead costs and fees, and shall cover all Work involved in the change, whether such Work was deleted, added, changed or impacted. Notwithstanding the request for quotation, Contractor shall carry on the Work and maintain the progress schedule. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.

5.12 Form of Proposed Changes. The form of all submittals, notices, Change Orders and other documents permitted or required to be used or transmitted under the Contract Documents shall be determined by the Owner. Standard Owner forms shall be utilized.

5.13 Changes to Contract Time. The Contract Time may only be changed pursuant to a Change Order or a written amendment to the Contract Documents. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party. Notice of the extent of the claim with supporting data

shall be delivered within fifteen (15) days from detection or beginning of such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. The Contract time will be extended in an amount equal to time lost due to delays beyond the control of Contractor. Such delays shall include, but not be limited to, acts or neglect by Owner or others performing additional Work; or to fires, floods, epidemics, abnormal weather conditions or acts of God. Failure to deliver a written notice of claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

ARTICLE VI
ROLE OF ARCHITECT/ENGINEER

6.1 General.

A. Retaining. The Owner shall retain an Architect/Engineer (whether an individual or an entity) lawfully licensed to practice in Florida. That person or entity is identified as the Architect/Engineer in the Agreement and is referred to throughout the Contract Documents as if singular in number.

B. Duties. Duties, responsibilities and limitations of authority of the Architect/Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner and Architect/Engineer. Consent shall not be unreasonably withheld.

C. Termination. If the employment of the Architect/Engineer is terminated, the Owner shall employ a successor Architect/Engineer as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect/Engineer.

6.2 Administration. The Architect/Engineer will provide administration of the Agreement as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect/Engineer approves the final Application for Payment. The Architect/Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

A. Site Visits. The Architect/Engineer will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work complete, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. Unless specifically instructed by Owner, the Architect/Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect/Engineer will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

B. Reporting. On the basis of the site visits, the Architect/Engineer will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect/Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect/Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

6.3 Interpretation of Project Plans and Specifications. The Architect/Engineer will be the interpreter of the requirements of the Project Plans and Specifications. Upon receipt of comments or objections by Contractor or Owner, the Architect/Engineer will make decisions on all claims, disputes, or other matters pertaining to the interpretation of the Project Plans and Specifications.

6.4 Rejection of Non-Conforming Work. Upon consultation with Owner, the Architect/Engineer shall have the authority to reject Work which does not conform to the Project Plans and Specifications.

6.5 Correction of Work. The Contractor shall promptly correct all Work rejected by the Architect/Engineer for being defective or as failing to conform to the Project Plans and Specifications, whether observed before or after the Substantial Completion Date and whether or not fabricated, installed, or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for Architect/Engineer's additional services made necessary thereby.

6.6 Timely Performance of Architect/Engineer. The Contractor shall identify which requests for information or response from the Architect/Engineer have the greatest urgency and those items which require prioritizing in response by the Architect/Engineer. The Contractor shall also identify the preferred time period for response and shall request a response time which is reasonably and demonstrably related to the needs of the Project and Contractor. In the event that Architect/Engineer claims that Contractor's expectations for a response are unreasonable, Owner shall require Architect/Engineer to communicate such claim to Contractor in writing together with the specific time necessary to respond and the date upon which such response will be made. In the event that Contractor believes that Architect/Engineer is not providing timely services or responses, Contractor shall notify Owner of same in writing not less than two (2) weeks before Contractor believes performance or response time from Architect/Engineer is required without risk of delaying the Project.

ARTICLE VII
OWNER'S RIGHTS AND RESPONSIBILITIES

7.1 Project Site; Title. The Owner shall provide the lands upon which the Work under the Contract Documents is to be done, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same. The Owner hereby represents to the Contractor that it currently has and will maintain up through and including the Substantial Completion Date, good title to all of the real property constituting the Project Site. Owner agrees to resolve, at its expense, any disputes relating to the ownership and use of the Project Site which might arise during the course of construction.

7.2 Project Plans and Specifications; Architect/Engineer. The parties hereto acknowledge and agree that Owner has previously entered into an agreement with Architect/Engineer. Pursuant to the terms of such agreement, the Architect/Engineer, as an agent and representative of Owner, is responsible for the preparation of Project Plans and Specifications which consist of drawings, specifications, and other documents setting forth in detail the requirements for the construction of the Project. All of such Project Plans and Specifications shall be provided either by Owner or the Architect/Engineer, and Contractor shall be under no obligation to provide same and shall be entitled to rely upon the accuracy and completeness of the Project Plans and Specifications provided by the Architect/Engineer and all preliminary drawings prepared in connection therewith. The Contractor will be furnished a reproducible set of all drawings and specifications reasonably necessary for the performance of Contractor's services hereunder and otherwise ready for printing. The Contractor shall be notified of any written modification in the agreement between Owner and Architect/Engineer.

7.3 Surveys; Soil Tests and Other Project Site Information. Owner shall be responsible for providing a legal description and certified land survey of the Project Site in a form and content and with such specificity as may be required by the Architect/Engineer and Contractor to perform their services. To the extent deemed necessary by Owner and Architect/Engineer, and solely at Owner's expense, Owner may engage the services of a geotechnical consultant to perform test borings and other underground soils testing as may be deemed necessary by the Architect/Engineer or the Contractor. Contractor shall not be obligated to provide such surveys or soil tests and shall be entitled to rely upon the accuracy and completeness of the information provided; subject, however, to the provisions of Section 2.4.S hereof. Owner shall provide Contractor, as soon as reasonably possible following the execution of the Contract Documents, all surveys or other survey information in its possession describing the physical characteristics of the Project Site, together with soils reports, subsurface investigations, utility locations, deed restrictions, easements, and legal descriptions then in its possession or control. Upon receipt of all surveys, soils tests, and other Project Site information, Contractor shall promptly advise Owner of any inadequacies in such information and of the need for any additional surveys, soils or subsoil tests. In performing this Work, Contractor shall use the standard of care of experienced contractors and will use its best efforts timely to identify all problems or omissions. Owner shall not be responsible for any delay or damages to the Contractor for any visible or disclosed site conditions or disclosed deficiencies in the Project Site which should have been identified by Contractor and corrected by Owner prior to the execution of the Contract Documents.

7.4 Information; Communication; Coordination. The Owner's Project Representative shall examine any documents or requests for information submitted by the Contractor and shall advise Contractor of Owner's decisions pertaining thereto within a reasonable period of time to avoid unreasonable delay in the progress of the Contractor's services. Contractor shall indicate if any such documents or requests warrant priority consideration. However, decisions pertaining to approval of the Project Schedule as it relates to the date of Substantial Completion, the Project Cost, Contractor's compensation, approving or changing the Contract Sum shall only be effective when approved by Owner in the form of a written Change Order or amendment to the Contract Documents. Owner reserves the right to designate a different Owner's Project Representative provided Contractor is notified in writing of any such change. Owner and Architect/Engineer may communicate with Subcontractors, materialmen, laborers, or suppliers engaged to perform services on the Project, but only for informational purposes. Neither the Owner nor the Architect/Engineer shall attempt to direct the Work of or otherwise interfere with any Subcontractor, materialman, laborer, or supplier, or otherwise interfere with the Work of the Contractor. Owner shall furnish the data required of Owner under the Contract Documents promptly.

7.5 Governmental Body. The Contractor recognizes that the Owner is a governmental body with certain procedural requirements to be satisfied. The Contractor has and will make reasonable allowance in its performance of services for such additional time as may be required for approvals and decisions by the Owner and any other necessary government agency.

7.6 Pre-Completion Acceptance. The Owner shall have the right to take possession of and use any completed portions of the Work, although the time for completing the entire Work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents.

7.7 Ownership and Use of Drawings, Specifications and Other Instruments of Service.

(1) The Architect/Engineer and the Architect/Engineer's consultants shall be deemed the authors and owners of their respective instruments of service, including the Project Plans and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the instruments of service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be constructed as publication in derogation of the Architect/Engineer's or Architect/Engineer's consultants' reserved rights.

(2) The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the drawings and specifications provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Project Plans and Specifications or other instruments of service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the

drawings or specifications on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect/Engineer and the Architect/Engineer's consultants.

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

A. Responsibilities. Except as otherwise instructed in writing by Owner, the Owner's Project Representative will:

(1) Attend preconstruction conferences; arrange a schedule of progress meetings and other job conferences as required in consultation with Owner/Architect/Engineer and notify those expected to attend in advance; and attend meetings and maintain and circulate copies of minutes thereof;

(2) Serve as Owner/Architect/Engineer's liaison with Contractor, working principally through Contractor's superintendent, to assist in understanding the intent of the Contract Documents. As requested by Owner/Architect/Engineer, assist in obtaining additional details or information when required at the job site for proper execution of the Work;

(3) Report to Owner/Architect/Engineer whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents;

(4) Accompany visiting inspectors representing public or other agencies having jurisdiction over the project; record the outcome of these inspections and report to Owner/Architect/Engineer;

(5) Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Owner/Architect/Engineer; and

(6) Perform those duties as set forth elsewhere within the Contract Documents.

B. Limitations. Except upon written instructions of Owner, Owner's Project Representative shall not:

(1) Authorize any deviation from the Contract Documents or approve any substitute materials or equipment;

(2) Exceed limitations on Owner/Architect/Engineer's authority as set forth in the Contract Documents;

(3) Undertake any of the responsibilities of Contractor, Subcontractors or Contractor's superintendent, or expedite the Work;

(4) Advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents;

(5) Advise on or issue directions as to safety precautions and programs in connection with the Work;

(6) Authorize Owner to occupy the project in whole or in part; or

(7) Participate in specialized field or laboratory tests.

ARTICLE VIII
RESOLUTION OF DISAGREEMENTS; CLAIMS FOR COMPENSATION

8.1 Owner to Decide Disputes. The Owner shall reasonably decide all questions and disputes, of any nature whatsoever, that may arise in the execution and fulfillment of the services provided for under the Contract Documents, in accordance with the Procurement Ordinance.

8.2 Finality. The decision of the Owner upon all claims, questions, disputes and conflicts shall be final and conclusive, and shall be binding upon all parties to the Contract Documents, subject to judicial review as provided in Section 8.5 below.

8.3 No Damages for Delay. If at any time Contractor is delayed in the performance of Contractor's responsibilities under the Contract Documents as the result of a default or failure to perform in a timely manner by Owner or Owner's agents or employees, Contractor shall not be entitled to any damages except for compensation specifically authorized in Article III. Contractor's sole remedy will be a right to extend the time for performance. Nothing herein shall preclude Contractor from any available remedy against any responsible party other than Owner. Contractor shall be responsible for liquidated damages for delay pursuant to Section 3 of the Agreement.

8.4 Permitted Claims Procedure. Where authorized or permitted under the Contract Documents, all claims for additional compensation by Contractor, extensions of time affecting the Substantial Completion Date, for payment by the Owner of costs, damages or losses due to casualty, Force Majeure, Project Site conditions or otherwise, shall be governed by the following:

(1) All claims must be submitted as a request for Change Order in the manner as provided in Article V.

(2) The Contractor must submit a notice of claim to Owner's Project Representative and to the Architect/Engineer within fifteen (15) days of when the Contractor was or should have been aware of the fact that an occurrence was likely to cause delay or increased costs. Failure to submit a claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

(3) Within twenty (20) days of submitting its notice of claim, the Contractor shall submit to the Owner's Project Representative its request for Change Order, which shall include a written statement of all details of the claim, including a description of the Work affected.

(4) After receipt of a request for Change Order, the Owner's Project Representative, in consultation with the Architect/Engineer, shall deliver to the Contractor, within twenty (20) days after receipt of request, its written response to the claim.

(5) In the event the Owner and Contractor are unable to agree on the terms of a Change Order, the Owner shall have the option to instruct the Contractor to proceed with the Work. In that event, the Owner shall agree to pay for those parts of the Work, the scope and price of which are not in dispute. The balance of the disputed items in the order to proceed will be resolved after completion of the Work, based upon completed actual cost.

(6) The rendering of a decision by Owner with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Owner or Contractor of such right or remedies as either may otherwise have under the Contract Documents or by laws or regulations in respect of any such claim, dispute or other matter.

8.5 Contract Claims and Disputes. After completion of the process set forth in Section 8.4 above, any unresolved dispute under this Agreement shall be decided by the Purchasing Official in accordance with Section 2-26-63 of the Manatee County Code of Laws, subject to an administrative hearing process as provided in Section 2-26-64. The decision of the Board of County Commissioners in accordance with Section 2-26-64 of the Manatee County Code of Laws shall be the final and conclusive County decision subject to exclusive judicial review in circuit court by a petition for certiorari.

8.6 Claims for Consequential Damages. The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes:

(1) damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

(2) damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article XIV. Nothing contained in this Section 8.6 shall be deemed to preclude an award of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

ARTICLE IX
INDEMNITY

9.1 Indemnity.

A. Indemnification Generally. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect/Engineer, Architect/Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.1.

B. Claims by Employees. In claims against any person or entity indemnified under this Section 9.1 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 9.1.A. shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

9.2 Duty to Defend. The Contractor shall defend the Owner in any action, lawsuit mediation or arbitration arising from the alleged negligence, recklessness or intentionally wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of the Work. So long as Contractor, through its own counsel, performs its obligation to defend the Owner pursuant to this Section, Contractor shall not be required to pay the Owner's costs associated with the Owner's participation in the defense.

ARTICLE X
ACCOUNTING RECORDS; OWNERSHIP OF DOCUMENTS

10.1 Accounting Records. Records of expenses pertaining to all services performed shall be kept in accordance with generally accepted accounting principles and procedures.

10.2 Inspection and Audit. The Contractor's records shall be open to inspection and subject to examination, audit, and/or reproduction during normal working hours by the Owner's agent or authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the Contractor or any of its payees during the performance of the Work. These records shall include, but not be limited to, accounting records, written policies and procedures, Subcontractor files (including proposals of successful and unsuccessful bidders), original estimates, estimating worksheets, correspondence, Change Order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to the Contract Documents. They shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with the Contract Documents. For the purpose of such audits, inspections, examinations and evaluations, the Owner's agent or authorized representative shall have access to said records from the effective date of the Contract Documents, for the duration of Work, and until three (3) years after the date of final payment by the Owner to the Contractor pursuant to the Contract Documents.

10.3 Access. The Owner's agent or authorized representative shall have access to the Contractor's facilities and all necessary records in order to conduct audits in compliance with this Article. The Owner's agent or authorized representative shall give the Contractor reasonable advance notice of intended inspections, examinations, and/or audits.

10.4 Ownership of Documents. Upon completion or termination of the Contract Documents, all records, documents, tracings, plans, specifications, maps, evaluations, reports, transcripts and other technical data, other than working papers, prepared or developed by the Contractor under the Contract Documents shall be delivered to and become the property of the Owner. The Contractor at its own expense may retain copies for its files and internal use.

ARTICLE XI
PUBLIC CONTRACT LAWS

11.1 Equal Opportunity Employment.

A. Employment. The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, disability or age, and will take affirmative action to insure that all employees and applicants are afforded equal

employment opportunities without discrimination because of race, creed, sex, color, national origin, disability or age. Such action will be taken with reference to, but shall not be limited to, recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of training or retraining, including apprenticeship and on-the-job training.

B. Participation. No person shall, on the grounds of race, creed, sex, color, national origin, disability or age, be excluded from participation in, be denied the proceeds of, or be subject to discrimination in the performance of the Agreement.

11.2 Immigration Reform and Control Act of 1986. Contractor acknowledges that it is responsible for complying with the provisions of the Immigration Reform and Control Act of 1986, located at 8 U.S.C. Section 1324, et seq., and regulations relating thereto. Failure to comply with the above statutory provisions shall be considered a material breach and shall be grounds for immediate termination of this Agreement.

11.3 No Conflict of Interest. The Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure the Contract Documents, and that it has not paid or agreed to pay any person, company, corporation, individual, or firm other than a bona fide employee working solely for the Contractor, any fee, commission, percentage, gift or any other consideration, contingent upon or resulting from the award or making of the Contract Documents.

A. No Interest in Business Activity. By accepting award of this Contract, the Contractor, which shall include its directors, officers and employees, represents that it presently has no interest in and shall acquire no interest in any business or activity which would conflict in any manner with the performance of services required hereunder, including without limitation as described in the Contractor's own professional ethical requirements. An interest in a business or activity which shall be deemed a conflict includes but is not limited to direct financial interest in any of the material and equipment manufacturers, suppliers, distributors, or contractors who will be eligible to supply material and equipment for the Project for which the Contractor is furnishing its services required hereunder.

B. No Appearance of Conflict. The Contractor shall not knowingly engage in any contractual or professional obligations that create an appearance of a conflict of interest with respect to the services provided pursuant to the Contract Documents. The Contractor has provided the Affidavit of No Conflict, incorporated into the Contract Documents as Exhibit "C", as a material inducement for Owner entering into the Contract Documents. If, in the sole discretion of the County Administrator or designee, a conflict of interest is deemed to exist or arise during the term of the County Administrator or designee may cancel this Agreement, effective upon the date so stated in a written notice of cancellation, without penalty to the Owner.

11.4 Truth in Negotiations. By execution of the Contract Documents, the Contractor certifies to truth-in-negotiations and that wage rates and other factual unit costs supporting the compensation are accurate, complete and current at the time of contracting. Further, the original Contract Sum and any additions thereto shall be adjusted to exclude any significant sums where the Owner determines the Contract Sum was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. Such adjustments must be made within one (1) year after final payment to the Contractor.

11.5 Public Entity Crimes. The Contractor is directed to the Florida Public Entity Crimes Act, Section 287.133, Florida Statutes, specifically section 2(a), and the Owner's requirement that the Contractor comply with it in all respects prior to and during the term of the Agreement.

ARTICLE XII
FORCE MAJEURE, FIRE OR OTHER CASUALTY

12.1 Force Majeure.

A. Unavoidable Delays. Delays in any performance by any party contemplated or required hereunder due to fire, flood, sinkhole, earthquake or hurricane, acts of God, unavailability of materials, equipment or fuel, war, declaration of hostilities, revolt, civil strife, altercation or commotion, strike, labor dispute, or epidemic, archaeological excavation, lack of or failure of transportation facilities, or any law, order, proclamation, regulation, or ordinance of any government or any subdivision thereof, or for any other similar cause to those enumerated, beyond the reasonable control and which with due diligence could not have been reasonably anticipated, shall be deemed to be events of Force Majeure and any such delays shall be excused. In the event such party is delayed in the performance of any Work or obligation pursuant to the Contract Documents for any of the events of Force Majeure stated in this Section 12.1, the date for performance required or contemplated by the Contract Documents shall be extended by the number of calendar days such party is actually delayed

B. Concurrent Contractor Delays. If a delay is caused for any reason provided in 12.1.A. or as a result of an extension of time provided by Change Order, and during the same time period a delay is caused by Contractor, the date for performance shall be extended as provided in 12.1.A. but only to the extent the time is or was concurrent.

C. Notice; Mitigation. The party seeking excuse for nonperformance on the basis of Force Majeure shall give written notice to the Owner, if with respect to the Contractor, or to the Contractor if with respect to the Owner, specifying its actual or anticipated duration. Each party seeking excuse from nonperformance on the basis of Force Majeure shall use its best efforts to rectify any condition causing a delay and will cooperate with the other party, except that neither party shall be obligated to incur any unreasonable additional costs and expenses to overcome any loss of time that has resulted.

12.2 Casualty; Actions by Owner and Contractor. During the construction period, if the Project or any part thereof shall have been damaged or destroyed, in whole or in part, the Contractor shall promptly make proof of loss; and Owner and Contractor shall proceed promptly to collect, or cause to be collected, all valid claims which may have arisen against insurers or others based upon such damage or destruction. The Contractor shall diligently assess the damages or destruction and shall prepare an estimate of the cost, expenses, and other charges, including normal and ordinary compensation to the Contractor, necessary for reconstruction of the Project substantially in accordance with the Project Plans and Specifications. Within fifteen (15) days following satisfaction of the express conditions described in subsections (1), (2) and (3) below, the Contractor covenants and agrees diligently to commence reconstruction and to

complete the reconstruction or repair of any loss or damage by fire or other casualty to the Project to substantially the same size, floor area, cubic content, and general appearance as prior to such loss or damage:

(1) Receipt by the Owner or the trustee of the proceeds derived from collection of all valid claims against insurers or others based upon such damage or destruction, and receipt of other sums from any source such that the funds necessary to pay the Project Cost and any additions to the Project Cost necessitated for repair or reconstruction are available;

(2) Written agreement executed by the Contractor and the Owner, by amendment to the Contract Documents or otherwise, authorizing and approving the repair or reconstruction and any additions to the Project Cost necessitated thereby, including any required adjustment to the Contract Sum; and

(3) Final approval by the Owner of the Project Plans and Specifications for such repair or reconstruction and issuance of any required building permit.

12.3 Approval of Plans and Specifications. The Owner agrees to approve the plans and specifications for such reconstruction or repair if the reconstruction or repair contemplated by such plans and specifications is economically feasible, and will restore the Project, or the damaged portion thereof, to substantially the same condition as prior to such loss or damage, and such plans and specifications conform to the applicable laws, ordinances, codes, and regulations. The Owner agrees that all proceeds of any applicable insurance or other proceeds received by the Owner or the Contractor as a result of such loss or damage shall be used for payment of the costs, expenses, and other charges of the reconstruction or repair of the Project.

12.4 Notice of Loss or Damage. The Contractor shall promptly give the Owner written notice of any significant damage or destruction to the Project, defined as loss or damage which it is contemplated by Contractor will increase the Contract Sum or extend the Substantial Completion Date, stating the date on which such damage or destruction occurred, the then expectations of Contractor as to the effect of such damage or destruction on the use of the Project, and the then proposed schedule, if any, for repair or reconstruction of the Project. Loss or damage which the Contractor determines will not affect the Contract Sum or Substantial Completion Date will be reported to Owner and Architect/Engineer immediately, and associated corrective actions will be undertaken without delay.

ARTICLE XIII
REPRESENTATIONS, WARRANTIES AND COVENANTS

13.1 Representations and Warranties of Contractor. The Contractor represents and warrants to the Owner that each of the following statements is presently true and accurate:

A. The Contractor is a construction company, organized under the laws of the State of _____, authorized to transact business in the State of Florida, with _____ as the primary qualifying agent. Contractor has all requisite power and authority to carry on its business as now conducted, to own or hold its properties, and to enter into and perform its obligations hereunder and under each instrument to which it is or will be a party, and is in good standing in the State of Florida.

B. Each Contract Document to which the Contractor is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Contractor enforceable against the Contractor in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally and subject to usual equitable principles in the event that equitable remedies are involved.

C. There are no pending or, to the knowledge of the Contractor, threatened actions or proceedings before any court or administrative agency, within or without the State of Florida, against the Contractor or any partner, officer, or agent of the Contractor which question the validity of any document contemplated hereunder, or which are likely in any case, or in the aggregate, to materially adversely affect the consummation of the transactions contemplated hereunder, or materially adversely affect the financial condition of the Contractor.

D. The Contractor has filed or caused to be filed all federal, state, local, or foreign tax returns, if any, which were required to be filed by the Contractor, and has paid, or caused to be paid, all taxes shown to be due and payable on such returns or on any assessments levied against the Contractor.

E. Neither Contractor nor any agent or person employed or retained by Contractor has acted fraudulently or in bad faith or in violation of any statute or law in the procurement of this Agreement.

F. The Contractor shall timely fulfill or cause to be fulfilled all of the terms and conditions expressed herein which are within the control of the Contractor or which are the responsibility of the Contractor to fulfill. The Contractor shall be solely responsible for the means and methods of construction.

G. It is recognized that neither the Architect/Engineer, the Contractor, nor the Owner has control over the cost of labor, materials, or equipment, over a Subcontractor's methods of determining bid prices, or over competitive bidding, market, or negotiating conditions.

H. During the term of the Contract Documents, and the period of time that the obligations of the Contractor under the Contract Documents shall be in effect, the Contractor shall cause to occur and to continue to be in effect those instruments, documents, certificates, and events contemplated by the Contract Documents that are applicable to, and the responsibility of, the Contractor.

I. The Contractor shall assist and cooperate with the Owner and shall accomplish the construction of the Project in accordance with the Contract Documents and the

Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, or orders that are or will be applicable thereto.

J. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective, and that Owner, representatives of Owner, governmental agencies with jurisdictional interests will have access to the Work at reasonable time for their observation, inspecting and testing. Contractor shall give Architect/Engineer timely notice of readiness of the Work for all required approvals and shall assume full responsibility, including costs, in obtaining required tests, inspections, and approval certifications and/or acceptance, unless otherwise stated by Owner.

K. If any Work (including Work of others) that is to be inspected, tested, or approved is covered without written concurrence of Architect/Engineer, it must, if requested by Architect/Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Architect/Engineer timely notice of Contractor's intention to cover the same and Architect/Engineer has not acted with reasonable promptness in response to such notice. Neither observations by Architect/Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the Work in accordance with the Contract Documents.

L. If the Work is defective, or Contractor fails to supply sufficient skilled workers, or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof and terminate payments to the Contractor until the cause for such order has been eliminated. Contractor shall bear all direct, indirect and consequential costs for satisfactory reconstruction or removal and replacement with non-defective Work, including, but not limited to fees and charges of Architect/Engineers, attorneys and other professionals and any additional expenses experienced by Owner due to delays to other Contractors performing additional Work and an appropriate deductive change order shall be issued. Contractor shall further bear the responsibility for maintaining the schedule and shall not be entitled to an extension of the Contract Time or the recovery of delay damages due to correcting or removing defective Work.

M. If Contractor fails within seven (7) days after written notice to correct defective Work, or fails to perform the Work in accordance with the Contract Documents, or fails to comply with any other provision of the Contract Documents, Owner may correct and remedy any such deficiency to the extent necessary to complete corrective and remedial action. Owner may 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 Owner has paid Contractor but which are stored elsewhere. All direct and indirect costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Architect/Engineer and a Change Order will be issued incorporating the necessary revisions.

N. If within three (3) years after the Substantial Completion Date or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's

written instructions, either correct such defective Work or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instruction, Owner may have the defective Work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor. Failing payment by the Contractor and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall have the right to bring a direct action in the Circuit Court to recover such costs.

13.2 Representations of the Owner. To the extent permitted by law, the Owner represents to the Contractor that each of the following statements is presently true and accurate:

A. The Owner is a validly existing political subdivision of the State of Florida.

B. The Owner has all requisite corporate or governmental power and authority to carry on its business as now conducted and to perform its obligations under the Contract Documents and each Contract Document contemplated hereunder to which it is or will be a party.

C. The Contract Documents and each Contract Document contemplated hereby to which the Owner is or will be a party has been duly authorized by all necessary action on the part of, and has been or will be duly executed and delivered by, the Owner, and neither the execution and delivery thereof nor compliance with the terms and provisions thereof or hereof: (a) requires the approval and consent of any other person or party, except such as have been duly obtained or as are specifically noted herein; (b) contravenes any existing law, judgment, governmental rule, regulation or order applicable to or binding on the Owner; or (c) contravenes or results in any breach of, default under, or result in the creation of any lien or encumbrance upon the Owner under any indenture, mortgage, deed of trust, bank loan, or credit agreement, the charter, ordinances, resolutions, or any other agreement or instrument to which the Owner is a party, specifically including any covenants of any bonds, notes, or other forms of indebtedness of the Owner outstanding on the date of the Contract Documents.

D. The Contract Documents and each document contemplated hereby to which the Owner is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Owner enforceable against the Owner in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally, and subject to usual equitable principles in the event that equitable remedies are involved.

E. There are no pending or, to the knowledge of the Owner, threatened actions or proceedings before any court or administrative agency against the Owner which question the validity of the Contract Documents or any document contemplated hereunder, or which are likely in any case or in the aggregate to materially adversely affect the consummation of the transactions contemplated hereunder or the financial or corporate condition of the Owner.

F. The Owner shall use due diligence to timely fulfill or cause to be fulfilled all of the conditions expressed in the Contract Documents which are within the control of the Owner or which are the responsibility of the Owner to fulfill.

G. During the pendency of the Work and while the obligations of the Owner under the Contract Documents shall be in effect, the Owner shall cause to occur and to continue to be in effect and take such action as may be necessary to enforce those instruments, documents, certificates and events contemplated by the Contract Documents that are applicable to and the responsibility of the Owner.

H. The Owner shall assist and cooperate with the Contractor in accomplishing the construction of the Project in accordance with the Contract Documents and the Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, orders, contracts, or agreements that are or will be applicable thereto or, to the extent permitted by law, enact or adopt any resolution, rule, regulation, or order, or approve or enter into any contract or agreement, including issuing any bonds, notes, or other forms of indebtedness, that will result in the Contract Documents or any part thereof, or any other instrument contemplated by and material to the timely and effective performance of a party's obligations hereunder, to be in violation thereof.

ARTICLE XIV
TERMINATION AND SUSPENSION

14.1 Termination for Cause by Owner. This Agreement may be terminated by Owner upon written notice to the Contractor should Contractor fail substantially to perform a material obligation in accordance with the terms of the Contract Documents through no fault of the Owner. In the event Owner terminates for cause and it is later determined by a court of competent jurisdiction that such termination for cause was not justified, then in such event such termination for cause shall automatically be converted to a termination without cause pursuant to Section 14.2.

A. Nonperformance. If the Contractor fails to timely perform any of his obligations under the Contract Documents, including any obligation the Contractor assumes to perform Work with his own forces, or if it persistently or repeatedly refuses or fails, except in case for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or fails, without being excused, to maintain an established schedule (failure to maintain schedule shall be defined as any activity that falls thirty (30) days or more behind schedule) which has been adopted by the Construction Team, or it fails to make prompt payment to Subcontractors for materials or labor, or disregards laws, rules, ordinances, regulations, or orders of any public authority having jurisdiction, or otherwise is guilty of substantial violations of the Agreement the Owner may, after seven (7) days written notice, during which period the Contractor fails to perform such obligation, make good such deficiencies and perform such actions. The Contract Sum, or the actual Cost of the Project, whichever is less, shall be reduced by the cost to the Owner of making good such deficiencies, and the Contractor's compensation shall be reduced by an amount required to manage the making good of such deficiencies. Provided, however, nothing contained herein shall limit or preclude Owner from pursuing additional damages from Contractor as a result of its breach.

B. Insolvency. If the Contractor is adjudged bankrupt, or if it makes a general assignment for the benefit of its creditors, or if a receiver is appointed on account of its

insolvency, then the Owner may, without prejudice to any other right or remedy, and after giving the Contractor and its surety, if any, fourteen (14) days written notice, and during which period the Contractor fails to cure the violation, terminate the Agreement. In such case, the Contractor shall not be entitled to receive any further payment. Owner shall be entitled to recover all costs and damages arising as a result of failure of Contractor to perform as provided in the Contract Documents, as well as reasonable termination expenses, and costs and damages incurred by the Owner may be deducted from any payments left owing the Contractor.

C. Illegality. Owner may terminate the Agreement if Contractor disregards laws or regulations of any public body having jurisdiction.

D. Rights of Owner. The Owner may, after giving Contractor (and the Surety, if there is one) seven (7) days written notice, terminate the services of Contractor for cause; exclude Contractor from the Project site and take possession of the Work and of all Contractor's tools, construction equipment and machinery at the Project site and use the same to the full extent they could be used (without liability to Contractor for trespass or conversion); incorporate in the Work all materials and equipment stored at the Project site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment beyond an amount equal to the value of material and equipment not incorporated in the Work, but delivered and suitably stored, less the aggregate of payments previously made. If the direct and indirect costs of completing the Work exceed the unpaid balance of the Contract Sum, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Owner in writing; but in finishing the Work, Owner shall not be required to obtain the lowest quote for the Work performed. Contractor's obligations to pay the difference between such costs and such unpaid balance shall survive termination of the Agreement. In such event and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall be entitled to bring a direct action in the Circuit Court to recover such costs.

14.2 Termination without Cause by Owner. The Owner, through its County Administrator or designee, shall have the right to terminate the Agreement, in whole or in part, without cause upon sixty (60) calendar days' written notice to the Contractor. In the event of such termination for convenience, the Owner shall compensate Contractor for payments due through the date of termination, and one subsequent payment to cover costs of Work performed through the date of termination, subject to the terms and conditions of Section 3.1. The Contractor shall not be entitled to any other further recovery against the Owner, including, but not limited to, anticipated fees or profit on Work not required to be performed, or consequential damages or costs resulting from such termination.

A. Release of Contractor. As a condition of Owner's termination rights provided for in this subsection, Contractor shall be released and discharged from all obligations arising by, through, or under the terms of the Contract Documents, and the Payment and Performance Bond shall be released. Owner shall assume and become responsible for the reasonable value of Work performed by Subcontractors prior to termination plus reasonable direct close-out costs, but in no event shall Subcontractors be entitled to unabsorbed overhead, anticipatory profits, or damages for early termination.

B. Waiver of Protest. Contractor hereby waives any right to protest the exercise by Owner of its rights under this Section that may apply under the Procurement Ordinance.

14.3 Suspension without Cause. Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) days by written notice to Contractor, which will fix the date on which Work will be resumed. Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, directly attributable to any suspension if Contractor makes an approved claim therefor.

14.4 Termination Based Upon Abandonment, Casualty or Force Majeure. If, after the construction commencement date (i) Contractor abandons the Project (which for purposes of this paragraph shall mean the cessation of all construction and other activities relating to the Project, excluding those which are necessary to wind down or otherwise terminate all outstanding obligations with respect to the Project, and no recommencement of same within one hundred twenty (120) days following the date of cessation), or (ii) the Project is stopped for a period of thirty (30) consecutive days due to an instance of Force Majeure or the result of a casualty resulting in a loss that cannot be corrected or restored within one hundred twenty (120) days (excluding the time required to assess the damage and complete the steps contemplated under Section 12.2), the Owner shall have the right to terminate the Agreement and pay the Contractor its compensation earned or accrued to date.

14.5 Vacation of Project Site; Delivery of Documents. Upon termination by Owner pursuant to Section 14.2 or 14.4, Contractor shall withdraw its employees and its equipment, if any, from the Project Site on the effective date of the termination as specified in the notice of termination (which effective date shall not be less than two (2) working days after the date of delivery of the notice), regardless of any claim the Contractor may or may not have against the Owner. Upon termination, the Contractor shall deliver to the Owner all original papers, records, documents, drawings, models and other material set forth and described in the Contract Documents.

14.6 Termination by the Contractor. If, through no act or fault of Contractor, the Work is suspended for a period of more than ninety (90) consecutive days by Owner or under an order of court or other public authority, or Owner fails to act on any Application for Payment or fails to pay Contractor any sum finally determined to be due; then Contractor may, upon fourteen (14) days written notice to Owner terminate the Agreement and recover from Owner payment for all Work executed, any expense sustained plus reasonable termination expenses. In lieu of terminating the Agreement, if Owner has failed to act on any Application for Payment or Owner has failed to make any payment as aforesaid, Contractor may upon fourteen (14) days written notice to Owner stop the Work until payment of all amounts then due.