



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER REACH I
FLAGLER COUNTY, FLORIDA**

**SPECIFICATIONS
AND
CONTRACT DOCUMENTS**

**PREPARED FOR THE
FLORIDA INLAND NAVIGATION DISTRICT**

By



10199 Southside Boulevard, Suite 310
Jacksonville, Florida 32256
Certificate of Authorization #4815
Phone: (904) 731-7040
Fax: (904) 731-9847
www.taylorengineering.com
TE C2018-025

MARCH 2019



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10199 Southside Blvd., Suite 310
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Phone: (904) 731-7040
Fax: (904) 731-9847
www.TaylorEngineering.com
(Taylor Engineering Contract No. C2018-025)

MARCH 2019

Bill Aley P.G. # _____
Taylor Engineering, Inc.

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SECTION 00 10 00

BID SOLICITATION

Florida Inland Navigation District
1314 Marcinski Road
Jupiter, Florida 33477
(561) 627-3386

INTRACOASTAL WATERWAY MAINTENANCE DREDGING; FLAGLER, FLORIDA

The Florida Inland Navigation District (District) will receive sealed bids for the construction of the District's Intracoastal Waterway (ICWW) maintenance dredging project at its offices at 1314 Marcinski Road, Jupiter, Florida 33477 until **2 PM, local time April 11, 2019**. Following evaluation of qualification documents, bids will be opened at a public meeting — located at the District office at **2 PM, local time, on Tuesday, April 16** — and read aloud. The project will be awarded to the qualified, responsible, and responsive Bidder presenting the lowest Bid.

This project generally entails dredging approximately 185,200 cubic yards of material from Reach I of the ICWW in Flagler County, Florida. The ICWW maintenance dredging area extends from ICWW Cut F-2 STA 32+00 through ICWW Cut-F10 STA 12+52. This maintenance work will include excavation of the ICWW channel to an elevation of -14 feet (ft) mean lower low water (MLLW) (project depth of -12 feet and 2-foot allowable overdredge). In accordance with permit conditions, material shall be dredged via the use of either a mechanical or hydraulic dredge to remove all material (inclusive of all in-channel debris) feasible from the dredge template. All dredged material shall be offloaded at the District-owned ±44-acre dredged material management area (DMMA) FL-3 located in Palm Coast, Florida. The Contractor will have **180** calendar days from the Notice to Proceed to complete the project. Construction of the project is funded and administered by the District.

The District will hold a **MANDATORY** pre-bid meeting at **1:00 PM on March 27, 2019**. Attendees shall meet at the intersection of Dupont Road and North Old Kings Road in Palm Coast for a briefing on the project scope and a visit to the project's DMMA. Prospective bidders are required to RSVP (with the name of all attendees) to Bill Aley, P.G. (Bailey@Taylorengeering.com) no later than 2 calendar days (March 25) prior to the date of the meeting.

A Bid Bond will be required for bids that exceed \$200,000.00. Bids providing less than 90 days for District acceptance after the date bids are due will not be considered and will be rejected. Bidders may obtain the Contract Documents, Project Drawings, and Specifications from the offices of the District or the District's website (<http://www.aicw.org>) at no charge.

--End of Section--

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SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

1.0 MANDATORY PRE-BID MEETING

The Florida Inland Navigation District (District) will hold a **mandatory** pre-bid meeting and site visit (to the dredged material management area) at the date, time, and place referenced in SECTION 00 10 00 BID SOLICITATION. Representatives of the District and Engineer will be present at the pre-bid meeting to discuss the project. All Bidders are required to attend and participate in the entire meeting. Failure of any Bidder to attend the pre-bid meeting shall render its Bid unresponsive. The Engineer will transmit to all prospective Bidders of record such Addenda as the Engineer considers necessary in response to questions arising at the pre-bid meeting. Oral statements may not be relied upon and will not be binding or legally effective.

2.0 PREPARATION OF BIDS

All Bids shall be submitted on reproduced copies of the forms furnished in the following Sections of the Contract Documents.

1. 00 41 63 BID FORM
2. 00 41 63A BID SCHEDULE
3. 00 43 00 BID BOND (if bid exceeds \$200,000.00)
4. 00 45 01 PUBLIC ENTITY CRIME STATEMENT
5. 00 45 02 AFFIDAVIT FOR SURETY COMPANY

These forms, completed in their entirety, together with all other required documents including but not limited to copies of licenses, credentials, reference lists, and project descriptions constitute the "Bid," also called the "Bid Package." Each Bid — **containing two separate sealed envelopes described below** — must be submitted in an opaque sealed outer envelope, plainly marked on the outside as "**Intracoastal Waterway Maintenance Dredging; Flagler Reach I; Flagler County, Florida**" and the envelope should bear on the outside the name and address of the Bidder, and its Contractor's License Number and classification for the State of Florida. If the Bid is sent through the mail or other delivery system, the sealed outer bid envelope must be enclosed in another envelope addressed to the District at the address referenced above with the notation "BID ENCLOSED" on the face of it.

1. **Sealed Envelope No. 1.** All blank spaces on the BID SCHEDULE for Bid prices must be filled in, in ink or typewritten, and the BID SCHEDULE must be fully completed and executed when submitted. The total bid price must be written in both words and numbers. In the event of a conflict, the words shall govern. Amounts are products of the Bid Unit Prices multiplied by the estimated quantities. In the event of a conflict between the amounts and the Unit Prices, the Unit Prices shall govern. The envelope shall be clearly labeled with the Bidder's name and "Sealed Bid Schedule for "**Intracoastal Waterway Maintenance Dredging; Flagler Reach I; Flagler County, Florida**".
2. **Sealed Envelope No. 2.** All other required sections — BID FORM (inclusive of required credentials), BID BOND, PUBLIC ENTITY FOR CRIME STATEMENT, AFFIDAVIT FOR SURETY COMPANY — shall be submitted in a sealed envelope, separate from the BID SCHEDULE, and labeled "Qualification Documents for "**Intracoastal Waterway Maintenance Dredging; Flagler Reach I; Flagler County, Florida**".

2.1 Credentials of Bidders to be Submitted as Part of SECTION 00 41 63 BID FORM

Each Bidder shall submit the documentation listed below with the bid package. Failure to submit these items will render the Bid unresponsive.

1. Copies of the Bidder's State or County (as applicable) Contracting licenses.

2. The names, addresses, and telephone numbers of three (3) references. Bidders shall use the REFERENCES form provided in SECTION 00 41 63 BID FORM.
3. Descriptions of at least three (3) projects of a similar nature that the Bidder has completed in the last three (3) years or currently has under way. Bidders shall use the SIMILAR PROJECTS form provided in SECTION 00 41 63 BID FORM.
4. A narrative plan for execution of dredging and disposal of dredged material. Bidders shall use the BIDDERS PLAN form provided in SECTION 00 41 63 BID FORM.

The District reserves the right to reject any Bid if the information submitted by a Bidder, or investigation of a Bidder fails to satisfy the District that a Bidder is properly qualified or licensed to carry out the obligations of the Contract Documents and to complete the Work described therein.

2.2 Inquiries/Addenda

Verbal interpretations of the meaning of the Project Drawings, Specifications, or other Contract Documents will not be valid. Every request for interpretation shall be in writing and addressed to **Bill Aley** via e-mail (baley@taylorengineering.com) and, to be given consideration, must be received at least six (6) calendar days prior to the date fixed for the Bid opening. Any and all interpretations and any supplemental instructions will be in the form of written Addenda to the Specifications which, if issued, will be posted on the District website not less than four (4) calendar days prior to the Bid opening date. Bidders must acknowledge receipt of the Addenda in their Bids. Failure of any Bidder to receive, or to acknowledge receipt of any such Addenda shall not relieve the Bidder from any obligation under its Bid as submitted, provided, however, that failure to so acknowledge receipt of any such Addenda may render a Bid unresponsive and result in its rejection. Bidders are advised to contact the Engineer and check the District's website (www.aicw.org) prior to submitting Bids to satisfy themselves as to the existence and number of all Addenda. All Addenda so issued shall become part of the Contract Documents.

2.3 Performance of Work by the Contractor

The Contractor shall perform Work equivalent to at least sixty percent (60%) of the total amount of the Work to be performed under the Contract with his own organization.

2.4 Joint Venture

If the Bid involves a joint venture, a copy of the joint venture agreement shall be included with the Bid along with the attached "Statement of Business Organization."

2.5 Public Entity Crimes

Any Bidder, or any of its Suppliers, Subcontractors, or Consultants who shall perform Work which is intended to benefit the District, shall not be a convicted vendor. Each Bidder shall submit a completed Public Entity Crime Statement with the Bid Form. The Bidder shall use the form provided in SECTION 00 45 01 PUBLIC ENTITY CRIME STATEMENT for this purpose. The Bidder further understands and agrees that any Contract issued as a result of this solicitation shall be either voidable by the District or subject to immediate termination by the District in the event there is any misrepresentation or lack of compliance with the mandates of Section 287.133 F.S. The District, in the event of such termination, shall not be liable to the Contractor for any work or materials furnished.

2.6 Bid Guaranty

Bidders are not required to provide a Bid Bond if the Bid amount is less than or equal to \$200,000.00, unless specified in the Supplemental conditions. Each Bid greater than \$200,000.00 must be accompanied by the District's Bid Bond form meeting the standards specified in the General Conditions, including those applicable to the Sureties for the Payment Bond and Performance Bond specified in the General Conditions. The Bond shall be written on the Bid Bond form provided by the District, with Affidavit for Surety Company attached, in an amount not less than ten percent (10%) of the amount of the Bid. Bidders must use the District's forms

provided in the Contract Documents. Alternate Bond forms will not be accepted. Failure to use the District's Bond forms shall render the Bid unresponsive.

In lieu of the Bid Bond, the Bid may be accompanied by a certified check of any national or state bank made payable to the District in an amount not less than ten percent (10%) of the amount of the Bid. The Bid Bond or certified check shall be conditioned upon the Bidder's:

- A. not withdrawing said Bid within thirty (30) days after date of opening of the same, and
- B. within fifteen (15) calendar days after the prescribed forms are presented to the Bidder:
 - (1) entering into a written Contract with the District, in accordance with the Bid as accepted;
 - (2) providing evidence of insurance in the manner specified by the District; and
 - (3) if the Bid exceeds \$200,000.00, providing a Payment Bond and a Performance Bond as specified in the General Conditions (or, in lieu of the Statutory Payment Bond or Common Law Performance Bond, having provided an alternate form of security as specified in the General Conditions).

Any securities that may be received will be returned to all Bidders, with the exception of the two (2) highest ranked Bidders, within thirty (30) calendar days after the opening of the Bids. Bid bonds will not be returned to the Bidders, unless specifically requested by the Bidder. Any certified check of the two (2) highest ranked Bidders will be returned to them promptly after the District and the successful Bidder have (i) executed the Contract for the work, and (ii) the Contractor (successful Bidder) has secured and tendered to the District a valid and acceptable Payment Bond and a Performance Bond as specified in the General Conditions (or, in lieu of the Payment bond or Performance Bond, having provided an alternate form of security as specified in the General Conditions). Failure of the District to execute the Contract within sixty (60) days after the date of the Bid opening shall initiate release of the Bid Bond, certified check, cashier's check, treasurer's check or bank draft of the highest ranked and second highest ranked Bidders unless mutually agreed otherwise.

Attorneys-In-Fact who sign Bonds must file with such Bond a certified copy of their power of attorney to sign said Bonds.

3.0 RECEIPT AND EVALUATION OF BIDS

3.1 Bid Receipt

The District will receive bids at the location, date, and time referenced in SECTION 00 10 00 BID SOLICITATION. At such location, date, and time, the District will open Sealed Envelope No. 2. Any bid received after the time and date specified will not be considered and will be returned unopened. No bid information will be available until required to be released in accordance with Florida Statutes Section 119.071(1)(b) 2. and 3.

3.2 Bid Evaluation

An Evaluation Committee — comprising a minimum of three District and Engineer staff members — will open the Sealed Envelope No. 2 for each Bidder and shall evaluate the bids based on the scoring criteria set forth below. For each Bidder, committee members will independently complete an evaluation form and assign points for each scoring criterion. Evaluators' scores will be summed to determine overall ranking of Bids. The Bid receiving the greatest point total will be designated the highest-ranked Bid. The remaining Bids shall be ranked by descending point totals. The top one-third ranked Bids will be deemed eligible for further consideration, provided that if fewer than nine (9) Bids are received, the three (3) highest ranked Bids shall be deemed eligible for further consideration; the remaining Bids will not be eligible for further consideration and the BID SCHEDULEs shall be returned to those Bidders unopened. All Bidders shall be notified in writing of their ranking and whether they are eligible for further consideration. The rankings of the Evaluation Committee shall be final.

DISTRICT EVALUATION CRITERIA

SECTION	MAXIMUM POINT VALUE
<p>1 STAFF CREDENTIALS AND PROJECT TEAM The qualifications will be evaluated on the basis of the Contractor's demonstrated staff credentials. Items to be considered include:</p> <ul style="list-style-type: none"> • Information regarding firm background and licenses/certificates attached • Years of dredging experience • Contractors profile and project team • Specific experience and functions of project team • Established team; how long they have worked together • Ability to meet the minimum requirements for the Site Safety and Health Officer and Dredge/Excavator Operators • Communication skills and accessibility 	10
<p>2 QUALITY CONTROL Qualifications will be evaluated on the quality control process to be implemented to ensure that work can be completed in a timely manner in compliance with all stated permit conditions:</p> <ul style="list-style-type: none"> • Timely accomplishment of required objectives • Adherence to permit conditions including, but not limited to, all environmental monitoring criteria • Personnel assignments/project management to provide effective delivery • Contractor's accountability for QA/QC of internal and external (sub consultants) staff • Project schedule / budget tracking and billing • Contractors process for completing projects within approved budgets, preventing time delays, and minimizing Change Orders 	20
<p>3 TECHNICAL APPROACH Equipment list and Dredge Plan will be evaluated based on Contractors understanding of the project; written demonstration of its ability to successfully accomplish the project; and descriptions of previously completed projects to indicate the successful accomplishment of the project with no environmental impacts.</p>	20
<p>4 SIMILAR PROJECTS Successful dredging projects within tidal marine waters in the last 5 years. Scoring will consider similar environmental, geotechnical, and dredged material management approach.</p>	25
<p>5 REFERENCES AND PAST PERFORMANCE Submitted references must demonstrate Bidder's familiarity with projects of similar scope and complexity to this project.</p> <ul style="list-style-type: none"> • Satisfactory response from contacts regarding project performance • Timely execution of projects with zero environmental impacts • Bidder's ratings in the Florida Department of Management Services Vendor Performance Tracking (VPT) system and the Federal Contract Performance Assessment Report System (CPARS), if available. • Scoring will consider successful completion of past similar District project within time and budget constraints. 	25
MAXIMUM POINTS	100

NOTE: To clarify any response, the evaluation committee may contact references provided in response to this Bid, contact Bidder's clients, or solicit information from any available sources concerning any aspect of the Bid deemed pertinent to this evaluation process.

3.3 Bid Schedule Opening

At an advertised public meeting, the District will open the sealed BID SCHEDULE from the eligible Bidders. The date, time and place of the Bid Schedule opening meeting shall be advertised in a newspaper of general circulation in the county or counties in which the Project is located and in Palm Beach County at least three (3) days prior to the date of the meeting. In addition, the District shall send a courtesy notice by email to each Bidder who has filed a request for notice and a valid email address. The failure to receive the courtesy notice shall not affect the validity of the Bid Schedule opening. The District shall award the project to the qualified, responsible, and responsive Bidder presenting the lowest Bid. However, if any of the Bid Schedules are non-responsive and the District elects not to waive the irregularities, the District may, but is not required to, open the next highest ranked Bidder's Bid and consider it along with the Bids of the original eligible Bidders.

3.4 Bid Withdrawal

Any Bid may be withdrawn prior to the date and time referenced in SECTION 00 10 00 BID SOLICITATION or authorized postponement thereof provided that the Bidder submits a written request signed by an authorized representative of the firm that submitted the Bid. No Bidder may withdraw a Bid within sixty (60) days after the date of the opening thereof.

3.5 Acceptance or Rejection of Bids

The District reserves the right to reject any or all Bids when (i) such rejection is in the interest of the District; (ii) such Bid is void per se; or (iii) the Bid contains any irregularities, PROVIDED, however, that the District reserves the right to waive any minor irregularities and to accept the most responsive and qualified Bid as determined by the District. Bids will be considered irregular if there are omissions, unauthorized alterations of any forms, additions not called for, conditional or unauthorized alternate Bids, or other irregularities of any kind. The District reserves the right to request a written confirmation of the Bid and the responsibility of the Bidder prior to the awarding of the Contract. Failure of the Bidder to confirm the Bid within seven (7) working days from the date of the District's request shall render the Bid unresponsive and require forfeiture of the Bid Guaranty.

3.6 Notice of Intended Award

After completion of the review of the Bids and approval by the District's Board of Commissioners, a final Bid tabulation and notice of intent to award will be posted to the District's webpage. Failure to file a protest within the time prescribed in Section 120.57(3), Florida Statutes, or failure to post the bond or other security required by law within the time allowed for filing a bond shall constitute a waiver of proceedings under Chapter 120, Florida Statutes.

4.0 CONTRACT

The Bidder understands that the Bid form does not constitute a Contract with the Bidder. A binding Contract does not exist until the Contract has been executed by both parties. The Bidder to whom the award is made shall, within fifteen (15) calendar days after receipt of the Contract from the District, execute the Contract in the form attached (SECTION 00 52 00 CONTRACT), entering into a Contract with the District. The executed Contract should be returned to the District accompanied by the required Certificates of Insurance, Performance and Payment Bonds as set forth herein. If the Bidder fails to execute the Contract or provide the insurance and Bonds within fifteen (15) calendar days after receipt of the Contract, there shall be just cause for the annulment of the award and forfeiture of the Bid Guaranty to the District. The District may then award the contract to the next lowest priced qualified, responsible, and responsive Bidder or may re-advertised the Work at the District's sole discretion.

4.1 Substitute Material and Equipment

A Contract, if awarded, will be on the basis of material and equipment described in the Project Drawings and Technical Specifications without consideration of possible substitute or an "equivalent" or "equal" item. Whenever it is indicated that a substitute or an "equivalent" or "equal" item of material or equipment may be furnished or used by the Contractor if acceptable to the Engineer, application for such acceptance will not be

considered by the Engineer until after the date of execution of the Contract. In all cases, the BID SCHEDULE shall be based on the costs for the materials and equipment specified. Bidders unable to provide the specified materials and equipment shall be determined unresponsive.

4.2 Notice to Proceed

The Notice to Proceed will be issued within fifteen (15) days of receipt and acceptance of the pre-construction submittals by the District and at completion of the Pre-Construction Meeting. Should there be reasons why the Notice to Proceed cannot be issued within such period; the time may be extended by mutual agreement between the District and Contractor. If the Notice to Proceed has not been issued within the allowed time or within the period mutually agreed upon, the Contractor may terminate the Contract without further liability on the part of either party.

4.3 Project Drawings and Specifications

Up to four (4) sets of the Project Drawings and Specifications will be provided free of charge to the successful Bidder upon award.

4.4 Conditions of Work

The Contract Documents contain the provisions required for the construction of the Work. Information obtained from an officer, agent, or employee of the District, Port or Engineer, or any other person shall not affect the risks or obligations assumed by the Contractor nor relieve the Contractor from fulfilling any of the conditions of the Contract. Each Bidder is responsible for inspecting the site and for reading and being thoroughly familiar with the Contract Documents. The failure or omission of any Bidder to so familiarize themselves shall in no way relieve any Bidder from any obligation in respect to their Bid. All applicable federal, state, and local laws and regulations shall apply to the Work throughout the Contract.

5.0 EQUAL OPPORTUNITY

The Florida Inland Navigation District recognizes fair and open competition as a basic tenet of public procurement. Contractors doing business with the District are prohibited from discriminating on the basis of race, color, creed, national origin, handicap, age, or sex. In addition, The District encourages contractors doing business with the District to solicit and utilize minority business enterprises (as defined in Section 288.703, Florida Statutes) as subcontractors and suppliers to the greatest extent possible.

--End of Section--

SECTION 00 41 63

BID FORM

FLORIDA INLAND NAVIGATION DISTRICT

INTRACOASTAL WATERWAY MAINTENANCE DREDGING; FLAGLER REACH I
FLAGLER COUNTY, FLORIDA

Submitted on _____ (Date)

Bidder (Firm Name)

Address

Signature of Authorized Representative

Name & Title

1. The above signed, as Bidder, hereby declares that the only person or persons interested in the Bid as Principal or Principals is or are named herein and that no other person than herein mentioned that has any interest in this Bid or in the Contract to be entered into; that this Bid is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud.
2. The Bidder further declares that he has examined the site and has informed himself fully in regard to all conditions pertaining to that place where the Work is to be done; that he has examined the Project Drawings and Specifications for the Work and Contractual Documents relative thereto. The Bidder also acknowledges that he has read all of the provisions furnished prior to the opening of Bids; and that he has satisfied himself relative to all Work to be performed.
3. If this Bid is accepted, the undersigned Bidder agrees to complete all Work included under the Contract within **180** calendar days from the date established in the "Notice to Proceed." If the Contractor fails to complete the work within this time the District may obtain the services of another Contractor to complete the Work. Such monies required for the District to complete the Work shall be chargeable to the Contractor.
4. In case of failure on the part of the Contractor to complete the Work within the time fixed in the Contract, or any extension thereof granted, then the Contractor shall be liable to pay the District: (i) not as a penalty but as liquidated damages, \$1,500.00 per day for each calendar day the Work remains incomplete after the expiration of the time limit specified or any extension(s) thereof for the total contract plus (ii) any monies which are paid by the District to any other person, firm or corporation for services rendered for the preservation or completion of the Work. These monies shall include, but are not limited to, all Engineering and Inspection fees required to oversee the completion of the Work. Such monies shall be chargeable to the Contractor and shall be deducted from any monies due said Contractor, or if no money is due or the amount due is insufficient to cover the amount charged, then the Contractor and his Surety shall be liable for said amount. Bidder agrees to perform all the Work described in the Contract Documents for the unit and lump sum prices identified on the following Bid Schedule (located at the end of this section).
5. If this Bid is accepted, it is understood that the terms and conditions of the bid provisions and documents relative thereto, shall be binding upon the parties; however, the undersigned Bidder agrees, upon acceptance and prior to commencement of any Work, to:
 - a. Execute the aforementioned Contract with Florida Inland Navigation District as a written memorial and formalization of said Bid provisions and matters relative.

BID FORM

Section 00 41 63 Page 1 of 8

- b. Provide the necessary Certificates of Insurance, Performance and Payment Bonds (each Bond equal to one hundred percent (100%) of the total Contract Bid), of which this Bid, Instructions to Bidders, General Conditions, Technical Specifications, and Project Drawings shall be made a part for the performance of Work described therein.
 - c. Furnish all necessary materials, equipment, machinery, tools, apparatus, transportation, supervision, labor and all means necessary to construct and complete the Work specified in this Bid and Contract and called for in the Project Drawings, upon "Notice to Proceed with Contract Work" from the Engineer;
 - d. Complete all Contract Work within the time specified in the Bid Form or pay for liquidated damages and cost of supervision for each calendar day in excess thereof according to the terms set forth in the Contract and Specifications.
 - e. Provide complete copies of any or all required insurance policies to the District upon request. The Bidder shall attach to each policy a sworn statement executed by an officer of the Bidder or by the issuing insurance company certifying that the copy is true, correct and complete.
6. The Bidder understands this Bid does not constitute a Contract with the Bidder, and there is no official Contract binding the parties until:
- a. bids are reviewed and accepted by the District; and
 - b. applicable Bonds and Certificates of Insurance are reviewed and accepted by the District; and
 - c. the Contract has been approved by the District; and
 - d. the Contract has been executed by both parties.
7. The undersigned agrees that, in case of failure on his part to execute and deliver the said Contract and the Bonds within fifteen (15) days after receipt of the Contract, the Bid Bond, or securities accompanying his Bid, shall be paid into the funds of Florida Inland Navigation District, otherwise, any Bid Bond or securities accompanying this Bid shall be returned to the undersigned.
8. The Corporation, Partnership or Business name and signature of authorized Corporate Officer, Partner, or Individual making this Bid, together with the signature of the licensee qualifying Bidder, must appear on the signature page of this Bid.
9. The Bidder understands and agrees that he must perform all Work necessary to complete the Work as described in the Project Drawings and Specifications. Payment to the Contractor will be made only for the actual quantities of Work performed and accepted or materials furnished in accordance with the Contract. All Work and materials not specified under "Item" in the Bid shall be considered incidental to the Contract.
10. The Bidder has attached to this Bid an approved Bid Bond or a certified check as described in SECTION 00 21 13 INSTRUCTIONS TO BIDDERS, for the sum of ten percent (10%) of the Bid Amount according to the conditions under the Instructions to Bidders and provisions herein.
11. The Bidder, if apparent low Bidder, agrees to provide the following after the bid opening within the time specified herein:
- a. evidence of the appropriate insurance coverage,
 - b. approved Performance and Payment Bonds for each one hundred (100%) of the Contract Amount according to the conditions under the General Conditions and provisions therein.
 - c. requested credentials, past Work information, and other evidence as requested by the Engineer to verify the ability of the Contractor to perform the Work, if not previously furnished.
12. In accordance with §287.135, Florida Statutes, Bidder hereby certifies that Bidder is not on the Scrutinized

Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, and that it does not have business operations in Cuba or Syria. "Business operations" means, for purposes specifically related to Cuba or Syria, engaging in commerce in any form in Cuba or Syria, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, military equipment, or any other apparatus of business or commerce.

13. Both the Bidder and the licensee shall fill in the information below, pursuant to Chapter 489, Florida Statutes. Licensee is defined as the person who is the licensed Contractor who qualifies the bidding Company, Corporation or Partnership. If the Bidder is an individual, he must be licensed.

(Please print or type)

BIDDER'S NAME: _____

ADDRESS: _____

PHONE NUMBER: _____

FEID OR SOCIAL SECURITY NUMBER: _____

BIDDER'S SIGNATURE, BY: _____

LICENSE NUMBER: _____

LICENSE TYPE: _____
(Attach copy of license)

STATE OR COUNTY: _____

LICENSE LIMITATIONS, IF ANY: _____
(Attach a separate sheet, if necessary)

LICENSE SIGNATURE, BY: _____

**(If an INDIVIDUAL or SOLE PROPRIETOR
is Bidder, sign on this line.)**

By: _____
Signature

Type or Print Name

Address

**(If a CONTRACTOR OPERATING
UNDER A TRADE NAME or FICTITIOUS
is bidder, fill in the trade name followed
by signature)**

Trade Name

By: _____
Signature

Type or Print Name

**(If a GENERAL OR LIMITED PARTNERSHIP
is bidder, fill in name of joint venture, followed
by signature of the partners signing)**

Name of Partnership

By: _____
Partner

Business Address of Partnership

(Names and Addresses
of all General Partners - attach a
separate sheet if necessary)

**(If a CORPORATION is Bidder,
fill in the name of the Corporation,
followed by the signature of the
President or Vice President)**

(Corporate Seal)

Name of Corporation

By: _____
President or Vice President

Address of Corporation

Organized under the Laws of the State of _____, and authorized by the law to make
this Bid and perform all Work and furnish materials and equipment required under the Contract Documents.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the Secretary of the Corporation named as
principal in the within Bid; that _____, who signed the said Bid on behalf of the
Principal, was then _____ of said Corporation; that I know his signature, and his
signature thereto is genuine; and that said bond was duly signed, sealed and attested for and in behalf of said
Corporation by authority of its governing body.

Secretary

(Corporate Seal)

REFERENCES

Provide the names, addresses, and telephone numbers of three (3) clients (former or current) who can attest to your company's experience in work similar in nature to the Work (i.e., hydraulic or mechanical dredging in open tidal coastal waters) required to construct this project in the spaces provided below.

FIRM NAME: _____

ADDRESS: _____

CONTACT PERSON: _____

TELEPHONE NUMBER: _____

FIRM NAME: _____

ADDRESS: _____

CONTACT PERSON: _____

TELEPHONE NUMBER: _____

FIRM NAME: _____

ADDRESS: _____

CONTACT PERSON: _____

TELEPHONE NUMBER: _____

SIMILAR PROJECTS

Provide descriptions of at least three (3) projects of a similar nature (i.e., hydraulic or mechanical dredging in open tidal coastal waters) that the Bidder has completed in the last three (3) years or currently has under way in the spaces provided below. For each project, explain why it is relevant, problems encountered, actions taken to correct problems, and any environmental impacts that were encountered. If additional spaces are needed, make copies of this form.

PROJECT NAME: _____

OWNER'S NAME: _____

CONTACT PERSON: _____ TELEPHONE: _____

START DATE: _____ COMPLETION DATE: _____

DESCRIPTION: _____

PROJECT NAME: _____

OWNER'S NAME: _____

CONTACT PERSON: _____ TELEPHONE: _____

START DATE: _____ COMPLETION DATE: _____

DESCRIPTION: _____

PROJECT NAME: _____
OWNER'S NAME: _____
CONTACT PERSON: _____ TELEPHONE: _____
START DATE: _____ COMPLETION DATE: _____
DESCRIPTION: _____

BIDDERS PLAN

Provide a narrative plan for execution of the dredging and disposal of dredged material. The plan shall include:

1. Description of project related activities
2. Identification and description of major pieces of equipment required for the project
3. Assurance the Contractor can complete the work within the given amount of time
4. Assurance that the work can be performed with minimum impact to water quality and within the stated permit conditions.
5. Description of how quality control will be achieved, conducted, and maintained throughout the project duration.
6. Estimate of weekly productivity
7. Other matters the Contractor considers critical to the completion of the work.

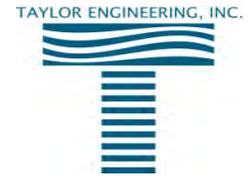
If extra space is necessary, append additional pages.

--End of Section--

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SECTION 00 41 63A



BID SCHEDULE

INTRACOASTAL WATERWAY MAINTENANCE DREDGING; FLAGLER REACH I; FLAGLER COUNTY, FLORIDA

BIDDER: _____

ALL BID ITEMS SHALL INCLUDE ALL COSTS FOR FURNISHING TO THE OWNER ALL MATERIALS, EQUIPMENT, SUPPLIES, AND PERMITS INCURRED IN PROVIDING ALL WORK SHOWN ON THE INTRACOASTAL WATERWAY ST. LUCIE COUNTY REACH I MAINTENANCE DREDGING; ST. LUCIE COUNTY, FLORIDA PROJECT DRAWINGS AND OUTLINED IN THE CONTRACT SPECIFICATIONS FOR CONSTRUCTION.

BASE BID ITEMS

ITEM	DESCRIPTION	UNITS	QUANTITY	UNIT COST	TOTAL COST
LUMP SUM					
0001	Insurance	LS	1	\$	\$
0002	Mobilization/Demobilization	LS	1	\$	\$
0003	Environmental Protection and Erosion Control	LS	1	\$	\$
0004	Additional Bathymetric Survey	LS	1	\$	\$
UNIT COST					
0005	Dredging and Dredged Material Placement	CY	185,200	\$	\$

TOTAL BASE BID (ITEMS 0001 THRU 0005) \$ _____

AMOUNTS SHALL BE SHOWN IN BOTH WORDS AND NUMBERS. IN CASE OF DISCREPANCIES, THE AMOUNT SHOWN IN WORDS SHALL GOVERN FOR EACH BID ITEM AND TOTAL BID.

TOTAL BASE BID (WRITTEN)

Dollars

Signature of Bidder: _____

Date: _____

Notes:

- (1) Quantities are estimated. Actual quantities may vary.
- (2) All bids must be for the entire work and must have each blank space completed.

Bidder has to sign below that they have read and understood all addendums related to this project. Failure

Addendum No.1	Date of Receipt:
Addendum No.2	Date of Receipt:
Addendum No.3	Date of Receipt:

NOTICE TO ALL BIDDERS

- 1 The District reserves the right to waive any informality in any bid, to reject any or all bids, and to delete any part of
- 2 Changes in the Contract Price and Contract Time require prior authorization in writing from the District, in the form
- 3 Bid prices for the various work items are intended to establish a total price for completing the project in its entirety.
- 4 Quantities shown are estimated. Actual quantity may vary due to estimated excavation or fill.

Contractor shall meet requirements of all applicable permits and codes (in their current edition).

5

Bidder: _____

By: _____

Title: _____

Name of Bidder

Signature of Bidder

Date: _____

SECTION 00 43 13

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____ as Principal and _____, as Surety, are held and firmly bound unto Florida Inland Navigation District, in the penal sum of _____ dollars (\$_____) lawful money of the United States, not less than 10% of the amount of the bid amount, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THE OBLIGATION IS SUCH, that whereas the Principal has submitted the accompanying bid, dated _____, 20__ for the Contract and Specifications for the Intracoastal Waterway Maintenance Dredging Project in Flagler County, Florida.

NOW, THEREFORE, if the Principal:

1. Does not withdraw said Bid within ninety (90) calendar days after date of opening of the same, and
2. Within fifteen (15) calendar days after the prescribed Contract forms are presented to the Contractor:
 - a. Enters into a written Contract with Florida Inland Navigation District, in accordance with the Bid, as accepted; and
 - b. Provides evidence of insurance in the manner specified by the Florida Inland Navigation District;
 - c. Gives a Payment Bond and Performance Bond as specified in the General Conditions (or, in lieu of the Payment Bond and Performance Bond, provides an alternate form of security as specified in the General Conditions).
3. Or in the event of the failure to fully comply with all of the foregoing, if the Principal pays the District the difference between the amount specified in said Bid and the amount for which the District may procure the required Work and/or supplies if the latter amount be in excess of the former, then the above obligations shall be void, and of no effect, otherwise to remain in full force and effect.

DATED ON _____, 20__.

WHEN THE PRINCIPAL IS AN INDIVIDUAL OR SOLE PROPRIETOR:

By: _____
Signature

Business Address

WHEN THE PRINCIPAL OPERATES UNDER A TRADE NAME OR FICTITIOUS NAME*:

By: _____
Signature

Business Name and Address

**Attach copy of Florida fictitious name registration from www.sunbiz.org.*

WHEN THE CONTRACTOR IS A LIMITED LIABILITY COMPANY:

By: _____
LLC Name and State of Organization

Signature of Manager or Managing Member

Type or Print Name/Title

WHEN THE PRINCIPAL IS A GENERAL OR LIMITED PARTNERSHIP:

By: _____
Name and Address of Partnership

Signature of General Partner

WHEN THE PRINCIPAL IS A CORPORATION:

ATTEST:

Corporate Name and State of Incorporation

(Corporate Seal)

Signature of President

ATTEST:

(Surety Seal)

(Corporate Surety)

Business Address

(Secretary)

By

(Surety)

(Surety shall provide evidence of signature authority, i.e., a certified copy of Power of Attorney.)

NOTE: If both the Principal and Surety are Corporations, the respective Corporate Seals should be affixed and attached.

Name of Surety's Florida Resident Agent

--End of Section--

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SECTION 00 45 01

PUBLIC ENTITY CRIME STATEMENT

SWORN STATEMENT PURSUANT TO SECTION 287.133(3) (a), FLORIDA STATUTES,
ON PUBLIC ENTITY CRIMES

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

1. This sworn statement is submitted to _____
[print name of the public entity]
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: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1) (b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that an "affiliate" as defined in Paragraph 287-133(1) (a), Florida Statutes, means:
- i. A predecessor or successor of a person convicted of a public entity crime, or
 - ii. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
5. I understand that a "person" as defined in Paragraph 287.133(1) (e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal

power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement that I have marked below is true in relation to the entity submitting this sworn statement. [Indicate which statement applies.]

_____ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. [Attach a copy of the final order]

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1(ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

[Signature]

[Date]

STATE OF _____

COUNTY OF _____

Before me this day personally appeared _____, who, being duly sworn, executed this Affidavit and acknowledged to and before me the truthfulness and accuracy of the statements in the Affidavit.

SWORN TO AND SUBSCRIBED before me this _____ day of _____, 20____, by AFFIANT, who is personally known to me.

Name: _____
NOTARY PUBLIC

Commission Expiration Date: _____

--End of Section--

SECTION 00 45 02

AFFIDAVIT FOR SURETY COMPANY

TO: Florida Inland Navigation District

RE: Contract Name: Intracoastal Waterway Maintenance Dredging, Flagler Reach I, Flagler County, Florida

BIDDER: _____

Name: _____

Address: _____

Phone: _____

AMOUNT OF BOND: _____

SURETY COMPANY: _____

Name: _____

Address: _____

Phone: _____

BEFORE ME, the undersigned authority, personally appeared the AFFIANT, who being duly sworn and says:

- (1) He/She is _____ of the Surety Company;
- (2) In accordance with Section 287.0935, Florida Statutes, the Surety Company fulfills each of the following provisions:
 - (a) The Surety Company is licensed to do business in the State of Florida;
 - (b) The Surety Company holds a certificate of authority authorizing it to write surety bonds in Florida;
 - (c) The Surety Company has twice the minimum surplus and capital required by the Florida Insurance Code at the time the invitation to bid is issued;
 - (d) The Surety Company is otherwise in compliance with the provisions of the Florida Insurance Code; and
 - (e) The Surety Company holds a currently valid certificate of authority issued by the United States Department of Treasury under 31 U.S.C. ss. 9304 to 9308.

FURTHER AFFIANT SAYETH NOT.

Signature of AFFIANT: _____ Date: _____
(Officer of Surety Company)

Title of AFFIANT: _____

STATE OF _____

COUNTY OF _____

Before me this day personally appeared _____, who,
being duly sworn, executed this Affidavit and acknowledged to and before me the truthfulness and accuracy of
the statements in the Affidavit.

SWORN TO AND SUBSCRIBED before me this _____ day of _____, 20____, by AFFIANT, who
is personally known to me.

Name: _____
NOTARY PUBLIC

Commission Expiration Date: _____

--End of Section--

SECTION 00 51 00

NOTICE OF AWARD

Date: _____

To: _____

Project: Intracoastal Waterway Maintenance Dredging; Flagler Reach I; Flagler County, Florida

The District has considered the Bid submitted by you for the above-described Work in response to its BID SOLICITATION (SECTION 00 10 00) dated **March 11, 2019** and INSTRUCTIONS FOR BIDDERS (SECTION 00 21 13).

You are hereby notified that your Bid has been accepted for items in the amount of \$_____.

You are required by SECTION 00 21 13 INSTRUCTIONS FOR BIDDERS to execute the Contract and furnish the required PERFORMANCE BOND (SECTION 00 61 13.13), PAYMENT BOND (SECTION 00 61 13.16) and certificates of insurance in accordance with GENERAL CONDITIONS (SECTION 00 72 00) within fifteen (15) calendar days from the date of receipt of this Notice of Award. Return all document copies to the District for further processing, review and distribution to the parties to the Contract.

If you fail to execute said Contract and to furnish said Bonds within fifteen (15) days from the date of receipt of this Notice, the District will be entitled to consider all your rights arising out of the District's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The District will be entitled to such other rights as may be granted by law. You are required to return acknowledged copies of this Notice of Award to the District and the Engineer.

Owner: Florida Inland Navigation District

By: _____
(Authorized Signature)

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the Notice of Award is hereby acknowledged by _____.

Authorized Signature: _____

Date: _____

Title: _____

--End of Section--

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SECTION 00 52 00

CONTRACT

CONTRACT
BETWEEN
FLORIDA INLAND NAVIGATION DISTRICT
AND

_____ CONTRACTOR

THIS Contract, made this _____ day of _____, 20____, by and between the Florida Inland Navigation District, an independent special district of the State of Florida, hereinafter designated as the "DISTRICT," and _____, at _____, a _____ Corporation, FEID Number _____, hereinafter designated as the "CONTRACTOR."

WITNESS THAT:

WHEREAS, the District is an independent special district created by the Florida Legislature and given those powers and responsibilities enumerated in Chapter 374, Florida Statutes; and

WHEREAS, the District desires the services of a qualified and experienced Contractor to provide construction services; and

WHEREAS, the District solicited on **March 11, 2019** and received Bids on **April 11, 2019** for the project called **"Intracoastal Waterway Maintenance Dredging; Flagler Reach I; Flagler County, Florida."**

WHEREAS, the Contractor has responded to the District's solicitation and the Contractor is qualified and willing to provide said services; and

WHEREAS, the District has found the Contractor's response to be acceptable and wishes to enter into a Contract; and

WHEREAS, the District has funds in its current fiscal year budget which are available for the funding of the Contract;

NOW THEREFORE, the District and the Contractor in consideration of the benefits flowing from each to the other do hereby agree as follows:

ARTICLE 1 - STATEMENT OF WORK

- 1.1 The Contractor shall furnish all equipment, tools, materials, labor, and everything necessary and shall perform the required Work in accordance with the Contract Documents for the contract entitled **"Intracoastal Waterway Maintenance Dredging; Flagler Reach I; Flagler County, Florida."**

ARTICLE 2 - TERM OF THE CONTRACT

- 2.1 Unless extended or terminated, the period of performance of the Contract shall commence upon the effective date of the Notice to Proceed and continue for a period of **180** calendar days. The Contractor shall not proceed with Work under this Contract until a Notice to Proceed is received from the District.

ARTICLE 3 - COMPENSATION/CONSIDERATION

- 3.1 The consideration, for the full and complete performance under this Contract, shall be in the amount of \$ _____, subject only to any additions and/or deduction as provided in the Contract Documents and formally approved by the District.

The consideration stated above is based upon the aggregate Contract price submitted to the District, in which the aggregate amount is obtained from the summation of the total prices for each of the Bid items shown in the Bid.

ARTICLE 4 - INVOICING AND PAYMENT

- 4.1 If acceptable progress is being made, the Contractor may request partial payments on monthly estimates, based on the actual value of Work done or completed, which request may be approved and paid by the District. All pay requests shall reference the District's Contract Number, shall follow the same format as AIA Document G702-2017, and shall be in accordance with the terms specified in the General Conditions.
- 4.2 The Executive Director of the District has been authorized to approve and execute change orders, with the concurrent approval of the District's Chair, totaling up to ten (10) per cent of the initially executed contract value. When change orders in total exceed ten (10) percent of the initially executed construct value, they will be presented to the District's Board of Commissioners for approval at one of their regularly scheduled meetings. However, if there is a finding by the Engineer, the District's Executive Director and the District's Chair that a delay in approving the change order will result in an unnecessary delay causing negative financial, environmental, or health safety and welfare impacts, a change order up to 20% of the executed contract value can be executed by the District's Executive Director.

ARTICLE 5 - REMEDIES

- 5.1 If either party initiates legal action, including appeals, to enforce this Contract, the prevailing party shall be entitled to recover a reasonable attorney's fee.
- 5.2 It is acknowledged that the Contractor's failure to complete the Work within the Contract Time provided by the Contract Documents, or any extension thereof granted, will cause the District to incur substantial economic damages and losses of types and in amounts which are impossible to compute and ascertain with certainty as a basis for recovery by the District of actual damages, and that liquidated damages represent a fair, reasonable and appropriate estimate thereof. Accordingly, in lieu of actual damages for such delay, the Contractor agrees that liquidated damages may be assessed and recovered by the District as against Contractor and its Surety, in the event of delayed completion and without the District being required to present any evidence of the amount or character of actual damages sustained by reason thereof; therefore Contractor shall be liable to the District for payment of liquidated damages in the amount of One Thousand Five Hundred Dollars (\$1,500) for each day that Substantial Completion is delayed beyond the Contract Time as adjusted for time extensions provided by the Contract Documents. Such liquidated damages are intended to represent estimated actual damages and are not intended as a penalty, and Contractor shall pay them to District without limiting District's right to terminate this agreement for default as provided elsewhere herein.
- 5.3 In case of any other failure to perform the Contract, the Contractor shall be liable to pay the District any monies which are paid by the District to any other person, firm or corporation for services rendered for the preservation or completion of the Work. These monies shall include, but are not limited to, all Engineering and Inspection fees required to oversee the completion of the Work.
- 5.4 Such liquidated damages and monies shall be chargeable to the Contractor and shall be deducted from any monies due said Contractor, of if no money is due or the amount due is insufficient to cover the amount charged, then the Contractor and his Surety shall be liable for said amount.

CONTRACT

ARTICLE 6 - STANDARDS OF COMPLIANCE

- 6.1 The Contractor, its employees, Subcontractors, or assigns, shall comply with all applicable federal, state, and local laws and regulations relating to the performance of this Contract. The District undertakes no duty to ensure such compliance, but will attempt to advise the Contractor, upon request, as to any such laws of which it has present knowledge.
- 6.2 The Contractor hereby assures that no person shall be excluded on the grounds of race, color, creed, national origin, handicap, age, or sex, from participation in, denied the benefits of, or be otherwise subjected to discrimination in any activity under this Contract. The Contractor shall take all measures necessary to effectuate these assurances.
- 6.3 The laws of the State of Florida shall govern all aspects of this Contract. In the event it is necessary for either party to initiate legal action regarding this Contract, venue shall be in the Fifteenth Judicial Circuit or claims under state law and in the Southern District of Florida for any claims which are justifiable in federal court.
- 6.4 The Contractor hereby warrants that he has not, during the bidding process, nor shall he, during the term of this Contract, offer to pay any officer, employee or agent of the District, anything of value including, but not limited to gifts, loans, rewards, promises of future employment, favors or services, based on the understanding that the actions, decision or judgments of such officer, employee, or agent would be influenced thereby. For breach of this provision, the District may terminate this Contract without liability and, at its discretion, deduct or otherwise recover the full amount of such fee, commission, percentage, gift, or other consideration.
- 6.5 The Contractor, by its execution of this Contract, acknowledges and attests neither he, nor any of his suppliers, subcontractors, or consultants who shall perform Work which is intended to benefit the District, is a convicted vendor or, if the Contractor or any affiliate of the Contractor has been convicted of a public entity crime, a period longer than thirty-six (36) months has passed since that person was placed on the convicted vendor list. The Contractor further understands and accepts that this Contract shall be either voidable by the District or subject to immediate termination by the District, in the event there is any misrepresentation or lack of compliance with the mandates of Section 287.133, Florida Statutes. The District, in the event of such termination, shall not incur any liability to the Contractor for any Work or materials furnished. The Contractor is required to submit a completed Public Entity Crime Statement with the Bid Form.

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

- 6.6 While this package cites Florida Department of Transportation (FDOT) specifications and references, the Contractor does not have to be FDOT certified.

ARTICLE 7 - RELATIONSHIP BETWEEN THE PARTIES

- 7.1 The Contractor is an independent Contractor and is not an employee or agent of the District. Nothing in this Contract shall be interpreted to establish any relationship, other than that of an independent Contractor, between the District and the Contractor, its employees, agents, subcontractors, or assigns, during or after the performance of this Contract. The Contractor is free to provide similar services to others.

7.2 The Contractor shall not assign, delegate, or otherwise transfer its rights and obligations as set forth in this Contract without the prior written consent of the District.

ARTICLE 8 - GENERAL PROVISIONS

8.1 The Contract Documents listed below, by this reference, shall become a part of this Contract as though physically attached as a part hereof and all documents in this Contract shall be interpreted together to yield the most consistent results to achieve the purpose of the project:

- a. General Conditions
- b. General Requirements
- c. Technical Specifications
- e. Project Drawings
- f. Such addenda supplementing the documents forming this Contract as are referenced to it and attached as a part of it.
- g. Bid Solicitation, Bid Form, Instructions to Bidders, Addenda, provided however, that no exceptions to the District's specifications, whether stated or implied in the Contractor's Bid, shall be allowed **EXCEPT** as shall be itemized, listed, approved by the District and recorded as written Addenda with the District as a supplement to this Contract.

8.2 This Contract states the entire understanding between the parties and supersedes any written or oral representations, statements, negotiations, or agreements to the contrary. The Contractor recognizes that any representations, statements, or negotiations made by District staff do not suffice to legally bind the District in a Contractual relationship unless they have been reduced to writing, approved, and signed by an authorized District representative. This Contract, once properly executed, shall bind the parties, their assigns, and successors in interest.

8.3 This Contract may be amended only with the prior written approval of the parties.

IN WITNESS WHEREOF, the parties or their duly authorized representatives hereby execute this Contract on the date first written above.

Legal Form Approved
District Counsel

FLORIDA INLAND NAVIGATION DISTRICT

By: _____

By: _____
Executive Director

Date: _____

WHEN THE CONTRACTOR IS AN INDIVIDUAL OR SOLE PROPRIETOR:

Signed, sealed, and delivered in the presence of:

Witness

By: _____
Signature

Witness

Type or Print Name

WHEN THE CONTRACTOR OPERATES UNDER A TRADE NAME OR FICTITIOUS NAME:

Signed, sealed, and delivered in the presence of:

Witness

Trade Name or Fictitious Name

Witness

Signature

Type or Print Name

WHEN THE CONTRACTOR IS A GENERAL OR LIMITED PARTNERSHIP:

Signed, sealed, and delivered in the presence of:

Witness

Partnership Name

Witness

Signature of General Partner

Type or Print Name of General Partner

WHEN THE CONTRACTOR IS A CORPORATION:

ATTEST:

Secretary

Corporation Name

(Corporate Seal)

By: _____
Signature of Officer or Authorized Agent

Type or Print Name/Title

WHEN THE CONTRACTOR IS A LIMITED LIABILITY COMPANY:

Signed, sealed, and delivered in the presence of:

Witness

LLC Name and State of Organization

Witness

Signature of Manager or Managing Member

Type or Print Name/Title

--End of Section--

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SECTION 00 55 00
NOTICE TO PROCEED

Dated: _____

To: _____

Project: Intracoastal Waterway Maintenance Dredging, Flagler Reach I, Flagler County, Florida

In accordance with the Contract, for the above referenced project dated _____, you are hereby notified to commence Work on _____ and you are to complete the Work within **180** calendar days.

Owner: Florida Inland Navigation District

Authorized Signature: _____ Date: _____

Title: _____

ACCEPTANCE OF NOTICE

Receipt of the Notice of Award is hereby acknowledged by:

Authorized Signature: _____ Date: _____

Title: _____

--End of Section--

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SECTION 00 61 13.13

PERFORMANCE BOND

District's Contract No. _____

Surety Bond No. _____

BY THIS BOND, know that _____ as Principal, herewith called Contractor, and _____, as Surety, hereinafter called Surety, are bound to the Florida Inland Navigation District, as Obligee, herein called District, in the amount of: _____ Dollars (\$ _____) for payment of which Contractor and Surety bind themselves, their heirs, personal representatives, executors, administrators, successors and assigns, jointly and severally, with reference to a written agreement entered into by Contractor and District, the construction of the Intracoastal Waterway Maintenance Dredging, Flagler Reach I, Flagler County, Florida.

THE CONDITION OF THIS BOND is that if the Contractor:

1. Performs said Contract in accordance with its terms and conditions; and
2. Pays District all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that District sustains because of a default by Contractor under the Contract; and
3. Pays District any and all other amounts due District by Contractor because of a default by Contractor under the Contract; and
4. Perform 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 changes in or under the Contract documents and compliance or noncompliance with formalities connected with the Contract or with the changes, do not affect the Surety's obligation under this bond. Surety hereby waives notice of any alteration or extension of time made by the District.

Dated on _____, 20____.

Contractor's Principal Business Address and Telephone No.:

Phone: () ___ - _____

Surety's Principal Business Address and Telephone No.:

Phone: () ___ - _____

District's Principal Business Address and Telephone No.:

1314 Marcinski Road
Jupiter, Florida 33477
Phone: (561) 627-3386

WHEN THE PRINCIPAL IS AN INDIVIDUAL OR SOLE PROPRIETOR:

Signed, sealed, and delivered in the presence of:

(Witness) By: _____
Signature

(Witness) Business Address

WHEN THE PRINCIPAL OPERATES UNDER A TRADE NAME OR FICTITIOUS NAME:

Signed, sealed, and delivered in the presence of:

(Witness) Business Name and Address

(Witness) By: _____
Signature

WHEN THE CONTRACTOR IS A LIMITED LIABILITY COMPANY:

Signed, sealed, and delivered in the presence of:

Witness LLC Name and State of Organization

Witness Signature of Manager or Managing Member

Type or Print Name/Title

WHEN THE PRINCIPAL IS A GENERAL OR LIMITED PARTNERSHIP:

Signed, sealed, and delivered in the presence of:

(Witness) (Name and Address of Partnership)

(Witness) By: _____
(Signature of General Partner)

WHEN THE PRINCIPAL IS A CORPORATION:

ATTEST:

(Corporate Seal) (Corporate Principal)

Business Address

(Secretary) By: _____
(President)

ATTEST:

(Surety Seal)

(Corporate Surety)

Business Address

(Secretary)

By

(Surety)

a certified copy of Power of Attorney.)

(Surety shall provide evidence of signature authority, i.e.,

NOTE: If both the Principal and Surety are Corporations, the respective Corporate Seals should be affixed and attached.

Name of Surety's Florida Resident Agent

--End of Section--

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SECTION 00 61 13.16

PAYMENT BOND

District's Contract No. _____

Surety Bond No. _____

BY THIS BOND, know that _____ as Principal, herewith called Contractor, and _____ as Surety, hereinafter called Surety, are bound to Florida Inland Navigation District, as Obligee, herein called District, in the amount of: _____ Dollars (\$) for payment of which Contractor and Surety bind themselves, their heirs, personal representatives, executors, administrators, successors and assigns, jointly and severally, with reference to a written agreement entered into by Contractor and District, the construction of the Intracoastal Waterway Maintenance Dredging; Flagler Reach I, Flagler County Florida.

THE CONDITION OF THIS BOND is that if the Contractor:

Promptly makes payments to all claimants as defined in Section 255.05(1), Florida Statutes, supplying Contractor with labor, material, or supplies, used directly or indirectly by Contractor in the prosecution of the Work provided for in the Contract;

THEN THIS BOND IS VOID, OTHERWISE, IT REMAINS IN FULL FORCE.

Any changes in or under the Contract documents and compliance or noncompliance with formalities, connected with the Contract or with the changes, do not affect Surety's obligation under this bond. Surety hereby waives notice of any alteration or extension of time made by the District.

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) and (10), Florida Statutes.

DATED on _____, 20__.

Contractor's Principal Business Address and Telephone No.:

Phone: () _____ - _____

Surety's Principal Business Address and Telephone No.:

Phone: () _____ - _____

District's Principal Business Address and Telephone No.:

1314 Marcinski Road
Jupiter, Florida 33477
Phone: (561) 627-3386

WHEN THE PRINCIPAL IS AN INDIVIDUAL OR SOLE PROPRIETOR:

Signed, sealed, and delivered in the presence of:

(Witness) By: _____
Signature

(Witness) Business Address

WHEN THE PRINCIPAL OPERATES UNDER A TRADE NAME OR FICTITIOUS NAME:

Signed, sealed, and delivered in the presence of:

(Witness) Business Name and Address

(Witness) By: _____
Signature

WHEN THE CONTRACTOR IS A LIMITED LIABILITY COMPANY:

Signed, sealed, and delivered in the presence of:

Witness LLC Name and State of Organization

Witness Signature of Manager or Managing Member

Type or Print Name/Title

WHEN THE PRINCIPAL IS A GENERAL OR LIMITED PARTNERSHIP:

Signed, sealed, and delivered in the presence of:

(Witness) (Name and Address of Partnership)

(Witness) By: _____
(Signature of General Partner)

WHEN THE PRINCIPAL IS A CORPORATION:

ATTEST:

(Corporate Seal) (Corporate Principal)

Business Address

(Secretary) By: _____
(President)

ATTEST:

(Surety Seal)

(Corporate Surety)

Business Address

(Secretary)

By

(Surety)

(Surety shall provide evidence of signature authority, i.e., a certified copy of Power of Attorney.)

NOTE: If both the Principal and Surety are Corporations, the respective Corporate Seals should be affixed and attached.

Name of Surety's Florida Resident Agent

--End of Section--

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SECTION 00 65 19

CERTIFICATE OF SUBSTANTIAL COMPLETION

DATE OF ISSUANCE: _____

PROJECT NAME: Intracoastal Waterway Maintenance Dredging; Flagler Reach I, Flagler County Florida

OWNER: Florida Inland Navigation District

CONTRACTOR: _____

CONTRACT DATE: _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To: Florida Inland Navigation District
OWNER

And To: _____
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and that part of the Work is hereby declared to be substantially complete in accordance with the Contract Documents on:

DATE OF SUBSTANTIAL COMPLETION

A tentative list of items to be completed or corrected, prepared by Contractor and verified and amended by the Engineer is attached hereto. This list may not be all-inclusive, and failure to include any items in the tentative list does not alter the responsibility of Contractor to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by Contractor within _____ days of the above Date of Substantial Completion.

The responsibilities between Owner and Contractor for security, operation, insurance, and warranties and guarantees shall be as follows:

OWNER: _____

CONTRACTOR: _____

The following documents are attached to and made part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Executed by Engineer on: _____
Date

ENGINEER By: _____
(Authorized Signature)

Contractor accepts this Certificate of Substantial Completion on: _____
Date

CONTRACTOR By: _____
(Authorized Signature)

Owner accepts the Work or designated portion thereof as substantially complete and will assume full possession thereof on: _____
Date

Florida Inland Navigation District
OWNER By: _____
(Authorized Signature)

--End of Section--

SECTION 00 72 00

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

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

Addenda: Written or graphic instruments issued prior to the opening of Bids that modify or interpret the Contract Documents by additions, deletions, clarifications, or corrections.

Application for Payment: The form furnished or approved by the District which is to be used by the Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

Bid: The offer or proposal of the bidder submitted on the prescribed form setting forth the price(s) for the Work to be performed.

Bidder: Any person, firm, partnership, or corporation submitting a Bid for the Work.

Bonds: Bid, Payment, and Performance Bonds and other instruments of security, furnished by the Contractor and the Contractor's Surety in accordance with the Contract Documents.

Change Order: A written order to the Contractor, signed by the District, authorizing an addition, deletion, or revision in the Work or an adjustment in the Contract Price or Contract Time issued on or after the effective date of the Contract.

Claim: A demand or assertion by one of the parties seeking, as a matter of right, an adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract.

Construction Change Directive: A written order to the Contractor, prepared by the Engineer and signed by the District, directing a change to the Work prior to agreement on adjustment, if any, in the Contract Price or Contract Time, or both.

Contract: The written agreement between the District and the Contractor covering the Work to be performed and other Contract Documents are made a part of the Contract.

Contract Documents: The Contract, including the Bid Solicitation, Instructions for Bidders, Contractor's Bid, Bid Bond, Payment Bond, Performance Bond, Notice of Award, Notice to Proceed, Change Order(s), General Conditions, Project Drawings, Specifications, Addenda, and all Modifications issued after the effective date of the Agreement.

Contract Price: The total monies payable by the District to the Contractor under the Contract Documents.

Contract Time: The number of calendar days or the date stated in the Contract Documents for the completion of the Work.

Contractor: The person, firm, or corporation with whom the District has entered into the Contract.

Day: A calendar day of twenty-four (24) hours measured from midnight to the next midnight.

Defective: Term used to describe Work that is unsatisfactory, faulty or deficient, in that it does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection, referenced standard, test or approval or has been damaged prior to final acceptance.

District: The Florida Inland Navigation District is an independent special District created under the laws of the State of Florida.

District Observer: The Engineer, Engineer's representative, or Resident Authorized Representative.

Engineer: The person, firm, or corporation named as such in the Contract Documents.

Engineer's Consultants: A person, firm, or corporation having a Contract with the District or the Engineer to furnish services as the District's or Engineer's independent professional associate or consultant with respect to the Work or Project.

Effective Date of the Contract: The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Contract is signed and delivered by the last of the two parties to sign and deliver.

Executive Director: The person employed as the District's Executive Director or his or her designee.

Field Order: A written order effecting a change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by the Engineer to the Contractor during construction.

Furnish: to provide or install complete in place.

General Requirements: Sections of Division 01 of the Specifications.

Governing Board: The Board of Commissioners of the Florida Inland Navigation District.

Laws and Regulations: Any and all applicable laws, rules, regulations, ordinances, codes and orders of any and all governmental bodies, agencies, authorities and courts having jurisdiction.

Liens: Liens, changes, security interest or encumbrances upon real property or personal property.

Milestone: A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

Modification: (a) A Written Amendment of the Contract Documents signed by the District and the Contractor, (b) a Change Order or (c) a Field Order. A Modification may only be issued after Effective Date of the Contract.

Notice of Award: The written notice of the acceptance of the Bid from the District to the successful Bidder.

Notice to Proceed: Written notice given by the District to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contractor shall start to perform the Contractor's obligations under the Contract Documents.

Partial Utilization: Use by the District of a substantially completed part of the Work for the purpose for which it is intended prior to substantial completion of all the Work.

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

Project Drawings: The part of the Contract Documents which show largely through graphical presentation the character, extent and scope of the Work to be furnished and performed by the Contractor and which have been prepared or approved by the Engineer. Shop drawings are not Project Drawings as so defined.

Resident Project Representative: An authorized representative of the District who is assigned to perform construction observation.

Samples: Physical examples of materials, equipment, or Workmanship that are representative of some portion of the Work and establish standards by which some portion of Work will be judged.

Shop Drawings: All drawings, diagrams, illustrations, brochures, schedules, and other data or information that are specifically prepared or assembled by the Contractor and submitted by the Contractor to illustrate some portion of the Work.

Specifications: Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards, and Workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor: An individual, firm, or corporation having a direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

Substantial Completion: The date determined by the Engineer when the construction of the Work or an expressly stipulated part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Work or stipulated part can be fully utilized for the purposes for which it is intended.

Supplier: A manufacturer, fabricator, supplier, distributor, materialman, vendor, firm, corporation or organization having a direct contract with the Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by the Contractor or any Subcontractor.

Surety: The corporate body which is bound with the Contractor and which engages to be responsible for the Contractor and the acceptable performance of the Work.

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

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

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

Written Amendment: A written amendment of the Contract Documents, signed by the District and the Contractor on or after the effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly construction-related aspects of the Contract Documents.

Written Notice: Any written notice to any party to the Contract relative to any part of this Contract. Such notice shall be considered delivered and the service thereof completed, when posted by certified or registered mail to the said party at the party's last given address, or as to the Contractor, delivered in person to said party or said party's authorized representative at the Project site. Email to the last given email address, and delivery by a recognized overnight delivery service shall constitute written notice. However, written notice by any means other than certified or registered mail shall not be deemed complete until actually received by the addressee. If email is used, it is up to the party sending the email to verify receipt by asking for a verification reply or electronic read notice.

ARTICLE 2 - CONDITIONS AFFECTING WORK

The Contractor acknowledges that he has investigated and correlated his observations with the requirements of the Contract and satisfied himself as to the conditions affecting the Work. These conditions include, but are not restricted to, those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electrical power, roads and uncertainties of weather, river stages, tides or similar physical conditions at the site, and the character of equipment and facilities needed preliminary to and during prosecution of the Work. The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as

this information is reasonably ascertainable from an inspection of the site, including all exploratory Work done by the District, as well as from information presented by the Project Drawings and Specifications made a part of this Contract. Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. The District assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the District, its officers or employees prior to the execution of the Contract, unless such information has been stated expressly in the Contract.

ARTICLE 3 - CONTRACT DOCUMENTS

The Contract Documents comprise the entire agreement between the District and the Contractor concerning the Work. The Contract Documents are complementary; what is called for by one is binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project. It is the intent of the Contract Documents to describe the functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials, equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as to be required to produce the intended result shall be furnished and performed whether or not specifically called for. When words and phrases that have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment such words or phrases shall be interpreted in accordance with that meaning. Reference to standards, 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 be implied, shall mean the latest standard, specification, manual, code, Laws or Regulations in effect on the date of the Bid Solicitation except as may otherwise be 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 the District, the Contractor or the Engineer, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to the District, the Engineer, or any of the Engineer's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents. Clarifications and interpretations of the Contract Documents shall be issued by the Engineer.

Brand names where used in the Contract Documents, are intended to denote the standard of quality required for the particular material or product. The term "equal" or "equivalent," when used in connection with brand names, shall be interpreted to mean a material or product that is similar and equal in type, quality, size, capacity, composition, finish, color and other applicable characteristics to the material or product specified by trade name, and that is suitable for the same use and capable of performing the same function, in the opinion of the Engineer, as the material or product so specified. Proposed equivalent items must be approved by the Engineer before they are purchased or incorporated in the Work. When a brand name, catalog number, or other identification, is used without the phrase "or equal," the Contractor shall use the item specified. "Equivalent" or "equal" items will only be approved after the Contractor has been furnished with the Notice to Proceed.

If, during the performance of the Work, the Contractor discovers any conflict, error, ambiguity or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such Law or Regulation applicable to the performance of the Work or any such standard, specification, manual or code, the Contractor shall report all errors to the Engineer in writing at once and the Contractor shall not proceed with the Work affected thereby (exception in an emergency as provided for in the Contract Documents) until an amendment or supplement to the Contract Documents has been issued.

ARTICLE 4 - SPECIFICATIONS AND PROJECT DRAWINGS

The Contractor shall check all Project Drawings furnished to him immediately upon their receipt and shall promptly notify the Engineer of all errors, inconsistencies, omissions, and discrepancies. Dimensions marked on Project Drawings shall, in general, be followed in preference to scaled measurements. Anything mentioned in the Specifications and not shown on the Project Drawings, or shown on the Project Drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both. In the case of an inconsistency between Drawings and Specifications or within either document not clarified by addendum, the

better quality or greater quantity of Work shall be provided in accordance with the Engineer's interpretation. In case of a discrepancy either in the dimensions, in the Project Drawings, or in the Specifications, the matter shall be submitted to the District who shall make a determination in writing. Any adjustment by the Contractor without such a determination by the District shall be at his own risk and expense. All deviations made by the Contractor from the Specifications and Project Drawings will be compiled and provided to the District in the form of Record Drawings (see SECTION 01 78 00 PROJECT CLOSEOUT). The District may furnish from time to time such detail Project Drawings and other information considered necessary to clarify the Contract.

Omissions from the Project Drawings or Specifications or the misdescription of details of Work which are manifestly necessary to carry out the intent of the Project Drawings and Specifications, or which are customarily performed, shall not relieve the Contractor from performing such omitted or misdescribed details of the Work as if fully and correctly described in the Project Drawings and Specifications. If the Contractor performs any construction activity knowing it involves a recognized error, inconsistency, or omission in the Contract without providing written notice to the District, the Contractor shall assume appropriate responsibility for such performance and shall bear an appropriate amount of the attributable costs for correction. Standard references used in the Specifications shall be the latest revision or edition of that reference, any such referenced paragraph, or section revised shall apply to the Work as indicated.

ARTICLE 5 - CONSTRUCTION BONDS

5.1 BONDS REQUIRED

If the Contract price is in excess of two-hundred thousand dollars (\$200,000.00), the Contractor shall, within fifteen (15) calendar days after receipt of the Contract for execution, provide the District with a payment bond and a performance bond in accordance with Florida Statutes § 255.05(1) in an amount not less than the Contract Price. The form of the payment and performance bonds shall be as provided IN SECTION 00 61 13.13 PERFORMANCE BOND and 00 61 13.16 PAYMENT BOND, with a Power of Attorney Affidavit attached. Contractor, at Contractor's Expense, shall record the Performance Bond and the Payment Bond in the Public Records of the county where the improvement is located and deliver a certified copy of each recorded bond to the District. Contractor shall perform no work, and the District shall not make any payment to Contractor until Contractor has delivered certified copies of the recorded bond to the District. Failure to provide the Bond(s) with the fifteen (15) day period shall be sufficient cause for the District to deem the Bidder non-responsive and nullify the Contract Award.

5.2 SURETIES QUALIFICATIONS

All bonds required under this Contract, including, but not by way of limitation, any Bid Bond, Payment Bond or Performance Bond, shall be written through a reputable and responsible Surety Bond agency licensed to do business in the State of Florida and with a Surety which holds a certificate of authority authorizing it to write Surety Bonds in Florida meeting the following requirements:

BOND REQUIREMENTS FOR CONSTRUCTION CONTRACTS

CONTRACT SUM	A.M. BEST'S RATING CLASSIFICATION / OTHER REQUIREMENTS	BEST'S FINANCIAL SIZE CATEGORY
From: \$ 0.00 To: \$200,000.00	Bid or Payment Bond or Performance Bond Not Required (unless specified in Supplemental Conditions)	Not Applicable
From: \$200,000.01 To: \$500,000.00	All Bonds Required: B+ or better (See requirements under paragraph 1 below)	No Minimum Required
From: \$500,000.01 To: \$2,500,000.00	A - or better Circular 570 requirements (paragraph 2 below)	IV or larger
From: \$2,500,000.01 or more	A - or better Circular 570 requirements (paragraph 2 below)	V or larger

(1) Contract Price of five-hundred thousand dollars (\$500,000.00) or Less:

If the Contract price is five-hundred thousand dollars (\$500,000.00) or less, Bonds with a Surety company in compliance with the following requirements shall be acceptable:

- (a) The surety company is licensed to do business in the State of Florida;
- (b) The surety company holds a certificate of authority authorizing it to write Surety Bonds in the State Florida;
- (c) The surety company has twice the minimum surplus and capital required by the Florida Insurance code at the time the Bid Solicitation is issued;
- (d) The surety company is otherwise in compliance with the provisions of the Florida Insurance Code; and,
- (e) The surety company holds a currently valid certificate of authority issued by the U.S. Department of the Treasury under 31 U.S.C. ss.9304 to 9308.

In order to qualify as an acceptable Surety company under this paragraph (1), an Affidavit for Surety Company shall be executed by an Officer of the Surety Bond insurer as evidence that a Surety company complies with the foregoing requirements.

(2) Circular 570, Contract Price of \$500,000.01 or more:

If the Contract price is \$500,000.01 or greater, the Surety shall also comply with the Circular 570 requirements as set forth in this paragraph (2). The Surety shall maintain a current certificate of authority as an acceptable Surety on Federal Bonds in accordance with U.S. Department of Treasury Circular 570, current revision. If the amount of the Bond exceeds the underwriting limitations set forth in the Circular, in order to qualify, the net retention of the Surety company shall not exceed the underwriting limitation in the Circular and the excess risk must be protected by coinsurance, reinsurance, or other methods in accordance with Treasury Circular 297, revised September 1, 1978 (3) CFR Section 223.10 - Section 223.111. Further, the surety company shall provide the District with evidence satisfactory to the District, that such excess risk has been protected in an acceptable manner.

5.3 ADDITIONAL OR REPLACEMENT BOND

It is further mutually agreed between the parties hereto that if, at any time, the District shall deem the Surety or Sureties upon any Bond to be unsatisfactory, or if, for any reason, such Bond ceases to be adequate, the Contractor shall, at his expense within five (5) business days after the receipt of notice from the District to do so, furnish an additional or replacement Bond or Bonds on the District's standard form, amount, and with such Surety or Sureties as shall be satisfactory to the District. In such event, no further payments to the Contractor shall be deemed due under this Contract until such new or additional security for the faithful performance of the Work shall be furnished in manner and form satisfactory to the District.

In addition, the Contractor shall for any increases in the Contract amount automatically increase the amount of the Payment Bond and the Performance Bond to equal the revised amount of the Contract and shall provide the District with evidence of the same.

5.4 FLORIDA RESIDENT AGENT

The Surety Company shall have a Florida resident agent whose name shall be listed in the prescribed space on the forms provided by the District for all Bonds required by the District.

5.5 ALTERNATIVE FORM OF SECURITY

In lieu of the Payment Bond and the Performance Bond, the Contractor may, pursuant to Section 255.05, Florida Statutes, provide an alternate form of security in the form of cash, a money order, a certified check, or an irrevocable letter of credit. Any such alternative form of security shall be for the same purpose and be subject to the same conditions as those applicable to the Bond for which the alternative form of security is being substituted. The determination of the value of an alternative form of security shall be made by the District.

ARTICLE 6 - INSURANCE REQUIREMENTS

Without limiting any of the other obligations or liabilities of Contractor, Contractor shall provide, pay for, and maintain in force until all of its work to be performed under this Contract has been completed and accepted by the District (or for such duration as is otherwise specified hereinafter), the insurance coverages set forth herein.

6.1 WORKERS' COMPENSATION/EMPLOYER'S LIABILITY INSURANCE

Such insurance to apply for all employees in compliance with the "Workers' Compensation Law" of the State of Florida and all applicable federal laws. Such insurance shall be no more restrictive than that provided by the latest edition of the standard Workers' Compensation Policy, as filed for use in Florida by the National Council on Compensation Insurance (NCCI), without any restrictive endorsements other than any endorsements required by NCCI or the State of Florida. In addition to coverage for the Florida Workers' Compensation Act, where appropriate, coverage is to be included for the Federal Employer's Liability Act and any other applicable Federal or State law. In addition, the policy(ies) must include:

The minimum amount of coverage (inclusive of any amount provided by an umbrella or excess policy) shall be:

Part One: "Statutory"
Part Two: \$1,000,000 Each Accident
\$1,000,000 Disease – Policy Limit
\$1,000,000 Disease – Each Employee

In addition to coverage for the Florida Workers' Compensation Act, where appropriate, coverage is to be included for:

- a. If any of Contractor's employees or subcontractors' (of any tier) employees will be involved in loading, unloading, building or repairing vessels, coverage shall be included for the U.S Longshoremen & Harbor Workers Act. Such coverage shall be provided on a form no more restrictive than NCCI Form WC 00 01 06A Longshore and Harbor Workers' Compensation Act Coverage Endorsement.
- b. If any of Contractor's employees or subcontractors' (of any tier) employees will be working as the masters or crew members of any vessel, coverage shall be included for losses arising out of injuries to such employees. Such coverage is to be provided on a form no more restrictive than the latest edition of the NCCI Form WC 00 02 01B Maritime Coverage Endorsement.

In the event that Contractor provides all or a portion of the Workers' Compensation/Employers Liability insurance required herein via a professional employer organization ("PEO") or employee leasing company, any such Workers' Compensation/Employers Liability insurance provided will only be deemed acceptable solely for the purposes of insuring Contractor's enrolled employees. In addition, and notwithstanding the foregoing, in order to adequately protect the District against injuries to uninsured employees of Subcontractors and non-enrolled employees of Contractor, Contractor must still procure, maintain, and furnish District with evidence of a stand-alone separate Workers' Compensation/Employers Liability insurance policy issued with Contractor as the named insured, and complying with all requirements for Contractor provided Workers' Compensation contained in the Agreement. It is permissible for Contractor to exclude payroll of leased employees from such separate Workers' Compensation/Employers Liability insurance policy.

The Workers' Compensation policy must be endorsed to waive the insurers right to subrogate against the District and District's Commissioners, officers, employees and agents in the manner which would result from the attachment of the NCCI Waiver Of Our Right To Recover From Others Endorsement (Advisory Form WC 00 03 13) with the District and the District's Commissioners, officers, employees and agents scheduled thereon.

6.2 COMMERCIAL GENERAL LIABILITY INSURANCE

Such insurance shall be on a form no more restrictive than that provided by the latest edition of the standard Commercial General Liability Form (Form CG 00 01) as filed for use in the State of Florida by the Insurance Services Office (ISO), without any restrictive endorsements other than any endorsements specifically required by ISO or the State of Florida. The coverage may include restrictive endorsements which exclude coverage for liability arising out of:

Mold, fungus, or bacteria

Terrorism

Silica, asbestos or lead

Sexual molestation

The minimum limits (inclusive of amounts provided by an umbrella or excess policy) shall be:

\$5,000,000	General Aggregate
\$2,000,000	Products/Completed Operations Aggregate
\$2,000,000	Personal and Advertising Injury
\$5,000,000	Each Occurrence

Contractor shall continue to maintain products/completed operations coverage in the amount stated above for a period of three (3) years after the final completion of the Work. The insurance shall be on a form no more restrictive than, and shall cover those sources of liability which would be covered by Coverage A of, the latest occurrence form edition of the Commercial General Liability Coverage Form (ISO Form CG 00 01), or of the occurrence Products/Completed Operations Liability Coverage Form (ISO Form CG 00 37), as filed for use in the State of Florida by ISO, without any restrictive endorsements other than those which, under an ISO filing, must be attached to the policy (i.e., mandatory endorsements).

District and District's Commissioners, officers, employees and agents shall be included as an "Additional Insured" on a form no more restrictive than ISO form CG 20 10 (Additional Insured – Owners, Lessees, or Contractor) combined with ISO form CG 20 37 (Additional Insured – Owners, Lessees or Contractors – Completed Operations).

Contractor shall cause its subcontractors to purchase and maintain commercial general liability insurance in the minimum amount of \$1,000,000, covering District and Contractor.

6.3 BUSINESS AUTOMOBILE LIABILITY INSURANCE

Such insurance shall be provided on a form no more restrictive than that provided by Section II (Liability Coverage) of the most recent version of the standard Business Auto Policy (ISO Form CA 00 01) without any restrictive endorsements, including coverage for liability contractually assumed. The policy shall cover all owned, non-owned, and hired autos used in connection with the performance of work under this Contract.

The minimum limits (inclusive of any amounts provided by an umbrella or excess policy) shall be:

\$1,000,000	Each Occurrence – Bodily Injury and Property Damage Combined
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6.4 WATERCRAFT/VESSEL LIABILITY INSURANCE

To the extent watercraft are utilized, Contractor shall purchase and maintain, or cause its subcontractors to purchase and maintain, insurance which shall, at a minimum, cover Contractor and subcontractors for injuries or damage arising out of the use of all owned, non-owned and hired watercraft. The insurance shall include the District and District's Commissioners, officers, employees and agents "Additional Insureds".

The limits applicable to watercraft liability (inclusive of any amounts provided by an umbrella or excess policy) shall be:

Each Occurrence/Annual Aggregate \$5,000,000

6.5 POLLUTION/ENVIRONMENTAL IMPAIRMENT LIABILITY INSURANCE

Such insurance shall include clean-up costs and cover Contractor for liability resulting from pollution or other environmental impairment arising out of, or in connection with, work performed under this Contract, or which arises out of, or in connection with this Contract, including coverage for clean-up of pollution conditions and third-party bodily injury and property damage claims arising from pollution conditions. Such insurance shall also include transportation coverage and non-owned disposal site coverage. Such insurance shall be on a form acceptable to District.

District and District's Commissioners, officers, employees and agents shall be included as "Additional Insureds" on the policy.

Coverage must either be on an occurrence basis; or, if on a claims-made basis, the coverage must respond to all claims reported within three years following the period for which coverage is required and which would have been covered had the coverage been on an occurrence basis.

The minimum limits (inclusive of any amounts provided by an umbrella or excess policy) shall be:

\$5,000,000 Each Claim/Occurrence

\$5,000,000 Annual Aggregate

6.6 PROPERTY/BUILDER'S RISK

Contractor shall be responsible to maintain Builder's Risk and/or and Installation policy for all construction projects. The coverage limit shall be equal to 100% of the completed value of the project. Such coverage shall be written on "all-risk" including coverage for the perils of windstorm and flood. Such coverage shall be written on an "agreed value" basis and shall not be subject to a coinsurance clause. The maximum deductible for other than windstorm and flood shall be \$25,000. The maximum deductible for windstorm and/or flood shall be 2% of the value of the project at the time of the loss. District shall be included on the policy as a Named Insured and a loss payee.

Until such insurance is no longer required by this Contract, Contractor shall provide District with renewal or replacement evidence of insurance at least fifteen (15) days prior to the expiration or termination of such insurance.

All policies required by this Contract shall be endorsed to provide that the insurer will provide District thirty (30) days' advance notice of any cancellation of the policy, except in cases of cancellation for non-payment of premium for which District shall be given ten (10) days' advance notice.

Insurers providing the insurance required by this Contract must either be: (1) authorized by a subsisting certificate of authority issued by the State of Florida to transact insurance in the State of Florida, or (2) except with respect to coverage for the liability imposed by the Florida Workers' Compensation Act, an eligible surplus lines insurer under Florida Statutes.

In addition, each such insurer shall have and maintain throughout the period for which coverage is required, a Best's Rating of "A-" or better and a Financial Size Category of "VII" or better according to A. M. Best Company.

Contractor shall provide to District satisfactory evidence of the insurance required in the Contract within fifteen (15) calendar days after notification of award of the Contract. As evidence of compliance with the insurance required herein, Contractor shall furnish District with one of the following forms of acceptable evidence of insurance:

- a.
 1. an appropriate Certificate of Insurance (which identifies the project) and is signed by an authorized representative of the insurer evidencing all coverage required; and
 2. a copy of the actual additional insured endorsement as issued on the policy(ies), signed by an authorized representative of the insurer(s) verifying inclusion of the District and the District's Commissioners, officers, employees and agents as additional insureds;
- b. the original of the policy(ies); or
- c. other evidence satisfactory to the District.

The official title of the certificate holder is Florida Inland Navigation District. This official title shall be used in all insurance documentation.

Notwithstanding the prior submission of a Certificate of Insurance, copies of endorsements, or other evidence initially acceptable to the District, if requested by the District, Contractor shall, within thirty (30) days after receipt of a written request from District, provide the District with a certified copy or certified copies of the policy or policies providing the coverage required herein. Contractor may redact or omit, or cause to be redacted or omitted, those provisions of the policy or policies which are not relevant to the insurance required herein.

The insurance provided by the Contractor shall apply on a primary basis to and shall not require contribution from any other insurance or self-insurance maintained by the District or the District's Commissioners, members, officers, employees or agents. Any insurance, or self-insurance, maintained by the District shall be in excess of, and shall not contribute with, the insurance provided by Contractor.

District and Contractor, each for itself and on behalf of its insurers, to the fullest extent permitted by law without voiding the insurance required hereunder, waive all rights against each other and any of their other contractors, subcontractors, agents and employees, each of the other, for damages or loss to the extent covered and paid for by any insurance maintained by the other party.

Except where prior written approval has been obtained hereunder, the insurance maintained by Contractor shall apply on a first dollar basis without application of a deductible or self-insured retention. Contractor shall pay on behalf of the District or the District's Commissioners, officers, employees and agents any deductible or self-insured retention applicable to a claim against the District or the District's Commissioners, officers, and employees.

District reserves the right, but not the obligation, to review and revise any insurance requirements at the time of contract renewal and/or any amendments, not limited to deductibles, limits, coverages and endorsements based on insurance market conditions affecting the availability or affordability of coverage; or changes in the scope of work/specifications affecting the applicability of coverage.

Compliance with these insurance requirements shall not limit the liability of Contractor, its subcontractors, sub-subcontractors, employees or agents. Any remedy provided to the District or the District's Commissioners, officers or employees by the insurance provided by Contractor or the District shall be in addition to and not in lieu of any other remedy (including, but not limited to, as an indemnitee of Contractor) available to District under this Contract or otherwise.

Neither approval nor failure to disapprove insurance furnished by Contractor shall relieve Contractor from the responsibility to provide insurance as required by this Contract.

ARTICLE 7 - INDEMNIFICATION

The Contractor shall indemnify and hold harmless the District, its officers, agents, guests, invitees and employees, from all liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor and persons employed or utilized by the Contractor in the performance of the Contract. The Contractor shall include substantially the same indemnification provisions in all contracts with Subcontractors.

The Contractor acknowledges that it is solely responsible for ensuring the safety of the premises to protect its employees, Subcontractors, invitees, licensees and all other persons during the course of the Work.

ARTICLE 8 - SCHEDULES

Within ten (10) days after the Effective Date of Contract, the Contractor shall submit to the Engineer for review a preliminary progress schedule (See SECTION 01 29 00 MEASUREMENT AND PAYMENT) indicating the starting and completion dates of the various stages of the Work, including any Milestones specified in the Contract Documents.

Prior to the submission of the first Application for Payment, the Contractor shall submit a finalized progress schedule. No progress payment shall be made to the Contractor until the schedule is submitted to and acceptable to the Engineer as provided herein. The progress schedule will be acceptable to the Engineer as providing an orderly progression of the Work to completion within any specified Milestones and Contract Time, but such acceptance will neither impose on the Engineer responsibility for the sequencing, progress or scheduling of the Work nor interfere with or relieve the Contractor from full responsibility thereof. The Contractor's schedule of values will be acceptable to the Engineer as to form and substance.

ARTICLE 9 - SUPERINTENDENCE BY CONTRACTOR

The Contractor, at all times during performance and until the Work is completed and accepted, shall give his personal superintendence to the Work or have a competent superintendent at the project site, satisfactory to the District and with authority to act for the Contractor.

9.1 PERFORMANCE OF WORK BY THE CONTRACTOR

The Contractor shall, with his own organization, perform Work equivalent to at least forty percent (40%) of the total amount of the Work, based on percentage of Contract value, to be performed under the Contract.

9.2 SUBCONTRACTORS

The Contractor is as fully responsible to the District for the acts, coordination, and omissions of his Subcontractors and of persons, either directly employed by said Subcontractor, as he is for the acts and omissions of persons directly employed by him. The Contractor shall submit the names of the Subcontractors proposed for the Work for District acceptance at the pre-construction meeting. The Contractor shall not substitute any Subcontractor without the prior consent of the District. Nothing contained in the Contract shall create any Contractual relationship between any Subcontractor and the District. All Subcontractors shall complete and submit to the Engineer a Public Entity Crime Statement.

9.3 PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES

In accordance with §287.135, Florida Statutes, Contractor certifies that Bidder is not on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, and that it does not have business operations in Cuba or Syria. "Business operations" means, for purposes specifically related to Cuba or Syria, engaging in commerce in any form in Cuba or Syria, including, but not limited to, acquiring, developing, maintaining, owning, selling, possessing, leasing, or operating equipment, facilities, personnel, products, services, personal property, real property, military equipment, or any other apparatus of business or commerce. District may terminate the contract if Contractor is found to have submitted a false certification, been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or been engaged in business operations in Cuba or Syria.

ARTICLE 10 - PERMITS

The Contractor shall, without additional expense to the District, be responsible for obtaining licenses and permits and for complying with any applicable federal, state, and municipal laws, codes, and regulations in connection with the prosecution of the Work. The District will obtain the environmental permits indicated in SECTION 01 35 43 ENVIRONMENTAL PROTECTION; the Contractor will obtain any other environmental permits.

ARTICLE 11 - PROTECTION OF EXISTING VEGETATION, STRUCTURES, UTILITIES, AND IMPROVEMENTS

The Contractor will preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site of Work which is not to be removed. Care will be taken in removing trees authorized for removal to avoid damage to vegetation to remain in place. Any limbs or branches of trees broken during such operations or by the careless operation of equipment, or by Workmen, shall be trimmed with a clean cut and painted with an approved tree-pruning compound as directed by the District. The Contractor will protect from damage all existing improvements, District easements, or utilities at or near the site of the Work, the location of which is made known to him, or the existence of which may be reasonably inferred from a site inspection, and will repair or restore any damage to such facilities, and shall be responsible for any interruption of utility services, resulting from failure to comply with the requirements of this Contract or the failure to exercise reasonable care in the performance of the Work. If the Contractor fails or refuses to repair any such damage promptly, the District may have the necessary Work performed and charge the cost thereof to the Contractor. The Contractor shall follow all requirements set forth in SECTION 01 35 43 ENVIRONMENTAL PROTECTION.

ARTICLE 12 - SAFETY

The Contractor shall be responsible for providing safe and healthful working conditions for employees of the Contractor, Subcontractors, the District, or its invitees. The Contractor shall initiate and maintain an accident prevention program that should include, but is not limited to, the following: Establish and supervise programs for the education and training of employees in the recognition, avoidance, and prevention of unsafe conditions and acts.

The Contractor shall be responsible for providing first-aid services and medical care to all his employees. The Contractor shall establish and maintain good housekeeping practices throughout all phases. The Contractor shall be responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions.

The District's Observer may, but is not required to, order that the Work be stopped if a condition of immediate danger exists. Nothing contained herein shall be construed to shift responsibility or risk of loss for injuries or damage sustained as a result of a violation of this section from the Contractor to the District and the Contractor shall remain solely and exclusively responsible for compliance with all safety requirements and for the safety of all persons and property at the project site. Employees required to handle or use toxins, caustics and other harmful substances shall be instructed regarding the safe handling and use, and be made aware of the

potential hazards, personal hygiene, and personal protective measures required. All Work shall meet and be in compliance with standards and regulations set forth by Occupational Safety and Health Administration (OSHA), Florida Department of Labor and Employment Security and any and all other appropriate federal, state, local or District safety and health standards including but not limited to OSHA Excavation Safety Standards as enumerated in the "Trench Safety Act" Section 553.60, Florida Statutes.

12.1 EMERGENCIES

In emergencies affecting the safety or protection of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the District, is obligated to act to prevent threatened damage, injury or loss. If the Contractor believes that any significant change in the Work or Contract Document have been caused thereby, prompt written notice shall be given to the Engineer. If the Engineer determines that a change in the Contract Documents is necessary due to the action taken by the Contractor in the event of the emergency, a Field Order or Change Order will be issued.

ARTICLE 13 - DIFFERING SITE CONDITIONS

During the progress of the Work should the Contractor encounter differing site conditions, the Contractor shall within 48 hours, and before such conditions are disturbed, deliver to the District written notice of:

- a. Subsurface, submerged or latent physical conditions at the site differing materially from those indicated in this Contract, or;
- b. Unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in Work of the character provided for in this Contract.

The Engineer shall promptly investigate the conditions, and shall render a non-binding opinion as to whether such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the Work under this Contract, whether or not changed as a result of such conditions, and shall make a non-binding recommendation for an adjustment to the Contract Price, the Contract Time, or both. Contractor and the Executive Director shall meet and discuss the Engineer's recommendation and shall attempt to negotiate a mutually acceptable adjustment. If the Contractor and the Executive Director reach agreement, the terms of the adjustment shall be documented by a Change Order. If the Executive Director finds that a change to the work is warranted by differing site conditions but the Contractor does not agree with the proposed adjustment to the Contract Price, Contract Time, or both, the Executive Director may issue a Construction Change Directive. During the Engineer's investigation, the Contractor shall proceed with those portions of the Work which do not disturb such conditions. Engineer shall notify Contractor in writing when Work may resume in the area of the differing site conditions. If the Contractor disagrees with the Executive Director's findings regarding the non-existence of differing site conditions or the Executive Director's proposed adjustment, if any, the Contractor may file a Claim in accordance with Section 14.6 of these General Conditions within 30 days of receipt of the Executive Director's determination.

No Claim by the Contractor for an adjustment hereunder shall be allowed if asserted after final payment under this Contract.

ARTICLE 14 – CHANGES TO THE WORK; CLAIMS

The District may, without invalidation of the Contract, at any time, without notice to the Sureties, by Change Order or Construction Change Directive, make any change in the Work within the general scope of the Contract. The Engineer may, without invalidation of the Contract, at any time, without notice to the Sureties, by Field Order, make any change in the Work, not involving an adjustment in the Contract Price or an extension of the Contract Time, within the general scope of the Contract.

Upon receiving a Change Order, Construction Change Directive or a Field Order the Contractor will promptly proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents.

14.1 FIELD ORDERS

The Engineer may authorize minor variations in the Work from the requirements of the Contract Documents that do not involve extra cost or extension of time and are compatible with the design concept of the completed project as a functioning whole as indicated by the Contract Documents. These shall be accomplished by a Field Order and will be binding on the District and the Contractor who shall perform the Work involved promptly. If the District or the Contractor believes that a Field Order justifies an adjustment in the Contract Price or the Contract Time, the District or the Contractor may make a written Claim for such an adjustment as provided in Section 14.6.

14.2 CHANGE ORDERS

The District and the Contractor shall execute appropriate Change Orders covering:

- a) Changes in the Work where the District and the Contractor are in agreement with:
 1. the change in the Work;
 2. the amount of the adjustment, if any, in the Contract Price; and
 3. the amount of the adjustment, if any, in the Contract Time.
- b) Changes in the Work which are required because of acceptance of defective Work or correcting defective Work;
- c) Changes in the Contract Price or Contract Time, or both, which are agreed to by the parties; and
- d) Changes in the Contract Price or Contract Time, or both, which embody the substance of any written decision rendered by the Governing Board pursuant to the paragraph entitled "Claims" of these General Conditions provided that, in lieu of executing any such Change Order, an appeal may be taken from any decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, the Contractor shall carry on the Work and adhere to the progress schedule.

The District and the Contractor will execute appropriate Change Orders prepared by the Engineer covering changes in the Work to be performed as provided in the paragraph entitled "Differing Site Conditions," and Work performed in an emergency as provided in the paragraph entitled "Emergencies" and any other Claim for a change in the Contract Time or the Contract Price which is approved by the parties.

14.3 CONSTRUCTION CHANGE DIRECTIVES

The District may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Price and Contract Time being adjusted accordingly.

A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

If the Construction Change Directive provides for an adjustment to the Contract Price, the adjustment shall be based on one or more of the methods provided in Section 14.5.

Upon receipt of a Construction Change Directive, the Contractor shall promptly, but in no event more than ten (10) days after receipt, proceed with the change in the Work involved and advise the Engineer of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Price or Contract Time.

A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Price and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be deemed as a Change Order.

Pending final determination of the total cost of a Construction Change Directive to the District, amounts not in dispute for such changes in the Work shall be included in applications for payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. For any portion of such cost that remains in dispute, the Engineer will make an interim determination for purposes of monthly certification for payment for those costs. That determination of cost shall adjust the Contract Price on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Section 14.6.

When the District and Contractor agree with the determination made by the Engineer concerning the adjustments in the Contract Price and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

14.4 SURETY NOTIFICATION

It is the Contractor's responsibility to notify the Surety of any changes affecting the general scope of the Work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. The Contractor will furnish proof of such adjustment to the District.

14.5 CHANGE OF CONTRACT PRICE

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to the Contractor for performing the Work. All duties, responsibilities, and obligations assigned to or undertaken by the Contractor shall be at the Contractor's expense without change in the Contract Price.

If the Contractor wishes to make a Claim for an increase in the Contract Price, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 12.1.

If the Contractor believes that additional cost is involved for reasons including but not limited to (1) a written interpretation by the Engineer, (2) an order by the District to stop the Work where the Contractor was not at fault, (3) a Field Order (4) failure of payment by the District, (5) termination of the Contract by the District, (6) District's suspension, or (7) other reasonable grounds, a Claim shall be filed in accordance with Section 14.6.

The Contract Price may only be changed by a Change Order, Construction Change Directive or Written Amendment. Any Claim for an adjustment in the Contract Price shall be based on written notice delivered by the party making the Claim to the other party and to the Engineer promptly (but in no event later than ten (10) days) after the start of the occurrence or event giving rise to the Claim and stating the general nature of the Claim. Notice of the amount of the Claim with supporting data shall be delivered within thirty (30) days after the start of such occurrence or event (unless the Engineer allows additional time for Claimant to submit additional or more accurate data in support of the Claim) and shall be accompanied by Claimant's written statement that the adjustment Claimed covers all known amounts to which the Claimant is entitled as a result of said occurrence or event. All Claims for adjustment in the Contract Price shall be initially reviewed by the Engineer in accordance with the paragraphs entitled "Claims" of these General Conditions. No Claim for an adjustment in Contract Price will be valid unless submitted in accordance with this paragraph.

The value of any Work covered by a Change Order, Construction Change Directive or of any Claim for an adjustment in the Contract Price shall be determined in one of the following ways:

- a. Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved;
- b. By a mutually agreed lump sum; or
- c. The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the Work plus a fixed amount (Contractor's fee) to be agreed upon but not to exceed fifteen (15%) percent of the actual cost of such Work to cover

the cost of general overhead and profit.

Whenever the cost of any Work is to be determined pursuant to subparagraphs b. or c. above, the Contractor will submit in form prescribed by the Engineer an itemized cost breakdown together with supporting data.

The term Cost of the Work means the sum of all costs necessarily incurred and paid by the Contractor in the proper performance of the Work. Except as otherwise may be agreed to in writing by the District, such costs shall be in amounts no higher than those prevailing at the locality of the Project.

The Contractor, in connection with any proposal he makes for a Contract modification, shall furnish a price breakdown, itemized as required by the District. Unless otherwise directed, the breakdown shall be in sufficient detail to permit an analysis of all materials, labor, equipment, subcontract, and overhead costs, as well as profit, and shall cover all Work involved in the modification, whether such Work was deleted, added or changed. Any amount claimed for subcontracts shall be supported by a similar price breakdown. In addition, if the proposal includes a time extension, a justification therefore, shall also be furnished. The proposal, together with the price breakdown and time extension justification, shall be furnished by the date specified by the District.

14.6 CLAIMS AND CLAIMS DISPUTES

Claims must be initiated by written notice to the other party with a copy to the Engineer. The responsibility to substantiate the Claim shall rest with the party making the Claim.

Claims shall be referred initially to the Engineer for analysis and a non-binding recommendation. The Engineer shall provide his analysis and non-binding recommendation to both parties within a reasonable amount of time, not to exceed thirty (30) days, unless otherwise agreed by the parties. Upon receipt of the Engineer's analysis and non-binding recommendation, the Contractor and the Executive Director shall meet and attempt in good faith to negotiate a mutually acceptable resolution of the Claim. If the parties successfully negotiate a mutually acceptable resolution, the terms shall be documented by a Change Order or Written Amendment, as appropriate, and signed by both parties.

If the parties fail to reach a mutually acceptable resolution of the Claim, the Claimant shall have the right to have the Claim reviewed by the Governing Board. The Claimant shall file a written request for Governing Board review within thirty (30) days of the termination of negotiations. The Governing Board shall review the Claim at the next available regularly scheduled Governing Board meeting. The decision of the Governing Board shall be final and binding on the parties.

Pending final resolution of a Claim, except as otherwise agreed in writing or as otherwise provided in the General Conditions, the Contractor shall proceed diligently with performance of the Contract and the District shall continue to make payments in accordance with the Contract Documents.

14.7 TIME EXTENSION

The Contract Time or milestones may only be changed by a Change Order, Construction Change Directive or Written Amendment. The Contractor's right to proceed shall not be terminated nor the Contractor charged with liquidated damages and associated District expenses if the delay in the completion of the Work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including but not restricted to, acts of God, acts of the public enemy, acts of the District, acts of another Contractor in performance of a contract with the District, fires, floods, epidemics, quarantine restrictions, strikes, embargoes, unusually severe weather, or delays of Subcontractors or suppliers arising from unforeseeable causes beyond the control and without fault or negligence of both the Contractor and such Subcontractor or suppliers.

Any request by the Contractor for an extension of the Contract Time shall be based on a written notice delivered by the Contractor to the Executive Director with a copy to the Engineer promptly (but in no event later than ten (10) days) after the start of the occurrence or event giving rise to the request. The notice shall state the number of calendar days being requested and the reason (or reasons) for the need for the additional

time. The Engineer shall promptly investigate the stated reasons for the time extension, and shall render a non-binding opinion as to whether such reasons cause an increase in the time required for, performance of any part of the Work under this Contract and shall make a non-binding recommendation for an adjustment to the Contract Time. Contractor and the Executive Director shall meet and discuss the Engineer's recommendation and shall attempt to negotiate a mutually acceptable adjustment. If the Contractor and the Executive Director reach agreement, the terms of the adjustment shall be documented by a Change Order. If the Executive Director finds that a change to the Contract Time is warranted but the Contractor does not agree with the proposed adjustment to the Contract Time, the Executive Director may issue a Construction Change Directive. If the Contractor disagrees with the Executive Director's findings regarding the non-existence of grounds for a time extension or the Executive Director's proposed adjustment of the Contract Time, if any, the Contractor may file a Claim in accordance with Section 14.6 of these General Conditions within 30 days of receipt of the Executive Director's determination.

No Claim for an extension of the Contract Time will be valid if not submitted in accordance with this paragraph.

ARTICLE 15 - TERMINATION AND SUSPENSION

15.1 TERMINATION FOR CAUSE

The District may terminate the Contract if the Contractor:

- a. Persistently or repeatedly refuses or fails to supply enough skilled Workers or proper materials;
- b. Fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- c. Disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction;
- d. Is adjudged bankrupt, or if he makes a general assignment for the benefit of his creditors, or if a receiver is appointed on account of his insolvency;
- e. Repeatedly or consistently fails to meet project schedules;
- f. Otherwise is guilty of substantial breach of a provision of the Contract.

When any of the above reasons exist, the District may, without prejudice to any other rights or remedies of the District and after giving the Contractor and the Contractor's Surety seven (7) days written notice, terminate employment of the Contractor and may, subject to any prior rights of the Surety:

- a. Take possession of the site and all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- b. Accept assignment of subcontracts; and
- c. Finish the Work by whatever reasonable method the District may deem expedient.

When the District terminates the Contract for one of the reasons stated in this paragraph, the Contractor shall not be entitled to receive further payment until the Work is finished. If the unpaid balance of the Contract Sum exceeds costs of finishing the Work as determined by the District, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the District. This obligation for payment shall survive termination of the Contract. Upon a final determination that the termination was improper, it will be deemed converted to a termination for convenience and the Contractor's remedy for a wrongful termination will be limited to recovery of profit for the completed Work and reasonable termination costs.

15.2 TERMINATION FOR CONVENIENCE

The performance of Work under this Contract may be terminated by the District in accordance with this clause in whole, or from time to time in part, whenever the Engineer shall determine that such termination is in the best interest of the District. Any such termination shall be affected by delivery to the Contractor of a Notice of Termination specifying the extent to which performance of Work under the Contract is terminated, and the date upon which such termination become effective. After receipt of a Notice of Termination, and except as otherwise directed by the District, the Contractor shall:

- a. Stop Work under the Contract on the date and to the extent specified in the Notice of Termination;
- b. Place no further orders or subcontracts for materials, services, or facilities, except as may be necessary for completion of such portion of the Work under the Contract as is not terminated;
- c. Terminate all orders and subcontracts to the extent that they relate to the performance of Work terminated by the Notice of Termination;
- d. Assign to the District, in the manner, at the times, and to the extent directed by the District, all of the right, title and interest of the Contractor under the orders and subcontracts so terminated, in which case the District shall have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts;
- e. Settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts, with the approval or ratification of the District, to the extent required, which approval or ratification shall be final for all the purposes of this clause;
- f. Transfer title and deliver to the District, in the manner, at the times, and to the extent, if any, directed by the District: The fabricated or unfabricated parts, Work in process, completed Work, supplies, and other material produced as a part of, or acquired in connection with, the performance of the Work terminated by the Notice of Termination, and the completed or partially completed plans, drawings, information, and other property which, if the Contract had been completed, would have been required to be furnished to the District;
- g. Use best efforts to sell, in the manner, at the times, to the extent, and at the price directed or authorized by the District, any property of the types referred to in (f) above; provided , however, the Contractor shall not be required to extend credit to any purchaser, and may acquire any such property under the conditions prescribed by and at a price or prices approved by the District; and provided further, the proceeds of any such transfer or disposition shall be applied in reduction of any payments to be made by the District to the Contractor under this Contract or shall otherwise be credited to the price or cost of the Work covered by this Contract or paid in such other manner as the District may direct;
- h. Complete performance of such part of the Work as shall not have been terminated by the Notice of Termination; and;
- i. Take such action as may be necessary, or as the District may direct, for the protection and preservation of the property related to this Contract which is in the possession of the Contractor and in which the District has or may acquire an interest.

After receipt of a Notice of Termination, the Contractor shall submit to the District his termination Claim, in the form and with certification, prescribed by the District. The Contractor and the District may agree upon the whole or any part of the amount to be paid to the Contractor by reason of the total or partial termination of Work pursuant to this clause. This amount may include a reasonable allowance for profit on Work not performed, provided that such agreed amount, exclusive of settlement costs, shall not exceed the total Contract price as reduced by the amount of payments otherwise made and as reduced by the estimated cost of the Contractor's overhead and administrative expenses for Work not performed, and as further reduced by the Contract price of Work not terminated. The Contract shall be amended accordingly, and the Contractor

shall be paid the agreed amount in accordance with the Section entitled "Payment to Contractor."

15.3 SUSPENSION OF WORK

The District may, with or without cause, order the Contractor in writing to suspend, delay, or interrupt the Work, in whole or in part, for such period of time as the District may determine. An adjustment shall be made for increases in the cost of performance of the Contract, including profit on the increased cost of performance caused by suspension, delay, or interruption.

No adjustment shall be made to the extent:

- a. That performance is, was, or would have been so suspended, delayed, or interrupted by another cause for which the Contractor is responsible; or
- b. That an equitable adjustment is made or denied under another provision of this Contract.

Adjustments made in the cost of performance may have a mutually agreed, fixed, or percentage fee.

ARTICLE 16 – PAYMENT AND COMPLETION

16.1 INSPECTION AND ACCEPTANCE

All Work shall be subject to inspection and test by the District at all reasonable times and at all places prior to acceptance. Any such inspection and test is for the sole benefit of the District and shall not relieve the Contractor of the responsibility of providing quality control measures to assure that the Work strictly complies with the Contract requirements. No inspection or test by the District shall be construed as constituting or implying acceptance. Inspection or test shall not relieve the Contractor of responsibility for damage to or loss of the material or Work in place prior to acceptance and shall not in any way affect the continuing rights of the District after acceptance of the completed Work.

The presence or absence of a District Observer does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the Specifications without the District's written authorization.

The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the Work performed under the Contract conforms to Contract requirements. The Contractor shall maintain complete inspection records and make them available to the District (within fifteen [15] days upon request). All Work shall be conducted under the general direction of the Engineer and is subject to District inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract.

The Contract shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Engineer. The District may charge to the Contractor any additional cost of inspection or test when Work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The District shall perform all inspections and tests in a manner that will not unnecessarily delay the Work. Special, full size, and performance tests shall be performed as described in the Contract.

The Contractor shall, without charge, replace any material or correct any workmanship found by the District not to conform to the Contract requirements, unless the District consents to accept such material or workmanship with an appropriate adjustment in Contract price. The Contractor shall promptly segregate and remove rejected material from the premises. If the Contractor does not promptly replace rejected material or correct rejected workmanship, the District:

- a. May, by Contract or otherwise, replace such material or correct such workmanship and charge the cost thereof to the Contractor, or

- b. May terminate the Contractor's right to proceed in accordance with the paragraph of this section entitled "Termination for Default."

The Contractor shall furnish promptly, without additional charge, all facilities, labor and material reasonable need for performing such safe and convenient inspections and tests as may be required by the District. All inspections and tests by the District shall be performed in such manner as not to unnecessarily delay the Work. The District reserves the right to charge to the Contractor any additional cost of inspection or test when material or Workmanship is not ready at the time specified by the Contractor for inspection or test, or when reinspection or retest is necessitated by Work not complying with the Contract and/or any applicable federal, state or municipal laws, codes and regulations in connection with the prosecution of the Work.

Should it be considered necessary or advisable by the District at any time before acceptance of the entire Work to make an examination of Work already completed, by removing or tearing out the same, the Contractor shall, on request, promptly furnish all necessary facilities, labor, and material. If such Work is found to be defective or not conforming in any material respect, due to the fault of the Contractor or his Subcontractors, he shall defray all the expenses of such examination and of satisfactory reconstruction. If, however, such Work is found to meet the requirements of the Contract, an equitable adjustment shall be made in the Contract price to compensate the Contractor for the additional services involved in such examination and reconstruction and, if completion of the Work has been delayed thereby, he shall, in addition, be granted a suitable extension of time.

Unless otherwise provided in this Contract, acceptance by the District shall be made as promptly as practicable after completion and inspection of all Work required by this Contract, or that portion of the Work, that the District determines can be accepted separately. Acceptance shall be final and conclusive, except as regards latent defects, fraud, or such gross mistakes as may amount to fraud or as regards the District's rights under any warranty or guarantee. The District shall evidence acceptance of the Work in writing by approved request for "Final Payment" and by issuance of the Certificate of Final Completion.

16.2 SCHEDULE OF VALUES

The accepted schedule of values will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to or provided by the Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

16.3 PAYMENT TO CONTRACTOR

At least ten (10) days before each progress payment is scheduled (but not more often than once a month), the Contractor will submit to the Engineer for review an Application for Payment filled out and signed by the Contractor covering the Work completed during the period covered by the Application for Payment and supported by such documentation as the Engineer may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing by both parties, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation, satisfactory to the District, as will establish the District's title to the material and equipment and protect the District's interest therein, including applicable insurance. The Engineer will, within fifteen (15) days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application for Payment to the District or return the Application for Payment to the Contractor indicating in writing reasons for refusing to recommend payment. In the latter case, the Contractor may make the necessary corrections and resubmit the Application for Payment. The District will, within fifteen (15) days of presentation of an approved Application for Payment, pay the Contractor a progress payment on the basis of the approved Application for Payment less the retainage. The retainage shall be an amount equal to 10 percent of said estimate until 50 percent of the Work has been completed. At 50 percent completion, further partial payments shall be made in full to the Contractor and no additional amounts may be retained unless the Engineer certifies that the Work is not proceeding satisfactorily but amounts previously retained shall not be paid to the Contractor. At 50 percent completion or any time thereafter when the progress of the Work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than 10 percent of the value of the Work completed. Upon

substantial completion of the Work, any amount retained may be paid to the Contractor. When the Work has been substantially completed except for Work which cannot be completed because of weather conditions, lack of materials or other reasons which in the judgment of the District are valid reasons for noncompletion, the District may make additional payments, retaining at all times an amount sufficient to cover the estimated cost of the Work still to be completed or corrected.

16.4 CONTRACTOR'S WARRANTY OF TITLE

The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will pass to the District upon Contractor's receipt of the Payment, free and clear of all Liens; and that no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor or by any other person performing the Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

16.5 APPLICATION FOR PAYMENT REVIEW

The Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by the Engineer to the District based on the Engineer's on-site observations of the executed Work as an experienced and qualified design professional and on the Engineer's review of the Application for Payment and the accompanying data and schedules, that, to the best of the Engineer's knowledge, information and belief, that the Work has progressed to the point indicated; the quality of the Work is generally in accordance with the Contractor Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent test called for in the Contract Documents and any qualifications stated in the recommendation); and that the Contractor is entitled to payment of the amount recommended. However, by recommending any such payment the Engineer will not thereby be deemed to have represented that exhaustive or continuous on-site observations to check the quality or the quantity of the Work, were made or that the means, methods, techniques, sequences, and procedures of construction were reviewed or that any examination to ascertain how or for what purpose the Contractor has used the moneys paid or to be paid to the Contractor on account of the Contract Price were made, or that title to any Work, materials, or equipment has passed to the District free and clear of any Liens. The Contractor shall make the following certification on each request for payment:

I certify that to the best of my knowledge and belief that all items and amounts herein are correct; that all Work has been performed and/or material supplied in conformance with the Contract Documents, and that the balance due is appropriate for payment.

The Engineer may refuse to recommend the whole or any part of any payment if, in the Engineer's opinion, it would be incorrect to make such representations to the District. The Engineer may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspection or tests, nullify any such payment previously recommended, to such extent as may be necessary in the Engineer's opinion to protect the District from loss because:

- a. The Work is defective, or completed Work has been damaged requiring correction or replacement,
- b. The Work for which payment is requested cannot be verified,
- c. Claims or Liens have been filed or there is reasonable evidence indicating the probable filing thereof,
- d. The Contract Price has been reduced because of Modification,
- e. The District has been required to correct defective Work or complete the Work.
- f. Of unsatisfactory prosecution of the Work, including failure to clean up.

- g. Of persistent failure to cooperate with other contractors on the Project and persistent failure to carry out the Work in accordance with the Contract Documents.
- h. Of any other violation of, or failure to comply with, the provisions of the Contract Documents.

Upon completion and acceptance of the Work, the Engineer will issue a Certificate of Final Completion attached to the final Application for Payment that the Work has been accepted by the Engineer under the conditions of the Contract Documents. The entire balance found to be due the Contractor, including the retained percentages, but except such sums as may be lawfully retained by the District, will be paid to the Contractor within thirty (30) days of completion and acceptance of the Work.

16.6 SUBSTANTIAL COMPLETION

When the Contractor considers the entire Work ready for its intended use the Contractor shall notify the District and the Engineer in writing the entire Work is substantially complete, except for items specifically listed by the Contractor as incomplete, and request the Engineer issue a Certificate of Substantial Completion. Within a reasonable time thereafter, the District, the Contractor, and the Engineer shall observe the Work to determine the status of completion. If the Engineer does not consider the Work substantially complete, the Engineer will notify the Contractor in writing giving the reasons therefore. If the Engineer considers the Work substantially complete, the Engineer will prepare and deliver to the District a tentative Certificate of Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. The District shall have seven (7) days after receipt of the tentative certificate during which to make written objection to the Engineer as to any provisions of the certificate or attached list. If, after considering such objections, the Engineer concludes that the Work is not substantially complete, the Engineer will within fourteen (14) days after submission of the tentative certificate to the District notify the Contractor in writing, stating the reasons therefore. If, after consideration of the District's objections, the Engineer considers the Work substantially complete, the Engineer will within said fourteen (14) days execute and deliver to the District and the Contractor a definitive Certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as the Engineer believes justified after consideration of any objections from the District. At the time of delivery of the tentative Certificate of Substantial Completion, the Engineer will deliver to the District and the Contractor a written recommendation as to division of responsibilities pending final payment between the District and the Contractor with respect to security, operation, safety, maintenance, heat, utilities, insurance, and warranties. Unless the District and the Contractor agree otherwise in writing and so inform the Engineer in writing prior to the Engineer's issuing the definitive Certificate of Substantial Completion, the Engineers aforesaid recommendation will be binding on the District and the Contractor until final payment. The District shall have the right to exclude the Contractor from the Work after the date of Substantial Completion, but the District shall allow the Contractor reasonable access to complete or correct items on the tentative list.

16.7 FINAL APPLICATION FOR PAYMENT

After the Contractor has completed all remaining work and corrections as stated on the punch list to the satisfaction of the Engineer and delivered all maintenance and operating instruction, schedules, guarantees, bonds, certificates of inspection, as-built Project Drawings, marked-up record documents and other documents — all as required by the Contract Documents, and after the Engineer has indicated the Work is acceptable — the Contractor may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to the District) of all liens arising out of or filed in connection with the Work. In lieu thereof and as approved by the District, the Contractor may furnish receipts or releases in full; an affidavit of the Contractor that the releases and receipts include all labor, services, material and equipment for which the District or the District's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor or Supplier fails to furnish a release or receipt in full, the Contractor may furnish a bond or other collateral satisfactory to the District to indemnify the District against any lien. The Contractor shall not be required to provide any releases or waivers from claimants provided that the Payment Bond has been recorded and delivered in accordance with Section 5.1 and the Surety has provided the District with a written consent regarding the Project in accordance with Section 255.05(11),

Florida Statutes and such written consent has not been revoked.

16.8 USE AND POSSESSION PRIOR TO COMPLETION

The District shall have the right to take possession of or use any completed or partially completed part of the Work. Such possession or use shall not be deemed an acceptance of any Work under the Contract. If such prior possession or use by the District delays the progress of the Work or causes additional expense to the Contractor, an equitable adjustment in the Contract price or the time of completion will be made, and the Contract shall be modified in writing accordingly.

16.9 OTHER CONTRACTS

The District may undertake or award other contracts for additional Work, and the Contractor shall fully cooperate with such other contractors and District employees and carefully coordinate his own Work to such additional Work as may be directed by the District. The Contractor shall not commit or permit any act that will interfere with the performance of Work by any other contractor or by District employees.

16.10 MATERIAL AND WORKMANSHIP

Unless otherwise specifically provided in this Contract, all equipment, material and articles incorporated in the Work covered by this Contract are to be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in this Contract, reference to any equipment, material, article or patented process, by trade name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition, and the Contractor may, at his option, use any equipment, material, article or process which, in the judgment of the District, is equal to that named. The Contractor shall furnish to the District, for his approval, the name of the manufacturer, the model number and other identifying data and information respecting the performance, capacity, nature, and rating of the machinery and mechanical and other equipment that the Contractor contemplates incorporating in the Work. The Contractor shall furnish the District, for approval, full information concerning the material or articles that he contemplates incorporating in the Work. When so directed, samples shall be submitted for approval at the Contractor's expense. Machinery, equipment, material, and articles installed or used without required approval shall be at the risk of subsequent rejection. All Work under this Contract shall be performed in a skillful and workmanlike manner. The District may, in writing, require the Contractor to remove from the Work any employee the District deems incompetent, careless, or otherwise objectionable.

16.11 WARRANTY

The Contractor warrants to the District that all materials and equipment furnished under this Contract will be new and that all Work will be of good quality free from faults and defects and is in conformance with the Contract. All Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the District, the Contractor shall furnish satisfactory evidence as to the kind and quality of the materials and equipment. Any Work, equipment or materials that, within one (1) year from the date of substantial completion as determined by the District, is not in conformance with the Contract or is otherwise found to be defective, must be corrected or replaced, at Contractor's expense.

16.12 WORK AND STORAGE AREAS

All operations of the Contractor, including storage of materials upon District premises, shall be confined to areas authorized or approved by the District. Temporary buildings, storage sheds, shops, offices, etc., may be erected by the Contractor only with the approval of the District and shall be built with labor and materials furnished by the Contractor without expense to the District. Such temporary buildings and utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the Work. With the written consent of the District, such buildings and utilities may be abandoned and need not be removed.

The Contractor shall, under regulations prescribed by the District, use only established roadways or construct and use such temporary roadways as may be authorized by the District. Where materials are

transported in the prosecution of the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by a federal, state, or local law or regulations. When it is necessary to cross curbing or sidewalks, protection against damage shall be provided by the Contractor and any damaged roads, curbing or sidewalks shall be repaired by, or at the expense of the Contractor.

The Contractor shall not store materials, except those to be incorporated in the Work, on the Project site. Portions of completed Work and materials incorporated in the Work shall be deemed to have become the property of the District, but if any such materials or parts of the Work become lost, damaged, or destroyed by any means whatsoever, the Contractor shall satisfactorily repair and replace the same at his own cost. The Contractor shall be responsible for any materials of construction stored on the site, and shall replace, in kind, any such materials lost, damaged, or destroyed at his own expense.

The Contractor shall maintain, where and when needed, suitable and sufficient guard signs and barriers, and at night, suitable and sufficient lights for the prevention of accidents. Guard signs and lights shall comply with OSHA, FDOT, and Coast Guard regulations. Lights shall be shielded or directed to minimize unwanted light pollution.

The Contractor shall clear from within the limits of the District's Work area all objectionable debris necessary to conduct the Work operations. The Work area shall, at all times, be kept free from accumulation of waste material or rubbish, and prior to completion of the Work, all rubbish, tools, equipment and materials shall be removed from, on or about the site.

Upon completion of the Work specified herein and before acceptance and final payment shall be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish and temporary structures. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily. Any salvaged material not specified to be disposed of otherwise, shall become the property of the Contractor and shall be removed from the site.

16.13 TAX EXEMPTION

The District is exempted from payment of Florida State Sales and Use taxes and Federal Excise tax. The Contractor, however, shall not be exempted from paying Florida State Sales and Use taxes to the appropriate governmental agencies or for payment by the Contractor to supplier for taxes on materials used to fulfill its Contractual obligations with the District.

The Contractor shall be responsible and liable for the payment of all of its FICA/Social Security and other taxes resulting from this Contract.

16.14 RECORDS

The Contractor shall maintain records and the District shall have inspection and audit rights as follows:

- a. Maintenance of records: The Contractor shall maintain all financial and non-financial records and reports directly or indirectly related to the negotiation or performance of this Contract including supporting documentation for any service rates, expenses, research or reports. Such records shall be maintained and made available for inspection for a period of five (5) years from completing performance and receiving final payment under this Contract.
- b. Examination of records: The District or its designated agent shall have the right to examine in accordance with generally accepted governmental auditing standards all records directly or indirectly related to this Contract. Such examination may be made only within five (5) years from the date of final payment under this Contract and upon reasonable notice, time, and place.

Records that relate to any litigation, appeals, or settlements of Claims arising from performance under this Contract shall be made available until a final disposition has been made of such litigation, appeals, or Claims.

- c. Cost and pricing data: The Contractor, by executing this Contract, certifies to truth-in-negotiation, specifically that wage rates and other factual unit costs supporting the consideration are accurate, complete, and current at the time of Contracting. The Contractor agrees that the District may adjust the consideration for this Contract to exclude any significant sums by which the consideration was increased due to inaccurate, incomplete, or non-current wage rates and other actual unit costs. The District shall make any such adjustment within one (1) year following the termination of this Contract.

16.15 PUBLIC ACCESS

The Contractor shall allow public access to all project documents and materials in accordance with the provisions of Chapter 119, Florida Statutes. Should the Contractor assert any exemptions to the requirements of Chapter 119 F.S. and related statutes, the burden of establishing such exemption, by way of injunctive or other relief as provided by law, shall be upon the Contractor.

16.16 NONDISCRIMINATION

The Contractor hereby assures that no person shall be excluded on the grounds of race, color, creed, national origin, disability, age or sex from participation in, denied the benefits of, or otherwise be subjected to discrimination in any activity under this Contract. The Contractor shall take all measures necessary to effectuate these assurances.

16.17 FORCE MAJEURE

Notwithstanding any provisions of this Contract to the contrary, the parties shall not be held liable if failure or delay in the performance of this Contract arises from fires, floods, strikes, embargoes, acts of the public enemy, unusually severe weather, outbreak of war, restraint of Government, riots, civil commotion, force majeure, act of God, or for any other cause of the same character which is unavoidable through the exercise of due care and beyond the control of the parties.

ARTICLE 17 – VALUE ENGINEERING

17.1 GENERAL

The Contractor is encouraged to develop, prepare, and submit Value Engineering Proposals (VEP's) voluntarily. The Contractor shall share in any Contract savings realized from accepted VEP's in accordance with the paragraph below.

17.2 VEP PREPARATION

As a minimum, the Contractor shall include in each VEP the information described in subparagraphs 1 through 8 below:

1. A description of the difference between the existing Contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.
2. A list and analysis of the Contract requirements that must be changed if the VEP is accepted, including any suggested specification revisions.
3. A separate, detailed cost estimate for: 1) the affected portions of the existing contract requirement, and 2) the VEP. The cost reduction associated with the VEP shall take into account the Contractor's costs, including any amount attributable to subcontracts under the paragraph below.
4. A description and estimate of costs that District may incur in implementing the VEP, such as test and evaluation, operating, maintenance and support costs.

5. A prediction of any effects the proposed change would have on the operating costs of the District.
6. A statement of the time by which a Contract amendment accepting the VEP must be issued in order to achieve the maximum cost reduction, noting any effect on the Contract completion time.
7. Identification of any previous submissions of the VEP, including the dates submitted, the Contract numbers involved, and previous District actions.
8. Any design change to the plans and specifications must be prepared under the supervision of a Professional Engineer in the State of Florida at the Contractor's expense. Such changes shall adhere to Florida law and the Florida Board of Professional Engineer's rules for taking over or modifying another Engineer's work. The Contractor will submit signed and sealed drawings and calculations to the District's Engineer (and if applicable, the project's Engineer of Record) for approval. Drawings and calculations will be signed and sealed by a professional Florida Engineer.

17.3 SUBMISSION

The Contractor shall submit VEP's to the Engineer.

17.4 EXECUTION

The Engineer shall notify the Contractor of the status of the VEP within fourteen (14) calendar days after Engineer receives it. If additional time is required, the Engineer shall provide the reason for the delay and the expected date of the decision. The District will process VEP's expeditiously; however, it shall not be liable for any delay in acting upon a VEP.

If the VEP is not accepted, the Engineer shall notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VEP, in whole or in part, at any time before it is accepted by the District. The Engineer may require that the Contractor provide written notification before undertaking significant expenditures for VEP effort.

Any VEP may be accepted, in whole or in part, by the District's execution of an amendment to this Contract citing this clause: the District may accept the VEP, even though an agreement on price reduction has not been reached, by issuing the Contractor a Construction Change Directive to proceed with the change. Until a Construction Change Directive is issued, or a Contract amendment applies a VEP to this Contract, the Contractor shall perform in accordance with the existing Contract. The District's decision to accept or reject, all or part of any VEP, shall be final and not subject to the Disputes clause or otherwise subject to litigation.

17.5 SHARING

The Contractor's share of savings is determined by subtracting District's costs (i.e. test and evaluation, operating, maintenance and support costs, etc.) from Contract savings and multiplying the result by fifty percent (50%).

Payment of any share due the Contractor for use of a VEP on this Contract shall be authorized by an amendment to this Contract to accept the VEP and reduce the Contract price by the amount of the Contract savings. This amendment will also add the Contractors share of savings to the Contract Price.

The Contractor is encouraged to include an appropriate Value Engineering clause in any subcontract and to share any cost savings with its Subcontractors.

Substitution of materials and/or equipment in lieu of that specified shall not necessarily be considered a VEP. To be considered as a VEP, the substitution must involve cost savings other than a simple reduction in price of the equipment or materials.

ARTICLE 18 – RESPONSIBILITIES

18.1 DISTRICT'S RESPONSIBILITIES

Except as otherwise provided in these General Conditions, the District will issue all communications to the Contractor through the Engineer.

The District will furnish the data required of the District under the Contract Documents promptly and shall make payments to the Contractor promptly when they are due as provided in these General Conditions.

Unless otherwise indicated, the District's duties in respect of providing lands and easements are set forth elsewhere in these General Conditions.

In addition to the District's rights to request changes in the Work in accordance with the section entitled "CHANGES IN THE WORK" of the General Conditions, the District will be obligated to execute necessary Change Orders.

The District will not supervise, direct or have control or authority over, nor be responsible for, the Contractor's means, sequences or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the Contractor to comply with Laws and Regulations applicable to the performance of the Work. The District will not be responsible for the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

18.2 ENGINEER'S RESPONSIBILITIES

a. District's Representative

The Engineer will be the District's representative during the construction period. The duties and responsibilities and the limitations of the authority of the Engineer as the District's representative during construction are set forth in the Contract Documents and shall not be extended without written consent of the District and the Engineer.

b. Visits to the Site

The Engineer will make visits to the site on a regular basis at intervals appropriate to the various stages of construction as the Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and quality of the various aspects of the Contractor's executed Work. Based on information obtained during such visits and observations, the Engineer will endeavor for the benefit of the District to determine, in general, if the Work is proceeding in accordance with the Contract Documents. The Engineer's efforts will be directed toward providing the District a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and on-site observations, the Engineer will keep the District informed of the progress of the Work and will endeavor to guard the District against defects and deficiencies in the Work.

The Engineer's visits and on-site observations are subject to all the limitations on the Engineer's authority and responsibility set forth in these General Conditions, and particularly, but without limitation, during or as a result of the Engineer's on-site visits or observations of the Contractor's Work the Engineer will not supervise, direct, control or have authority over or be responsible for the Contractor's techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of the Contractor to comply with Laws and Regulations applicable to the furnishing or performance of the Work.

c. Clarifications and Interpretations

The Engineer will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as the Engineer may determine necessary, which shall be consistent with the intent or reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on the District and the Contractor. If the District or the Contractor believes that a written clarification or interpretation

justifies an adjustment in the Contact Price or the Contract Time, the District or Contractor may make a written Claim therefore as provided in these General Conditions. The Engineer and the District shall not be held responsible for all ambiguities (latent and patent) found in the Contract Documents.

ARTICLE 18 - SUPPLEMENTARY CONDITIONS

18.1 CONSTRUCTION DRAWINGS AND SPECIFICATIONS DISTRIBUTION

The Contractor will be supplied with four (4) copies of the Project Drawings and Specifications. Additional copies can be obtained by the Contractor at reproduction cost. The Contractor shall have one (1) set of the Project Drawings and Specifications at the job site at all times.

18.2 "AS-BUILT" CONTRACT DRAWINGS

The Contractor shall maintain a separate set of full-size Contract Drawings, marked up in red, to indicate as-built conditions. These Drawings shall be maintained in a current condition at all times until completion of the Work and shall be available for review by the Engineer at all times. All variations from the Contract Drawings, for whatever reasons, including those occasioned by modifications, optional materials, and the required coordination between trades, shall be indicated. These variations shall be shown in the same general detail utilized in the Contract Drawings. Upon completion of the Work, the marked-up Drawings shall be furnished to the Engineer prior to acceptance of the Work. The Engineer reserves the right to withhold final payment until acceptable as-built Contract Drawings have been submitted.

18.3 RETAINAGE INVESTMENT

The retainage amount withheld in the Contractor's Application for Payments shall be invested by the District at the current rate provided by the State Board of Administration for the duration of the Project. If the Project is completed within the time limits specified and at the Contract Price specified, subject to any authorized modification thereto, the interest earned on the retainage shall be paid to the Contractor. Any expenses charged by the financial institution for the retainage investment account will be deducted from the interest earned on the account. Payment of the interest to the Contractor shall be made with the final payment, after the Engineer certifies the Work, including incomplete minor items remaining after substantial completion, has been completed within the time specified and within the current Contract Price. If the Contractor does not satisfy the time and/or price conditions, the District will retain the interest earned on retainage.

18.4 PERMITS

The District will supply environmental license agreements and permits required by the Florida Department of Environmental Protection (**APPENDIX B**) and the U. S. Army Corps of Engineers (**APPENDIX C**). The Contractor is responsible for all other permits required during construction.

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SECTION 00 73 19

SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This specification covers the requirements for safety and occupational health requirements for the protection of the Contractor, Engineer personnel, property and other resources.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only. All publications are "Latest Edition" unless specified otherwise.

- A. American National Standards Institute (ANSI)
ANSI A10.32 Personal Fall Protection for Use in Construction and Demolition Operations
- B. American Society of Safety Professionals (ASSE)
ASSE Z359.1 The Fall Protection Code
ASSE A10.34 Protection of the Public on or Adjacent to Construction Sites
- C. American Society of Mechanical Engineers (ASME)
ASME B30.22 Articulating Boom Cranes
ASME B30.3 Tower Cranes: Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings
ASME B30.5 Mobile and Locomotive Cranes
ASME B30.8 Floating Cranes and Floating Derricks
- D. National Fire Protection Association (NFPA)
NFPA 10HB10 Portable Fire Extinguishers
NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations
NFPA 70 National Electrical Code
NFPA 70E Standard for Electrical Safety in the Workplace
- E. U.S. Army Corps of Engineers (USACE)
EM 385-1-1 Safety and Health Requirements
- F. U.S. National Archives and Records Administration (NARA)
29 CFR 1910.146 Permit-required Confined Spaces
29 CFR 1926 Safety and Health Regulations for Construction
29 CFR 1926.500 Fall Protection

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES

- A. Accident Prevention Plan (APP)
 - 1. Submit the APP to the Engineer for information only at or before the scheduled pre-construction meeting.
- B. Activity Hazard Analysis (AHA)
 - 1. Submit the AHA for review at least fifteen (15) calendar days prior to the start of each phase.
- C. Accident Reports
 - 1. Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."
- D. Drug Free Work Place Compliance
 - 1. Submit the Drug Free Work Place Compliance documentation form (SECTION 00 73 19A DRUG-FREE WORKPLACE FORM) to the Engineer at or before the scheduled pre-construction meeting.
- E. Personnel Qualification Requirements
 - 1. Submit personnel qualifications per requirements for the Site Safety and Health Officer (SSHO) and Crane Operators (Paragraph 1.4.A) at or before the scheduled pre-construction meeting.

1.4 SITE QUALIFICATIONS, DUTIES AND MEETINGS

- A. Personnel Qualifications
 - 1. Site Safety and Health Officer (SSHO)
 - a. Site Safety and Health Officer (SSHO) shall be provided at the work site at all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The Contractor Quality Control (QC) person can be the SSHO on this project. The SSHO shall meet the following requirements:
 - 1) A minimum of 5 years safety work on similar projects.
 - 2) 30-hour OSHA construction safety class or equivalent within the last 5 years.
 - 3) An average of at least 24 hours of formal safety training each year for the past 5 years.
 - 4) Competent person training as needed.
 - 2. Crane Operators
 - a. Crane operators shall meet the requirements in USACE EM 385-1-1, Section 16. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 50,000 pounds or greater, crane operators shall be designated as

qualified by a source that qualifies crane operators (i.e., union, a government agency, or and organization that tests and qualifies crane operators). Proof of current qualification shall be provided.

3. Site Safety and Health Officer (SSHO)/Superintendent Personnel Duties
 - a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily quality control report.
 - b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.
 - c. Maintain applicable safety reference material on the job site.
 - d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
 - e. Implement and enforce accepted APPS and AHAs.
 - f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.
 - g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

B. Meetings

1. Preconstruction Conference
 - a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
 - b. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Engineer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.
 - c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.
 - d. The functions of a Preconstruction conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

2. Safety Meetings

- a. Safety meetings shall be conducted and documented as required by EM 385-1-1. Minutes showing contract title, signatures of attendees and a list of topics discussed shall be attached to the Contractor's daily quality control report.

1.5 ACCIDENT PREVENTION PLAN (APP)

- A. The Contractor shall use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plans". Specific requirements for some of the APP elements are described below. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Engineer considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer and any designated CSP and/or CIH.
- B. Submit the APP to the Engineer at or before the preconstruction conference for information.
- C. Once received by the Engineer, the APP and attachments will be part of the Contract. Disregarding the provisions of this Contract or the received APP will be cause for stopping of work, at the discretion of the Engineer, until the matter has been rectified.
- D. Once work begins, changes to the received APP shall be made with the knowledge and concurrence of the Engineer, project superintendent, SSHO and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the Engineer within 24 hours of discovery. Eliminate/remove the hazard. In the interim, all necessary action shall be taken to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSE A10.34) and the environment.
- E. Copies of the accepted plan will be maintained at the resident engineer's office and at the job site.
- F. The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

1.6 ACTIVITY HAZARD ANALYSIS (AHA)

- A. The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least fifteen (15) calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

- B. The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.
- C. The activity hazard analyses shall be developed using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Engineer.

1.7 DISPLAY OF SAFETY INFORMATION

- A. Within 1 calendar day after commencement of work, erect a safety bulletin board at the job site. The safety bulletin board shall include information and be maintained as required by EM 385-1-1, Section 01.A.07.

1.8 SITE SAFETY REFERENCE MATERIALS

- A. Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

1.9 EMERGENCY MEDICAL TREATMENT

- A. Contractors will arrange for their own emergency medical treatment. Engineer has no responsibility to provide emergency medical treatment.

1.10 REPORTS

- A. Accident Reports
 - 1. For recordable injuries and illnesses, and property damage accidents resulting in at least \$2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the USACE Accident Investigation Report Form 3394 and provide the report to the Engineer within 5 calendar day(s) of the accident. The Engineer will provide copies of any required or special forms.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 CONSTRUCTION AND/OR OTHER WORK

- A. The Contractor shall comply with USACE EM 385-1-1, NFPA 241, the APP, the AHA, Federal and/or State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard shall prevail.

3.2 PRE-OUTAGE COORDINATION MEETING

- A. Contractors are required to apply for utility outages at least fifteen (15) days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Engineer and the Public Utilities representative to review the scope of work

and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

3.3 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

- A. The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.
- B. Training
 - 1. The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, Section 21.C.
- C. Fall Protection Equipment and Systems
 - 1. The Contractor shall enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Employees shall be protected from fall hazards as specified in EM 385-1-1, Section 21. In addition to the required fall protection systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 5.J. and 5.K. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with all applicable requirements.
- D. Personal Fall Arrest Equipment
 - 1. Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI A10.32 and ASSE Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 6 feet. The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.
- E. Existing Anchorage
 - 1. Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ASSE Z359.1. Existing horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

F. Horizontal Lifelines

1. Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.502(d)(15)).

G. Guardrails and Safety Nets

1. Guardrails and safety nets shall be designed, installed and used in accordance with EM 385-1-1, 29 CFR 1926.502(b) and 29 CFR 1926.502(c).

H. Rescue and Evacuation Procedures

1. When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

3.4 EQUIPMENT

A. Material Handling Equipment

1. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.
2. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.
3. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

B. Weight Handling Equipment

1. Cranes and derricks shall be equipped as specified in EM 385-1-1, Section 16.
2. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.
3. The Contractor shall comply with ASME B30.5 for mobile and locomotive cranes, ASME B30.22 for articulating boom cranes, ASME B30.3 for construction tower cranes, and ASME B30.8 for floating cranes and floating derricks.
4. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.
5. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 Section 11 and ASME B30.5 or ASME B30.22 as applicable.

6. Crane suspended personnel work platforms (baskets) shall not be used unless the Contractor proves that using any other access to the work location would provide a greater hazard to the workers or is impossible. Personnel shall not be lifted with a line hoist or friction crane.
7. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.
8. All employees shall be kept clear of loads about to be lifted and of suspended loads.
9. The Contractor shall use cribbing when performing lifts on outriggers.
10. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.
11. A physical barricade must be positioned to prevent personnel from entering the counterweight swing (tail swing) area of the crane.
12. Certification records which include the date of inspection, signature of the person performing the inspection, and the serial number or other identifier of the crane that was inspected shall always be available for review by Engineer personnel.
13. Written reports listing the load test procedures used along with any repairs or alterations performed on the crane shall be available for review by Engineer personnel.
14. Certify that all crane operators have been trained in proper use of all safety devices (e.g. anti-two block devices).

3.5 ELECTRICAL

A. Conduct of Electrical Work

1. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Engineer and Station Utilities for identification. The Engineer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

B. Portable Extension Cords

1. Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70.

3.6 WORK IN CONFINED SPACES

A. The Contractor shall comply with the requirements in Section 34.A of USACE EM 385-1-1 and OSHA 29 CFR 1910.146 Any potential for a hazard in the confined space requires a permit system to be used.

1. Entry procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 34.A.05 of USACE EM 385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.
2. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its' action level.

3.7 DRUG-FREE WORK PLACE

A. The Contractor shall submit required certification (see SECTION 00 73 19A DRUG-FREE WORKPLACE FORM) that they have or will establish a drug free work place in accordance with Florida Statute 287.087.

-End of Section-

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SECTION 00 73 19A

DRUG-FREE WORKPLACE FORM

The undersigned vendor in accordance with Florida Statute 287.087 hereby certifies

That _____ does:
(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation programs, employee assistance programs and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, plea of guilty or nolo contendere to, any violation of Chapter 1893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program, if such is available in the employee's community, by any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

Contractor's Signature

Date

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Change in Contract Price:

Original Contract Price: \$ _____
Current Contract Price adjusted by previous Change Order \$ _____
The Contract Price due to this Change Order will be (Increased) (Decreased) by: \$ _____
The new Contract Price including this Change Order will be: \$ _____

Change in Contract Time:

Original Completion Date: _____
Current completion date adjusted by previous Change Order: _____
The Contract time due to this Change Order will be (Increased or Decreased) by the indicated number of calendar days: _____
The new Contract Time including this Change Order will be: _____

Recommended By: _____
Authorized Signature: _____
Title: _____

Date: _____

Ordered By: _____
Authorized Signature: _____
Title: _____

Date: _____

Accepted By: _____
Authorized Signature: _____
Title: _____

Date: _____

--End of Section--

SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Description

1. This project generally entails dredging approximately 185,200 cubic yards of material from Reach I of the Intracoastal Waterway (ICWW) in Flagler County, Florida. The ICWW maintenance dredging area extends from ICWW Cut F-2 STA 32+00 through ICWW Cut-F10 STA 12+52. This maintenance work will include excavation of the ICWW channel to target elevations of -14 feet (ft) mean lower low water (MLLW) (project depth of -12 feet and 2-foot allowable over dredge). In accordance with permit conditions, material shall be dredged via the use of either a mechanical or hydraulic dredge to remove all material (inclusive of all in-channel debris) feasible from the dredge template. Dredged material shall be offloaded at the ±44-acre dredged material management area (DMMA) FL-3 located in Palm Coast, Florida
2. **APPENDIX D** provides 2018 reconnaissance reports for DMMA FL-3. The 2014 bathymetric survey, used for design quantity estimates, is provided in **APPENDIX F** and can be provided to the Contractor in CAD format on request.

B. Work Schedule

1. The Contractor will have **180** calendar days from the Notice to Proceed to complete the project, inclusive of the alternate bid item (if awarded). Construction of the project is funded and administered by the Florida Inland Navigation District.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

--End of Section--

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SECTION 01 29 00

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes requirements to be used for the basis of measurement and payment. The Contractor shall receive and accept the compensation provided in the Bid Schedule as full payment for furnishing all materials, labor, tools and equipment for performing all operations necessary to complete the Work under the Contract. Payment for all loss or damages arising from the nature of the Work, or from the action of the elements or any unforeseen difficulties, encountered during the Work until final acceptance by the District is also included in the compensation provided in the SECTION 00 41 63A BID SCHEDULE.
- B. Bid prices for the various work items are to establish a total price for completing the project in its entirety. The Contractor shall include in the Bid, any item for which a separate pay item has not been established in the Bid Schedule, to reflect the total price for completing the project in its entirety, as depicted on the Project Drawings and specified herein. Unless there is a specific line item for administrative costs, such as Project Management, Quality Control and Safety, allocate such costs proportionally across all line items. The Contractor must include all costs for this project to complete all work, in total, designated in the project drawings, specifications, and bid schedule.

1.2 SUBMITTALS

The following submittals shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES. Bring the following administrative submittal items to the Preconstruction Meeting:

- A. Schedule of Values
 - 1. The Contractor will submit a printed schedule on Contractor's standard form in electronic printout for review and approval by the Engineer at least fifteen (15) calendar days prior to the first Payment Application. List payment items sequentially in the same order as they appear in the Bid Form.
 - 2. Lump sum items are to have adequate breakdown of components to facilitate evaluating completeness for payment. Breakdown components shall appear directly under the payment item heading to which they apply.
 - 3. The Contractor will revise the schedule to list approved Change Orders, with each Application for Payment. The Contractor will submit a revised Schedule of Values in accordance with this specification.

- B. Construction Schedule

At or before the scheduled pre-construction meeting, the Contractor shall prepare and submit to the Engineer for approval a draft construction schedule in the form of a progress chart. The Contractor shall indicate on the progress chart, the bid items contained in the Contract, showing the amount of the item and its relative weighted percentage of the total Contract. The Contractor may separate features of Work under each item to show salient work elements such as procurement of materials, plants, and equipment, and supplemental work elements such as excavation, reinforcing steel, backfill, etc. These salient features shall total to the cost and weighted percentages shown for the major bid item. When quantity variations impact the

weighted percentages of a separate item by five percent or more, the Contractor shall revise the Contract progress charts to accurately reflect the impact of such variations.

- C. Revised Construction Schedule
 - 1. Submit copies of the updated construction schedule to the Engineer for each Payment Application. Changes that have occurred since the last update shall be clearly marked.
- D. Payment Surveys
 - 1. With each Payment Application, the Contractor shall submit both hard and digital copies of payment surveys to the engineer for review and approval. The Contractor will only be paid for the volumetric change between payment surveys as compared to the Engineer-Approved pre-construction bathymetric survey and payment survey within the defined dredged template boundary (see SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT).

1.3 MEASUREMENT

- A. Measurement for Payment for this Project is based upon completion of the Work in accordance with Project Drawings and Specifications for each of the items. Field measurements will determine the percent complete of work components when listed on the approved Schedule of Values. Measurements will be made using linear, area, volumetric units, or by unit quantity count, as listed on the SECTION 00 41 63A BID SCHEDULE for unit quantity items and at the Engineer's sole discretion for lump sum items.
- B. The Contractor will take all measurements and compute quantities. The Engineer will verify measurements and quantities as appropriate.
- C. The Contractor will provide all necessary equipment, workers, and survey personnel as required.
- D. Measurement Devices:
 - 1. Weigh Scales: Inspected, tested, and certified by the applicable State Weights and Measures department within the past year.
 - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
 - 3. Metering Devices: Inspected, tested, and certified by the applicable State department within the past year.
- E. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord, in feet and hundredths of a foot.
- F. Measurement by Area: Measured by square dimension using mean length and width or radius, in feet and hundredths of a foot.
- G. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness, in feet and hundredths of a foot.
- H. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.4 BASIS FOR PAYMENT

- A. Unless indicated on the Contract Documents, all work indicated on the Project Drawings and specified in the Bid Documents and Contract shall be included in the Contract Sum indicated on the Bid Form.
- B. Prices stated in the Bid Schedule shall include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the Work as depicted on the Project Drawings and specified herein. The basis of payment for an item in the amount shown in the Bid Schedule shall be in accordance with the description of that item provided in this Section.
- C. The Contractor's attention is again called to the fact that the quotations for the various items of work are intended to establish a total price for completing the Work in its entirety. Should the Contractor feel that the cost for any item of work has not been established by the Bid Form or Payment Items, the Contractor shall include the cost for that work in another applicable bid item, in order that the Proposal for the project reflects the total price to be paid by the District for completing the Work in its entirety.
- D. Changes in the Contract Price and Contract Time require prior authorization in writing from the District and the Engineer, in the form of a Change Order or Work Change Directive. The Contractor is responsible for verification of all bid quantities and to report to the Engineer any discrepancies found prior to ordering materials and/or equipment for construction. Refer to SECTION 00 72 00 GENERAL CONDITIONS.
- E. The various major items of Work will be paid for either by 1) the quantity of the actual Work complete by the Contractor and accepted by the Engineer multiplied by the unit price or 2) the lump sum amount indicated for each Bid Schedule Item. The Work shall include all miscellaneous and ancillary items necessary to construct a complete and functional Project.

1.5 SCHEDULE OF VALUES

- A. The below descriptions generally outline the scope of work required for those elements of the Work to be paid for under each item listed in the Schedule of Bid Items. The Contractor shall submit a Schedule of Values per SECTION 00 72 00 GENERAL CONDITIONS and shall be consistent with SECTION 01 33 00 SUBMITTAL PROCEDURES.

1.6 PAYMENT ITEMS

- A. Basis of Payment for Unit Price Items
 - 1. Quantities indicated in the Bid Form (SECTION 00 41 63 BID FORM) are for bidding and Contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer determine payment.
 - 2. If the actual Work requires more or fewer quantities than those quantities indicated, the Contractor will provide the required quantities at the unit prices contracted.
 - 3. If the actual Work requires a fifty percent (50%) or greater change in quantity than those quantities indicated, the District or Contractor may claim for a Contract Price adjustment for that item.

B. Basis of Payment for Lump Sum Items

1. Payment for lump sum items for this Project will be made at the lump sum price named in the Contract. The Contract price shall constitute full compensation for each item, including all required labor, products, tools, equipment, plant, transportation, services and incidentals, erection, application or installation of an item of the Work, overhead and profit as required to complete the item as indicated in the Project Drawings and Specifications.

C. Progress Payments

1. One progress payment will be made upon completion of mobilization to the site.
2. Subsequent progress payments will be made upon receipt and acceptance of surveys used for progress payments. Surveys will be evaluated based on the volumetric change (within the accepted dredge template) between the Engineer-approved pre-dredge bathymetric survey and payment, post-dredge surveys (see SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT). A copy of the original bathymetric survey, completed by Morgan & Eklund, Inc., February 2016 is included in **APPENDIX F** of these specifications. An electronic version of this survey is available upon request. The Contractor is required to have all surveys performed by a Florida Registered Professional Surveyor. Sounding depths used for determining of acceptance surveys will be derived from multi-beam survey data collected and processed in accordance the latest USACE specifications for dredging measurement and payment surveys (200 kHz acoustic frequency) and using a median depth sort with a 10- by 10-foot matrix. Once accepted by the Engineer, the pre-bathymetric survey will be used to evaluate all progress payments in which the Contractor is requesting payment for dredging.
3. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by a unit price of the item. Final payment for unit price Work will be accomplished by reconciliation Change Orders to adjust quantities at the end of the Project.
4. No payment, partial or complete, will be made for defective or rejected Work. The Contractor will not receive payment for any material dredged outside of the horizontal or vertical limits of the dredge template nor any material that falls within the setback requirements of the regulatory permits.
5. No separate payment will be made for additional labor and materials required for accomplishing the Project in its entirety. All labor, materials, and incidental costs shall be included for payment as part of the Proposal and the Contract, under the several scheduled items of the Project.

1.7 DESCRIPTION OF WORK ITEMS AND SCHEDULE OF VALUES

- A. The following Work items are described in order to assist the Contractor in the preparation of the Proposal and to assist the Engineer in the evaluation of Bids and evaluation of progress payments during construction. The Contractor shall submit a Schedule of Values containing the work components of each Bid Item of the Proposal for approval prior to the first Payment Application for Payment for work in progress.
- B. No separate payment will be made for any testing and/or surveying performed to complete the Work; costs for testing and/or surveying (as applicable), are included in the cost to complete the Work item.

- C. Submittals are considered part of the Contractor's administrative and overhead costs. The Contractor will not be compensated separately for submittals required by these specifications or those listed on the Project Drawings.
- D. Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated there with shall be included in the applicable unit prices or lump-sum prices contained in the Bid Schedule.
- E. For the purpose of the work items listed below, complete installation will mean the inclusion of demolition work, site restoration to existing or better conditions, and testing, all included in the cost to complete the work item (as applicable).
- F. All work shall be completed in accordance with all applicable permits and District requirements.
- G. The following provides a description of the Work listed in the Schedule of Bid Items. This description is not intended to be a complete and all-inclusive record of the required work items. Work includes but is not limited to the following:

H. Bid Item Description

1. Lump Sum Items

- a. **Insurance (Bid Item No. 0001)** – Payment will be as a lump sum (LS) for costs associated with and incidental to acquiring and maintaining the appropriate insurance requirements for this project as listed in SECTION 00 72 00 GENERAL CONDITIONS.
- b. **Mobilization and Demobilization (Bid Item No. 0002)** - Payment for this item will be made as a lump sum (LS) for costs associated with or incidental to mobilization, demobilization, and establishment of initial project management and coordination. Sixty percent (60%) of the lump sum payment will be payable to the Contractor upon completion of the mobilization at the work site with the remaining forty percent (40%) payable upon the completion of demobilization. The Contractor shall breakdown the cost for Mobilization and Demobilization in the Schedule of Values for Engineers approval prior to the first Payment Application.
- c. **Environmental Protection and Erosion Control (Bid Item No. 0003)** – Payment will be as a lump sum (LS) for full compensation for furnishing and installing all materials, labor, and equipment required for compliance with all permits and specifications related to environmental protection. This includes, but not limited to, all turbidity, water quality monitoring and testing, erosion control, sediment chemistry testing, associated reporting of data, manatee observation, backfilling and marsh plant replanting etc. The Contractor shall breakdown the cost for Environmental Protection in the Schedule of Values for Engineer approval prior to the first application for payment. See SECTION 01 35 43 ENVIRONMENTAL PROTECTION.
- d. **Additional Bathymetric Survey (Bid Item No. 0004)** - Payment will be as a lump sum (LS) for full compensation for furnishing a bathymetric survey of Intracoastal Waterway cuts SJ-63 and SJ-64. This survey is separate from and unrelated to required pre- and post- dredge surveys. ICWW cuts SJ-63 and SJ-64 are located approximately 1-2 miles north of the dredging project limits.

2. Unit Price Items

- a. **Dredging and Dredged Material Placement (Bid Item No. 0005)** – Payment will be made as a unit price (Cubic Yards) for costs associated with or incidental to dredge the Intracoastal Waterway Flagler County, Florida within the specified project limits

and transfer and dewater the material to the District-owned FL-3 dredged material management area. These prices shall include all labor, equipment, materials, upland site work, operational costs, and surveys required to complete the dredging and upland work necessary at the disposal area. Work stoppages for manatees, turbidity control, and Maintenance of Marine Traffic must be included in the overall cost. This project is set up with three (3) acceptance sections (A/S) based on defined cuts and stations [(Start of Project) Cut F-2 STA 32+00 through Cut F-5 STA 11+00; Cut F-5 STA 11+00 through Cut F-5 STA 70+00; Cut F-5 STA 70+00 through Cut F-10 STA 12+52 (End of Project)] in the project. The Owner will base final payment for dredging on an accepted survey conducted within each A/S only. Volumes of material dredged will be based off pre- and post-construction bathymetric surveys approved by the Engineer. See SECTION 01 40 00 CONTRACTOR QUALITY CONTROL, SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS, SECTION 01 78 00 PROJECT CLOSEOUT, and SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT.

1.8 DEFECTIVE WORK

- A. The Contractor shall replace the Work, or portions of the Work, not conforming to specified requirements as directed by the Engineer.
- B. If, in the opinion of the Engineer or of the District, it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit or lump sum price for the item will be adjusted to a new price. The adjustment will be performed at the sole discretion of the District. The determination for the adjustment will be done by the Engineer, whose determination will be final.
 - 2. The defective Work will be partially repaired to the instructions of the Engineer, and the unit or lump sum price will be adjusted to a new price at the sole discretion of the District. The determination for the adjustment will be done by the Engineer, whose determination will be final.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage sum/price reduction.
- D. The authority of the Engineer to assess the defect and identify payment adjustment is final.
- E. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products damaged in transit, during handling, or due to improper storage.
 - 4. Products not completely unloaded from the transporting vehicle.
 - 5. Products placed beyond the lines and levels of the required Work.
 - 6. Products remaining on hand after completion of the Work.
 - 7. Removing, demolishing, and disposing of rejected Work.
 - 8. Loading, hauling, and disposing of rejected Products.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 PAYMENT PROCEDURES

A. Requesting Progress Payment

1. Provide hard copies of supporting invoices and quantity measurements to support all requested earnings. Ensure that sum of payment activities do not exceed Contract award funding amounts.

B. Options and Modification

1. When additional work is added by modification, existing funding amounts must be updated, or new line items for modification will be created. If Contract has option line item not yet awarded, option line item will appear as zero dollars until option is awarded by modification. No payment may be requested for Options or Modification until Contract modification has been funded and signed.

--End of Section--

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SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. The Contractor shall manage the project and coordinate all activities of own employees, subcontractors, suppliers and offsite fabricators. The Contractor shall use computers, e-mail, and internet resources for administrative work and notify Engineer of important meetings, schedule events, and activities. The Contractor shall furnish labor, materials, and equipment required to plan and execute project management functions.
- B. The Contractor shall coordinate activities and manage resources to construct the project conforming to the contract, on time and within budget.

1.2 SUBMITTALS

The following submittals shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES. Bring the following administrative submittal items to at or before the scheduled Pre-Construction meeting:

- A. List of Subcontractors
 - 1. Submit a list of proposed subcontractors with company name, person to contact, street address, mail address, email address, phone number, type of specialty and estimated subcontract quote.
- B. Signature of Authority
 - 1. Furnish a power of attorney or a notarized letter of authority from Contractor identifying local representatives authorized to sign contract documents.

1.3 PROJECT COORDINATION

- A. Coordinate scheduling, submittals, and Work to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.
- C. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
- D. Work by Others
 - 1. During construction period, others may perform construction or maintenance work within construction limits. The Contractor shall coordinate work by others with Engineer and the District and schedule activities to avoid problems at no additional cost.

1.4 PROJECT MEETINGS

A. The Engineer and the District require the following types of project meetings, all of which are described below:

1. Pre-Construction Meeting
2. Coordination Meeting
3. Project Progress Meetings

B. Pre-Construction Meeting

1. The Engineer will conduct a Pre-Construction Meeting for this project. The Pre-Construction Meeting will be after Notice of Award (NOA) but prior to Notice to Proceed (NTP). (Refer to subparagraph "Pre-Construction Meeting Submittals" below.) The Engineer will notify Contractor of time, place, and agenda. Contractor shall notify key subcontractors and suppliers to attend. The Engineer will discuss contract "ground rules" and general issues including:

- a. Lines of Engineer authority
- b. Lines of Contractor authority
- c. Contract General Conditions
- d. Contract Special Conditions
- e. Contract Administration
- f. Progress Payment
- g. Correspondence Procedures
- h. Project Schedule
- i. Submittal Register
- j. Labor Requirements
- k. General Site Safety

2. Pre-Construction Meeting Attendees

- a. FDEP Representative
- b. USACE Representative
- c. District Engineer
- d. District Representative
- e. Contractor Representatives

3. Pre-Construction Meeting Minutes

- a. The Engineer will take detailed minutes of Pre-Construction Meeting discussions and may use an audio or video tape. Copies of typed minutes will be provided to the Contractor to review for accuracy, sign, and return. Signed minutes become part of the contract file. Audio or video tapes if used will be made available for Contractor to review or copy at the District offices.

4. Pre-Construction Meeting Submittals

- a. The timing of submission of submittals and completion of the Pre-Construction Meeting is intended to allow the Contractor, Engineer, and the District adequate time to prepare for commencement of work. However, should the Contractor fail to submit required items within the times stated, the District may issue NTP prior to receipt of submittals and prior to the Pre-Construction Meeting. If the NTP is issued prior to the Contractor's compliance with submittal requirements and prior to the Pre-Construction Meeting, the Contractor will not be permitted to commence work until these requirements have been satisfied. Any delays attributable to the Contractor's failure to comply with these pre-work requirements shall be at the Contractor's expense and may be cause for remedial action by the Engineer/the

District. Submittals required by this Section are described in paragraph SUBMITTALS above.

5. Other Division 00 and 01 Submittals to bring or electronically submit before the Pre-Construction Meeting:
 - a. Accident Prevention Plan – See SECTION 00 73 19 SAFETY AND OCCUPATION HEALTH REQUIREMENTS
 - b. Drug Free Work Place Compliance – See SECTION 00 73 19 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS
 - c. Personnel Qualification Requirements – See SECTION 00 73 19 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS
 - d. Construction Schedule – See SECTION 01 29 00 MEASUREMENT AND PAYMENT
 - e. List of Subcontractors – See SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION
 - f. Signature of Authority – See SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION
 - g. Draft Submittal Register - See SECTION 01 33 00 SUBMITTAL PROCEDURES
 - h. Environmental Protection Plan – See SECTION 01 35 43 ENVIRONMENTAL PROTECTION
 - i. Manatee Observer Qualifications– See SECTION 01 35 43 ENVIRONMENTAL PROTECTION
 - j. Shorebird Monitor: Qualifications – See SECTION 01 35 43 ENVIRONMENTAL PROTECTION
 - k. Turbidity and Water Quality Management and Monitoring Plan – See SECTION 01 35 43 ENVIRONMENTAL PROTECTION
 - l. Contractor Quality Control Plan – See SECTION 01 40 00 CONTRACTOR QUALITY CONTROL

6. Divisions 02 through 35 Submittals

In addition to the above, bring submittal items for materials, workmanship, plans, or events required early in project schedule that are ready for transmittal to Engineer. Prepare transmittal of submittal items in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES.

- a. Dredge Plan – See SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT
- b. Maintenance of Marine Traffic Plan – See SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT
- c. DMMA Facility Operation Plan (Site Plan and Placement Operations Plan) – See SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT

7. Notice to Proceed (NTP)

- a. NTP will be issued according to the Contract Documents. If the Contractor has failed to submit specified plans, including, but not limited to, Accident Prevention Plan – SECTION 00 73 19 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS, Environmental Protection Plan, Manatee Observer Qualifications, and the Turbidity and Water Quality Management and Monitoring Plan – SECTION 01 35 43 ENVIRONMENTAL PROTECTION, Contractor's Quality Control Plan – SECTION 01 40 00 CONTRACTOR'S QUALITY CONTROL, and the Dredge Plan and Maintenance of Marine Traffic Plan — SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT or has not yet received the Engineer's conditional approval to work under an interim plan, the Contractor shall not proceed with the work and shall consider the work to be suspended in accordance with the SECTION 00 72 00 GENERAL CONDITIONS. While the Contractor is working under a conditionally accepted interim plan, funds may be

PROJECT MANAGEMENT AND COORDINATION

retained from progress payments in accordance with the SECTION 00 72 00 GENERAL CONDITIONS until the Contractor submits an acceptable plan. If the Contractor does not submit an acceptable plan within a reasonable time, as determined by the Engineer, the Engineer may order the Contractor to suspend work. Any suspension order issued for the Contractor's failure to submit an acceptable plan will not constitute unreasonable delay under the SECTION 00 72 00 GENERAL CONDITIONS and the Contractor will not be entitled to an equitable adjustment of either performance period or contract price.

C. Coordination Meeting

1. The Coordination Meeting is scheduled, convened, and conducted by Engineer after a Pre-Construction Meeting and prior to starting physical construction. Draft plans submitted after NOA (i.e., Construction Schedule, Equipment and Material Delivery Schedule, Submittal Register, Environmental Protection Plan, and Quality Control Plan) will have been reviewed. Coordination Meeting is primarily for on-site Contractor Quality Control staff, including subcontractor and supplier employees performing quality control, to meet and discuss the project in detail. Purposes of Coordination Meeting are:
 - a. Achieve mutual understanding with Contractor of required Quality Control
 - b. Jointly review submitted draft plans; resolve issues of concern
 - c. Discuss project plans and specifications, schedule, documentation
 - d. Establish a good working relationship between the Contractor's Quality Control Staff and Quality Assurance Representatives

D. Progress Meetings

1. The Contractor is responsible to schedule, convene, and preside over progress meetings. As project activities increase ("ramp up"), a minimum of one progress meeting per week is typical of a project of this scope. Convene additional meetings as required, or when requested by Engineer. Notify persons needed to be present to discuss agenda issues. Engineer may direct attendance by key Contractor suppliers, or fabricators as needed. A sample meeting agenda is provided in paragraph "GENERAL MEETING REQUIREMENTS" below.
2. Progress Meeting Participants typically include:
 - a. Engineer
 - b. Owner Representatives
 - c. Contractor's Site Superintendent
 - d. Contractor's Quality Control Manager
 - e. Contractor's Safety Coordinator
 - f. Subcontractors, as appropriate to the agenda
 - g. Suppliers, as appropriate to the agenda
 - h. Others as appropriate to the agenda

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 GENERAL MEETING REQUIREMENTS

- A. Contractor is responsible for phase and progress meetings to include:
 1. Meeting notification to participants

2. Prepare agenda for meetings
3. Physical arrangements for meetings
4. Preside at meetings
5. Record minutes recording proceedings and decisions
6. Copy and send minutes to:
 - a. Meeting participants
 - b. Project parties affected by decisions
 - c. Engineer (No later than 3 working days)

B. PROGRESS MEETING AGENDA

Modify agenda as needed for on-going work.

1. Review minutes from previous progress meetings
2. Review work progress since previous meeting
3. Review current definable features of work:
 - a. Identify phases of current features of work
 - b. Identify pending phase changes
 - c. Identify features for discussion in next scheduled meeting
4. Discuss problem prevention:
 - a. Field observations
 - b. Deficiencies and tracking
 - c. Procedures working well
 - d. Problems, conflicts
 - e. Methods to improve
5. Review construction schedule:
 - a. Identify delays
 - b. Discuss proposed corrective actions to regain schedule
6. Submittals and Requests for Information (design interpretation):
 - a. Review submittal register
 - b. Identify submittals to expedite as required
7. Review off-site activities:
 - a. Fabrications
 - b. Material and equipment delivery schedule
8. Review Testing:
 - a. Type, Schedule
 - b. Received Results
9. Review changes to construction schedule:
 - a. Planned progress during succeeding work period
 - b. Coordination of various schedules
 - c. Effect of changes on construction and completion date
10. Review site safety
11. Discuss maintaining contract quality for materials and workmanship
12. Discuss pending modifications, changes and substitutions
13. Discuss other business, as appropriate

-- End of Section --

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SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes requirements and procedures for submittals including shop drawings, product data, samples, or other submittals relating to products, and as specified in individual sections.
- B. The Contractor shall submit all items listed in this and other Sections of these Specifications. The Engineer may request submittals in addition to those listed when deemed necessary to adequately describe the Work covered in the respective sections. Units of weights and measures used on all submittals shall be the same used in the Project Drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with Contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the Contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; Operation and Maintenance manuals including parts list; certifications; warranties and other such required submittals. Submittals requiring Engineer approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby.

1.2 DEFINITIONS

- A. Manufacturer's Instructions: Instructions, stipulations, directions, and recommendations issued in printed form by the manufacturer of a product addressing handling, installation, erection, and application of the product; Manufacturers Instructions are not prepared especially for the Work.
- B. Shop Drawings: Custom prepared data of all types including drawings, diagrams, performance curves, material schedules, templates, instructions, and similar information not in standard printed form applicable to other projects.
- C. Product Data: Standard printed information on materials, products and systems; Illustrations, standard schedules, performance charts, brochures, diagrams and other information to illustrate materials or equipment for some portion of the Work
- D. Samples: Physical examples, which illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged. Included are both fabricated and unfabricated physical examples as complete units or as smaller portions of units available for either limited visual inspection or (where indicated) for more detailed testing and analysis.
- E. Special Samples: Physical examples that illustrate materials, equipment, or workmanship and establish standards by which the Work will be judged, and will be incorporated in the Work.
- F. Miscellaneous Submittals: Technical reports, administrative submittals, certificates, and guarantees not defined as shop drawings, product data, or samples.
 - 1. Technical reports include laboratory reports, tests, technical procedures, technical records, Contractor's design analysis and Contractor's survey field notes for construction staking, before cross-sections and after cross-sections.

2. Administrative Submittals are those nontechnical submittals required by the Contract Documents or deemed necessary for administrative records. These Submittals include statements of applicability, copies of industry standards, as-constructed data, security/protection/safety data, and similar type Submittals.
3. Certificates and guarantees are those Submittals on Equipment and Materials where a written certificate or guarantee from the manufacturer or Supplier is called for in the Specifications.
4. Reports as required by Contractor describing Contractor's means and methods for items such as dewatering, earth and water retaining, erosion control, and safety plans.

1.3 SUBMITTALS

- A. Draft Submittal Register
 1. Submit Draft Submittal Register, coordinated with Construction Schedule, for Engineer Approval at or before the scheduled pre-construction meeting.
- B. Revised Submittal Register
 1. Submit Revised Submittal Register with each monthly payment application to the Engineer.

1.4 PROCEDURES

- A. Before commencing work, the Contractor will review the Draft Submittal Register attached to this specification as **APPENDIX I**. The Contractor will review the Submittal Register with the Engineer and note any discrepancies or required additions. The reviewed Submittal Register will serve only as guidance document for submission as the project proceeds. Optional submittals or other submittal requirements not listed on the Submittal Register but described in the test of the Specifications may be required, and the Contractor shall provide these upon request of the Engineer.
- B. Unless specifically required to deliver hard copies, Contractor shall deliver all submittals to the Engineer in electronic format via email at the email address under "Inquiries/Addenda" listed in SECTION 00 21 13 INSTRUCTIONS TO BIDDERS.
- C. For submittal files too large to send via email, the Engineer will provide the Contractor with an ftp site to upload the electronic submittal. The Engineer will provide the designated FTP site to the Contractor at the Pre-Construction Meeting (SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION).
- D. For submittals that require the seal of a Professional Engineer, Professional Geologist, or Professional Surveyor, the seal and signature shall be clearly visible. Both hard copies and electronic copies shall be submitted for all sealed submittals.
- E. When immediate contact is required herein, the Contractor shall contact the Engineer by telephone, unless otherwise instructed.
- F. Submit submittals in ample time for review and response.
- G. Submit submittals specified or reasonably required for construction, operation, and maintenance of the Work.

- H. Deliver submittals under acceptable transmittal form which identifies:
1. Submittal date.
 2. Project and Contractor.
 3. Subcontractor and major supplier, when appropriate.
 4. Reference submittal to Contract Documents by Drawing, detail, and/or Specification section numbers, as appropriate.
 5. Variations from Contract Documents when variations are included in submittal.
 6. Whether submittal requires approval or is for information only.

1.5 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. Submit Shop Drawings, Product Data, Samples, and other pertinent information in sufficient detail to show compliance with specified requirements.
- B. Check, verify, and revise submittals as necessary to bring them into conformance with Contract Documents and actual field conditions.
1. Determine and verify quantities, dimensions, specified design and performance criteria, materials, catalog numbers, and similar data.
 2. Coordinate submittal with other submittals and with the requirements of the Contract Documents.
- C. After completion of checking, verification, and revising; stamp, sign and date submittals indicating review and approval; and submit to Engineer.
1. Stamp and signature indicates Contractor has satisfied shop drawing review responsibilities and constitutes Contractor's written approval of shop drawing.
 2. Shop drawings without Contractor's written approval will be returned for resubmission.
- D. Shop Drawings: Submit four (2) copies. One (1) will be returned with reviewer's comments and stamp.
- E. Product Data and Manufacturer's Instructions: Submit four (2) copies. Excise or cross out non-applicable information and clearly mark applicable information with citations to and terminology consistent with Contract Documents.
1. One (1) copy will be returned with reviewer's comments and stamp.
- F. Samples: Submit one (1) sample (unless otherwise directed) labeled with reference to applicable Contract Documents. Samples will not be returned unless return is requested in writing and an additional sample is submitted.
- G. Special Samples: Submit one (1) sample labeled with reference to applicable Contract Documents. Sample will be returned for installation in the Work.
- H. The Contractor shall assume all risks of additional expenses and delays when proceeding with work related to required submittals that have not been reviewed and approved.

1.6 MANUFACTURER'S INSTRUCTIONS

- A. Submit manufacturer's instructions whenever available and when installation, erection, or application in accordance with manufacturer's instructions is required by the Specifications.

- B. Submit manufacturer's instructions prior to installation, erection, or application of equipment and other project components. Submit manufacturer's instructions in accordance with requirements for Product Data.

1.7 ENGINEER'S REVIEW

- A. Engineer's review of submittals shall not release Contractor from Contractor's responsibility for performance of requirements of Contract Documents. Neither shall Engineer's review release the Contractor from fulfilling purpose of installation nor from Contractor's liability to replace defective work.
- B. Do not consider submittals as Contract Documents. Purpose of submittals is to demonstrate how Contractor intends to conform to the design concepts.
- C. Engineer's review of shop drawings, samples, or test procedures will be only for conformance with design concepts and for compliance with information given in Contract Documents.
 - 1. Engineer's review does not extend to:
 - a. Accuracy of dimensions, quantities, or performance of equipment and systems designed by Contractor.
 - b. Contractor's means, methods, techniques, sequences, or procedures except when specified, indicated on the Drawings, or required by Contract Documents.
 - c. Safety precautions or programs related to safety, which shall remain the sole responsibility of the Contractor.
- D. Except as may be provided in these specifications, a submittal will be returned within 10 business days. When a submittal cannot be returned within that period, Engineer will, within a reasonable time after receipt of the submittal, give notice of the date by which that submittal will be returned.
- E. For submittals returned Approved (AP) – No further action is required by the Contractor for this submittal; Contractor shall pursue with the Work described by this submittal.
- F. For submittals returned Rejected (RE) – See All Comments, Contractor shall develop a new submittal package with materials, equipment, methods, etc. that meet the requirements of the Contract Documents.
- G. For submittals returned Revise and Resubmit (RR) – Make Corrections Noted / See All Comments, Contractor shall incorporate the review comments into a complete revised package, and resubmit it for review.
- H. For submittals returned Approved as Corrected (AC) – No further action is required by the Contractor for this submittal; however, Contractor shall incorporate comments into the Work described by this submittal.
- I. For submittals returned Submittal Not Required – Returned without Review (SNR), File for Record, no further action is required by the Contractor for this submittal.
- J. For submittals returned Submittal Received, for Information Only (SRI) – File for Record, no further action is required by the Contractor for this submittal.
- K. For submittals returned Submit Specified Item (SSI) – Contractor shall develop a new submittal package with the specified item.

- L. Engineer will be entitled to rely upon the accuracy or completeness of designs, calculations, or certifications made by licensed professionals accompanying a particular submittal whether or not a stamp or seal is required by Contract Documents or Laws and Regulations.
- M. For submittals returned Rejected or Revise and Resubmit, the Contractor shall submit the subsequent submittal in its entirety so as to ultimately create one accepted submittal document. Submitting partial submittal data as a response to specific questions/comments will not be acceptable and the Engineer reserves the right to reject such partial submittals.
- N. Subsequent submittals shall contain the same submittal number as the original submittal; however, the Contractor shall append a suffix number or letter to the subsequent submittal number to identify it as subsequent to the original submittal.
- O. Costs incurred by Owner as a result of additional reviews of a particular submittal after the fourth time it has been reviewed shall be borne by Contractor at a rate of \$500.00 per subsequent submittal review or the Engineer's actual time spent reviewing the submittal whichever is greater. Reimbursement to Owner will be made by deducting such costs from Contractor's subsequent partial payments.

1.8 MINOR OR INCIDENTAL PRODUCTS AND EQUIPMENT SCHEDULES

- A. Shop Drawings of minor or incidental fabricated products will not be required, unless requested.
- B. If requested by the Engineer, submit tabulated lists of minor or incidental products showing the names of the manufacturers and catalog numbers, with Product Data and Samples as required to determine acceptability.

1.9 SCHEDULING

- A. Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent Project Drawings shall be so scheduled. Adequate time, a minimum of ten (10) calendar days exclusive of mailing time, shall be allowed on the Submittal Register for review and approval. No delays, damages, or time extensions will be allowed for time lost in late submittals.

1.10 DEVIATIONS

- A. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Engineer reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 SUBMITTAL REGISTER

- A. **APPENDIX I** provides a Draft Submittal Register listing each item of material or equipment for which submittals are required by the Specifications. The list may not be all-inclusive and additional submittals may be required. The Contractor shall complete one (1) digital copy of the Submittal Register to the Engineer for approval within ten (10) business days after the Notice to Proceed has been issued. The approved Submittal Register will become the scheduling document and will be

used to control submittals throughout the life of the Contract. The register and the progress schedules shall be coordinated. After initial approval of the Contractors'; Submittal Register, the Contractor shall submit one (1) copy of the revised and/or updated Submittal Register, as part of the monthly payment application to the Engineer. The appended Submittal Register is an Excel-based spreadsheet. The Engineer will provide an electronic version of this document to the Contractor upon request.

3.2 SUBMITTALS KNOWN TO BE UNACCEPTABLE

- A. The Contractor shall contact the Engineer immediately regarding construction-testing submittals that have failed tests criteria or are otherwise unacceptable.

-- End of Section --

SECTION 01 35 43

ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This section covers prevention of environmental pollution and damage as the result of construction operations under this contract and for those measures set forth in other Technical Requirements of these specifications. For the purpose 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 and damage requires consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants.
- B. Contractor shall establish and maintain quality control for environmental protection of all items set forth herein. Contractor shall record on daily quality control reports or attachments thereto, any problems in complying with laws, regulations and ordinances, and corrective action taken.
- C. Contractor shall comply with all requirements under terms and conditions set forth in the following environmental permits and authorizations for this project:
- Florida Department of Environmental Protection permit 18-0315383-003-EE (**APPENDIX B**)
 - Department of the Army permit SAJ-2018-01865 (RGP-SCW), Department of the Army Regional General Permit SAJ-93 (**APPENDIX C**)

Copies of these environmental permits are appended to these contract documents. The Contractor shall familiarize himself and his personnel with these and any other permits issued for this project and comply with all requirements under the terms and conditions set forth therein. The contractor shall be responsible for any fines resulting from violations of construction conditions set forth in the environmental permits. The Contractor shall include all costs for preparation and submittal of required reporting within each relative bid item. It is the Contractor's responsibility to obtain all other relevant Federal, State and local permits at no cost to the Owner. The Contractor shall be responsible for any delays and costs resulting from failure to comply with these and all federal, state and local environmental protection laws and regulations.

1.2 SUBMITTALS

The following submittals shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES.

- A. Environmental Protection Plan
1. At least fifteen (15) calendar days before the scheduled pre-construction conference, the Contractor shall submit in writing an Environmental Protection Plan that is specific to this project. The Engineer may, at its discretion, consider an interim plan for the first thirty (30) days of operations. However, the Contractor shall furnish an acceptable final plan no later than thirty (30) calendar days after receipt of Notice to Proceed. Acceptance of the

Contractor's plan shall not relieve the Contractor of its responsibility for adequate and continuing control of pollutants and other environmental protection measures. Acceptance of the plan is conditional and predicated on satisfactory performance during construction. The Engineer reserves the right to require the Contractor to make changes to the Environmental Protection Plan or operations if the Engineer determines that environmental protection requirements are not being met. No physical work at the site shall begin prior to acceptance of the Contractor's Plan or an interim plan covering the work to be performed. The Environmental Protection Plan shall include but not be limited to the following:

- a. A list of federal, state, and local laws, regulations, and permits concerning environmental protection, pollution control, and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations and permits.
- b. Methods for protection of features and resources to be preserved within authorized work areas. The Contractor shall prepare a listing of methods to protect resources needing protection, i.e., submerged natural resources, mangroves, trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological, and cultural resources.
- c. Procedures to be implemented to provide the required environmental protection and to comply with the applicable laws and regulations. The Contractor shall provide written assurance that immediate corrective action will be taken to correct pollution of the environment due to accident, natural causes, or failure to follow the procedure set out in accordance with the environmental protection plan.
- d. A permit or license for and the location of the solid waste disposal area.
- e. Drawings showing locations of any proposed temporary and permanent excavations or embankments for haul roads, stream crossing, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.
- f. Environmental monitoring plans for the job site, including land, water, air, and noise monitoring.
- g. Methods for protection of species identified as state and/or federally Threatened Endangered Species.
- h. Methods for protecting surface and groundwater during construction activities.
- i. Spill prevention Plan. The Contractor shall specify all potentially hazardous substances to be used on the job site and intended actions to prevent accidental or intentional introduction of such materials into the air, ground, water, wetlands, or drainage areas. The plan shall specify the Contractor's provisions to be taken to meet Federal, State, and local laws and regulations regarding labeling, storage, removal, transport, and disposal of potentially hazardous substances.
- j. Spill contingency plan for hazardous, toxic or petroleum material.
- k. Work area plan showing the proposed activity in each portion of the area and identify the areas of limited use or non-use. Plan should include measures for marking the limits of use areas.
- l. Plan inclusive of construction limits and dredging procedures.
- m. A statement identifying the Contractor's personnel who shall be responsible for implementation of the Environmental Protection Plan. The Contractor's personnel responsible shall report directly to the Contractor's top management and shall have the authority to act for the Contractor in all environmental protection matters.
- n. A Certification Letter must be signed acknowledging the Contractor has a copy of all environmental permits and licenses applicable to the project and understand the conditions in the permits. The Certification Letter (see **APPENDIX J**) shall be attached to the Environmental Protection Plan.

B. Manatee Observation

1. Qualifications: At or before the scheduled pre-construction meeting and at least fourteen (14) calendar days prior to construction commencement, the Contractor shall submit qualifications for the person that is designated as a manatee observer when in-water work is being performed. That person shall be approved by the Engineer two weeks

before the beginning of construction and be equipped with polarized sunglasses to aid in observation. This person must be on site during all in-water construction activities and will advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity. All Contractor 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.

2. Daily Reports: Observers shall maintain a daily log detailing manatee sighting, work stoppages, and other protected species-related incidents. An example form is provided in **APPENDIX J**.
3. Summary Report: Within thirty (30) days of project completion, the Contractor shall submit a summary report detailing all activities noted in the observer logs, the location and name of project, and the dates and times of work.
4. Special permit conditions related to Manatees:
 - a. No Important Manatee Area (IMA) or Warm Water Aggregation Areas (WWAA) have been identified within the work area, however, the U.S. Fish and Wildlife Service (USFWS) has mandated a year-round 25 mph speed limit within the ICWW channel in Flagler County. Refer to **APPENDIX B** for special conditions for Federally listed species.
 - b. This project is federally authorized through Regional General Permit SAJ-14. The USACE general permit was modified in 2018 to include measures to prevent the entanglement of species in buoy lines. The modification states that all buoy lines shall be secured in a manner that does not include the looping of wire/nylon rope or chain. Buoys shall be secured using one of the following methods:
 1. Light weight chain
 2. Non-looping wire rope
 3. Plastic sheathing around nylon rope to prevent looping

C. Turbidity and Water Quality Management and Monitoring Plan

1. At least fifteen (15) calendar days before the scheduled pre-construction conference, the Contractor shall submit a detailed turbidity and water quality management and monitoring plan to the Engineer for approval. At a minimum this plan should specifically detail specific project equipment, techniques, procedures, and sequencing including all feasible turbidity reduction measures, applicable regulatory standards, anticipated handling, transport and disposal of dredged materials and all efforts to preserve adjacent or downstream resources. The document, including both narrative and illustrative documentation, shall also describe in detail the specific turbidity and sedimentation monitoring, sampling and reporting protocols proposed.
2. The Contractor shall also include specific details and drawings that specifically describe how the overall dredging operations and turbidity control measures will not adversely impact marine mammals. Barrier details and drawings — including the location, method of securing, and monitoring schedule — to avoid manatee entanglement, entrapment, and movement impedence.

D. Turbidity Monitoring Reports

1. During construction, the Contractor shall submit daily monitoring reports containing the turbidity data gathered. Monitoring reports shall be submitted to the Engineer via e-mail on a daily basis. All sampling and analyses shall be in accordance FDEP-approved field procedures and laboratory methods as specified in Chapter 62-160. All reports shall contain the following information:
 - a. Permit number
 - b. Project name
 - c. Dates of sampling and analysis
 - d. Turbidity sampling results
 - e. Description of data collection methods (via a statement describing the methods use in collection, handling, storage, sample analysis, and date that the sampling meter was last calibrated)
 - f. Time of day profile was taken
 - g. Depth of sample
 - h. Depth of water body
 - i. Weather conditions at time of sampling
 - j. Tidal stage and direction of flow
 - k. Wind direction and velocity
 - l. Water temperature.
 - m. Map indicating sampling locations, dredging and discharge locations, and direction of tidal flow
 - n. Statement and signature by the individual responsible for implementation of the sampling program attesting to the authenticity, precision, limits of detection, and accuracy of the data.
 - o. When samples cannot be collected, include an explanation in the report. If unable to collect sample due to severe weather conditions, include a copy of a weather report from a reliable, independent source, such as an online weather service.
2. See **APPENDIX J** for an example Turbidity Monitoring Report Form.

E. Project Environmental Summary Sheet

1. Within thirty (30) days of project completion, the Contractor shall complete the Project Environmental Summary Sheet located in **APPENDIX J**. The purpose of this summary sheet is to demonstrate compliance — as well as to summarize any deviations — from the conditions and requirements set forth in the project’s environmental resource permits.

1.3 SUBCONTRACTORS

1. Assurance of compliance with this section by subcontractors will be the responsibility of Contractor.

1.4 TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL

2. Contractor shall train his personnel in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous environmental pollution control. Quality Control and supervisory personnel shall be thoroughly trained in the proper use of monitoring devices and abatement equipment, and shall be thoroughly knowledgeable of federal, state, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by

Contractor. Quality Control personnel will be identified in the Quality Control Plan submitted in accordance with SECTION 01 40 00 CONTRACTOR QUALITY CONTROL.

1.5 NONCOMPLIANCE

1. The Engineer will notify the Contractor in writing of any observed noncompliance with the aforementioned federal, state, or local laws or regulations, permits and other elements of the Contractor's Environmental Protection Plan. The Contractor shall, after receipt of such notice, inform the Engineer of proposed corrective action and take such action as may be approved. If the Contractor fails to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspension.
2. Monitoring of permit and/or regulation compliance by the Engineer is for the sole benefit of the District and shall not relieve the Contractor of the responsibility of knowing and complying with all local, state, and federal laws and regulations concerning the protection of the environmental resources, nor does it relieve the Contractor of the responsibility of ensuring that all environmental permit requirements governing the project work are met.
3. The Contractor shall immediately notify the Engineer, via phone and e-mail, of the occurrence of any environmental incident.

PART 2 - PRODUCTS

2.1 GENERAL

- A. All upland erosion/turbidity control devices shall be installed pursuant to Chapter 6 of The Florida Land Development Manual, A Guide to Sound Land and Water Management, prior to the commence of construction activities. The devices shall remain functional at all times.

2.2 SILTATION FENCES

- A. The siltation fences shall be geotechnical woven or non-woven fabric conforming to the applicable application requirement of Section 985 of the Florida Department of Transportation "Standards Specifications for Road and Bridge Construction." The type and size of posts and wire mesh reinforcement will be at the option of the Contractor an applicable to the installation conditions.

2.3 EROSION CONTROL MATTING

- A. Erosion control matting shall be woven, biodegradable geotechnical fabric. It shall be used to temporarily stabilize channels or steep slopes until vegetation is established. The type selected shall be comparable to the vegetation cover applied for the particular installation. The material shall be stapled in place at 18 inches on center with a minimum matting lap of 4 inches.

2.4 HAY OR STRAW BALES

- A. Hay or straw bales shall be individual bales each entrenched 4 inches into the soil. The bales shall be clean, fresh hay or straw. Bales shall be replaced when they become clogged with silt, deteriorate, or after a period of 3 weeks, whichever occurs first. The particular application may require that bales be staked into the ground with rebar.

2.5 TURBIDITY SCREENS

- A. Floating turbidity screens with weighted skirts that extend to within 1 foot of the bottom and shall be placed at the construction site (DMMA discharge) where feasible. The Contractor is responsible for ensuring that turbidity control devices are inspected daily and maintained in good working order so that there are no violations of water quality standards outside of the mixing zone. The Contractor is solely responsible for ensuring that the turbidity screens (1) do not impact seagrasses; (2) avoid manatee entanglement and entrapment; and (3) do not impede manatee movement.

2.6 BUOY LINES

- A. All buoy lines shall be secured in a manner that does not include the looping of wire/nylon rope or chain. Buoys shall be secured using one of the following methods:
 - 1. Light weight chain
 - 2. Non-looping wire rope
 - 3. Plastic sheathing around nylon rope to prevent looping

PART 3 - EXECUTION

3.1 PROTECTION OF ENVIRONMENTAL RESOURCES

- A. General
 - 1. For contract work, the Contractor shall comply with all applicable federal, state, and local laws and regulations. The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. Contractor shall confine his activities to areas defined by the drawings and specifications. Environmental protection shall be as stated in the following paragraphs. Failure to meet the requirements of these Specifications for environmental protection may result in Work stoppages or termination for default. No part of the time lost due to any such Work stoppages shall be made the subject of claims for extensions of time or for excess costs or damages by Contractor. If Contractor fails or refuses to promptly repair any damage caused by violation of provisions of these Specifications, the Owner may have the necessary Work performed and charge the cost thereof to Contractor.

3.2 PROTECTION OF LAND RESOURCES

- A. Before beginning any construction, Contractor shall identify all land resources to be preserved within Contractor's work area. Contractor shall not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and landforms without special permission from Engineer. Contractor shall engage a qualified tree surgeon to perform all tree surgery, and shall repair injuries to bark, trunk, branches, and roots of protected trees by dressing, cutting, and painting as specified for Class I Fine Pruning, of the National Arborist Association Pruning Standards for Shade Tree or as per State's Agricultural Extension Agency Guidelines, immediately as occurrences arise. No ropes, cables, or guys shall be fastened to or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, Contractor shall provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs.
- B. Work Area Limits

1. The Contractor's field offices, staging areas, stockpile storage, and temporary buildings shall be placed in areas approved by the Engineer. Temporary movement or relocation of the Contractor facilities shall be made only upon approval by the Engineer.
2. Prior to any construction, the Contractor shall mark the areas that are not required to accomplish all work to be performed under this contract. Isolated areas within the general work area that are to be saved and protected shall also be marked or fenced. Protect from damage all existing trees designated to remain. Protect tree roots from noxious materials in solution caused by run-off or spillage. No materials, trailers, or equipment shall be stored within the drip line of any protected tree.
3. Monuments and markers shall be protected before construction operations commence. Where construction operations are to be conducted during darkness, the markers shall be visible. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects.

C. Protection of Landscape

1. With exception of the Contractor Staging and Storage area, the District will not allow vegetation to be disturbed or removed from the DMMA nor perimeter road and access areas. Please refer to the Project Drawings for the allowable vegetation removal area. The vegetation removed in the Contractor offloading, staging, and storage area shall be minimized to the extent possible.
2. Trees and their roots, shrubs, vines, grasses, land forms, and other landscape features (indicated, defined, and delineated on the Drawings to be preserved, such as wetlands) shall be clearly identified and protected by fencing or any other approved techniques. Place tree protection fencing before excavation or grading is begun and maintain in place until construction is complete.

D. Disturbed Areas

1. The Contractor shall effectively prevent erosion and control sedimentation through approved methods include, but are not limited to, the following:
 - a. Retardation and Control of Runoff: Runoff from the construction site or from storms shall be controlled, retarded, and diverted to protected drainage courses by means of diversion ditches, benches, and by any other erosion control measures necessary.
 - b. The Contractor shall select, implement, and maintain erosion and sediment control measures as required by local, state, and federal laws and regulations.

E. Disposal of Solid Wastes

1. Solid wastes (excluding clearing debris) shall be placed in containers that are emptied on a regular schedule. All handling and disposal shall be conducted to prevent contamination. The Contractor shall transport all solid waste off the properties within the project limits and dispose of it in compliance with federal, state, and local requirements for solid waste disposal. Discarded materials other than those that can be handled in the solid waste category will be handled as directed by the Engineer.

F. Dispensing of Fuel

1. Fuel dispensers shall have a 4-foot square, 16-gauge metal pan with borders banded up and welded at corners right below the bib. Edges of the pans shall be 8-inch minimum in depth to ascertain that no contamination of the ground takes place. Pans shall be cleaned by an approved method immediately after every dispensing of fuel and wastes

disposed of offsite in an approved area. Should any spilling of fuel occur the CONTRACTOR shall immediately recover the contaminated ground and dispose of it offsite in an approved area.

G. Disposal of Chemical Waste

1. 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.

H. Disposal of Discarded Materials

1. Discarded materials other than those that can be included in the solid waste category shall be handled as directed.

3.3 PROTECTION OF WATER RESOURCES

A. General

1. The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. The Contractor shall conduct his operations in a manner to minimize erosion and shall conform to all water quality standards as prescribed all other relevant Federal, State and local regulatory criteria. Special management techniques as set out below shall be implemented to control water pollution by the listed construction activities that are included in this contract. In the event of unforeseen conditions, the Engineer may require the use of control features or methods other than those indicated or proposed by the Contractor.
2. Storage, stockpiling or access of equipment on, in, over or through seagrass (or other aquatic vegetation) beds is prohibited unless a work area or ingress/egress corridor is specifically approved by this permit. Refer to the Project Drawings. Anchoring or spudding of vessels and barges within beds of aquatic vegetation or over hardbottom areas is prohibited.

B. Turbidity Control

1. Turbidity shall be monitored and conducted in accordance with techniques described in the FDEP Standard Operating Procedure (SOP) for field turbidity measurements:
 - a. Every four (4) hours during all dredging and every six (6) hours during discharge operations.
 - b. Background: At one-foot below surface, mid-depth, and one-foot above bottom, clearly outside the influence of any artificially generated turbidity plume.
 - 1) Dredge Site: approximately 100 feet up-current of the work site and clearly outside the influence of construction activities.
 - 2) DMMA Discharge: approximately 100 feet in the opposite direction in the prevailing current flow.
 - c. Compliance: At one-foot below surface, mid-depth, and one-foot above bottom, within the densest portion of any visible turbidity plume generated by this project.
 - 1) Dredge Site and DMMA Discharge: Immediately outside the authorized 150-meter mixing zone surrounding the work sites and within the densest portion of any visible turbidity plume.
 - d. See **APPENDIX J** for a sample Turbidity Monitoring Report Form.

2. The compliance locations given above shall be considered the limits of the temporary mixing zone for turbidity allowed during construction. If turbidity monitoring (collected and recorded during daylight hours only) shows an increase in compliance sampling turbidity greater than 29 NTU above background, the Contractor shall:
 - a. Notify the Engineer and Florida Department of Environmental Protection (904-256-1624) at the time the violation is first detected.
 - b. Immediately cease all work contributing to the water quality violation.
 - c. Stabilize all exposed soils contributing to the violation. Modify the work procedures that were responsible for the violation, install more turbidity containment devices, and repair any non-functional turbidity containment devices.
 - d. Perform turbidity monitoring
 - e. Resume construction activities once turbidity levels outside turbidity curtains fall below 29 NTUs.
3. Work Delay
 - a. Delays in work due to the fault or negligence of the Contractor or Contractor's failure to comply with the required turbidity requirements shall not be compensable.

C. Washing and Curing Water

1. Wastewaters directly derived from construction activities shall not be allowed to enter surface water areas. These wastewaters shall be collected and placed in retention ponds where suspended materials can be settled out or the water evaporates so that pollutants are separated from the water.
2. The Contractor shall provide siltation fences, hay bales, and other means and materials to prevent the pollution of the Intracoastal Waterway, Dania Cutoff Canal, streams, canals, lakes, ditches, rivers, and other water improvements including on-site retention areas from siltation from erosion, run off, concrete truck wash, mortar mixer cleanout, and other construction activities. Under no circumstances will material delivery trucks be cleaned out on District property. The Contractor is responsible for arranging for proper clean out facilities.
3. The Contractor shall take sufficient precautions to prevent discharge of fuels, oils, bitumen, calcium chloride, and other harmful materials to the surface and ground water.

D. Oil Spill Prevention

1. Prevent oil or other hazardous substances from entering the ground, drainage, or local bodies of water. Provide containment, diversionary structures, or equipment to prevent discharged oil from reaching a watercourse. Take immediate action to contain and clean up any spill of oily substances, petroleum products, and hazardous substances. Immediately report such spills to the Engineer. Provide one or more of the following preventive systems at each oil storage site. The provision of such preventive systems shall be approved by the Engineer prior to tank installation and use.
 - a. Dikes, berms, retaining walls, culverting, curbing, guttering, or other similar structures shall be capable of containing the contents of the largest single tank.
 - b. Spill diversion ponds shall be capable of containing the contents of the largest single tank.
 - c. Absorbent materials shall be capable of absorbing the contents of the largest single tank.

2. Oil Storage Tank Installation: All oil storage tank installation shall be constructed so that a secondary means of containment is provided for the entire contents of the largest single tank. Dikes and other structures shall be positioned or located so as to provide a secondary containment identical to that required for non-mobile storage tanks. Storage tanks shall be located where they will not be subject to flooding or washout. When it is determined that the installation of containment structures or equipment to prevent discharged oil from reaching a watercourse is not practicable, a clear demonstration of such impracticability shall be submitted to the Engineer for approval prior to installation or use of the storage tank. The following shall also be provided to the Engineer for approval prior to installation use of the storage tank.
 - a. An oil spill contingency plan.
 - b. A written certification of commitment of manpower, equipment, and materials required to expeditiously control and remove the discharge oil.
3. Liabilities: Contractor shall be liable for the damage caused by oil spills when it can be shown that oil was discharged as a result of willful negligence or willful misconduct. The penalty for failure to report the discharge of oil shall be in accordance with state and federal laws.

3.4 PROTECTION OF WETLANDS

A. General

1. The Contractor shall protect all natural areas both inside and adjacent to the work area from erosion, siltation, scouring, and/or dewatering resulting from his operations. There shall be no storage of tools, materials (e.g., clearing debris, lumber, fill dirt) within wetlands, along the shoreline in the littoral zone, or elsewhere within waters of the state except as specified in the project Specifications and/or Project Drawings. Turbidity/erosion controls shall be installed prior to any clearing, excavation, or placement of fill material and shall be maintained in an effective condition at all locations until construction is completed and disturbed areas are stabilized. Appropriate erosion control barriers shall be placed at the edge of fill slopes adjacent to wetlands to prevent turbid run-off and erosion.

I. Shoreline and Marsh Vegetation

1. Trimming, alteration or removal of shoreline vegetation is strictly prohibited. Unauthorized impacts to shoreline vegetation due to construction activities will require mitigation and will result in enforcement action. **Should penalties and mitigation be required (that occurred as a direct result of the Contractor actions) — all cost will be borne by the Contractor at no extra cost to the Owner.**
2. Permanent impacts to shoreline and marsh vegetation are not authorized. In the event that pipeline placement or use causes ruts or permanently damages marsh vegetation, all ruts shall be backfilled with clean sand and marsh vegetation (*Spartina spp.*) shall be replanted in accordance with SECTION 32 72 00 MARSH GRASS PLANTING.

3.5 PROTECTION OF FISH AND WILDLIFE RESOURCES

- A. Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of fish and wildlife. Species that require specific attention along with measures for their protection will be listed in Contractor's Environmental Protection Plan prior to the beginning of construction operation. In the event that a threatened or endangered species is harmed because of construction activities, the Contractor shall cease all work and notify the Engineer. The Engineer will provide emergency contact information at the Pre-Construction Meeting.

B. Manatee

1. The Contractor shall comply with the Standard Manatee Construction Conditions for In-Water Work (2011) and conditions as cited in **APPENDIX B** and **APPENDIX C** for all in-water activity.

C. Sea Turtle and Smalltooth Sawfish

1. The Contractor shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006.

3.6 PRESERVATION AND RECOVERY OF HISTORIC, ARCHEOLOGICAL, AND CULTURAL RESOURCES

A. Inadvertent Discoveries

1. If, during construction activities, Contractor observes items that may have historic or archeological value, such observations shall be reported immediately to Engineer so that the appropriate authorities may be notified, and a determination made as to their significance and what, if any, special disposition of the finds should be made. Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his employees from trespassing on, removing, or otherwise damaging such resources.

B. Claims for Downtime due to Inadvertent Discoveries

1. Upon discovery and subsequent reporting of a possible inadvertent discovery of cultural resources, the Contractor shall seek to continue work well away from, or otherwise protectively avoiding, the area of interest, or in some other manner that strives to continue productive activities in keeping with the contract. Should an inadvertent discovery be of the nature that substantial impact(s) to the work schedule are evident; such delays shall be coordinated with the Engineer. Contract adjustments resulting from compliance with this paragraph shall be determined in accordance with Article 14 of the General Conditions.

3.7 PROTECTION OF AIR RESOURCES

- A. The Contractor shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes and work operated or performed by the Contractor in accomplishing the 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.

3.8 PROTECTION FROM SOUND INTRUSIONS

- A. The Contractor shall keep construction activities under surveillance and control to minimize damage to the environment by noise and to comply with all federal, state, and local noise ordinances. The use of horns, bells or the use of whistle signals shall be held to a minimum necessary in order to ensure as safe and as quiet an operation as possible.

3.9 POST CONSTRUCTION CLEANUP

- A. The Contractor shall clean up any area(s) used for construction to the satisfaction of the Engineer and Owner.

3.10 MAINTENANCE OF POLLUTION CONTROL FEATURES

- A. The Contractor shall, at his expense, provide routine maintenance of permanent and temporary erosion control features until the project is completed and accepted. If such erosion control features must be reconstructed due to the Contractor's negligence, carelessness, or in the case of temporary erosion control features, failure by the Contractor to install permanent erosion control features as scheduled, such replacement shall be on the Contractor's expense.

- B. If the Contractor through any construction activity degrades, destroys, or impacts the ground cover on any adjoining property including rights-of-way, effected area shall be fully repaired and re-vegetated at the Contractor's expense. Where the area affected is undeveloped with no maintained stand of grass, the area shall be sodded with Bahia, and where affected areas are grassed, the sod shall match the applicable vegetative cover.

-- End of Section --

SECTION 01 40 00

CONTRACTOR QUALITY CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. This section covers the establishment and operation of the Contractor's Quality Control (CQC) system as specified by the General Conditions of the Contract.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only. All publications are "Latest Edition" unless specified otherwise.

- A. American Society for Testing and Materials (ASTM)
 - ASTM D 3740 Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
 - ASTM E 329 Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.3 SUBMITTALS

The following shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES.

- A. Contractor Quality Control Plan
 - 1. At or before the scheduled pre-construction meeting, the Contractor shall submit the Contractor Quality Control (CQC) Plan for review and acceptance by the Engineer. The District will consider an interim plan for the first twenty (20) calendar days of operation. However, the Contractor shall furnish, no later than twenty (20) calendar days after receipt of the Notice to Proceed, an acceptable final CQC Plan to implement the requirement of paragraph entitled "INSPECTION AND ACCEPTANCE" of SECTION 00 72 00 GENERAL CONDITIONS. The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used.
 - 2. If the Contractor fails to submit an acceptable CQC Plan with the time prescribed, construction shall not start unless an acceptable interim plan is submitted and approved. While the Contractor is operating an acceptable interim plan, the Engineer shall retain fund from progress payments until such time as the Contractor submits an acceptable final plan. If an acceptable final plan is not submitted within a reasonable time, and determined by the Engineer, the Engineer may order the Contractor to stop work until such time as an acceptable plan has been submitted and approved. Any such stop work order shall be considered a suspension of work for an unreasonable period of time under SECTION 00 72 00 GENERAL CONDITIONS (Article 15) in the paragraph "SUSPENSION OF WORK" and the Contractor shall not be entitled to pay adjustments as a result of the stop work order.

3. Failure to comply with the above requirements within the time prescribed will be considered a condition endangering the performance of the Contract and may be considered grounds for termination of the Contract in accordance with paragraph "TERMINATION FOR DEFAULT", Section 00 72 00 GENERAL CONDITIONS (Article 15, et. al.)

B. Preparatory and Initial Phase Checklists

1. For each definable feature of work (see 3.2.A.i), the Contractor shall submit the Preparatory and Initial Phase Checklists a minimum of fifteen (15) calendar days prior to the start of each Phase to the Engineer.

C. Registered Surveyor Qualifications

1. At least fifteen (15) days before construction commencement, the Contractor shall submit the name and credentials of the Florida Registered Surveyor consultant and personnel who will be performing the surveying portions of the contract work for Engineer approval. The company and personnel shall show experience in this type of work. The submittal must provide the name and type of equipment used for the project. All work shall be overseen by a registered professional surveyor.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 GENERAL

- A. The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in accordance with these specifications. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Engineer and/or Owner for non-compliance with quality requirements specified in the contract. The project superintendent in this context shall mean the individual with the responsibility for the overall management of the project including quality and production.

3.2 QUALITY CONTROL PLAN

- A. Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

- a. A description of the quality control organization. The staff shall include a CQC System Manager who shall perform his duties in tandem with those of the Project Superintendent and with direct reporting responsibility to an officer of the prime Contractor and/or an individual not directly responsible for production. The Project Manager/Superintendent may have dual roles as CQC System Manager or Safety Officer. Additionally, a qualified Florida Registered Surveyor or is required for all surveys;

- b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.
- c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the Contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Engineer.
- d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES.
- e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities will be approved by the Engineer.)
- f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.
- g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.
- h. Reporting procedures, including proposed reporting formats.
- i. A list of the definable features of work. A definable feature of work is a task that is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the Coordination Meeting.

B. Acceptance of CQC Plan

- 1. Acceptance of the Contractor's CQC plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. Engineer reserves the right to require the Contractor to make changes to his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

C. Failure to Submit Acceptable CQC Plan

- 1. If the Contractor fails to submit an acceptable CQC plan within the time prescribed, construction SHALL NOT start unless an acceptable interim plan is submitted. If an acceptable final plan is not submitted within a reasonable time, as determined by the Engineer, the Engineer may order the Contractor to stop work until such time as an acceptable plan has been submitted. Any such stop work order shall not be considered a suspension of work for an unreasonable period of time under Article 15 of the General Conditions and the Contractor shall not be entitled to pay adjustments as a result of the stop work order. Failure to comply with the above requirements within the time prescribed

will be considered a condition endangering the performance of the Contract and may be considered grounds for termination of the Contract in accordance with paragraph "TERMINATION FOR DEFAULT" of SECTION 00 72 00 GENERAL CONDITIONS.

D. Notification of Changes

1. After acceptance of the CQC Plan, the Contractor shall notify the Engineer in writing a minimum of seven (7) calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Engineer.

3.3 COORDINATION MEETING

- A. After award of the contract, but before physical work starts and before the acceptance by the Engineer of the CQC Plan, the Contractor shall meet with the Engineer or Authorized Representative and discuss the Contractor's quality control system. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with Owner's Quality Assurance. Minutes of the meeting shall be prepared by the Engineer and signed by the Contractor. The minutes shall become a part of the contract file. There may also be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

A. General

1. The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure contract compliance. The Contractor shall provide a CQC organization which shall be at the site at all times during progress of the work and with complete authority to take any action necessary to ensure compliance with the contract. All CQC staff members shall be subject to acceptance by the Engineer. The organization shall designate a Safety Officer and a qualified Endangered Species Monitor who will serve as members of the CQC staff and designate a qualified surveyor for quantity measurement.

B. CQC System Manager

1. The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a dredging or construction person with a minimum of three (3) years of experience in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager, containing a minimum of three (3) years of experience, shall be identified in the plan to serve in the event of the System Manager's absence.

C. CQC Personnel

1. A staff shall be maintained under the direction of the CQC System Manager to perform all CQC activities. The staff must be of sufficient size to ensure adequate CQC coverage of

all work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned CQC responsibilities and must be allowed sufficient time to carry out these responsibilities. The CQC plan will clearly state the duties and responsibilities of each staff member.

D. Registered Land Surveyor

1. A registered Land Surveyor registered in the State of Florida shall perform all layouts of the work and quantity surveys required to carry out the project work. The Registered Land Surveyor shall certify all field notes, computations, and all other records relating to surveys or layouts of the work.
2. The Registered Surveyor must have appropriate equipment (i.e., heave, pitch, and roll compensator) to be able to work within inclement weather conditions.

E. Organizational Changes

1. The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Engineer for acceptance.

3.5 CONTROL

A. The Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of work as follows:

1. Preparatory Phase (see **APPENDIX J** for worksheet)

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

- a. A review of each paragraph of applicable specifications.
- b. A review of the Project Drawings
- c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.
- d. Review of provisions that have been made to provide required control inspection and testing.
- e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.
- f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.
- g. Reviews of the appropriate activity hazard analysis to assure safety requirements are met.
- h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for the feature of work.
- i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Engineer.
- j. Review requirements under permits, environmental protection, and protection of environmental species.
- k. Discussion of the initial control phase (workmanship).

- I. The Engineer shall be notified at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC Systems Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.
2. Initial Phase (see **APPENDIX J** for worksheet)

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

 - a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.
 - b. Verify adequacy of turbidity monitoring and survey controls to ensure full contract compliance. Verify required control inspection and testing.
 - c. Establish a level of workmanship and verify that it meets minimum acceptable workmanship standards and review allowable tolerances. Compare with required sample panels as appropriate.
 - d. Resolve all differences.
 - e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.
 - f. The Engineer shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC Systems Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases; and
 - g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.
 3. Follow-up Phase
 - a. Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.
 4. Additional Preparatory and Initial Phases
 - a. Additional preparatory and initial phases shall be conducted on the same definable features of work if the quality of on-going work is unacceptable; there are changes in the applicable CQC staff, onsite production supervision or work crew; work on the definable feature is resumed after a substantial period of inactivity; when other problems develop.

3.6 TESTS

A. Testing Procedure

1. The Contractor shall perform specified tests and required monitoring instrumentation or tests to verify that control measures are adequate to provide an end product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Engineer duplicate samples of test specimens for possible testing by the Owner. Testing includes operations and/or acceptance tests when specified. The Contractor shall procure the services of an Engineer-approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:
 - a. Verify that testing standard or procedures comply with contract requirements
 - b. Verify that facilities and testing equipment are available and comply with testing standards.
 - c. Check test instruments calibration data against certified standards
 - d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
 - e. Results of tests and monitoring instruments, both passing and failing, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by Engineer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of test performed by an offsite or commercial test facility shall be provided directly to the Engineer. Failure to submit timely test reports as stated or maintain adequate monitoring testing may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7 TESTING LABORATORIES

A. Capability Check

1. The Owner reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques.

B. Capability Recheck

1. If the selected laboratory fails the capability check, the Contractor will be assessed a charge to reimburse the Owner for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

C. Onsite Laboratory

1. The Owner reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests and to check Contractor's testing procedures, techniques, and test results at no additional cost to the Owner.

D. Furnishing or Transportation of Samples for Testing

1. Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Owner shall be delivered to Engineer-approved laboratory. Coordination for each specific test, exact delivery location, and dates will be made with the Engineer.

3.8 COMPLETION INSPECTION

A. Punch-Out Inspection

1. Near the completion of all work or any increment thereof, the CQC System Manager shall conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings and specifications. Such a list of deficiencies shall be included in the CQC documentation, as required by paragraph DOCUMENTATION below, and shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been correct. Once this is accomplished, the Contractor shall notify the Engineer that the facility is ready for "Pre-Final" inspection.

B. Pre-Final Inspection

1. The Engineer may perform a Pre-Final Inspection to verify that the Work is complete. The Contractor's CQC System Manager shall ensure that all items identified as needing completion or corrections have been addressed before requesting a final inspection. Any items noted on the Pre-Final Inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment thereof if the project is divided into increments by separate completion dates.

C. Final Acceptance Inspection

1. The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and Engineer's Representative shall be in attendance at this inspection. Additional Owner personnel may also be in attendance. The final acceptance inspection will be formally scheduled by the Engineer based upon results of the Pre-Final inspection. Notice shall be given to the Engineer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of Contractor to have all contract work acceptably complete for this inspection will be cause for the Owner to bill the Contractor for the Owner's additional inspection cost in accordance with Paragraph 14.06 of the General Conditions. In addition to the Owner, other agencies may attend.

3.9 DOCUMENTATION

- A. The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

1. Contractor/subcontractor and their area of responsibility.
2. Operating plan/equipment with hours worked, idle, or down for repair.

3. Work performed each day, giving location, description, and by whom.
 4. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase should be identified (Preparatory, Initial, Follow-up). List deficiencies noted along with corrective action.
 5. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.
 6. Submittals reviewed, with contract reference, by whom, and action taken.
 7. Off-site surveillance activities, including actions taken.
 8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
 9. Instructions give/received and conflicts in plans and/or specifications.
 10. Contractor's verification statement.
- B. These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. One copy of these records in electronic report form (Adobe PDF format) shall be furnished to the Engineer daily within 24 hours after the date(s) covered by the report, except that reports need not be submitted for days which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 NOTIFICATION OF NONCOMPLIANCE

- A. The Engineer will notify the contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

--End of Section--

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SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. In addition to temporary construction facilities, this section covers temporary utilities, vehicular access and parking, and project identification. The Contractor is solely responsible for locating, coordinating, and securing an appropriate staging area for the project.
- B. See SECTION 01 35 43 ENVIRONMENTAL PROTECTION for requirements including silt control, trailer placement, fueling restrictions, dust control, solid waste, and clean-up. Upon completion of project, clean-up and restore area in accordance with Article 6 of SECTION 00 72 00 GENERAL CONDITIONS.
1. Construction facilities include, but are not limited to, the following:
 - a. Contractor's Offices
 - b. Information Bulletin Board
 - c. Material and Equipment Storage Area
 - d. Fueling Area
 - e. Secured Storage Area
 - f. Employee Parking Area
 - g. Debris Container (Dumpster)
 - h. Construction Signage to include Project Sign; Safety Sign; and Construction Warning Signs
 2. Temporary utilities include, but are not limited to, the following:
 - a. Water
 - b. Electric
 - c. Sewage
 - d. Communications
 - e. Lighting

1.2 REFERENCES

The publications listed below form a part of this specification to extent referenced. The publications are referred to in text by basic designation only. All publications are "Latest Edition" unless specified otherwise.

- A. American National Standards Institute (ANSI)
ANSI C2 (1997) National Electrical Safety Code
- B. National Fire Protection Association (NFPA)
NFPA 70 (1999) National Electrical Code
- C. U.S. Army Corps of Engineers (USACE)
USACE CESAJR 385-1-1 (1998) Safety and Occupational Health Program
USACE EM 385-1-1 (2003) U.S. Army Corps of Engineers Safety and Health Requirements Manual

1.3 SUBMITTALS

The following submittals shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES.

A. Mobilization/Demobilization Plan

1. Prior to construction commencement, the Contractor shall submit a Mobilization/Demobilization Plan. This plan shall be submitted within 10 calendar days of Notice to Proceed. The Mobilization/Demobilization Plan shall include, but not be limited to, the following:
 - a. Mobilization Requirements:
 - 1) Methods, equipment and materials;
 - 2) Connection of utilities;
 - 3) Placement of site facilities and temporary controls; and
 - 4) Construction of facilities
 - b. Demobilization Requirements (methods, equipment, and materials required to clean-up and restore site at project conclusion):
 - 1) Collection, recycle and disposal of solid waste
 - 2) Contract-generated material
 - 3) Utility disconnection
 - 4) Removal of Contractor facilities
 - 5) Repair and restoration of site (i.e., fences, roads, or permanent facilities)

B. Security Plan

1. At or before the scheduled pre-construction conference, the Contractor shall prepare a Security Plan (to meet the minimum requirements specified in Paragraph 3.6 of this Specification and SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT) for the Engineer describing site security as follows:
 - a. Day and night security
 - b. Weekend and holiday security
 - c. General security duties

C. Hurricane and Severe Storm Plan

1. At least fifteen (15) calendar days prior to construction commencement, the Contractor shall prepare a Hurricane and Severe Storm Plan. This plan shall include but not be limited to the following:
 - a. Types of storms anticipated (winter storm, hurricane, tornado);
 - b. Time intervals before storms when action will be taken and details of the actions taken;
 - c. List of equipment to be used on the job and its ability to handle adverse weather;
 - d. List of safe harbors and the distances from the work area to these harbors and the time required to move the equipment to these harbors. Copies of letters of approval for the use of these safe harbors (local authorities, U.S. Coast Guard, etc.) where applicable;
 - e. Method of securing equipment in these safe harbors;
 - f. List of equipment to be utilized to make this move to safe harbors;
 - g. Method of securing equipment not moved
 - h. Plan of evacuation to include interim measures, i.e., immediate reaction plans to be taken for all storm occurrences, particularly sudden/flash storms; and

- i. Operating procedures to be undertaken when critical dredge equipment fails during sudden and severe adverse weather conditions, to including breaking of spuds, swing wires, anchor wires, or other mooring equipment or facilities.

D. Temporary Facility Shop Drawings

- 1. At least fifteen (15) calendar days prior to construction commencement, the Contractor shall submit a general layout sketch of the Contractor's temporary site facilities shall include, but not be limited to, the following:
 - a. Traffic control plan
 - b. Parking areas
 - c. Material storage
 - d. Equipment lay down area
 - e. Fuel areas
 - f. Supplemental or other staging areas
 - g. Temporary well, water supply
 - h. Septic field or holding tanks, port-a-lets
 - i. Fences -- location and dimensions, entrance and exit points, and details of installation

E. Boat Operator's License

- 1. At least fifteen (15) calendar days prior to construction commencement the Contractor shall furnish proof of a boat operator's license.

1.4 EXISTING UTILITIES

- A. The Contractor is responsible for furnishing all necessary utilities at the project site.

PART 2 - PRODUCTS

2.1 STORAGE CONTAINERS

- A. Welded steel construction, locking, shipping containers or equal.
- B. Fuel sled - ensure double containment for fuel tank, and electrically grounded and have fire extinguisher station.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Identification of Employees
 - 1. Contractor and Subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.
- B. Employee Parking
 - 1. Park employee's vehicles in areas approved by the Owner away from construction traffic, within reasonable distance of site. Maintain area free of ruts, mud holes, and puddles. Place gravel where required by deteriorated conditions.

2. Contractor should protect unattended equipment as it may be subject to vandalism.
3. Storage trailers and storage area with the Owner's material should be locking type with lighting.

C. Onsite Information

1. Keep copy of Project Drawings, specifications, and other contract documents at Contractor's Office onsite, available for use at all times.

3.2 AVAILABILITY AND USE OF UTILITY SERVICES

- A. Install temporary facilities and utilities in accordance with ANSI C2, USACE CESAJR 385-1-1, USACE EM 385-1-1, and NFPA 70. Obtain necessary construction, building, zoning, or soil erosion and sediment control approvals required by local authorities, and utility companies. Equip trailer(s) with wind tie downs in accordance with local wind and building code requirements.

B. Fire Extinguisher

1. Refer to USACE EM 385-1-1. Non-toxic, dry chemical, fire extinguisher meeting Underwriters Laboratories, Inc., approval for Class A, Class B, and Class C fires with a minimum rating of 2A; 10B; and 10C.

C. Utility Lines

1. Install, connect, and modify temporary lines as coordinated with owning utility. Conform to requirements in accordance with ANSI C2 and NFPA 70 for Temporary Electric Lines. Remove temporary line at completion of project.

3.3 PROTECTION AND MAINTENANCE OF TRAFFIC

- A. During construction, the Contractor shall provide access and temporary roads, as necessary, to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction.

The traveling public shall be protected from damage to person and property. The Contractor's traffic, on roads selected for hauling equipment and material to and from the site, shall interfere as little as possible with public. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

B. Barricades

1. The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

3.4 CONTRACTOR'S TEMPORARY FACILITIES

A. Waste Storage

1. Provide dumpsters or suitable debris containers. Prevent wind blown trash; cover as needed. Dispose of offsite when needed. Refer to SECTION 01 35 43 ENVIRONMENTAL PROTECTION.

B. Fuel Storage and Fueling Operations

1. Refer to SECTION 01 35 43 ENVIRONMENTAL PROTECTION. Provide light when fueling at night.

3.5 SECURITY PLAN

A. Maintain site security at all times when there are no on-site activities. Locked gates are a minimum requirement when there are no on-site activities. Maintain 24-hour security during weekends and holidays. Site security shall include, but not be limited to:

1. Limit vehicular access to authorized vehicles and personnel only.
2. Maintain a sign-in log documenting visitors, deliveries, and security incidents. Include date, name, address, company, time in and time out for each employee and visitor.
3. Check fenced areas, equipment, trailers on a daily basis. If damage is observed or vandalism is found report to the Engineer.
4. No visitors will be allowed on site without knowledge of Contractor and permission of the Owner. Direct visitors to report upon arrival to Contractor's Field Office for site safety and accident prevention briefing. Provide visitors appropriate protective equipment (i.e., earplugs, safety glasses, etc.).
5. All access gates shall be locked at all times when there are no on-site activities.

B. The Contractor shall refer to SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT for additional security requirements.

3.6 CONTRACTOR-FURNISHED BOAT AND MARINE RADIOS FOR OWNER PERSONNEL

A. The Contractor shall furnish crew boat transportation as needed. The boat shall be properly outfitted to meet all safety requirements of the U.S. Coast Guard. The Contractor shall also provide an operator who possesses an appropriate U.S. Coast Guard operator's license for carrying passengers on board. The Contractor shall furnish proof of the operators' license within 10 calendar days after receipt of Notice to Proceed.

3.7 PLANT COMMUNICATION

A. Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by the Owner's personnel.

3.8 CLEANUP

- A. Construction debris, waste materials, packaging material, and the like shall be removed from the work site daily. Any dirt or mud that is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities that are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored. Refer to SECTION 01 35 43 ENVIRONMENTAL PROTECTION for solid waste and post construction clean-up.

3.9 RESTORATION OF STAGING AND STORAGE AREA

- A. Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including topsoil and seeding as necessary.

-End of Section-

SECTION 01 78 00
PROJECT CLOSEOUT

PART 1 - GENERAL

1.1 SUMMARY

- A. This section includes administrative and procedural requirements for contract closeout including, but not limited, the following:
 - 1. Preliminary and inspection substantial completion procedures
 - 2. Preliminary and re-inspection closeout completion procedures
 - 3. Record Document submittal
 - 4. Inspection procedure
 - 5. Final cleaning and site restoration of the temporary dredged material management area
- B. Closeout requirements for specific construction activities are included in the appropriate sections of this specification.

1.2 SUBMITTALS

The following submittals shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES:

- A. Record Drawings:
 - 1. Submit one (1) full-size hard copy and one (1) electronic copy of the Record Drawings for Engineer approval at least two (2) calendar days prior to requesting inspection for Substantial Completion.
- B. As-Built Drawings
 - 1. Submit two (2) full-size hard copy set of signed and sealed As-Built Drawings.
 - 2. Submit two (2) CDs containing the electronic AutoCAD drawing files (compatible with AutoCAD 2013 or later format and a PDF printout of the As-Built Drawings. All survey data shall be referenced to the horizontal projection NAD83, Florida East, Ft, and the vertical datum in NAVD 88, Mean Lower Low Water (MLLW).
 - 3. As-Built Drawings shall be submitted no later than thirty (30) calendar days post-project completion.
- C. Request for Inspection
 - 1. The Contractor shall notify both the Owner and Engineer in writing five (5) calendar days prior to substantial completion and the final acceptance inspection. The Owner and Engineer will then set up an appropriate time for the inspection(s).

1.3 PROJECT RECORD DOCUMENTS

- A. Record Drawings:
 - 1. Throughout the project maintain at least one clean, undamaged set of Project Drawings for submittal as Record Drawings for Engineer review. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Do not use record documents for construction purposes. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Record Drawings.

Give particular attention to concealed elements that would be difficult to measure and record at a later date.

2. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
 - a. Mark new information that is important to the Engineer and Owner but was not shown on the Project Drawings or Shop Drawings.
 - b. Note related Change-Order numbers where applicable.
 - c. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates and other identification on the cover of each set.

3. The Owner will make electronic copies available to the Contractor for Record Drawing purposes whatever versions of the bid plans exist. The Contractor must obtain the concurrence of the Engineer as to form and content of record information provided in electronic format prior to proceeding, but in general, information similar to that shown below needs to be similarly provided.
 - a. Record information weekly concurrently with construction progress.
 - b. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work. Mark each document "PROJECT RECORD" in neat, large, printed letters.
 - c. Mark new information that is important to the Owner but was not shown on Project Drawings or Shop Drawings.
 - d. Note related change-order numbers where applicable.
 - e. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.
 - f. Include the following:
 - 1) Dates of areas dredged
 - 2) Depths of dredging per day or section.
 - 3) Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements (vertical and horizontal location of buried or encased piping, raceways, cables, etc.).
 - 4) Where Submittals (like shop drawings) are used for mark-up, record a cross-reference at corresponding location on Drawings.
 - 5) Field changes of dimension and detail.
 - 6) Changes made by Change Order or other Modifications.
 - 7) Details not on original Project Drawings.
 - 8) Record drawings shall include a plot of the actual excavation cross-sections plotted at the same station as and on top of the design cross-sections.

B. As-Built Drawings:

1. Within fifteen (15) days of Substantial Completion, the Contractor shall complete an as-built survey and submit an As-Built Drawing set of the completed dike, gravel toe drain pipes, weirs, weir pipes, timber walkway, roads, ditches, inlets, culverts, fence line, fence gates, edge of clearing, and other construction items as deemed necessary by the Engineer. The as-built survey shall show plan location and elevation of constructed features. Approval and acceptance of final As-Built Drawings shall be accomplished before final payment is made to the Contractor.

2. The Contractor will rely on the Project Drawings as the basis for the As-Built Drawing set. The Engineer will provide electronic copies of the Project Drawings in AutoCAD at the Preconstruction Meeting.

3. As-built survey drawings shall be in AutoCAD 2013 or later format. Survey data shall be in the same horizontal coordinate system and vertical datum used in the project drawings.
4. Each sheet of the As-Built Drawing set shall be clearly marked "As-Built Drawings" and shall be signed and sealed by a licensed Land Surveyor Registered in the State of Florida.
5. The Surveyor shall sign the cover sheet of the marked-up drawings in the following manner: "I CERTIFY THAT THESE CORRECTED DRAWINGS INDICATE CONSTRUCTION AS ACTUALLY PERFORMED AND ARE AN ACCURATE REPRESENTATION OF THE SPECIFIED WORK. THESE CORRECTED DRAWINGS ARE APPROVED FOR PREPARATION OF AS-BUILT DRAWINGS."
6. The As-Built Drawing set shall display the constructed dike cross sections superimposed on the Project Drawing sheets displaying the planned dike cross sections. Linework for the constructed features should be bold and easily distinguishable from linework for the designed features. Linework for the designed features shown in the Project Drawings shall be made to plot faded and in the background of the constructed features.
7. The As-Built Drawing set shall display as-built elevations and locations of the completed dike, weirs, roads, ditches, and walkway next to those design elevations and locations shown on the Project Drawings for comparison. Where the specifications list required tolerances, the As-Built Drawings shall clearly indicate if the constructed item is out of tolerance.
8. For unit price bid items determined by survey, the As-Built Survey Drawing set shall show a table with the final construction quantities of each unit price item using the same unit as indicated on the Bid Schedule.
9. The District and Engineer reserves the right to reject any drawing files it deems incompatible with the Engineer's AutoCAD system. Paper prints, drawing files and storage media submitted will become the property of the District upon final approval. Failure to submit final As-Built Drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract.

1.4 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following (list exceptions in the request):
 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, the Contractor shall demonstrate 100 percent completion for the portion of the Work claimed as substantially complete.
 - a. Include supporting documentation required for completion as indicated in these Specifications and a statement showing an accounting of changes to the Contract Sum.
 - b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 2. Submit specific warranties, maintenance agreements, final certifications, and similar documents.
 3. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

4. Submit preliminary Post-Dredging survey drawings and electronic files, damage or settlement surveys, property surveys, and similar final record information as indicated.
5. Complete final cleanup requirements.

B. Inspection Procedures

1. On receipt of a written request for inspection from the Contractor, the Engineer will either proceed with inspection within 3 days or advise the Contractor of unfilled requirements. The Engineer will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.
2. The Engineer will repeat inspection when requested and assured that the Work is substantially complete.
3. Results of the completed inspection will form the basis of requirements for final acceptance.

1.5 FINAL ACCEPTANCE

A. Preliminary Procedures: When requesting final inspection, include exceptions in the request. Before requesting final inspection of the Work for certification of final acceptance and final payment, complete the following:

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, endorsed and dated by the Engineer. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Engineer.
4. Submit Consent of Surety to final payment.
5. Submit a final liquidated damages settlement statement.
6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Engineer will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Engineer.

1. Upon completion of re-inspection, the Engineer will prepare a certificate of final acceptance. If the Work is incomplete, the Engineer will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, re-inspection will be repeated.

PART 2 - PRODUCTS

2.1 AUTOCAD DESIGN FILES

- A. The Contractor will be furnished AutoCAD design files. The Contractor shall use the electronic design files provided by the District to prepare changes and additions to the electronic As-Built Drawings.

PART 3 - EXECUTION

3.1 FINAL SITE CLEANING

- A. Execute periodic (once a day minimum) cleaning to keep the work, the site, and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from Construction work.
- B. Provide on-site containers for the collection of waste materials, debris and rubbish.
- C. Remove waste materials, debris, and rubbish from the site periodically and dispose of at legal disposal areas away from the site.
- D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.
- E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the District's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.
- F. Where extra materials of value remain after completion of associated Work, they become the District's property. Dispose of these materials as directed by the District.
- G. Prior to final completion, or District occupancy, Contractor shall conduct an inspection of the site, and all work areas, to verify that the entire work area is clean.
 - 1. Upon completion of dewatering and final offloading, all applicable access roads, pipeline access, and parkway amenities shall be returned to its preconstruction condition.
 - 2. After the Contractor completes the final site cleaning, the Engineer and Contractor shall arrange a meeting that involves the FIND and Taylor Engineering to inspect the site conditions.
- H. The Engineer will not recommend final payment and release of retainage until the Contractor has completed the site restoration as described in this section.

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SECTION 32 72 00

MARSH GRASS PLANTING

PART 1 - GENERAL

1.1 SUMMARY

- A. This section consists of all labor, equipment, and materials required to plant marsh grass within the designated areas shown in the Drawings.
- B. Permanent impacts to shoreline and marsh vegetation are not authorized. In the event that pipeline placement or use causes ruts or permanently damages marsh vegetation, all ruts shall be backfilled with clean sand and marsh vegetation (*Spartina spp.*) shall be replanted in accordance with the specifications provided in this section.

1.2 DEFINITIONS

- A. Engineer: The Owner's designated representative for construction oversight.
- B. Engineer of Record: The Engineer whose signature and seal is affixed to the Drawings and Specifications; hereafter referred to as Engineer.
- C. Nomenclature: The scientific and common names of plants herein specified conform to the approved names given in Hortus Third (1976) by Liberty Hyde Bailey Hortorium.
- D. Planting Unit: For the purposes of this project, the term "planting unit" refers to vegetative material with at least three stems of an individual, viable, nursery grown plant of marsh grass (*Spartina alterniflora* or *Spartina patens*) that is installed within a single hole created in the designated marsh grass planting area. No other plant species will be accepted as substitutes without approval of the Engineer.

1.3 SUBMITTALS

The following submittals shall be submitted to the Engineer for approval in accordance with SECTION 01 33 00 - Submittal Procedures:

- A. Marsh Grass Materials: Submit certificates of compliance and/or documentation for plant source, plant size, plant age, plant grade, etc., to the Engineer certifying that the planting materials meet all of the requirements for this specification at least 10 days before delivering plants to the project site for Engineer approval.

1.4 PAYMENT

- A. Methods of Measurement: The bid unit price will be LUMP SUM. Measurement will be based on the percentage of work accomplished as determined by the Engineer.
- B. Payment for Marsh Grass Planting: Payment will be based on the percentage of plants satisfactorily installed as determined by the Engineer. The Contractor may request up to 80% of the lump sum upon initial planting and the remaining sum upon completion of the final inspection.

PART 2 - PRODUCTS

2.1 MARSH GRASS MATERIALS

- A. The source of all planting units delivered under this item will be limited to seeds and propagated plants collected from Northeast Florida. Source material collected from areas other than Northeast Florida will be rejected. The Contractor will be required to provide written documentation as to the source of the planting units. Documentation shall include collection permits or contracts from the FDEP, the U.S. Department of Agriculture, or other comparable documents.

2.2 MARSH GRASS PROPAGATION METHODS

- A. Liners
 - 1. Marsh Grass shall be grown in multi-well trays (liners) not to exceed a size of approximately 2 inches in diameter not less than 2.5 inches in depth.

2.3 PLANT PREPARATION FOR TRANSPORT AND DELIVERY

- A. The root ball shall be properly moistened to prevent desiccation. All planting units shall be handled, packed, transported, and stored at the installation site in such a manner as to ensure protection against desiccation, thermal stress, disease, or physical damage. Planting units deemed to have been improperly handled, packed, transported, or stored will be rejected by the Engineer.

2.4 PLANT SIZE AND CONDITION AT DELIVERY

- A. Plant Size
 - 1. Two of the three live stems shall be no less than 12 inches in height, as measured from the top of the root ball to the apical meristem. The Engineer will reject any plants not meeting these size constraints.
- B. Plant Condition
 - 1. All planting units provided shall have moist, vigorous root systems free of rot, disease, or discoloration at the time of delivery and installation. The Engineer will reject planting units not meeting these specifications. Planting units rejected will not be considered as delivered to the site and will not be eligible for payment for production, delivery, or other costs.

PART 3 - EXECUTION

3.1 MARSH GRASS PLANTING DEPTH AND SPACING

- A. Planting Unit Depth
 - 1. Planting units shall be planted in a dug hole. Depth of the planting hole will be fixed so that the stem-root interface shall be positioned slightly below the normal ground. The stem-root interface shall not be more than four (4) inches below normal ground. The planting hole shall be slightly closed around the plant and plants must remain erect after planting. The Engineer will reject plants not installed in this manner. Planting units which are out-of-specification with

regard to the provisions of this planting unit depth specification will be planted solely at the Contractor's risk, and will be subject to all of the survival criteria and warranty provisions detailed below, in part 3.2 of this specification.

B. Planting Unit Spacing

1. Planting units shall be planted in staggered rows, within the limits of the designated area shown on the Drawings. Planting units in each row shall be planted on 18-inch centers. Planting units in each row shall be staggered mid-way (in the shore-parallel direction) between planting units in the adjacent rows.
2. The Engineer shall assist the Contractor in the planting layout. The specific location of the planting boundaries, rows, and baselines shall be marked on site by the Contractor as directed by the Engineer.

3.2 SUCCESS CRITERIA AND REPLANTING

A. Planting Unit Success Criteria

The success of the planting effort will be assessed by the Engineer approximately 60 days after completion of the planting unit installation (for the entire project) based on the whole-site survival rate.

1. Whole-Site Survival Rate: A minimum survival rate of 90% of all planting units installed over the site as a whole shall be achieved. Plants will be considered to be surviving if they show clearly vigorous rhizome and white, turgid roots, even in the absence of vital above ground growth.

B. Replanting of Units

1. If any of the above success criteria are not met, as determined by the Engineer, the Contractor shall replant with viable, and within specification, planting units in all areas considered to be deficient according to the planting unit success criteria. The replanting of planting units will be the sole responsibility of the Contractor and be completed at no cost to the Owner. All warranty and survival provisions and requirements will apply to replanted planting units.

C. Initial Planting Unit Survival

1. Planting units that do not survive for a minimum of 10 days after installation will be rejected and not be considered eligible for payment. New, within specification, planting units will be installed by the Contractor in areas that do not survive for a minimum of 10 days. Contractor will be responsible for installing the new replacement planting units within five days of notification by the Engineer that an area of initial planting units did not survive for 10 days. The replacement planting units will be considered eligible for payment as "original" planting units only after they have survived a minimum of 10 days from installation.

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SECTION 35 20 23

DREDGING AND DREDGED MATERIAL PLACEMENT

PART 1 GENERAL

1.01 SUMMARY

- A. The Work covered by this section consists of furnishing all labor, materials, equipment, supplies and material, surveying, and performing all operations necessary to mechanically or hydraulically dredge the Intracoastal Waterway project limits (as indicated in the Project Drawings, **APPENDIX A**), transfer all excavated material to the District-owned FL-3 Dredged Material Management Area (DMMA), and dispose of in-channel debris. In-channel debris shall be separated, hauled off site, and properly disposed of in an approved landfill. All watercraft associated with the execution of the permitted project shall only operate within waters of sufficient depth so as to preclude bottom scouring, prop dredging, grounding, and damage to the submerged bottom or submerged resources (a minimum eighteen-inches clearance must be maintained at all times). Temporary and permanent impacts to surrounding wetland and submerged natural resource areas are not authorized.
- B. This project generally entails dredging approximately 185,200 cubic yards of material from Reach I of the Atlantic Intracoastal Waterway (ICWW) in Flagler County, Florida. The ICWW maintenance dredging area extends from Cut F-3 through ICWW Cut-F11 STA 28+02. This maintenance work will include excavation of the ICWW channel to target elevations of -14 feet (ft) mean lower low water (MLLW) (project depth of -12 feet and 2-foot allowable overdredge). In accordance with permit conditions, material shall be dredged via the use of either a mechanical or hydraulic dredge to remove all material (inclusive of all in-channel debris) feasible from the dredge template. Dredged material from the northern maintenance area shall be offloaded at the ±44-acre dredged material management area (DMMA) FL-3 located in Palm Coast, Florida.
- C. The successful Bidder will have **180** calendar days from the Notice to Proceed to complete the entire project, inclusive of the alternate bid item, if awarded.
- D. Throughout all phases of the project, the Contractor shall remain responsible for ensuring that all work complies with the requirements specified in the regulatory permits (**APPENDIX B and APPENDIX C**). Failure to meet the environmental requirements of the aforementioned permits or of these Specifications may result in work stoppages or termination for default. The Contractor shall make no part of the time lost due to any such work stoppages the subject of claims for extensions of time or for excess costs or damages. If Contractor fails or refuses to promptly repair any damage caused by violation of the provisions of these permits and/or Specifications, the Owner may have the necessary work performed and charge the cost thereof to the Contractor.

1.02 REFERENCES

- A. American Society of Mechanical Engineers (ASME)
 - ASME B18.2.2 Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Coupling Nuts (Inch Series)
 - ASME B18.2.6 Fasteners for Use in Structural Applications

ASME B18.21.1 Washers: Helical Spring-Lock, Tooth Lock, and Plain Washers (Inch Series)

ASTM A307 Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength

B. American Society of Testing Materials (ASTM)

ASTM A153 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware

ASTM A307 Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength

ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort.

ASTM D1140 Standard Test Methods for Amount of Material in Soils Finer than the No. 200 (75-um) Sieve

ASTM D1556 Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method

ASTM D2216 Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes.

C. American Wood Preservers' Association (AWPA)

AWPA U1 User Specification for Treated Wood

AWPA M4 Standard for the Care of Preservative-Treated Wood Products

1.03 SUBMITTALS

The following shall be submitted in accordance with SECTION 01 33 00 SUBMITTAL PROCEDURES:

A. Notice to Mariners

1. Prior to the commencement of work on this Contract, the Contractor shall notify the Commander, Seventh Coast Guard District in Miami, Florida of his intended operations to dredge and request that it be published in the Local Notice to Mariners. This notification must be given in sufficient time so that it appears in the Notice to Mariners at least two weeks prior to the commencement of this dredging operation. A copy of the notification shall be provided to the Engineer.

B. Notification of Discovery of Historical Resources

1. Contractor shall immediately notify Engineer if any shipwreck, artifact, or other objects of antiquity that have scientific or historical value, or are of interest to the public, are discovered, located, and/or recovered. Contractor acknowledges that the site(s), articles,

or other materials are the property of the State of Florida, with title vested in the Department of State, Division of Historical Resources.

C. Notice of Misplaced Material

1. Contractor shall immediately notify the U.S. Coast Guard Marine Safety Office and the Engineer of any misplaced material (e.g., dredge pipe, cable, etc.).

D. Notification of Aids Relocation

1. Unless expressly stated in the Project Drawings, the Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation without written consent from the U.S. Coast Guard. Within seven (7) calendar days following receipt of the Notice to Proceed, the Contractor shall notify the Commander, Seventh Coast Guard District in Miami, Florida of his plan to dredge adjacent to any aids which require relocation to facilitate dredging. This notification shall be immediately followed by formal written request with a copy to the Engineer. The Contractor shall contact the U.S. Coast Guard for information concerning the position to which these aids will be relocated.

E. Dredge Plan

1. At least fifteen (15) calendar days before the scheduled pre-construction conference, the Contractor shall submit to Engineer for approval, a dredge plan that provides for a comprehensive summary of proposed project methodology (equipment, material transport, daily dredging productivity), operational controls (quality control, minimization of marine and upland traffic delays, permit compliance), security, and turbidity management/monitoring procedures to be implemented.

F. Maintenance of Marine Traffic Plan

1. The Contractor shall develop and submit a Maintenance of Marine Traffic Plan to the Engineer for approval within fifteen (15) calendar days before the scheduled pre-construction conference. The plan — addressing traffic within the Intracoastal Waterway — must clearly demonstrate, via narrative and illustrative documentation, how the Contractor will avoid disruption of ongoing traffic to the maximum extent possible.
2. During active dredging, the plan shall also include a daily email correspondence to local mariners that provides via narrative and illustrative documentation, at a minimum, the planned location of the dredge, local landmarks for ease of reference, and hours of operation.

G. DMMA Facility Operation Plan

1. Within fifteen (15) days of the Notice to Proceed, the Contractor shall submit plans to the Engineer for approval of the DMMA Facility Operation Plan. The Plan shall include a detailed narrative for transporting and placing the material at DMMA FL-3. Primary plan components include both the Site Plan and Placement Operations Plan.

a. Site Plan

- 1) Proposed location and dimensions of any on-site facilities (storage area, field office, sanitation, etc.)
- 2) On-site turbidity control measures
- 3) Avenues of ingress/egress

- 4) The Contractor shall also indicate if the use of a supplemental or other staging area will be used.
- b. Placement Operations Plan
- 1) The Contractor shall describe the procedure and equipment that will be used by the Contractor to manage the DMMA.
 - 2) The Placement Operations Plan shall include, at a minimum, the proposed commencement and completion date relevant to the District's Notice to Proceed, hours of operation, material unloading and handling equipment, anticipated production rates, maintenance and operation of inflow pipe, effluent monitoring, discharge monitoring and reporting, equipment and vehicles to be used on site, key personnel names and telephone numbers, pipeline route, fuel spill plan, and other pertinent procedures relating to material unloading, transportation and placement of the dredged material required under this Contract.
 - 3) The Placement Operations Plan shall also include, but shall not be limited to, the following items:
 - a) A scaled drawing and description of the inflow pipeline design and layout. The description shall include details including: pipe material, size and thickness; location of all proposed inflow pipe end points; pipeline valves and wyes; inflow pipe end point conditions, including use of spreaders, distance off the dike and pontoons or other equipment used.
 - b) Listing of all equipment to be mobilized on site and a description of the intended use. Equipment shall include but shall not be limited to: all pumps and pump details, spill cleanup equipment, monitoring equipment, and material excavation/trenching equipment. The Contractor shall be responsible for designing any necessary pumping system and sizing any pumps.
 - c) Procedure for inspection and maintenance of inflow pipeline to prevent leaks and spills. The Contractor shall inspect the full length of the inflow pipe a minimum of two (2) times per day.
 - d) Procedure for communication between the dredge and DMMA.
 - e) Health, Safety, and Security measures that will be implemented by the Contractor at the work site and along the pipeline locations to ensure safety and security for onsite personnel and to keep the public free and clear from work site and pipeline.
 - f) Location and description of any ramps, trenches or road crossing areas to be constructed by the Contractor along the pipeline on the DMMA.
 - g) Operating procedures to control discharge water and water quality including sampling and monitoring procedure and equipment.
 - h) Detailed plan of the operation and procedures that will be used to monitor the Contractor's operations at the disposal area and ensure compliance with the facility permits requirements.
 - i) Note, the Contractor has access to the on-site weir boards for use during the project construction. The Contractor shall inspect both the quality and

quantity on on-site weir boards for use during construction. The Contractor is responsible for verification and acquisition of needed weir boards necessary to operate the on-site weir structure.

H. Daily Dredging Report of Operations

1. For each 24-hour period of dredging operations, the Contractor shall prepare and submit to Engineer one (1) copy of the Daily Report of Operations. A sample daily report form is provided in **APPENDIX J**. These reports shall be submitted to Engineer in Adobe PDF format by 5:00 pm on the day following the 24-hour period covered by the report. Upon completion of the job, Contractor shall summarize the daily reports in a consolidated job report and submit this report to Engineer.
2. DMMA Seepage Control and Observation
 - a. The Contractor shall daily monitor the embankment for signs of increased seepage flow, development of pipes/boils, slope depressions, sloughs, etc. Any development of these conditions shall be immediately reported to the Engineer and pumping operations shall cease until said conditions can be observed and evaluated.
 - b. The daily report observations at the DMMA shall be noted on the Daily Report of Operations aforementioned and in additional detail, as necessary, in the DMMA Placement Daily Operations Report.

I. Daily DMMA Placement Report of Operations

1. The Contractor shall also generate and maintain a Daily Operations Report to record the placement operations at the DMMA. The reports shall be generated for the entire duration of the placement and dewatering operations conducted by the Contractor. The forms to record the information shall be developed by the Contractor and submitted the Engineer for approval ten (10) days prior to the intended start of dredging. The information contained in the daily operations report shall include, at a minimum, the following:
 - a. A drawing showing the location of each material discharge point within the disposal site.
 - b. Date, starting and ending times of deposition of dredged material from each discharge point.
 - c. Daily average pond elevation in the basin
 - d. Daily meteorological data including precipitation, sky conditions, winds (direction and miles per hour) and temperature.
 - e. Date, starting and ending times, quantity and duration of effluent water discharged through the weir, number of weir boards in place, ponding and freeboards depths
 - f. Daily narrative describing Contractor's operations including water control and discharge operations, any maintenance or material handling/grading activities performed, and site condition including any signs of dike erosion or other condition requiring remediation.
 - g. Daily tally of persons on site including Contractor personnel. Forms shall be filled out completely and legibly each day by the Site Superintendent using black ink, including signatures. The original, completed Forms shall be submitted to the Engineer by 5:00 pm on the day following the 24-hour period covered by the report.

J. Waterfront Marine Structures Photo-Documentation

1. Pre-Construction: At least fifteen (15) days prior to the commencement of dredging activities, the Contractor shall submit photo-documentation of all waterfront structures within fifty (50) ft from the channel side slopes along the entire project length. The Contractor shall supply a narrative and accompanying photographs that detail the specific condition of the structure(s) and denote any structural deficiency's that are cross-referenced and appropriately labeled, via location and owner name, in the survey.
2. Post-Construction: Within fifteen (15) days after the completion of each acceptance section (A/S) and in the equivalent areas of the Pre-Construction Waterfront Marine photo-documentation area, the Contractor shall supply a narrative and accompanying photographs that detail the specific condition of the structure(s) and denote any structural deficiency's (as strictly compared to the pre-construction condition) that are cross-referenced and appropriately labeled, via location and owner name, in the survey.

K. Pre-Construction Bathymetric Survey

1. At least fifteen (15) days prior to the commencement of dredging activities, Contractor shall perform a pre-construction bathymetric survey of the project dredge area. Note that all dredging surveys used to determine pay quantities shall be conducted by an Engineer-approved bathymetric surveyor licensed in the State of Florida. The Engineer must review and approve the pre-dredge survey prior to any dredging activity.

L. Pre-Construction Utility Survey

1. It is the Contractor's sole responsibility to investigate the location of all utility crossings, via an independent and comprehensive pre-construction utility survey and submit to the Engineer for approval, at least fifteen (15) calendar days prior to any dredging operations. The Contractor shall take precautions against damages which might result from his operations in the vicinity of the utility crossings. **The Contractor assumes all liability for submerged and buried utility facilities. If any utility damage occurs as a result of its operations, the Contractor shall suspend dredging in the area of the damaged utility until the damage is repaired and resumption of the dredging is approved by the Engineer. The District shall not be responsible for the cost of such damage and repairs regardless of cause – including but not limited to any costs associated with interruption of utility services and delay damages.**

M. Post-Construction Bathymetric Survey

1. Within seven (7) days of the completion of construction activities within an acceptance section, the Contractor shall perform the post-dredge bathymetric survey (by equivalent methods, standards, and density to the pre-construction dredging survey). Upon submittal to the Engineer, the surveys shall be reviewed for accuracy, completeness, and to calculate payment quantities relative to the pre-construction bathymetric survey or progress payment surveys. The payment quantities, within the permitted template and broken down by required depth and allowable overdepth, shall be shown on the front cover of each Acceptance Section survey and be sealed by a Florida Registered Professional Surveyor as part of the submittal. At the end of each acceptance section, the Contractor shall submit two (2) signed and sealed surveys.
2. At project completion of all Acceptance Sections, the Contractor shall submit two (2) copies of a signed and sealed survey of the entire project within fifteen (15) calendar days of the completion of dredging activities for Engineer for approval. At a minimum, the project certification survey must include the pre-construction bathymetric survey, permitted dredging template, construction template, and post-dredge bathymetric survey (combining each of the acceptance sections). The payment quantities, within the permitted template

and broken down by required depth and allowable overdepth, shall be shown on the front cover (summarizing each Acceptance Section) and be sealed by a Florida licensed surveyor as part of the submittal.

1.04 DEFINITIONS

- A. Limits of Dredging: The area in which the dredge is free to excavate material. All vessels and construction equipment, tools, and dredging activities shall be setback a minimum of 25 feet from all structures within the main channel. Anchoring, spudding of vessels, storage, stockpiling or access of equipment on, in, over or through submerged aquatic vegetation is strictly prohibited.
- B. Required Depth: The material actually removed from the designated areas to be dredged, to a depth of not more than the "Project Depth" as shown on the drawings, will be estimated and paid for in accordance with the provisions contained in SECTION 01 29 00 MEASUREMENT AND PAYMENT.
- C. Allowable Overdepth: To cover the inaccuracies of the dredging process, material actually removed from the designated areas to a depth below the required depth of not more than the allowable overdepth shown on the drawings, will be measured and paid for in accordance with the provisions contained in in SECTION 01 29 00 MEASUREMENT AND PAYMENT.
- D. Side Slopes: Although dredging of side slope material may be necessary to provide the required project channel dimensions (depth and width), the side slopes shown on the drawings are provided for payment purposes only. Side slopes may be formed by box cutting, step cutting, or dredging along the side slope. Material actually removed, confined by the "Limits of Dredging", to provide for final side slopes not flatter than that shown on the Project Drawings, but not in excess of the amount originally lying above the limiting side slope, will be measured and paid for in accordance with SECTION 01 29 00 MEASUREMENT AND PAYMENT.

1.05 PUMPING OF BILGES

- A. Contractors are warned that pumping oil or bilge water containing oil into navigable waters, or into areas which would permit the oil to flow into such waters, is prohibited by Section 13 of the River and Harbor Act of 1899, approved March 3, 1899 (30 Stat. 1152; 33 U.S.C. 407). Violation of this prohibition is subject to the penalties under the referenced acts.

1.06 UTILITY CROSSINGS

- A. The Contractor shall be responsible for investigating the locations and depths of all utility crossings. Contractor will take precautions against damages which might result from his operations, especially the sinking of dredge spuds and/or anchors into the channel bottom, in the vicinity of underwater utility crossings. If any damage occurs because of his operations, Contractor will be required to suspend dredging until the damage is repaired and approved by the District and Engineer. Costs for such repairs and for the downtime of the dredge and attendant equipment shall be at Contractor's expense.

1.07 SIGNAL LIGHTS

- A. The Contractor shall display signal lights and conduct operations in accordance with the General Regulations of the Department of the Army and of the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in

submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable channels, as set forth in the U.S. Coast Guard August 2014 Navigation Rules and Regulations Handbook, or 33 CFR 80 through 33 CFR 82 (International) and 33 CFR 83 through 33 CFR 90 (Inland) as applicable.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.01 GENERAL

- A. Contractor shall dredge within the Limits of Dredging as necessary to complete the Work as defined in the Project Drawings and Specifications and transport the dredged material to the designated placement area. Contractor shall not dredge outside the Limits of Dredging.
- B. Work Hours
 - 1. Refer to Section 01 11 00 SUMMARY OF WORK, **APPENDIX B** and **APPENDIX C** for Work Hour restrictions.
 - 2. A qualified manatee observer shall be on-site at all times during in-water work.
- C. Access to Work Sites
 - 1. Contractor shall be responsible for providing and maintaining access necessary for his equipment to and from the Work sites.

3.02 WEATHER

- A. The project area is subject to windy and rainy weather, including severe electrical storms and other sudden and locally severe meteorological occurrences that approach hurricane conditions, during any time of the year. 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 Contractor's responsibility to obtain information concerning rain, wind, and wave conditions that could influence his dredging and disposal operations.

3.03 NOISE CONTROL

- A. Contractor shall ensure that all possible measures are employed to reduce the amount of noise produced by his operations. Contractor shall conduct his operations to comply with all federal, state and local laws pertaining to noise. Additionally, Contractor shall inform all crewmembers of the need to maintain a professional manner while on the job sites, in radio communications, and in dealing with the public, Palm Beach, Port of Palm Beach employees.
- B. All hauling and excavating equipment including dredges, dredge/barges, booster pumps, tugs and other support vessels, dozers, loaders, etc. used on this Work shall be equipped with satisfactory mufflers and/or other noise abatement devices.

- C. Contractor shall consider the proximity of the dredge operations to residential areas, especially during early evening and early morning hours. Such consideration should include but not be limited to—reducing deck noise, reducing throttle, holding the use of horn and whistle signals to a minimum, and restraining the use of P.A. loudspeaker systems.

3.04 LIGHT CONTROL

- A. Contractor shall ensure that all work lights (as opposed to safety lighting) are shielded to prevent them from shining on residential areas.

3.05 DAMAGE TO PROPERTY

- A. Any damages to private or public property (inclusive of utilities) resulting from Contractor's operations shall be repaired and paid for by Contractor.

3.06 NOTIFICATION OF COAST GUARD

- A. Navigation Aids
 - 1. Navigation aids located within or near the areas required to be dredged will be removed, if necessary, by the U.S. Coast Guard in advance of dredging operations. The Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid of navigation.
- B. Dredging Aids
 - 1. The Contractor shall obtain approval from the U.S. Coast Guard for all buoys, dredging aid markers to be placed in the water, and dredging aid markers affixed with a light prior to the installation. Dredging aid markers and lights shall not be colored or placed in a manner that they will obstruct or be confused with navigation aids.

3.07 WATERBORNE OPERATIONS

- A. All areas to be dredged shall be in accordance with the attached Project Drawings and shall not exceed the specific areas and depths indicated on those drawings. The Contractor is NOT authorized to dredge outside of the area depicted. Material excavated shall be transported to and deposited in the DMMA designated on the Project Drawings. No wetlands or submerged aquatic vegetation outside the project area is to be disturbed as a result of this project construction. Failure to comply with this condition and all other permit conditions may result in enforcement action. All regulatory enforcement actions, stemming from the project construction, are the strict responsibility of the Contractor. **Failure to comply with this condition and all other permit conditions may result in enforcement action. All regulatory enforcement actions, stemming from the project construction, are the strict responsibility of the Contractor.**

3.08 BRIDGE-TO-BRIDGE COMMUNICATION

- A. In order that radio communication may be made with passing vessels, all dredges engaged in Work under this Contract shall be equipped with bridge-to-bridge radio telephone equipment. The radio equipment shall operate on a single channel very high frequency (VHF), FM, on a frequency of 156.55 MC per second with low power output having a communication range of

approximately ten (10) miles. The frequency has been approved by the Federal Communication Commission (FCC). Channels #13 and #16 must be monitored at all times.

3.09 RIGHT-OF-WAY LIMITS

- A. Contractor shall conduct his operations to minimize interference with the movement of vessels in the adjacent waters not being actively dredged. However, the Contractor will be permitted to exclude the public from the work areas including in the immediate vicinity of active dredging or material placement operations. Enforcement shall be Contractor's responsibility at no additional cost to District. When appropriate, the enforcement shall be coordinated with local law enforcement agencies and will be subject to approval of Engineer.

3.10 ACCESS

- A. The Contractor shall be responsible for providing and maintaining access necessary for his equipment and plant to and from the work site and the DMMA site. The Contractor shall ascertain the environmental conditions which can affect the access such as climate, winds, currents, waves, depths, shoaling, and scouring tendencies.

3.11 PROTECTION OF EXISTING WATERWAYS

- A. The Contractor shall conduct his operations in such a manner that material or other debris are not pushed outside of dredging limits or otherwise deposited in existing side channels, basins, docking areas, or other areas being utilized by vessels. The Contractor will be required to change his method of operations as may be required to comply with the above requirements. Should any bottom material or other debris be pushed into areas described above, as a result of the Contractor's operations, the same must be promptly removed by and at the expense of the Contractor to the satisfaction of the Engineer.
- B. Obstruction to Navigable Waterways
 - 1. Contractor shall promptly recover and remove any material, plant, machinery, or appliance Contractor loses dumps, throws overboard, sinks, or misplaces, and which, in the opinion of Engineer, may be dangerous to or obstruct navigation. If required by Engineer, Contractor will mark or buoy such obstructions; Engineer may have the obstructions removed by a separate Contract and deduct the cost from any monies due or becoming due to Contractor, or recover the cost under Contractor's bond. Contractor's Liability for the removal of a vessel, wrecked or sunk without fault of negligence is limited to that provided in sections 15, 19, and 29 of the River and Harbor Act of March 3, 1899 (33 U.S.C. 409 et seq.).
- C. Solid Waste Disposal
 - 1. Contractor may encounter solid waste (tires, cans, bottles, fibrous plant material, boards and other debris) within the dredging template that cannot be dredged and/or hydraulically transported to the DMMA site. Contractor shall be responsible for the appropriate disposal of such material.

3.12 ADJACENT PROPERTY AND STRUCTURES

- A. No dredging will be permitted within twenty-five (25) feet of any structure. Any damage to private or public property or structures resulting from the disposal or dredging operations shall be repaired promptly by the Contractor at his expense. Any damage to structures as a result of

Contractor's negligence will result in suspension of dredging and require prompt repair at the Contractor's expense as a prerequisite to the resumption of dredging.

3.13 BARGE AND EQUIPMENT ANCHORING

- A. If Contractor's operations require anchoring of barges or other equipment within the work areas, Contractor shall be responsible for assuring that the anchoring technique does not impact or interfere with navigation or damage public or private property. If pilings are used for anchorage, the pilings shall be well marked and removed in their entirety upon completion of Contractor's operation. Contractor shall, at his own expense, repair any damages to private or public property resulting from Contractor's operations. Anchoring or spudding of vessels and barges within wetland or submerged natural resource areas, including the identified Important Manatee Area and Warm Water Aggregation Area, is prohibited.

3.14 SUBAQUEOUS CABLE CROSSINGS

- A. The Contractor shall be responsible for verifying the locations and depths of all utility crossings and take precautions against damages which might result from his operations, especially the sinking of dredge spuds and/or anchors into the channel bottom, in the vicinity of utility crossings. **The Contractor assumes all liability for submerged and buried utility facilities. If any utility damage occurs as a result of its operations, the Contractor shall suspend dredging in the area of the damaged utility until the damage is repaired and resumption of the dredging is approved by the Engineer. The District shall not be responsible for the cost of such damage and repairs regardless of cause – including but not limited to any costs associated with interruption of utility services and delay damages.**

3.15 BOOSTER PUMPS

- A. Any booster pumps installed by the Contractor shall be located at least 300 feet from any residential-type building or house. Booster pumps, their prime movers, and any auxiliary equipment shall be fitted or equipped with mufflers, noise control enclosures, or other engineering noise control methods, measures, and features such that steady noise emanating from this equipment does not exceed the local ordinances. Such items shall be maintained throughout the project duration. Location of booster pumps and noise control methods must be submitted to the Engineer for approval.

3.16 NOISE CONTROL

- A. Contractor shall ensure that all possible measures are employed to reduce the amount of noise produced by his operations. Contractor shall conduct his operations to comply with all federal, state and local laws pertaining to noise. Additionally, Contractor shall inform all crewmembers of the need to maintain a professional manner while on the job sites, in radio communications, and in dealing with other team members involved in the project.
- B. The District retains the right to require the Contractor to install additional noise control measures if the public is not satisfied and the noise is within the decibel requirements of this specification. These additional measures will be paid for by the District.
- C. All hauling and excavating equipment including dredges, dredge/barges, booster pumps, tugs and other support vessels, dozers, loaders, etc. used on this Work shall be equipped with satisfactory mufflers and/or other noise abatement devices.

- D. Contractor shall consider the proximity of the dredge operations to residential areas, especially during evening, night, and early morning hours. Such consideration should include but not be limited to — reducing deck noise, reducing throttle, holding the use of horn and whistle signals to a minimum, and restraining the use of P.A. loudspeaker systems.

3.17 LIGHT CONTROL

- A. The Contractor shall ensure that all work lights (as opposed to safety lighting) are shielded to prevent them from shining on residential property.
- B. Interference with Other Contractors
 - 1. The District reserves the right to perform other work in the vicinity of the project area under separate contracts. Contractor shall afford District and other Contractor's reasonable opportunity for the introduction and storage of their materials and execution of their respective work, and shall properly connect and coordinate his work with theirs.
 - 2. If the performance of any contract for the project is likely to be interfered with by the simultaneous execution of some other contract or contracts, Engineer shall decide which Contractor shall cease work temporarily and which Contractor shall continue, or whether work under the contracts can be coordinated so that the Contractors may proceed simultaneously. District shall not be responsible for any damages suffered or extra costs incurred by Contractor resulting directly or indirectly from the award or performance or attempted performance of any other contract or contracts on the project or caused by the omission of consultation with the Engineer with respect to the order of precedence in the performance of the contracts other than for an extension of time.

3.18 TRANSPORT OF DREDGED MATERIALS

- A. All excavated material shall be transported to the DMMA site. If any material is deposited other than in places designated or approved, Contractor may be required to remove such misplaced material and redeposit it where directed at his expense. To the greatest extent possible, Contractor shall configure his activities (inclusive of pipelines) to allow continuous boat access to navigable waters. Contractor shall restrict access to these areas only as required to ensure public safety.
- B. Hydraulic Dredge Pipelines
 - 1. A tight dredge discharge pipeline shall be maintained to prevent spilling of dredged material or dredge water outside of the disposal area. The Contractor shall ensure that the entire pipeline route is devoid of any leaks before commencing dredging operations. The Contractor shall provide and maintain radio communication between the dredge and the disposal areas. The pipeline shall be inspected at least twice daily for leaks. Failure to immediately repair leaks in the discharge pipeline will result in suspension of dredging operations and require prompt repair of pipeline as a prerequisite to the resumption of dredging. Any pipeline leak will be immediately surveyed to determine the extent of the material spill. All spilled or misplaced materials will be recovered by the Contractor and any damage to private or public property resulting from the Contractor's operations shall be repaired by the Contractor at his expense.
- C. Hydraulic Discharge Pipeline Marking
 - 1. The Contractor shall plainly mark the pipeline access route (along the entire access) with conspicuous stakes, targets and/or buoys (in accordance with required U.S. Coast Guard requirements and **APPENDIX C**) to be maintained throughout the Contract operations.

2. Additionally, the Contractor shall clearly label the upland pipeline every 100 feet with signs reading as follows: "DANGER: HIGH PRESSURE DISCHARGE LINE."

D. Submerged Pipeline

1. In the event the Contractor elects to submerge his pipeline, the pipeline shall rest on the bottom, and the top of the submerged pipeline and any anchor securing the submerged pipeline shall be no higher than the project depth for any navigation channel in which the submerged pipeline is placed. Should Contractor elect to use a pipeline material that is buoyant or semi-buoyant, such as PVC pipe or similar low-density materials, the Contractor shall securely anchor the pipeline to prevent pipeline from lifting off the bottom under any conditions. Contractor shall make daily inspections of the submerged pipeline to ensure buoyancy has not loosened the anchors. Contractor shall remove all anchors when the submerged pipeline is removed. The location of the entire length of submerged pipeline shall be marked with signs, buoys, lights, and flags conforming to U.S. Coast Guard regulations. Under no circumstances shall the pipeline be anchored within any area identified with submerged natural resources.

E. Floating Pipeline

1. Should the Contractor's pipeline not rest on the bottom, it will be considered a floating pipeline and shall be visible on the surface and clearly marked. In no case will the Contractor's pipeline be allowed to fluctuate between the surface and the bottom or lie partly submerged. Lights shall be installed on the floating pipeline as required in paragraph SIGNAL LIGHTS above. The lights shall be supported either by buoys or by temporary piling, provided by the Contractor and approved by the Engineer. Where the pipeline does not cross a navigable channel, the flashing yellow all-around lights shall be spaced not over 200 feet apart, unless closer spacing is required by U.S. Coast Guard personnel, in which case the requirements of the U.S. Coast Guard shall govern, at no additional cost to the Government.

3.19 PLACEMENT OF DREDGED MATERIALS

- A. The Contractor shall supply all labor, equipment, plant, supplies and material to place the dredged material only in the DMMA as shown on the Project Drawings. The DMMA discharge water quality, settling basin water depth limits, and containment dike freeboard shall be maintained as specified in the following sections.
1. The Contractor shall supply all labor, equipment, plant, supplies and material to perform water control and discharge operations of the effluent from the dredged material containment cell during the entire term of this Contract in a manner consistent with regulatory and permit requirements prescribed for this facility. This includes water control and discharge during placement of the material and active dewatering and material handling/grading operations to promote drying of the containment cell material between, during, and after placement operations.
 2. A freeboard of two (2) feet shall be maintained at all times between the top of the containment dikes and the top of the water surface within the containment cell. This limit shall be maintained at all times during the term of this contract. During placement operations, if the freeboard limit is reached, the Contractor shall cease pumping into the containment area and shall allow sufficient time for drainage and settlement of solids before additional material is deposited. Between placement operations the freeboard limit shall also be maintained. The Contractor shall actively dewater the site and shall not allow rainwater to accumulate in the containment cell without periodic discharge.

3. The maximum settling basin water depth in the DMMA shall be maintained at an elevation suitable for proper material settling while preventing material resuspension and dike erosion/scour due to wind-wave activity. During active inflow operations, a minimum basin depth of two (2) feet should be maintained to achieve proper water quality and effective site operation. Greater depths may be needed to allow for sufficient settling of solids. Lower water depths may be necessary during periods of no- or low-inflow. At no times shall the basin depth exceed three (3) feet unless approved by the Engineer. The water depth shall not exceed the two (2) foot freeboard restriction.
4. Water depths shall be measured using a standard USGS Style A Water Level Staff Gauge to be located on the discharge control structure. The Staff Gauge is to be installed and maintained by the CONTRACTOR. Mudline elevation in the DMMA and settling basin water depths shall be measured a minimum of twice per day and shall be recorded and submitted to the Engineer on the **Daily Report of Operations**.

3.20 DREDGED MATERIAL DISCHARGE AND PLACEMENT OPERATIONS

- A. The excavated dredged material shall be placed in the DMMA as shown on the Project Drawings. This Contract and all Bids shall be based on placing excavated material in the designated DMMA only.
 1. The Contractor shall provide an inflow pipeline to discharge material and shall provide an even distribution of material in and along the interior of the cell with a positive flow toward the weir. Inflow pipe locations shall be in accordance with the Contractor-submitted **DMMA Facility Operation Plan: Placement Operations Plan**.
- B. The inflow pipeline shall be made of either new or used High Density Polyethylene (HDPE) with no obvious imperfections or weak areas. The pipeline shall be placed within the alignment limits as shown on the Project Drawings. The Contractor shall ensure that the pipeline does not create a public hazard and does not block access to any existing facilities. The pipeline shall be placed so there is not interference with traffic on existing DMMA roadways, roadway markers, wells, bench marks, piezometers or other instrumentation.
- C. The Contractor shall place material in the DMMA in a manner to: minimize turbidity of the ponded water column; increase settlement of deposited material; decrease disturbance of deposited material; and eliminate the potential for interior dike/levee erosion or scouring. The methods for placement and controlling of the dredged material into the dredged material containment cell shall be the Contractor's responsibility.
- D. The Contractor shall maintain the operation of all pipeline, valves, and endpoints including, determination of which endpoints to use during placement to maintain the cell filling operations consistent with the requirements of the Contract and Project Drawings. The Contractor shall outfit the inflow pipeline with wyes, valves and other appurtenances or relocate the pipeline endpoints as necessary to achieve uniform filling of the containment cell, prevent excessive mounding of dredged material within the containment cell, minimize areas of standing surface water, prevent excessive loading against the containment dike system, and prevent short circuiting of material.
- E. The Contractor is responsible for advancing or relocating the inflow endpoints as required to prevent the settled material from accumulating to an elevation that blocks inflow, diverts flow towards the dikes causing erosion/scour, or exceeding permit requirements. The inflow endpoints may require relocation due to their effects on effluent quality or other special circumstances as determined by the Engineer. Relocation of inflow endpoints shall be achieved by the Contractor within forty-eight (48) hours notification from the Engineer.

- F. Dike erosion, caused by excessive inflow velocities, wave action, or other means, shall be repaired within twenty-four (24) hours. Verbal notification of dike erosion shall be given to the Engineer within one (1) hour and written notification shall be submitted within twenty-four (24) hours.
- G. The Contractor shall outfit the pipeline endpoints with spreaders or other appurtenances and shall position pipeline endpoints in a manner that will minimize the potential for dike erosion, to promote spreading of material and prevent material build-up.
- H. The Contractor shall be responsible for managing the placement and dewatering of the dredged material and for scheduling the delivery of the dredged material to accommodate all the material designated on the Project Drawings for disposal at the site.
- I. The Contractor shall provide qualified personnel to monitor and control inflow of dredged material at all times that inflow is occurring. The person(s) monitoring and controlling inflow shall have a phone, radio, or other direct communication contact with the dredge or other plant that is supplying material to the containment cell. The inflow installation shall be capable of immediate shutdown to avoid exceeding freeboard requirements within the cell or as needed to satisfy water quality criteria for effluent discharge.
- J. Interruptions to Placement: The Contractor may be required to stop placement in order to permit the fill to settle and/or allow the water quality to improve to meet permit and regulatory requirements. Inflow operations may be required to stop if discharge limits cannot be met. There shall be no compensation to the Contractor for interruptions to placement operations.

3.21 EFFLUENT DISCHARGE AND WATER CONTROL OPERATIONS

- A. The Contractor shall supply all labor, equipment, plant, supplies and material to manage and discharge the effluent from the DMMA. During placement operations, the Contractor shall establish and maintain a basin in the cell to control retention of effluent to allow settling of Total Suspended Solids (TSS) until water quality reaches a level that would enable discharge consistent with regulatory requirement (and in accordance with SECTION 01 35 43 ENVIRONMENTAL PROTECTION) prescribed for discharges from the DMMA. The Contractor shall be responsible for the operation and maintenance of the water control structure to maintain an appropriate sized basin in the containment cell. The maximum basin water depth in the DMMA shall be maintained at an elevation suitable for proper material settling while preventing material re-suspension and dike erosion/scour due to wind-wave activity, not to exceed three (3) feet above the mudline. The Contractor shall discharge the effluent through the DMMA weir structure.
- B. The Contractor shall all labor, equipment, plant, supplies and material to connect their discharge line to the existing 42" HDPE flange at the weir discharge. All decant water shall be piped back to a suitable place in the waterway in a manner as to not cause excess turbidity or erosion of shorelines.
- C. During the term of this Contract, the Contractor is required to manage the cell water to protect the physical integrity of the site, to direct flow and settlement of dredged material to maintain a positive grade toward the weir without excessive mounding, and to discharge cell water as quickly as possible following placement operations to facilitate dewatering and consolidation of the placement material.
- D. During dredged material placement operations and during the immediate period of time following placement during which the drawdown of the DMMA is to be performed, the Contractor shall provide adequate staff to operate, inspect and monitor the discharge operations from the facility. No discharge from the facility can occur unless the Contractor is present on location, operating and monitoring the discharge.

- E. Following the completion of dredging of the final project segment and final approval of the dredging operations, the Contractor shall completely draw down and discharge the settling basin water level in the DMMA, at which point the District shall assume control of further dewatering operations.

3.22 WATER CONTROL STRUCTURE OPERATIONAL PROCEDURES

- A. Water control structure operational procedures are discussed in three sections, corresponding to the stages in operations at the site: beginning of inflow and end of inflow.

- B. Beginning of Inflow

- 1. Prior to the scheduled commencement of inflow, the Contractor will verify that all necessary preparations have been made to receive dredged material.
 - a. The water control structure and weir pipes shall be boarded up with the on-site weir boards to an elevation that can accommodate the volume of settled solids expected from the upcoming inflow cycle plus the depth of basin required for adequate settling of suspended solids. This weir crest elevation should be no less than three (3) feet above the existing cell surface and the elevation must not exceed the two (2) foot minimum freeboard requirement from cell water elevation to top of dike or upset the integrity of the dike system.
- 2. As inflow begins, the Contractor will hydraulically pump material into the DMMA cell. The cell will gradually fill and the basin elevation shall rise to the established weir crest elevation. If acceptable water quality has not been accomplished by the time the basin level nears the weir crest elevation, another row of weir boards shall be added to the water control structure. The weir crest elevations should always be maintained above an unstable basin to prevent sediments from entering the water control structure.

- C. Water Quality Management

- 1. Water quality shall be monitored at all times during discharge. The water control structure operator will remain at the water control structure for a sufficient period to ensure that of the discharge is stable.
- 2. The ponding elevation must be maintained within specified range. Once the desirable ponding elevation has been reached the Contractor shall take all necessary steps to maintain the basin elevation by increasing the weir crest elevation at about the same rate as the sediment builds in the basin.
- 3. Wind conditions should be closely monitored. Any increase in wind speed or change in the wind direction may cause turbidity in the basin to rise. Strong winds will cause wave action and this turbulence will raise turbidity.

- D. End of Inflow

- 1. When the inflow of dredged material is completed, the Contractor must continue to operate the weir system and slowly release the clarified surface water that remains ponded within the basin over the weir crest by incrementally removing weir boards. This process shall continue until all residual ponded water within the basin at the completion of dredge is released over the weirs. The Contractor will continue this operation until released from this requirement by the Engineer.
- 2. To maintain effluent quality, the Contractor should allow the flow over the weirs to drop essentially to zero before removing another row of weir boards. The Contractor may be

required to grade the deposited dredged material to drain isolated pockets of water so that this water may also be released over the weirs.

3. If at any time during this process monitoring shows effluent turbidity to exceed permitted standards, the Contractor must add weir boards until testing of the ponded waters that remains with the basin confirms that turbidity has returned to acceptable limits.
4. Following the completion of decanting and removal of all residual ponded water, the Contractor must re-install the weir boards to a sufficient height to ensure that no storm water discharges over the weir crest.

3.23 SURVEYS

A. Pre-Dredge Bathymetric Survey

1. Sea Diversified, Inc., completed a May-June 2014 examination survey of the project area entitled *Hydrographic Survey of the Intracoastal Waterway Flagler County, Florida*. The contours shown on the Project Drawings represent the bathymetric conditions existing at the time of the survey.
2. At the time of construction, actual conditions at the project sites may vary significantly. Since the Contractor will be paid for quantity of material removed from the project area, the Contractor shall perform a new pre-construction bathymetric survey of the project area. When approved by the Engineer, this survey will be used as the pre-dredge survey for payment quantity calculations. Refer to SECTION 01 78 00 PROJECT CLOSEOUT.

B. Post-Dredge Bathymetric Survey

1. Within 7 days of the completion of construction activities within an acceptance section, the Contractor shall perform the post-construction bathymetric survey (by equivalent methods and density to the pre-construction bathymetric survey). Upon submittal to the Engineer, the surveys shall be reviewed for accuracy, completeness, and to calculate payment quantities relative to the pre-dredge survey or progress payment surveys. At the project completion and for final project certification, the Contractor shall submit two copies of a signed and sealed survey of the entire project. Refer to SECTION 01 78 00 PROJECT CLOSEOUT.

C. Additional Bathymetric Survey

1. Contractor shall perform an additional bathymetric survey of Intracoastal Waterway cuts SJ-63 and SJ-64 by equivalent methods and density to the pre- and post- construction bathymetric survey. Upon submittal to the Engineer, the survey shall be reviewed for accuracy, completeness prior to acceptance. The Contractor shall submit two copies of a signed and sealed survey Intracoastal Waterway cuts SJ-63 and SJ-64.

3.24 FINAL EXAMINATION AND ACCEPTANCE

A. Final Examination of Dredging Work

1. As soon as practicable as and no later than one (1) week after receipt of the post-construction bathymetric surveys, the Engineer will review the surveys and/or examine the Work sites. Methods of examination, at no expense to the District, may include but are not limited to review of survey data and additional survey soundings or sweeping. Should any lumps or other lack of depth be disclosed by this examination, the Contractor will be

required to remove by dredging. Contractor or his authorized representative will be notified when the examination is to be made and will be permitted to accompany the survey party. When the area is found to be in a satisfactory condition, it will be accepted.

2. The District reserves the right to conduct an independent survey. Any discrepancies between the Contractor and Districts surveys will be in favor of the District.
3. Should more than two examinations by Engineer over an area be necessary by reason of work for the removal of lack of depth disclosed at a prior examination, the cost of such third and any subsequent soundings or sweeping operations will be charged against Contractor at the rate of \$5,000 per day for each day in which the examination survey crew is engaged in sounding and/or is en route to or from the site or held at or near the site for such operation.

B. Final Acceptance

1. Final acceptance of the whole or a part of the work and the deductions or corrections of deductions made thereon will not be reopened after having once been made, except on evidence of collusion, fraud or obvious error, and the acceptance of a completed section shall not change the time of payment of the retained percentages of the whole or any part of the work.

3.25 FINAL CLEANUP

- A. Final cleanup shall include the removal of all Contractor's plant, equipment, and materials for either disposal or reuse. All such disposal shall be in a manner and at locations approved by the District and Engineer. Contractor shall not be permitted to abandon equipment or materials in any area within or adjacent to the project sites, including the dredging area and the DMMA.

-End of Section-

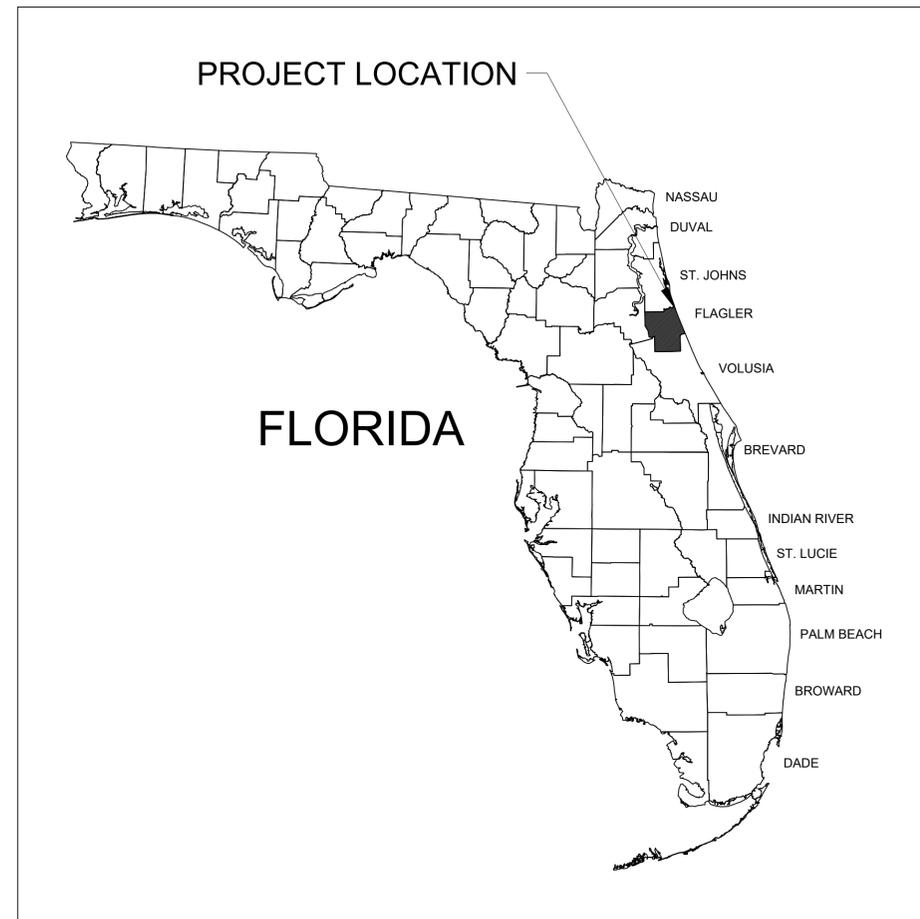


**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

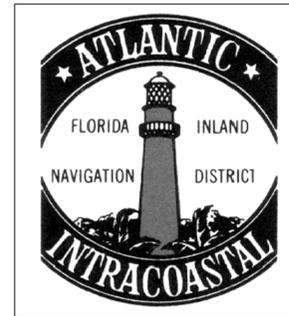
APPENDIX A
11" x 17" Project Drawings

INTRACOASTAL WATERWAY MAINTENANCE DREDGING -- FLAGLER COUNTY REACH 1 FLAGLER COUNTY, FLORIDA

DRAFT

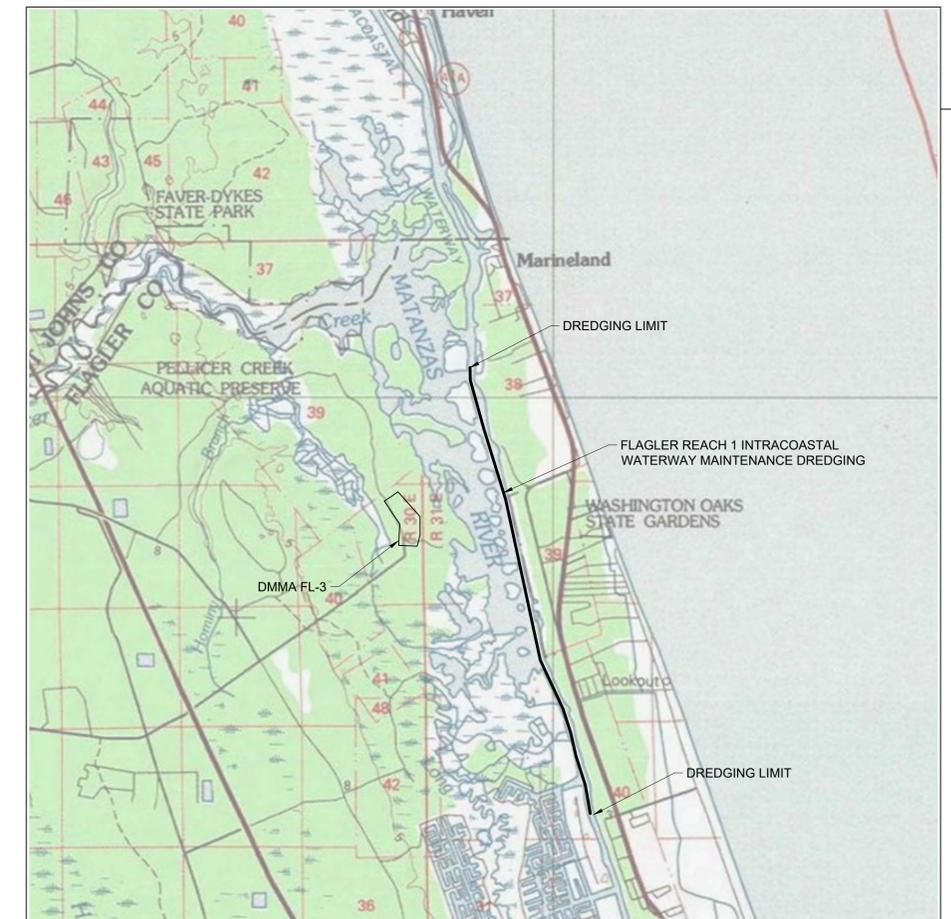


LOCATION MAP
N.T.S.



DRAWING INDEX

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VICINITY MAP
1" = 2000' (22x34)
1" = 4000' (11x17)

REFERENCE:
USA TOPO MAPS, ESRI

Call 811 before you dig.

 TAYLOR ENGINEERING INC. 10199 SOUTHSIDE BLVD SUITE 310 JACKSONVILLE, FLORIDA 32256 (904)-731-7040 <small>CERTIFICATE OF AUTHORIZATION # 4815</small>	<small>PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.</small>	<h1>DRAFT</h1>
	<small>PROJECT TITLE</small> INTRACOASTAL WATERWAY MAINTENANCE DREDGING -- FLAGLER COUNTY REACH 1 FLAGLER COUNTY, FLORIDA	
	<small>PROJECT NO</small> C2018-25 <small>DATE</small> MAR 2019	C-1 <small>SHEET 1 OF 12</small>

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**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX B
FDEP Permit 18-0315383



FLORIDA DEPARTMENT OF Environmental Protection

Northeast District
8800 Baymeadows Way West, Suite 100
Jacksonville, Florida 32256

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Noah Valenstein
Secretary

September 6, 2018

Florida Inland Navigational District
Mark Crosley, Executive Director
1314 Marcinski Road
Jupiter, Florida 33477
mcrosley@aicw.org

File No.: 18-0315383-003-EE, Flagler and St. Johns Counties
Easement No.: 27855(3671-18)

Dear Mr. Crosley:

On August 7, 2018, we received your request for verification of exemption to perform the following activities:

To maintenance dredge an authorized and previously dredged channel within the Matanzas River, a Class II Waterbody, and within the Intracoastal Waterway (ICWW), a Class II and III Waterbody, neither in an Aquatic Preserve nor an Outstanding Florida Waterbody. The project starts in St. Johns County at ICWW mile 54.77 (Lat. 29° 41' 17.74" N / Long. - 81° 13' 26.82" W) and spans south into Flagler County, stopping at ICWW mile 60.96 (Lat. 29° 36' 4.45" N / Long. -81° 12' 2.98" W). The channel will be dredged to the previously authorized specifications of a depth of -12 feet Mean Lower Low Water, a width of 125 feet, and 3:1 side slopes. The dredging may be completed by hydraulic cutter-suction dredge (expected method) and/or a mechanical dredge. The project is expected to remove 79,957 cubic yards from the portion in St. Johns County (Sections 92 and 38, Township 09 South, Range 31 East) and 248,235 cubic yards from the portion in Flagler County (Sections 37, 7, 18, 19, 29, Township 10 South, Range 31 East). The project is expected to take six months to complete.

Material dredged from this project will be dewatered and stored at DMMA FL-3 (authorized by ERP 18-0315383-002-EI) in Flagler County, Section 13, Township 10 South, Range 30 East. The dredged material will be transported as a slurry through a HDPE pipe to the DMMA site. The effluent water will be piped out of the DMMA and returned to adjacent surface waters, as long as the return water meets quality standards for Class II Waters and does not create wash out, turbidity, or other negative environmental impacts at the point of discharge. The project application provides that the pipelines will cross State Sovereignty Submerged Lands via easement No. 27855(3671-18) and easement to the United States of America (1931 and 1932). These temporary pipelines will traverse surface waters and wetlands, and will only be present for the duration of the project. These pipelines are only expected to result in minimal and temporary impacts to marsh vegetation (*Spartina spp.*) due to being laid on the vegetation. Per the project application, the permittee and construction contractor voluntarily commit to documenting marsh vegetation conditions prior to pipeline placement and will monitor conditions for one year

following completion of the project. Project application specifications provide for backfilling and revegetation of any ruts left in the marsh as a result of pipeline placement. The permittee commits to follow self-proposed activities, as specified in the project application, to prevent navigational hazards potentially created by submerged pipes, in-water work, and other associated activities.

Your request has been reviewed to determine whether it qualifies for (1) regulatory exemption, (2) proprietary authorization (related to state-owned submerged lands), and (3) federal approval that may be necessary for work in wetlands or waters of the United States.

Your project did not qualify for the federal review portion of this verification request. **Additional authorization must be obtained prior to commencement of the proposed activity.** This letter does not relieve you from the responsibility of obtaining other federal, state, or local authorizations that may be required for the activity. Please refer to the specific section(s) dealing with that portion of the review below for advice on how to proceed.

If you change the project from what you submitted, the authorization(s) granted may no longer be valid at the time of commencement of the project. Please contact us prior to beginning your project if you wish to make any changes.

If you have any questions regarding this matter, please contact **Hunter Bradshaw** the letterhead address, phone at **(904) 256-1624**, or by email at Hunter.Bradshaw@floridadep.gov .

1. Regulatory Review – Verified

Based on the information submitted, the Department has verified that the activity as proposed is exempt under Section 403.813(1)(f), F.S. from the need to obtain a regulatory permit under Part IV of Chapter 373 of the Florida Statutes.

This exemption verification is based on the information you provided the Department and the statutes and rules in effect when the information was submitted. This verification may not be valid if site conditions materially change, the project design is modified, or the statutes or rules governing the exempt activity are amended. In the event you need to re-verify the exempt status for the activity, a new request and verification fee will be required. Any substantial modifications to the project design should be submitted to the Department for review, as changes may result in a permit being required.

2. Proprietary Review – Granted

The Department acts as staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees) and issues certain authorizations for the use of sovereign submerged lands. The Department has the authority to review activities on sovereign submerged lands under Chapters 253 and 258 of the Florida Statutes, and Chapters 18-20 and 18-21 of the Florida Administrative Code.

The activity appears to be partially located on sovereign submerged lands owned by the Board of Trustees. The activity is not exempt from the need to obtain the applicable proprietary authorization. As staff to the Board of Trustees, the Department has reviewed the activity described above, and has determined that the activity qualifies for a letter of consent under

Section 253.77, Florida Statutes, to construct and use the activity on the specified sovereign submerged lands, as long as the work performed is located within the boundaries as described herein 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.

Additionally, as staff to the Board of Trustees, the Department has reviewed the activity described above and has determined that as long as the work is performed as described in the attached project description and drawings (including Attachment B – Supplemental Information), is wholly located within the boundaries of the existing easement No. 27855(3671-18), and easement to the United States of America (1931 and 1932) and is consistent with the terms and conditions therein, we have no objection to the project. Therefore, consider this letter to also constitute the authority sought under Section 253.77, F.S. to pursue this project.

Special Consent Conditions

1. 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.
2. 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.
3. 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.
4. 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.

5. This authorization does not allow any activity prohibited in a conservation easement or restrictive covenant that prohibits the activity.

General Conditions for Authorizations for Activities

All authorizations granted by rule or in writing under Rule 18-21.005, F.A.C., except those for geophysical testing, shall be subject to the general conditions as set forth in paragraphs (a) through (i) below. The general conditions shall be part of all authorizations under this chapter, shall be binding upon the grantee, and shall be enforceable under Chapter 253 or 258, Part II, F.S.

(a) Authorizations are valid only for the specified activity or use. Any unauthorized deviation from the specified activity or use and the conditions for undertaking that activity or use shall constitute a violation. Violation of the authorization shall result in suspension or revocation of the grantee's use of the sovereignty submerged land unless cured to the satisfaction of the Board.

(b) Authorizations convey no title to sovereignty submerged land or water column, nor do they constitute recognition or acknowledgment of any other person's title to such land or water.

(c) Authorizations may be modified, suspended or revoked in accordance with their terms or the remedies provided in Sections 253.04 and 258.46, F.S., or Chapter 18-14, F.A.C.

(d) Structures or activities shall be constructed and used to avoid or minimize adverse impacts to sovereignty submerged lands and resources.

(e) Construction, use, or operation of the structure or activity shall not adversely affect any species which is endangered, threatened or of special concern, as listed in Rules 68A-27.003, 68A-27.004, and 68A-27.005, F.A.C.

(f) Structures or activities shall not unreasonably interfere with riparian rights. When a court of competent jurisdiction determines that riparian rights have been unlawfully affected, the structure or activity shall be modified in accordance with the court's decision.

(g) Structures or activities shall not create a navigational hazard.

(h) Structures shall be maintained in a functional condition and shall be repaired or removed if they become dilapidated to such an extent that they are no longer functional. This shall not be construed to prohibit the repair or replacement subject to the provisions of Rule 18-21.005, F.A.C., within one year, of a structure damaged in a discrete event such as a storm, flood, accident, or fire.

(i) Structures or activities shall be constructed, operated, and maintained solely for water dependent purposes, or for non-water dependent activities authorized under Paragraph 18-21.004(1)(f), F.A.C., or any other applicable law.

3. Federal Review – SPGP Not Approved

Your proposed activity as outlined on your application and attached drawings **does not qualify** for Federal authorization pursuant to the State Programmatic General Permit and a **SEPARATE permit** or authorization **Shall be required** from the Corps. You must apply separately to the Corps using the federal application form (ENG 4345). More information about Corps permitting may be found online in the Jacksonville District Regulatory Division Sourcebook. **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.

Additional Information

Please retain this letter. The activities may be inspected by authorized state personnel in the future to ensure compliance with appropriate statutes and administrative codes. If the activities are not in compliance, you may be subject to penalties under Chapter 373, F.S., and Chapter 18-14, F.A.C.

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 filing of a petition means that the Department's final action may be different from the position taken by it in this notice.

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 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S. must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. 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 21 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 the order is filed with the Clerk of the Department.

Judicial Review

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 Jacksonville, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Brian Durden
Environmental Manager

BD:kp:hb

Enclosures: 403.813(1)(f), Florida Statutes
Sea Turtle and Smalltooth Sawfish Construction Conditions
Standard Manatee Conditions for In-Water Work (2011)
Permit Application Attachment C – Permit Drawings, 26 pages
Permit Application Attachment B – Supplemental Information, 10 pages

cc:

Bill Aley, Taylor Engineering, baley@taylorengeering.com
Will Warren, Taylor Engineering, wwarren@taylorengeering.com
Thomas Kallemeyn, FDEP NED
Michelle Neeley, FDEP NED
Brian Durden, FDEP NED
Hunter Bradshaw, FDEP NED
Kim Pearce, FDEP NED

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this determination, including all copies, was mailed before the close of business on September 6, 2018, to the above listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to 120.52(7),
Florida Statutes, with the designated Department Clerk,
receipt of which is hereby acknowledged.

Clerk  Date September 6, 2018

Chapter 403.813 Florida Statute

Permits issued at district centers; exceptions.—

(1) A permit is not required under this chapter, chapter 373, chapter 61-691, Laws of Florida, or chapter 25214 or chapter 25270, 1949, Laws of Florida, for activities associated with the following types of projects; however, except as otherwise provided in this subsection, this subsection does not relieve an applicant from any requirement to obtain permission to use or occupy lands owned by the Board of Trustees of the Internal Improvement Trust Fund or a water management district in its governmental or proprietary capacity or from complying with applicable local pollution control programs authorized under this chapter or other requirements of county and municipal governments:

f) The performance of maintenance dredging of existing manmade canals, channels, intake and discharge structures, and previously dredged portions of natural water bodies within drainage rights-of-way or drainage easements which have been recorded in the public records of the county, where the spoil material is to be removed and deposited on a self-contained, upland spoil site which will prevent the escape of the spoil material into the waters of the state, provided that no more dredging is to be performed than is necessary to restore the canals, channels, and intake and discharge structures, and previously dredged portions of natural water bodies, to original design specifications or configurations, provided that the work is conducted in compliance with s. 379.2431(2)(d), provided that no significant impacts occur to previously undisturbed natural areas, and provided that control devices for return flow and best management practices for erosion and sediment control are utilized to prevent bank erosion and scouring and to prevent turbidity, dredged material, and toxic or deleterious substances from discharging into adjacent waters during maintenance dredging. Further, for maintenance dredging of previously dredged portions of natural water bodies within recorded drainage rights-of-way or drainage easements, an entity that seeks an exemption must notify the department or water management district, as applicable, at least 30 days prior to dredging and provide documentation of original design specifications or configurations where such exist. This exemption applies to all canals and previously dredged portions of natural water bodies within recorded drainage rights-of-way or drainage easements constructed prior to April 3, 1970, and to those canals and previously dredged portions of natural water bodies constructed on or after April 3, 1970, pursuant to all necessary state permits. This exemption does not apply to the removal of a natural or manmade barrier separating a canal or canal system from adjacent waters. When no previous permit has been issued by the Board of Trustees of the Internal Improvement Trust Fund or the United States Army Corps of Engineers for construction or maintenance dredging of the existing manmade canal or intake or discharge structure, such maintenance dredging shall be limited to a depth of no more than 5 feet below mean low water. The Board of Trustees of the Internal Improvement Trust Fund may fix and recover from the permittee an amount equal to the difference between the fair market value and the actual cost of the maintenance dredging for material removed during such maintenance dredging. However, no charge shall be exacted by the state for material removed during such maintenance dredging by a public port authority. The removing party may subsequently sell such material; however, proceeds from such sale that exceed the costs of maintenance dredging shall be remitted to the state and deposited in the Internal Improvement Trust Fund.



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



Additions

to the

"Sea Turtle and Smalltooth Sawfish Construction Conditions"

for SPGP V

a. Any collision(s) with and/or injuries to any whale, or sturgeon occurring during the construction of a project, shall be reported immediately to NMFS's Protected Resources Division (PRD) at (727-824-5312).

b. Reports to NMFS's Protected Resources Division (PRD) may be made by email to takereport.nmfsser@noaa.gov.

c. Sea turtle and marine mammal stranding/rescue organizations' contact information is available by region at <http://www.nmfs.noaa.gov/pr/health/networks.htm>.

d. Smalltooth sawfish encounters shall be reported to <http://www.flmnh.ufl.edu/fish/sharks/sawfish/sawfishencounters.html>.

e. All work must occur during daylight hours.

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 1/2" 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





PROJECT LOCATION
FLAGLER COUNTY, FL

FLORIDA

LOCATION MAP
N.T.S.

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VICINITY MAP
1"= 50,000'



TAYLOR ENGINEERING INC.

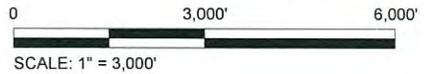
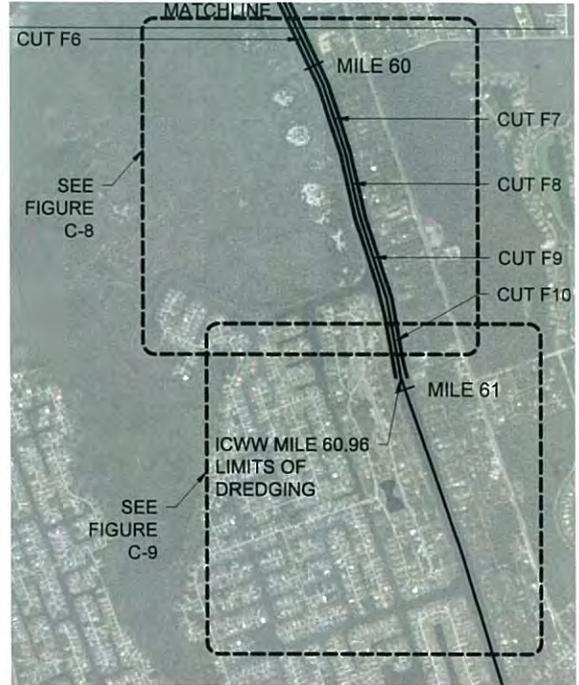
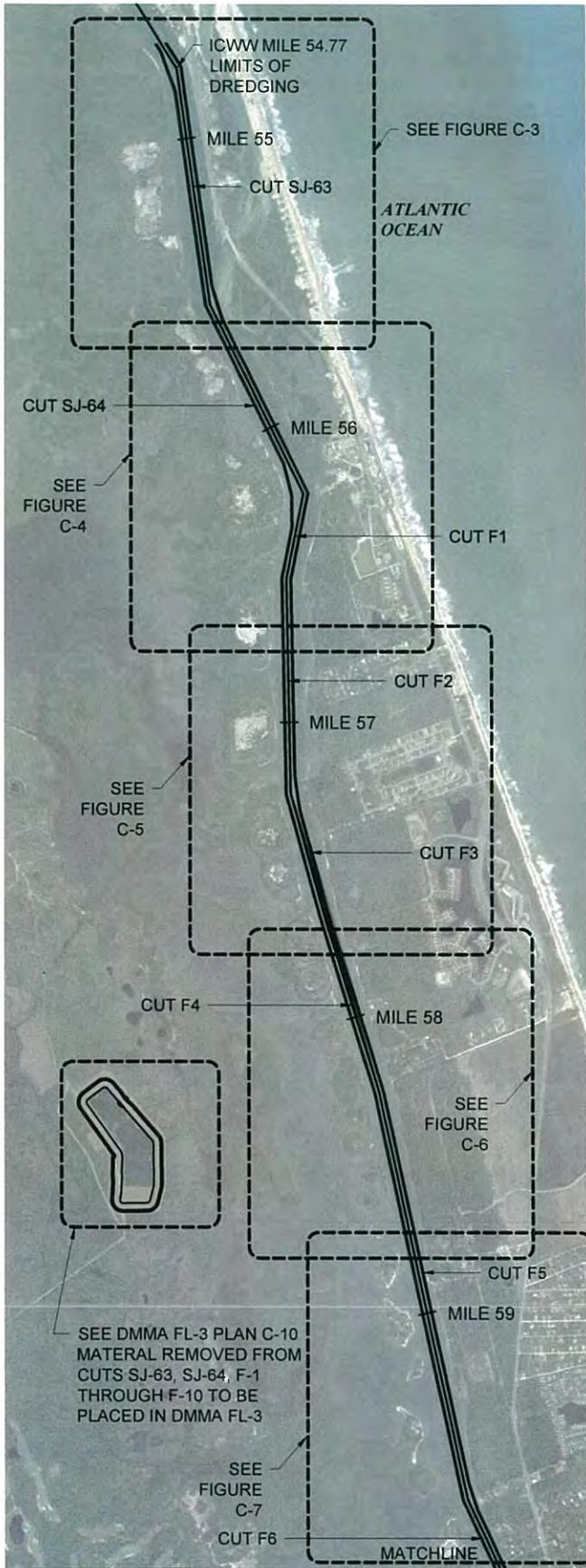
10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

C-1
TITLE SHEET
FLAGLER CO. ICWW DREDGING PERMIT
FLAGLER COUNTY, FLORIDA

PROJECT	DRAWN BY	SHEET	DATE
C2018-025	NP	1 of 16	JULY 2018

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

NESTOR PALMA X:\SYS\PROJECTS\C2018-025_P-FLAGLEREACH\PERMIT\C2018-025-P-TITLE.DWG 7/31/2018 1:47:57 PM



GENERAL NOTES:

1. DREDGING IS PROPOSED IN CUTS SJ-63, SJ-64, F-1 THROUGH F-10 OF THE ICWW.
2. HORIZONTAL DATA ARE IN FEET AND RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR FLORIDA, EAST ZONE (0901), NORTH AMERICAN DATUM, (NAD) OF 1983, 1990 ADJUSTMENT.
3. VERTICAL DATA ARE IN FEET AND RELATIVE TO MEAN LOWER LOW WATER (MLLW). MEAN LOWER LOW WATER WAS TRANSLATED FROM THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) UTILIZING THE LATEST VERSION OF VDATUM (VERTICAL DATUM TRANSFORMATION) PROVIDED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), NATIONAL OCEAN SERVICE (NOS).
4. INTRACOASTAL WATERWAY FLAGLER COUNTY, FLORIDA CHANNEL BATHYMETRY SURVEY WAS CONDUCTED ON JULY 9-11, 2014 AND JANUARY 31, 2015 BY SEA DIVERSIFIED, INC.
5. AERIAL IMAGERY TAKEN IN 2018 AND OBTAINED FROM GOOGLE EARTH. AERIAL IMAGERY DISPLAYED HEREON FOR INFORMATIONAL PURPOSES ONLY, NO PHOTOGRAPHIC ACCURACY IS IMPLIED BY THIS MAP.
6. FEDERAL NAVIGATION CHANNEL LIMITS OBTAINED FROM THE U.S. ARMY CORPS OF ENGINEERS JACKSONVILLE DISTRICT.
7. ALL DREDGE SPOIL WILL BE DISCHARGED WITHIN FLORIDA INLAND NAVIGATION DISTRICT (FIND) OWNED UPLAND DREDGED MATERIAL MANAGEMENT AREA (DMMA) FL-3.
8. DMMAS ARE SITED TO REMAIN ON UPLAND PROPERTY ABOVE THE MEAN HIGH WATER LINE. DMMAS WILL INCLUDE STAKED HAY BALES AND TURBIDITY CURTAINS AT ANY CONTROLLED OVERFLOW/DISCHARGE AREAS.

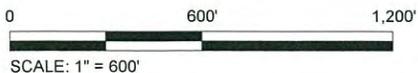
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TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
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C-2
 DREDGE OVERVIEW
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

PROJECT	DRAWN BY	SHEET	DATE
C2018-025	NP	2 of 16	JULY 2018

SEAL
 WILLIAM C. ALEY
 LICENSE # PG2904
 STATE OF FLORIDA
 PROFESSIONAL GEOLOGIST
 DATE 8/1/2018



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 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
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C-3
 DREDGE PLAN
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

PROJECT C2018-025	DRAWN BY NP	SHEET 3 of 16	DATE JULY 2018
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SEAL

 WILLIAM C. ALTY
 LICENSE
 No. PG2904
 STATE OF
 FLORIDA
 PROFESSIONAL GEOLOGIST
 DATE 8/1/2018

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



MATCHLINE A

MILE 55.75

CUT SJ-64

ATLANTIC OCEAN

INTRACOASTAL WATERWAY

MILE 56.00

LIMITS OF DREDGING (TYP)

MILE 56.25

N OCEANSHORE BLVD

LIMIT OF DREDGING CUT F-1
STA: 84+69

S2
C-12

CUT F-1

MILE 56.50

CUT F-2

MILE 56.75

MATCHLINE B



NESTOR PALMA X:\SYSTEMS\PROJECTS\C2018-025_FLAGLERREACH\IPERMIT\C2018-025-F-DREDGE PLANS DWG 7/31/2018 1:48:27 PM

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 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
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PROJECT C2018-025				DRAWN BY NP		SHEET 4 of 16		DATE JULY 2018	
C-4 DREDGE PLAN FLAGLER CO. ICWW DREDGING PERMIT FLAGLER COUNTY, FLORIDA									

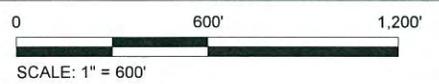
SEAL

WILLIAM C. ALEY
 LICENSE # PG2904
 STATE OF FLORIDA
 PROFESSIONAL GEOLOGIST

DATE 8/1/2018

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

NESTOR PALMA X:\SYS\PROJECTS\2018\025_FLAGLER\REACH\PERMIT\C2018-025-P-DREDGE PLANS.DWG 7/31/2018 1:48:32 PM



TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

C-5
DREDGE PLAN
FLAGLER CO. ICWW DREDGING PERMIT
FLAGLER COUNTY, FLORIDA

PROJECT	DRAWN BY	SHEET	DATE
C2018-025	NP	5 of 16	JULY 2018

SEAL

WILLIAM C. ALEY
 LICENSE # PG2904
 STATE OF FLORIDA
 PROFESSIONAL GEOLOGIST

DATE 8/1/2018

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MATCHLINE C



CUT F-4

MILE 58.00

LIMITS OF DREDGING (TYP)

MILE 58.25



INTRACOASTAL WATERWAY

MILE 58.50

CUT F-5

MILE 58.75

OLD A1A

MATCHLINE D

0 600' 1,200'



SCALE: 1" = 600'

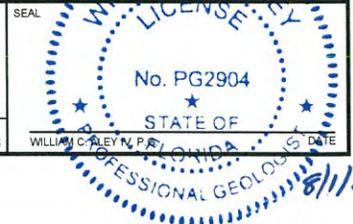


TAYLOR ENGINEERING INC.

10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

C-6
DREDGE PLAN
FLAGLER CO. ICWW DREDGING PERMIT
FLAGLER COUNTY, FLORIDA

PROJECT	DRAWN BY	SHEET	DATE
C2018-025	NP	6 of 16	JULY 2018



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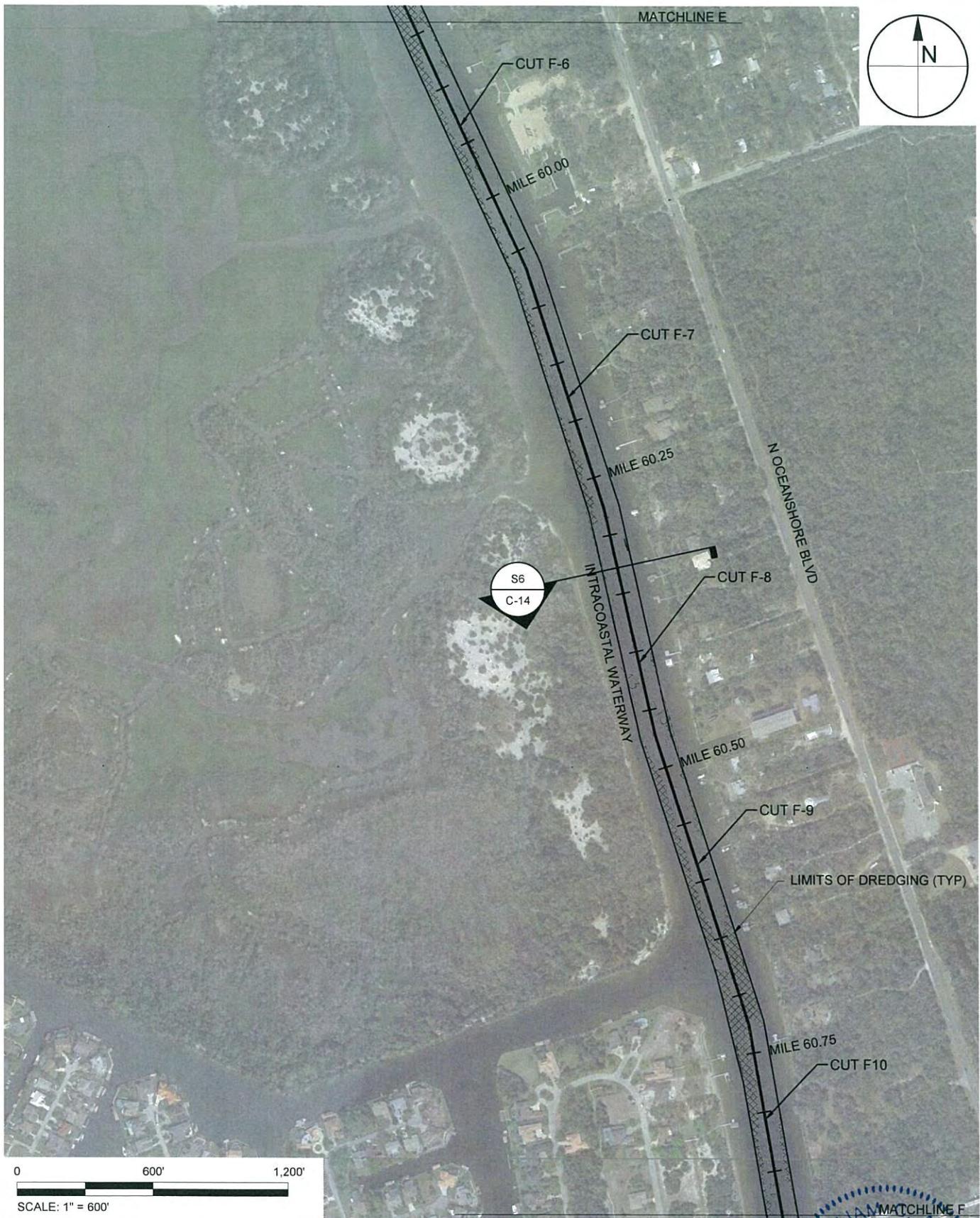
TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

C-7 DREDGE PLAN			
FLAGLER CO. ICWW DREDGING PERMIT FLAGLER COUNTY, FLORIDA			
PROJECT	DRAWN BY	SHEET	DATE
C2018-025	NP	7 of 16	JULY 2018



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TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

C-8 DREDGE PLAN FLAGLER CO. ICWW DREDGING PERMIT FLAGLER COUNTY, FLORIDA			
PROJECT	DRAWN BY	SHEET	DATE
C2018-025	NP	8 of 16	JULY 2018

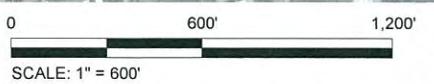
SEAL

WILLIAM C. KEY IV
 LICENSE # PG2904
 STATE OF FLORIDA
 PROFESSIONAL GEOLOGIST

8/1/2018

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

NESTOR PALMA X:\S\PROJECTS\C2018-025_FLAGLERREACH\PERMIT\C2018-025-P-DREDGE PLANS.DWG 7/31/2018 1:48:51 PM



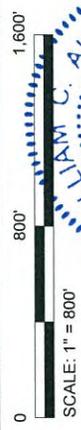
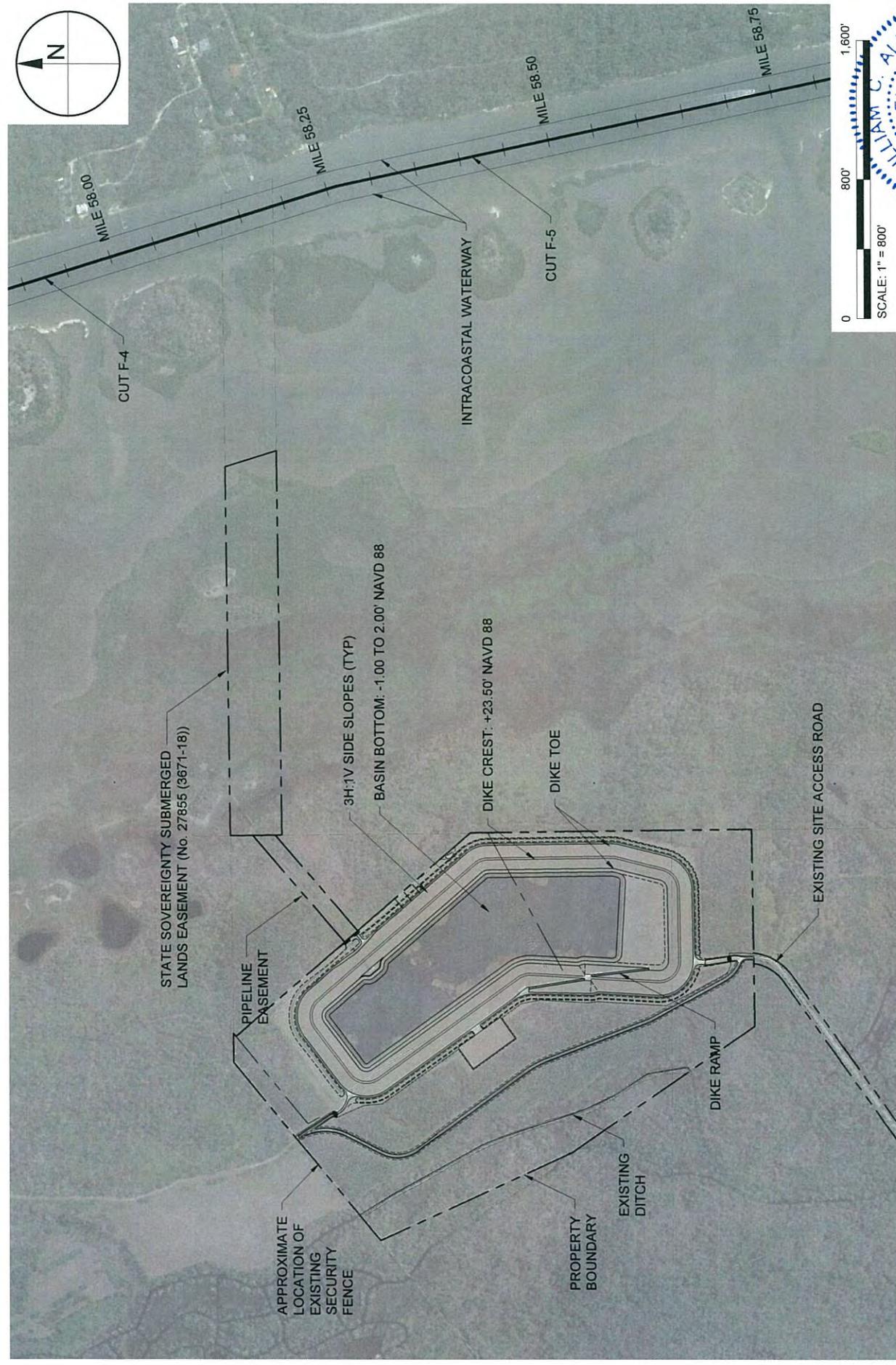
TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

C-9
 DREDGE PLAN
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

PROJECT	DRAWN BY	SHEET	DATE
C2018-025	NP	9 of 16	JULY 2018

SEAL
 WILLIAM C. ALBY
 LICENSE NO. PG2904
 STATE OF FLORIDA
 PROFESSIONAL GEOLOGIST
 DATE 8/1/2018

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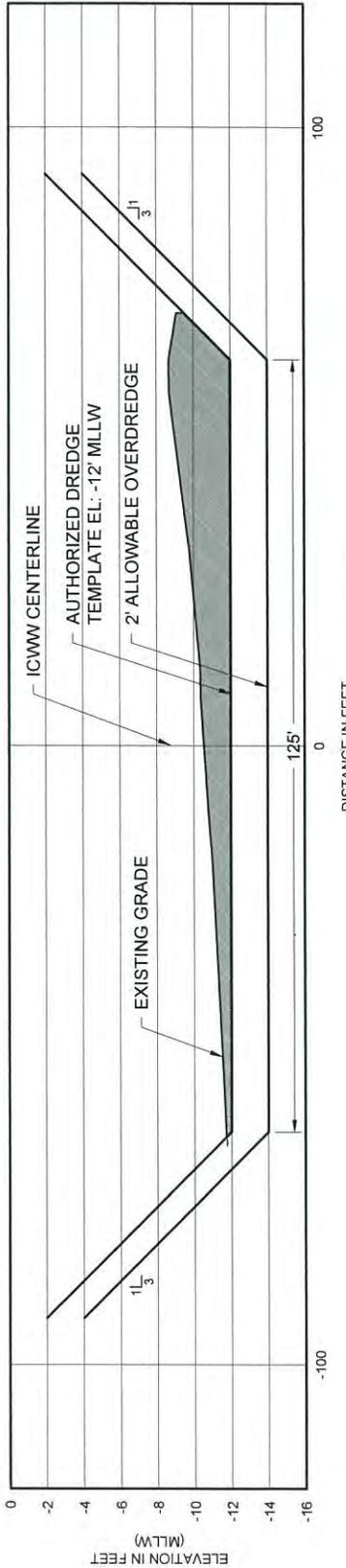
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DRAWN BY	NP
SHEET	10 of 16
DATE	JULY 2018

SEAL
 WILLIAM C. ALEXANDER
 PROFESSIONAL ENGINEER
 No. PG2904
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

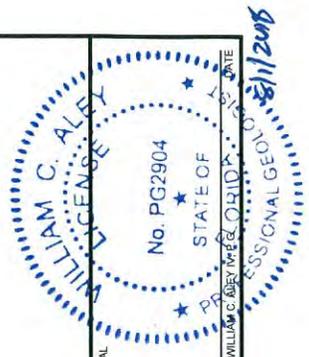
C-10
 DMMA FL-3 PLAN
 FLAGLER CO. ICWW/DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

PRELIMINARY DRAWINGS. THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



TYPICAL DREDGING SECTION
SCALE: 1" = 30'

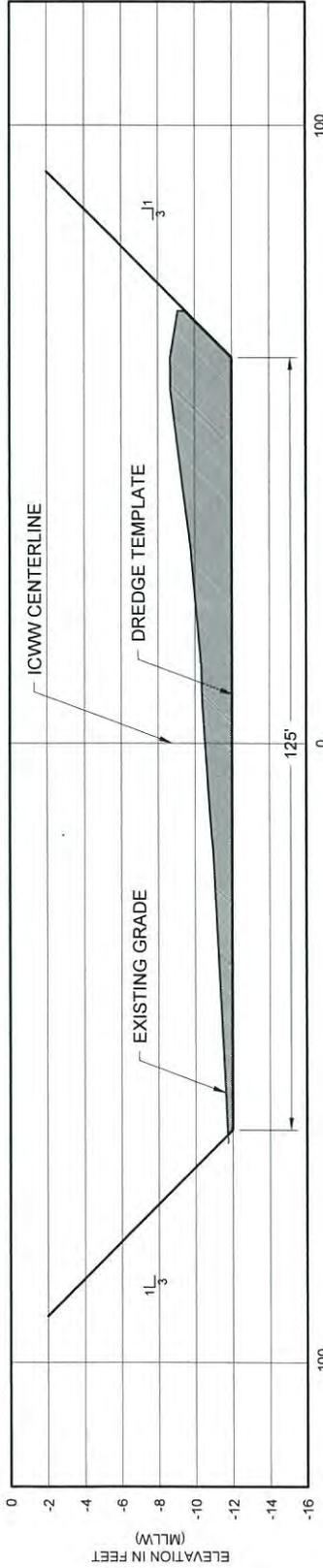
PROJECT	C2018-025	SEAL	
DRAWN BY	NP		
SHEET	11 of 16		
DATE	JULY 2018		



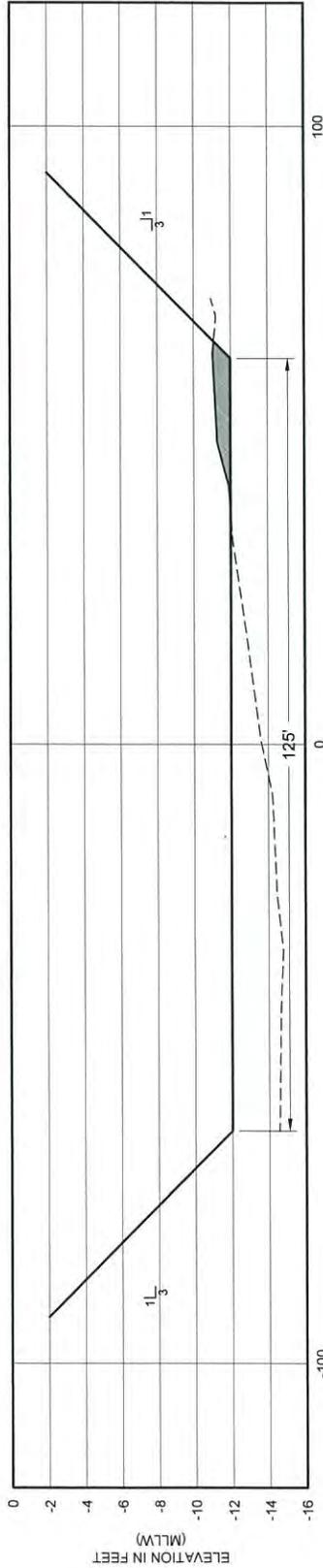
C-11
TYPICAL DREDGING SECTION
FLAGLER CO. ICWW DREDGING PERMIT
FLAGLER COUNTY, FLORIDA

TAYLOR ENGINEERING INC.
10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

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S1
C-3
TYPICAL DREDGING SECTION
SCALE: 1" = 30'

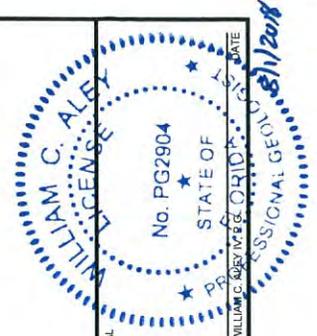


S2
C-4
TYPICAL DREDGING SECTION
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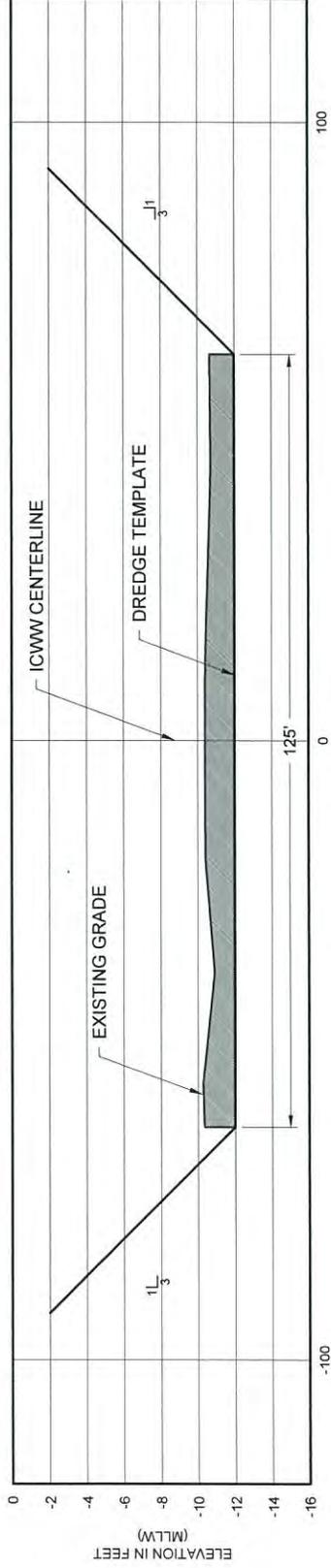
TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

C-12
 SECTIONS
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

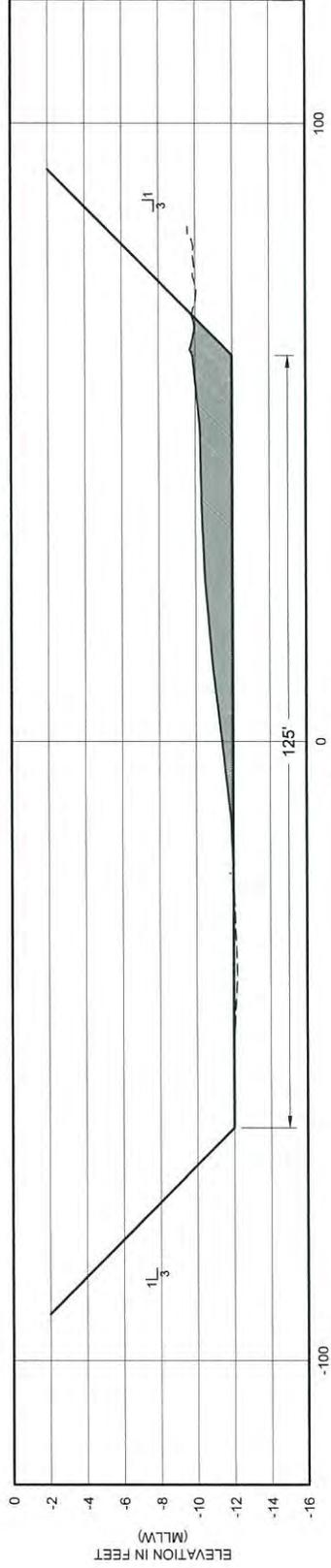
PROJECT	C2018-025
DRAWN BY	NP
SHEET	12 of 16
DATE	JULY 2018



PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



TYPICAL DREDGING SECTION
 S3
 C-5
 SCALE: 1" = 30'



TYPICAL DREDGING SECTION
 S4
 C-6
 SCALE: 1" = 30'

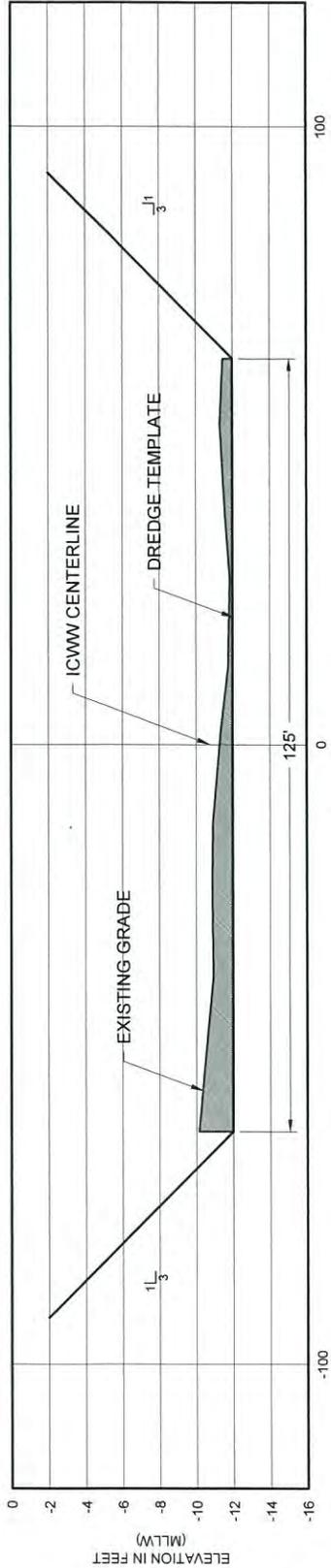
TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
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C-13
 SECTIONS
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

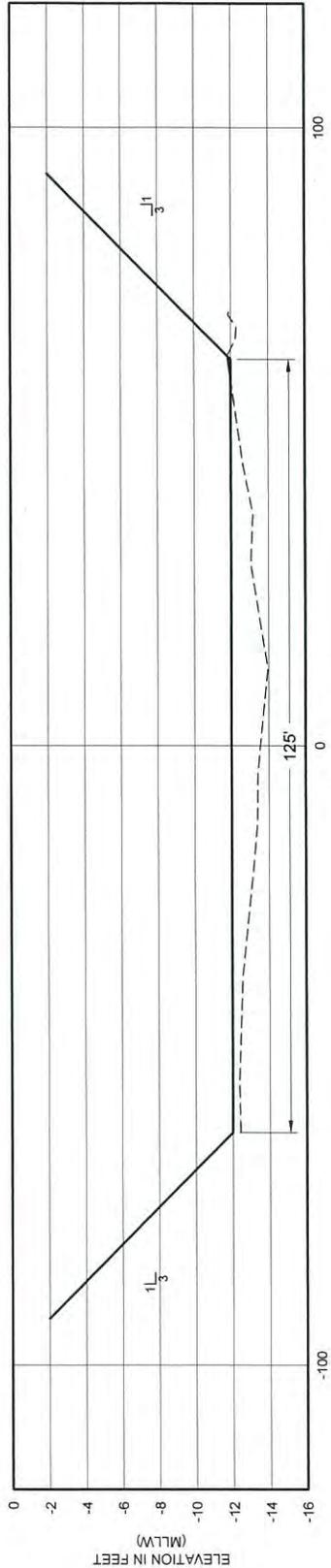
PROJECT	C2018-025
DRAWN BY	NP
SHEET	13 of 16
DATE	JULY 2018

SEAL
 WILLIAM C. ALEY
 LICENSED PROFESSIONAL ENGINEER
 No. PG2904
 STATE OF FLORIDA
 WILLIAM C. ALEY, P.E.
 LICENSE NO. PG2904
 8/11/2018

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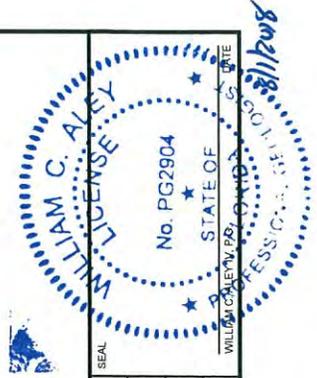


TYPICAL DREDGING SECTION
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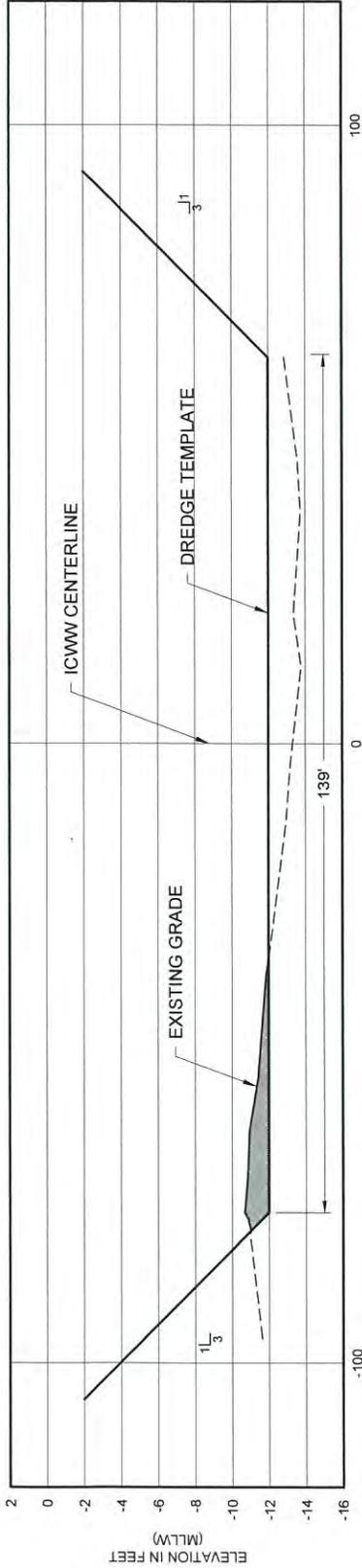
TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

C-14
 SECTIONS
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

PROJECT	C2018-025
DRAWN BY	NP
SHEET	14 of 16
DATE	JULY 2018

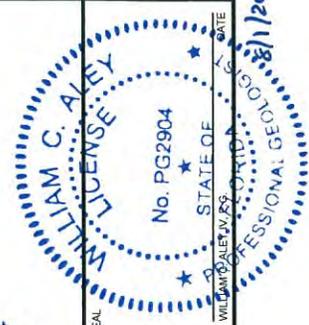


PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



TYPICAL DREDGING SECTION
 SCALE: 1" = 30'

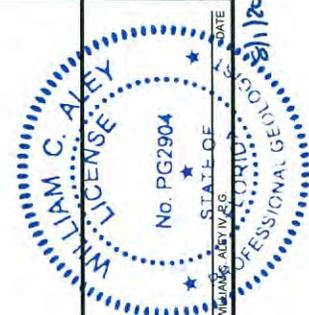
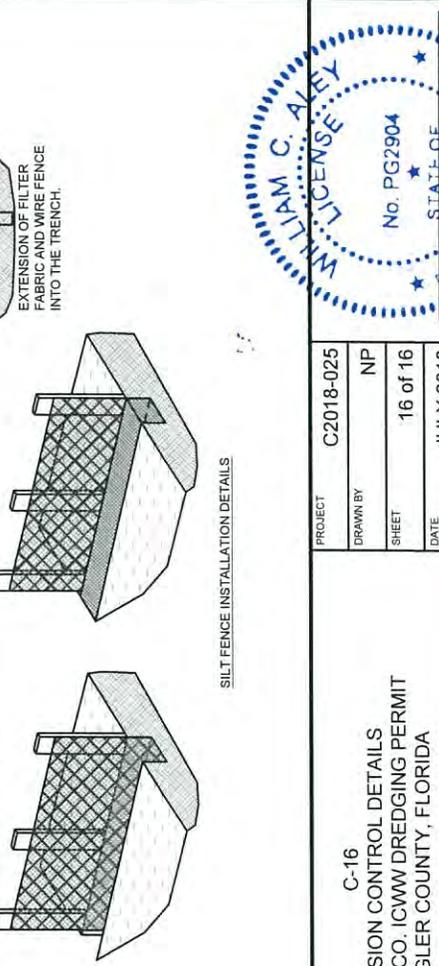
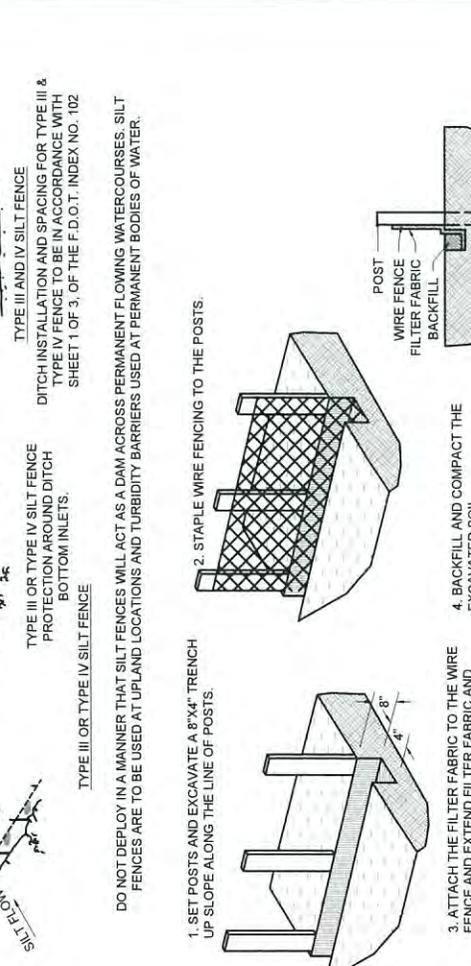
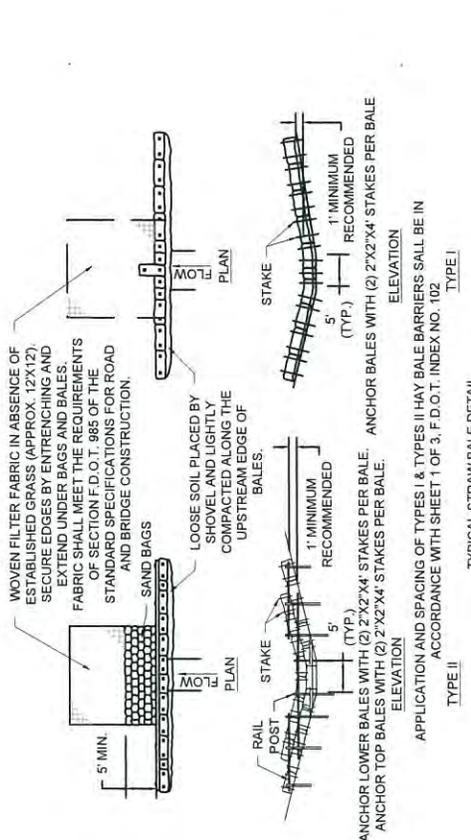
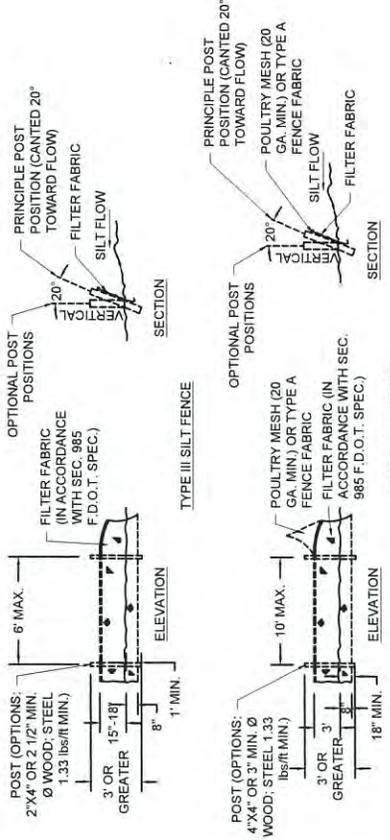
SEAL
 PROJECT: C2018-025
 DRAWN BY: NP
 SHEET: 15 of 16
 DATE: JULY 2018



C-15
 SECTIONS
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

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C-16
EROSION CONTROL DETAILS
FLAGLER CO. ICWW DREDGING PERMIT
FLAGLER COUNTY, FLORIDA

PROJECT: C2018-025
DRAWN BY: NP
SHEET: 16 OF 16
DATE: JULY 2018

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ATTACHMENT B -SUPPLEMENTAL INFORMATION

**Florida Inland Navigation District (FIND) – Intracoastal Waterway Flagler Reach I Maintenance
Dredging**

FDEP Request for Verification of an Exemption per Section 403.813(1)(f), F.S.

A pre-application meeting about the proposed project was held on Friday, July 27th, 2018, at FDEP offices at 8800 Baymeadows Way West, in Jacksonville Florida. Pre-application meeting attendance is summarized in Table 1 below.

Table 1. Pre-application meeting attendance

Date	Location	Agency	Attendees
7/27/2018	8800 Baymeadows Way West, Jacksonville Florida	Florida Department of Environmental Protection	Brian Durden, Kim Pearce, Hunter Bradshaw, Michelle Neeley, Junhong Shi
		U.S. Army Corps of Engineers, Jacksonville District	Shannon White
		Taylor Engineering, Inc	Bill Aley, Will Warren

The paragraphs in this document are numbered in accordance with the sections contained on Florida Department of Environmental Protection (FDEP), Request for Verification of Exemption (Form 62-330.050(1)) and are intended to provide additional detail on the topics listed in the application.

PART 1: GENERAL INFORMATION

Section B. Location of Proposed Activities

Please refer to *Figures C-1 through C-10* of the permit drawings (*Attachment C*) for regional and local scale views of the proposed dredging activities. The proposed plan is to maintenance dredge Reach I of the Intracoastal Waterway (ICW) in Flagler County, FL and an adjacent area of the waterway in St. Johns County between Summerhaven and Marineland. Figure C-1 shows the general project location. Dewatering and storage of the dredged material will occur at the FIND owned dredged material management area (DMMA) FL-3 in Palm Coast, FL.

Figure C-2 shows the dredging areas; Table 2 provides northern and southern boundary coordinates for the area. As depicted in *Figure C-3* the northernmost proposed dredging area extends from approximately Cut SJ-63 STA 14+00 (ICW mile 54.77) to approximately Cut F-14 STA 15+82 (ICW mile 60.96) of the ICW. Material dredged from this area will be dewatered and stored at DMMA FL-3 in Flagler County (*Attachment C, Figure C-10*).

Florida Inland Navigation District - IWW Flagler Reach I Maintenance Dredging

FDEP Request for Verification of an Exemption – ATTACHMENT B -Supplemental Information

Page 2 of 10

Table 2. Geographic coordinates for proposed dredging area boundaries

Boundary	Cut	Stationing	Latitude	Longitude
Northern	Cut SJ-63	STA 14+00	29° 41' 6.60" N	81° 13' 24.59" W
Southern	Cut F-14	STA 15+81.75	29° 34' 47.84" N	81° 11' 30.72" W

Table 3 provides specific information on the disposal site locations.

Table 3. Disposal site Information

DMMA	Parcel #	Address	City	County	Zip	Coordinates
FL-3	13-10-30-0000-01010-0030, 13-10-30-0000-01010-0031	Old King Rd N*	Palm Coast	Flagler	32137	29° 38' 14" N 81° 13' 34" W

*No address has been assigned

Section C. Commence and End Dates

The maintenance dredging activities are proposed to commence on or around October 1, 2018 and end by March 31, 2019. In the event that activities cannot commence by October 1 the end date may be extended.

Section D. Proposed Activities. *Describe in general terms the proposed project, system, or activity (including materials to be used and construction methods):*

The proposed activity will involve maintenance dredging portions of the federally authorized and constructed Intracoastal Waterway in Flagler County, FL.

As stated in Section B, the proposed plan will dredge Reach I of the ICW in Flagler County. Dredging will remove approximately 328,192 cubic yards (CY) of material and dispose of it in FIND DMMA FL-3 (*Attachment C, Figure C-10*).

The dredging may be completed by either a hydraulic cutter-suction dredge or a mechanical dredge. Geotechnical data for the material to be dredged is provided in *Attachment H*.

The most likely dredging scenario is that a contractor would use a hydraulic cutter-suction dredge to excavate shoaled material from the channel bottom and transport it hydraulically as a slurry through high density polyethylene (HDPE) pipelines to the designated DMMA. The dredged material would exit the pipeline at the DMMA as a slurry containing approximately 20% solids (by volume) and 80% water. The

Florida Inland Navigation District - IWW Flagler Reach I Maintenance Dredging

FDEP Request for Verification of an Exemption – ATTACHMENT B -Supplemental Information

Page 3 of 10

solid material will quickly settle out and the water will pond in the DMMA until it reaches the designated discharge elevation at the weir of the DMMA. The ponding depth and weirs are designed to allow sufficient time for solids to settle from the water column to reduce turbidity prior to the water exiting the weir into another pipeline for discharge back into the waterway. Work equipment staged at the DMMA site would most likely be limited to one HDPE pipe bringing the dredged slurry into the site and two or three HDPE pipelines returning effluent water to the waterway. There may be some earth moving equipment on site to intermittently rearrange material in the DMMA to maintain efficiency of the discharge pipeline. For emergency uses only, the contractor may elect to stage a generator and pump at the DMMA site but it is most likely that these will not be used. DMMA's are required to be monitored by the contractor at all times while dredged material is being deposited.

The ultimate objective of the dredging is to restore Flagler Reach I of the ICW channel to the design depth. The ICW channel is authorized at -12-ft depth relative to mean lower low water (MLLW), with a 125-ft channel width and 3:1 side slopes.

USACE and FIND records indicate that since USACE completed deepening of the channel to its authorized project depth of -12-ft below MLLW, Flagler Reach I of the ICW has only had four minor maintenance dredging events while Cuts SJ-64 – F1 have only had five minor maintenance dredging events as summarized in Tables 4 and 5 below.

Table 4. Flagler Reach I dredging history

REACH	ICWW MILEAGE		CUT/STATION		YEAR	DESIGN VOLUME (CY)	PAY VOLUME (CY)
	FROM	TO	FROM	TO			
I	56.73	57.16	F-2/10+50	F-2/33+50	1967	23,100	27,500
	57.18	57.59	F-2/34+50	F-3/19+00		7,000	8,334
	57.59	58.26	F-3/19+00	F-4/32+00		22,800	27,143
	56.81	57.14	F-2/15+00	F-2/32+50	1976	42,000	50,000
	57.02	59.3	F-2/26+00	F-5/55+00	1986	97,000	115,475
	56.62	57.13	F-2/5+00	F-2/32+00	2011	15,479	33,938
	REACH I TOTAL						207,379

Table 5. St. Johns Cuts SJ-63 - FL-1 dredging history

REACH	ICWW MILEAGE		CUT/STATION		YEAR	DESIGN VOLUME (CY)	PAY VOLUME (CY)
	FROM	TO	FROM	TO			
V	54.81	55.3	SJ-63/2+00	SJ-63/28+00	1958	40,863	48,647
	54.84	55.36	SJ-63/4+00	SJ-63/31+00	1960	19,000	18,967
	55.51	55.66	SJ-63/39+00	SJ-64/6+00		4,000	5,950
	56.2	56.39	SJ-64/34+50	F-1/8+00	1967	14,000	9,441
	53.67	53.91	SJ-61/64+50	SJ-62/7+00	1970	31,500	34,000
	54.84	55.26	SJ-63/3+80	SJ-63/26+00		39,700	59,501
	54.92	55.36	SJ-63/8+00	SJ-63/31+00	1978	52,000	62,207
	55.36	56.36	SJ-63/31+00	F-1/6+00		31,000	37,200
	Total						232,063

Section E. Work Proposed in Wetlands or Other Surface Waters. Describe, with specific references, how the limits of the proposed work will comply with the terms and conditions of the referenced exemption.

Terms and Conditions related to the Section 403.813(3), F.S. Maintenance Dredging permit exemption and Florida Statute Section 18-21.004(7) (Management Policies, Standards, and Criteria) were reviewed for consistency with the proposed plan. Per requirements of these terms and conditions, the following paragraphs are provided to: (1) review and discuss the general description of work proposed; (2) discuss measures to be taken to ensure that the proposed activities do not create a navigational hazard (18-21.004(7)(g), F.A.C.; and (3) per 18-21.004(7)(e), F.A.C., discuss whether the proposed activity may 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.

(1) General Description of Work Proposed

No work is proposed in wetlands although the dredging activities will occur from surface waters. During the proposed project a contractor will have dredging equipment positioned in the ICW channel at designated dredging areas. There may also be equipment moored in surface waters adjacent to the planned upland placement area and there will likely be one or more service vessels

operating and patrolling between the dredging area and the disposal area. If the contractor resorts to hydraulic dredging methods (as anticipated), there will also be floating and sunken pipeline connecting the dredge to the disposal area and connecting the disposal area weirs back to the waterway for discharge of clarified effluent water. These pipelines will cross State Sovereignty Submerged Lands via easement No. 27855(3671-18). The pipeline crossings may result in temporary impacts to marsh vegetation (*Spartina* sp.) as a result of pipes being laid on the vegetation. Project specifications will require backfilling and revegetation of any ruts left in the marsh as a result of pipeline placement. The construction contractor and FIND will document marsh vegetation conditions prior to pipeline placement and will monitor conditions for 1 year following completion of the project.

(2) Prevention of Navigational Hazards

The proposed activities will be conducted so as not to create navigational hazards for recreational and commercial traffic which may use the waterway during construction. In order to ensure no navigational hazards are created, several items specific to this objective are included in contract specifications. Those specific items are as follows:

- Notice to Mariners: Prior to the commencement of work on this Contract, the Contractor shall notify the Commander, Seventh Coast Guard District in Miami, Florida of his intended operations to dredge and request that it be published in the Local Notice to Mariners.
- Notice of Misplaced Material: Contractor shall immediately notify the U.S. Coast Guard Marine Safety Office and the Engineer of any misplaced material (e.g., dredge pipe, cable, etc.).
- Notification of Aids Relocation: Unless expressly stated in the Project Drawings, the Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation without written consent from the U.S. Coast Guard.
- Dredge Plan: includes Site Plan and Placement Operations Plan: The Contractor shall submit to Engineer for approval, a dredge plan that provides for a comprehensive summary of proposed project methodology (equipment, material transport, daily dredging productivity), operational controls (quality control, minimization of marine and upland traffic delays, permit compliance), security, and turbidity management/monitoring procedures to be implemented. The plan shall also include a specific discussion on staging areas, work sequencing, and minimization of impacts to recreational users of the Intracoastal Waterway.
- Signal Lights: The Contractor shall display signal lights and conduct operations in accordance with the General Regulations of the Department of the Army and of the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passing by other vessels of floating plant working in navigable channels, as set forth in Commandant U.S. Coast Guard Instruction M16672.2, Navigation Rules: International-Inland (COMDTINST M16672.2), or 33 CFR 81 Appendix A (International) and 33 CFR 84 through 33 CFR 89 (Inland) as applicable.
- Weather Radio Monitoring: 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 Contractor's responsibility to obtain

information concerning rain, wind, and wave conditions that could influence his dredging and disposal operations.

- Bridge-to-Bridge Communication: In order that radio communication may be made with passing vessels, all dredges engaged in Work under this Contract shall be equipped with bridge-to-bridge radio telephone equipment.
- Right-of-Way Limits: Contractor shall conduct his operations to minimize interference with the movement of vessels in the adjacent waters not being actively dredged. However, the Contractor will be permitted to exclude the public from the work areas including in the immediate vicinity of active dredging or material placement operations.
- Protection of Existing Waterways: The Contractor shall conduct his operations in such a manner that material or other debris are not pushed outside of dredging limits or otherwise deposited in existing side channels, basins, docking areas, or other areas being utilized by vessels. The Contractor will be required to change his method of operations as may be required to comply with the above requirements. Should any bottom material or other debris be pushed into areas described above, as a result of the Contractor's operations, the material or debris must be promptly removed by and at the expense of the Contractor to the satisfaction of the Engineer.
- Hydraulic Discharge Pipeline Marking:
 - Submerged Pipeline: In the event the Contractor elects to submerge his pipeline, the pipeline shall rest on the bottom, and the top of the submerged pipeline and any anchor securing the submerged pipeline shall be no higher than the project depth for any navigation channel in which the submerged pipeline is placed. Should Contractor elect to use a pipeline material that is buoyant or semi-buoyant, such as PVC pipe or similar low-density materials, the Contractor shall securely anchor the pipeline to prevent pipeline from lifting off the bottom under any conditions. Contractor shall make daily inspections of the submerged pipeline to ensure buoyancy has not loosened the anchors. Contractor shall remove all anchors when the submerged pipeline is removed. The location of the entire length of submerged pipeline shall be marked with signs, buoys, lights, and flags conforming to U.S. Coast Guard regulations. Under no circumstances shall the pipeline be anchored within any area identified with submerged natural resources.
 - Floating Pipeline: Should the Contractor's pipeline not rest on the bottom, it will be considered a floating pipeline and shall be visible on the surface and clearly marked. In no case will the Contractor's pipeline be allowed to fluctuate between the surface and the bottom, or lie partly submerged. Lights shall be installed on the floating pipeline as required in paragraph SIGNAL LIGHTS above. The lights shall be supported either by buoys or by temporary piling, provided by the Contractor and approved by the Engineer. Where the pipeline does not cross a navigable channel, the flashing yellow all-around lights shall be spaced not over 200 feet apart, unless closer spacing is required by U.S. Coast Guard personnel, in which case the requirements of the U.S. Coast Guard shall govern, at no additional cost to the Government.

(3) Potential for the proposed activity to 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.

Florida Inland Navigation District - IWW Flagler Reach I Maintenance Dredging

FDEP Request for Verification of an Exemption – ATTACHMENT B -Supplemental Information

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The following paragraphs summarize efforts made by Taylor Engineering to assess the potential for the proposed activity to 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.

Florida Natural Areas Inventory (FNAI) Biodiversity Matrix Query Results

Taylor Engineering Inc. environmental staff used the FNAI Biodiversity Matrix (*Attachment I*) online search tool on May 7, 2018 to identify state- and federally-listed species that may occur within the proposed project areas. The search included a query of all FNAI matrix units associated with each of the proposed project areas.

According to the FNAI search results listed below, listed species that likely occur in the project area vicinity include:

Dredging Plan Cuts SJ-63 thru F-14- (see Attachment C, Figure C-2)

FNAI Matrix Units 49880, 49881, 49882, 50207, 50208, 50209, 50210, 50536, 50537

- Birds
 - Florida Scrub-Jay (Threatened – Federal, Threatened – State)
 - American Oystercatcher (Not Listed - Federal, Species of Special Concern - State)
 - Wood stork (Threatened – Federal, Threatened – State)
 - Worthington’s marsh wren (Not Listed - Federal, Species of Special Concern - State)
 - Piping Plover (Threatened – Federal, Threatened – State)
- Mammals
 - West Indian manatee (Endangered – Federal, Endangered - State)
- Reptiles
 - Eastern Indigo Snake (Threatened – Federal, Threatened – State)
 - Gopher Tortoise (Candidate – Federal, Threatened – State)
 - Green Sea Turtle (Endangered – Federal, Endangered - State)
 - Loggerhead Sea Turtle (Threatened – Federal, Threatened – State)
 - Leatherback Sea Turtle (Endangered – Federal, Endangered - State)
 - Hawksbill Sea Turtle (Endangered – Federal, Endangered - State)

Dredged Material Management Area FL-3 - (see Attachment C, Figure C-10)

FNAI Matrix Unit 49879

- Mammals
 - West Indian manatee (Endangered – Federal, Endangered - State)
- Reptiles
 - Eastern Indigo Snake (Threatened – Federal, Threatened – State)
 - Gopher Tortoise (Candidate – Federal, Threatened – State)
- Fish
 - Atlantic Sturgeon (Endangered – Federal, Endangered - State)

Source: <http://www.fnai.org/biointro.cfm>

U.S. Fish & Wildlife Service Information for Planning and Conservation (IPaC) Trust Resources Reports

Taylor Engineering Inc. environmental staff used the U.S. Fish & Wildlife Service's IPaC online search tool on May 7, 2018 for each of the proposed project areas (Attachment I). The query results follow.

Dredging Plan Cuts SJ-63 thru F-14 - (see Attachment C, Figure C-2).

- Birds
 - Florida Scrub-Jay (*Aphelocoma coerulescens*) - Threatened
 - Red knot (*Calidris canutus rufa*) - Threatened
 - Red-cockaded woodpecker (*Picoides borealis*) - Endangered
 - Wood stork - Threatened
- Mammals
 - West Indian manatee – Endangered
 - Project location includes West Indian manatee critical habitat
- Reptiles
 - Eastern indigo snake (*Drymarchon corais couperi*) - Endangered
 - Green sea turtle (*Chelonia mydas*) - Endangered
 - Hawksbill sea turtle (*Eretmochelys imbricata*) - Endangered
 - Leatherback sea turtle (*Dermochelys coriacea*) - Endangered

Dredged Material Management Area FL-3 - (see Attachment C, Figure C-10)

- Birds
 - Florida Scrub-Jay (*Aphelocoma coerulescens*) - Threatened
 - Red knot (*Calidris canutus rufa*) - Threatened
 - Red-cockaded woodpecker (*Picoides borealis*) - Endangered
 - Wood stork - Threatened
- Mammals
 - West Indian manatee – Endangered
 - Project location includes West Indian manatee critical habitat
- Reptiles
 - Eastern indigo snake (*Drymarchon corais couperi*) - Endangered
 - Green sea turtle (*Chelonia mydas*) - Endangered
 - Hawksbill sea turtle (*Eretmochelys imbricata*) - Endangered
 - Leatherback sea turtle (*Dermochelys coriacea*) - Endangered

Source: <http://ecos.fws.gov/ipac/>

Potential Impacts to Listed Species

Of the listed species identified by the USFWS and FNAI Biodiversity Matrix searches and based on review of available literature; the present environmental conditions within the areas to be

Florida Inland Navigation District - IWW Flagler Reach I Maintenance Dredging

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dredged provide habitat for the West Indian manatee, Eastern Indigo Snake, and swimming sea turtles. Below we provide a brief synopsis of the potential project impacts to these species, and the protection measures the applicant will implement during dredging activities to avoid impacts to these species.

West Indian Manatee

The West Indian manatee resides in Florida's fresh, estuarine, and marine habitats. The West Indian manatee, an endangered marine mammal in coastal waters of the United States, primarily feeds on submerged, floating, and emergent aquatic vegetation. In order to avoid and minimize adverse effects to the West Indian manatee, the project will follow manatee protection plan guidance and will implement the 2011 Standard Manatee Conditions for In-Water Work (*Attachment K*) during construction.

Turbidity barriers (if utilized) will be made of materials that will make it difficult for manatees to become entangled, will be properly secured and will be monitored regularly to ensure no manatees are entangled or entrapped. The barriers will be designed to discourage manatees from inadvertently entering the construction/dredging area.

RGP SAJ-14 Special Conditions

The USACE general permit was modified in 2018 to include measures to prevent the entanglement of species in buoy lines. The modification states that all buoy lines shall be secured in a manner that does not include the looping of wire/nylon rope or chain. Buoys shall be secured using one of the following methods:

1. Light weight chain
2. Non-looping wire rope
3. Plastic sheathing around nylon rope to prevent looping

Swimming Sea Turtles

According to the USFWS IPaC search, project activities have the potential to encounter green sea turtles, hawksbill sea turtles, and leatherback sea turtles. In order to avoid and minimize adverse effects to these species, the project will implement the 2006 Sea Turtle and Smalltooth Sawfish Construction Conditions (*Attachment L*) during all permitted activities.

Any potential interactions between listed species and the activities associated with the use of the the DMMA FL-3 site has been previously addressed in the permits issued to construct that DMMA.

Sources:

West Indian Manatee Information: (<http://ecos.fws.gov/ipac/>),
(<http://www.fws.gov/southeast/wildlife/mammal/manatee/>)

Swimming sea turtles and smalltooth sawfish Information: (<http://ecos.fws.gov/ipac/>),
Regional General Permit SAJ-14, Modification #1

Section F. Sediment and erosion controls

Turbidity and erosion control will be established and maintained through enforcement of the following specifications:

- Turbidity: Turbidity control measures will be used to minimize turbidity and the work will be completed in accordance with State Water Quality Standards as outlined in Chapter 62.302, Florida Administrative Code. Turbidity control measures may include but are not limited to turbidity control curtains, the exclusive use of suction dredging, the exclusive use of closed "clam shell" dredging, or any other technique necessary to reduce turbidity to meet water quality standards. Additionally, the construction contractor will be required to submit daily turbidity reports, which will be reviewed by FIND and Taylor Engineering, compiled, and made available for federal, state, or local government review.
- Erosion control: The contractor will be required to submit a detailed turbidity and water quality management and monitoring plan and a detailed dredge plan for engineer approval before issuance of a notice to proceed. Some of the requirements of these plans are as follows:
 - The contractor will be required to implement and maintain erosion control measures as necessary to comply with all federal, state, and local regulations and comply with state water quality criteria for storm water discharge. Erosion control measures include but are not limited to turbidity screens, mulching, Hay bales, and silt fence.
 - Erosion control measures will manage sediment loading at all points of discharge to surface waters or wetlands including curb inlets, ditch bottom inlets, ditches, and downstream portions of streams and tidal waters adjacent to Construction.
 - Erosion control measures will be maintained for the entire duration of the project or until sodding or grass is established.
 - Disturbed areas not including roadways and wetlands will be seeded or grassed, fertilized, mulched, and maintained in accordance with specification requirements until a permanent vegetative cover is established.
 - The contractor will be responsible for establishing a permanent stand of sod or grass meeting the NPDES final stabilization requirements at all disturbed areas.
 - The site contractor is responsible for removing the temporary erosion and sediment control devices after completion of construction and only when areas have been stabilized.
 - Silt fences and filter barriers will be inspected immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.
 - All slopes 3:1 or steeper shall receive staked solid sod.



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX C

USACE Permit SAJ-2018-01865 (RGP-SCW)
USACE Permit RGP SAJ-93
Modification #1 RGP SAJ-93



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

September 18, 2018

REPLY TO
ATTENTION OF

Regulatory Division
North Permits Branch
Jacksonville Permits Section
SAJ-2018-01865 (RGP-SCW)

Florida Inland Navigation District (FIND)
Mr. Mark Crosley
1314 Marcinski Road
Jupiter, Florida 33477

Dear Mr. Crosley:

Your application for a Department of the Army permit received on August 3, 2018 has been assigned number SAJ-2018-01865. A review of the information and drawings provided shows the proposed work is to hydraulically maintenance dredge a total of 328,192 cubic yards of sediment from the Intracoastal Waterway channel to a depth of -12 feet Mean Lower Low Water, with 2 feet of allowable overdredge, with a 125-foot wide channel and 3:1 slide slopes. Approximately 79,957 cubic yards of sediment is authorized to be dredged from Cut SJ-63 (STA 14+00) to Cut SJ-64 (STA 23+50) in St. Johns County, and 248,235 cubic yards of sediment is authorized to be dredged from Cut F-1 (STA 0+00) to Cut F-14 (STA 15+81.75) in Flagler County. All dredged material shall be disposed of in Dredged Material Management Area (DMMA) FL-3. The project is located in the Intracoastal Waterway, from Cut SJ-63 (STA 14+00) to Cut SJ-64 (STA 23+50), in St. Johns County, and from Cut F-1 (STA 0+00) to Cut F-14 (STA 15+81.75), in Flagler County, Florida.

Your project, as depicted on the enclosed drawings, is authorized by Regional General Permit (GP) SAJ-93. This authorization is valid until April 26, 2021. Please access the Corps' Jacksonville District Regulatory Division Internet page to view the special and general conditions for SAJ-93, which apply specifically to this authorization. The Internet URL address is:

<http://www.saj.usace.army.mil/Missions/Regulatory/Source-Book/>

Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Once there you will need to click on "Source Book"; and, then click on "General Permits". Then you will need to click on the specific SAJ permit noted above. You must comply with all of the special and general conditions of the permit; and, any project-specific conditions noted below, or you may be subject to

enforcement action. The following project-specific conditions are included with this authorization:

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, P.O. Box 4970, Jacksonville, Florida 32232-0019.

b. For electronic mail SAJ-RD-Enforcement@usace.army.mil (not to exceed 10 MB). The Permittee shall reference this permit number, SAJ-2018-01865 (GP-SCW), on all submittals.

2. Agency Changes/Approvals: Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the Jacksonville Permits Section. The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.

This authorization does not obviate the necessity to obtain any other Federal, State, or local permits, which may be required. Prior to the initiation of any construction, projects qualifying for this NWP/RGP permit must qualify for an exemption under section 403.813(1), F.S. or 373.406, F.S., or otherwise be authorized by the applicable permit required under Part IV of Chapter 373, F.S., by the Department of Environmental Protection, a water management district under section 373.069, F.S., or a local government with delegated authority under section 373.441, F.S., and receive Water Quality Certification (WQC) and applicable Coastal Zone Consistency Concurrence (CZCC) or waiver thereto, as well as any authorizations required for the use of state-owned submerged lands under Chapter 253, F.S., and, as applicable, Chapter 258, F.S. You should check State-permitting requirements with the Florida Department of Environmental Protection or the appropriate water management district.

This authorization does not include conditions that would prevent the 'take' of a state-listed fish or wildlife species. These species are protected under sec. 379.411, Florida Statutes, and listed under Rule 68A-27, Florida Administrative Code. With regard to fish and wildlife species designated as species of special concern or threatened by the State of Florida, you are responsible for coordinating directly with the Florida Fish and Wildlife Conservation Commission (FWC). You can visit the FWC license and permitting webpage (<http://www.myfwc.com/license/wildlife/>) for more information, including a list of those fish and wildlife species designated as species of special concern or

threatened. The Florida Natural Areas Inventory (<http://www.fnai.org/>) also maintains updated lists, by county, of documented occurrences of those species.

This authorization does not give absolute Federal authority to perform the work as specified on your application. The proposed work may be subject to local building restrictions mandated by the National Flood Insurance Program. You should contact your local office that issues building permits to determine if your site is located in a flood-prone area, and if you must comply with the local building requirements mandated by the National Flood Insurance Program.

If you are unable to access the internet or require a hardcopy of any of the conditions, limitations, or expiration date for the above referenced NWP and RGP, please contact Shannon White by telephone at 904-232-1681.

Thank you for your cooperation with our permit program. The Corps' Jacksonville District Regulatory Division is committed to improving service to our customers. We strive to perform our duty in a friendly and timely manner while working to preserve our environment. We invite you to complete our automated Customer Service Survey at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. Please be aware this Internet address is case sensitive; and, you will need to enter it exactly as it appears above. Your input is appreciated – favorable or otherwise.

Sincerely,



Shannon White
Project Manager

Enclosures

Copies Furnished:

Taylor Engineering, 10199 Southside Blvd., Suite 310, Jacksonville, FL 32256
CESAJ-RD-PE

GENERAL CONDITIONS
33 CFR PART 320-330

1. The time limit for completing the work authorized ends on the **dates identified in the letter.**
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 or 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.

SELF-CERTIFICATION STATEMENT OF COMPLIANCE

Permit Number: RGP-93
Application Number: SAJ-2018-01865

Permittee's Name & Address (please print or type): _____

Telephone Number: _____

Location of the Work: _____

Date Work Started: _____ Date Work Completed: _____

PROPERTY IS INACCESSIBLE WITHOUT PRIOR NOTIFICATION: YES _____ NO _____

TO SCHEDULE AN INSPECTION PLEASE CONTACT _____
AT _____

Description of the Work (e.g. bank stabilization, residential or commercial filling, docks, dredging, etc.): _____

Acreage or Square Feet of Impacts to Waters of the United States: _____

Describe Mitigation completed (if applicable): _____

Describe any Deviations from Permit (attach drawing(s) depicting the deviations):

I certify that all work, and mitigation (if applicable) was done in accordance with the limitations and conditions as described in the permit. Any deviations as described above are depicted on the attached drawing(s).

Signature of Permittee

Date

DEPARTMENT OF THE ARMY PERMIT TRANSFER REQUEST

PERMIT NUMBER: SAJ-2018-01865 (RGP-SCW)

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. Although the construction period for works authorized by Department of the Army permits is finite, the permit itself, with its limitations, does not expire.

To validate the transfer of this permit and the associated responsibilities associated with compliance with its terms and conditions, have the transferee sign and date below and mail to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, FL 32232-0019.

(TRANSFEREE-SIGNATURE)

(SUBDIVISION)

(DATE)

(LOT)

(BLOCK)

(NAME-PRINTED)

(STREET ADDRESS)

(MAILING ADDRESS)

(CITY, STATE, ZIP CODE)

AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Enforcement Section, P.O. Box 4970, Jacksonville, FL 32232-0019. For electronic mail saj-rd-enforcement@usace.army.mil (not to exceed 10 MB). If you have questions regarding this requirement, please contact the Enforcement Branch at 904-232-3131.

1. Department of the Army Permit Number: SAJ-2018-01865 (RGP-SCW)

2. Permittee Information:

Name: _____

Address: _____

3. Project Site Identification (physical location/address):

4. As-Built Certification: I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled, and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

Signature of Engineer

Name (Please type)

(FL, PR, or VI) Reg. Number

Company Name

City

State

ZIP

(Affix Seal)

Date

Telephone Number

DEPARTMENT OF THE ARMY PERMIT REGIONAL GENERAL PERMIT SAJ-93

Permittee: Florida Inland Navigation District
1314 Marcinski Road
Jupiter FL 33477-9498

Effective Date: April 26, 2016

Expiration Date: April 26, 2021

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the Permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

After you receive written verification for your project under this Regional General Permit (RGP) from the Corps, you are authorized to perform work in accordance with the terms and conditions specified below.

Work Authorized: The work authorized includes maintenance dredging of the Atlantic Intracoastal Waterway (AIWW), Intracoastal Waterway (IWW), and Okeechobee Waterway (OWW) federal navigation channels, including wideners, along the east coast of Florida which includes the following counties: Nassau, Duval, St. Johns, Flagler, Volusia, Brevard, Indian River, St. Lucie, Martin, Palm Beach, Broward, and Miami-Dade. The federal navigation projects are described in Table 1 below and shown in Attachment 1 and encompass the channel area as defined as the 12-foot deep, 150-foot wide to 125-foot wide federal AIWW channel extending from the Georgia/Florida line in Nassau County to the St. Johns River in Jacksonville; the 12-foot deep, 125-foot wide federal IWW channel extending from the St. Johns River in Jacksonville to the Fort Pierce Harbor Project in St. Lucie County; the 10-foot deep, 125-foot wide federal IWW channel from the Fort Pierce Harbor Project in St. Lucie County to the Miami Harbor in Miami-Dade County; the 8-foot deep, 80-foot wide channel originating at the confluence of the Indian River Lagoon/IWW and the St. Lucie River in Martin County ("Crossroads") to the St. Lucie Lock and Dam/eastern limit of St. Lucie Canal; the 8-foot deep, 100-foot wide channel originating from the St. Lucie Lock and Dam/eastern limit of St. Lucie Canal to the western Palm Beach County line across the middle of Lake Okeechobee (Route 1); and the 6-foot deep, 80-foot channel originating from the Port Mayaca Lock/western limit of St. Lucie Canal to the western Palm Beach County line along the southern shore of Lake Okeechobee (Route 2/Rim canal). This permit authorizes maintenance dredging of any of the aforementioned federal navigation projects in

accordance with the Congressional authorization or as deepened or widened under a Department of the Army permit. Maintenance dredging of residential canals and/or flood control projects; “new” dredging to widen or deepen an existing federal navigation project, new access channels, and channel realignments; and removal of channel/canal plugs or connection of any canal or other waterway to navigable waters of the United States are not authorized herein. This permit includes no limitation on volume. Maintenance dredging is restricted to the amount necessary to restore the congressionally authorized or permitted dimensions of the federal navigation channel allowing for a two-foot over-dredge.

Table 1. Federal Navigation Channels Within the Scope of RGP SAJ-93.

Federal Channel	Limits	Depth (feet)	Width (feet) ¹	Approximate Side Slopes (DepthX3) (feet) ²
Atlantic Intracoastal Waterway	Florida State line to St. Johns River	12	150-125	36
Intracoastal Waterway	St. Johns River to Ft. Pierce.	12	125	36
Intracoastal Waterway	Ft. Pierce to Miami	10	125	30
Okeechobee Waterway	IWW (at St. Lucie Inlet) to St. Lucie Lock and Dam	8	80	24
Okeechobee Waterway	St. Lucie Lock and Dam to Clewiston (Route 1)	8	100	24
Okeechobee Waterway	St. Lucie Lock and Dam to Clewiston (Route 2)	6	80	18

¹Channel wideners are not shown in this table.

²Actual horizontal width depends on bathymetry outside the federal project limits.

Maintenance dredging within the AIWW, IWW, and OWW would be performed using a hydraulic pipeline cutterhead suction dredge or mechanical clamshell dredge. Hopper dredges are excluded under this permit. Since dredging does not always result in a

smooth and even channel bottom, a drag bar or chain may be dragged along the bottom or agitation or injection dredging used to smooth down high spots and fill in low areas. The authorized work includes activities associated with maintenance dredging including transportation methodology and use of pipelines, booster pumps, and associated dredged material transfer mechanisms. Pipelines may be submerged or floating, typically constructed of steel or high-density polyethylene (HDPE) with connecting steel collars. Authorized pipeline sizes range from 12-inch to 24-inch in diameter. Dredging may require strategically locating booster pumps to facilitate pipeline disposal of the dredged material. Work vessels and activities typically include: the dredge vessel; booster pumps/small barges; push boats; scows/barges; crew transport/work vessels; spudding, anchoring, staging, and stockpile areas; loading/unloading areas; and associated vessel movements.

Dredged material shall be deposited in operational Dredged Material Management Areas (DMMA), upland areas where the dredged material is self-contained, or placed on certain beaches when dredging beach-compatible material. Operational DMMA at the time of this authorization are shown in Attachment 2. Decanted return water is allowed and must meet State Water Quality Standards as established by the Florida Department of Environmental Protection (FDEP). The use of an upland disposal area that is not a standard DMMA shall be constructed with consideration of the existing onsite drainage patterns, and the Permittee shall provide verification no onsite or offsite adverse flooding conditions will result from the placement of dredged material. Beneficial reuse of dredged material is allowed through the placement of dredged material at the eight beach sites shown in Table 2 below where the characteristics of the dredged material are consistent with that of the beach placement site and this authorization. This authorization also includes offload of dredged material from operational DMMA, specifically from DMMA SJ-1 to Summer Haven Beach and from MSA 434 to New Smyrna Beach. Offload of DMMA M-5 to Hobe Sound National Wildlife Refuge (NWR) is covered under SAJ-2009-03015 which expires October 24, 2021.

Table 2. Beach Placement Sites within the Scope of RGP SAJ-93

DREDGE REACH	LOCATION	COUNTY	BEACH	FDEP RANGE MONUMENTS	LINEAR FT OF SHORELINE
N-II	Sawpit	Nassau Co.	Amelia Island	R-75 to R-78	3,000
SJ-III	St Augustine Inlet Intersection	St. Johns Co.	Anastasia State Park	R-84 to R-122 R-123 to R-152	38,000 29,000

SJ-V	Matanzas	St. Johns Co.	Summer Haven	R-205 to R-208	3,000
V-IV	Volusia/Ponce	Volusia Co.	New Smyrna	R-161 to R-189.5	28,500
M-II	Crossroads	Martin Co.	Hobe Sound NWR	R-59 to R-80	21,000
P-I	Jupiter	Palm Beach Co.	Jupiter	R-13 to R-19	4,000
P-IV	Ocean Ridge/South Lake Worth Inlet	Palm Beach Co.	Ocean Hammock Park	R-155 to R-122 R-123 to R-152	2,050
MD-II	Baker's Haulover	Miami-Dade Co.	Bal Harbor	R-28 to R-32	4,000

Special Conditions Related to Water Quality:

1. Where disposal of dredged material includes beach placement, prior to the initiation of construction, the project must be authorized by the applicable permit required under Part IV of Chapter 373, F.S., by the FDEP and receive Water Quality Certification (WQC) and applicable Coastal Zone Consistency Concurrence (CZCC) or waiver thereto, as well as any authorizations required for the use of state-owned submerged lands under Chapter 253, F.S., and, as applicable, Chapter 258, F.S. The Permittee shall comply with state standards as approved by FDEP and included as special conditions in the Corps' authorization.

2. Turbidity control measures will be used to minimize turbidity impacts from dredging to the maximum extent practicable to control water quality and the work must be in accordance with State Surface Water Quality Standards as outlined in Chapter 62.302, Florida Administrative Code (F.A.C.). Turbidity control measures may include, but are not limited to, turbidity control curtains, the exclusive use of suction dredging, and the exclusive use of closed "clam shell" dredging, or any other technique necessary to reduce turbidity to meet State Surface Water Quality Standards. The FDEP may require the applicant to submit a turbidity report within seven (7) days of sample collection, which may be verified by federal, state, or local government inspectors. More frequent report submissions, such as daily, may be requested or required by FDEP. If turbidity generated from the project exceeds acceptable levels as defined in Chapter 62-302.530, F.A.C. during normal work hours, i.e., 8:00 am to 5:00 pm, the Permittee shall immediately notify the Corps. If the exceedance occurs after normal work hours, the Permittee shall notify the Corps on the morning of the following workday. All dredging or disposal shall cease until corrective measures have been taken and turbidity has returned to acceptable levels.

3. The Permittee is prohibited from dumping oil, fuel, or hazardous wastes in the work area, and will adopt safe and sanitary measures for the disposal of solid wastes in accordance with federal, state, and local requirements. The Permittee shall develop an environmental protection plan to address concerns regarding monitoring of equipment,

maintenance and security of fuels, lubricants, and spill prevention. The plan shall be submitted to the Corps for review and approval at least 30 days prior to commencement of work under this permit. Subsequent environmental protection plans for individual verifications are not required unless provided there are no major changes to the plan.

Special Conditions Related to Seagrass and other Aquatic Resources:

4. This permit authorizes direct impacts to seagrass within the design limits of the federal navigation channel as described in Table 1. The Corps has identified seagrass potentially impacted as a result of maintenance dredging of the AIWW, IWW, and OWW based on two sources: the "Corps' 2015 Side-Scan Sonar and Aquatic Resource Mapping of the AIWW, IWW, and OWW" (referred to below as "side-scan sonar data") and the compilation of existing GIS data from the Fish and Wildlife Research Institute (referred to below as "GIS data"). Where side scan sonar data or the GIS data show seagrass within the design limits of the federal channel, the Permittee shall provide a pre-construction notification to include information on whether the navigation channel has continued to be maintained at or near authorized dimensions and a pre-construction seagrass survey performed in accordance with the requirements of special condition number 5.a and 5.b below. The Corps will evaluate whether there are substantially changed physical conditions that support and sustain significant ecological resources and will address, on a case-by-case, basis whether compensatory mitigation is required. If compensatory mitigation is required, the Corps will debit the appropriate acreage of credits from the Snook Island Natural Area unless the Permittee provides an alternate in-kind compensatory mitigation plan to the Corps for review and approval.

5. For maintenance dredging of the IWW from Dunlawton Bridge in Volusia County to Miami-Dade County, pre-construction seagrass surveys are required for all projects where the side-scan sonar data, GIS data, or other data source indicates seagrass is present within 100 feet from the near bottom edge of the federal navigation channel, within the anchor drop zones (typically within 100 feet of the near bottom edge of the channel), and/or pipeline corridors (typically a 50-foot corridor). Post-construction seagrass surveys are required for all projects where the pre-construction survey identifies seagrass within the survey area.

a. The pre-construction survey will clearly identify the limits of all seagrass beds in their entirety and the seagrass polygons will be illustrated on the project construction plans (plan view and cross-sections). The Permittee must also provide a GIS data set for seagrass and construction plan view. The size, species identified, estimate of percent coverage, and estimate of percent species abundance shall be provided. The pre-construction survey shall be conducted during the period from June 1 through September 30. All surveys within the range of Johnson's Seagrass shall fully adhere to

the *Recommendations for Sampling Halophila johnsonii at a Project Site* as provided in Appendix III of the Johnson's Seagrass Recovery Plan available at: http://sero.nmfs.noaa.gov/protected_resources/johnsons_seagrass/documents/recoveryplan.pdf .

b. The pre-construction survey shall involve a visual inspection of the proposed pipeline route(s), the anchor zone adjacent to the dredge areas, and all vessel operation areas. The pre-construction survey shall indicate water depths and bottom contours and shall identify and define existing seagrass beds and other aquatic resources within the anchor and pipeline zone on a map at a resolution sufficient to avoid impacts. Patches of Johnson's seagrass within the anchor zone, pipeline routes, and vessel operation areas shall be delineated with GPS and areas of coverage shall be quantified. Anchor drop points and identified pipeline corridor (within 5 meters from the centerline) shall be free of seagrass resources. Coordinates of all dredge anchor drop points shall be recorded using GPS technology, accurate to one (1) meter.

c. Within 30 days following completion of construction, or after June 1 (whichever is later), a post-construction seagrass survey shall be conducted in the same manner and following the same transect locations and methods that were established during the pre-construction survey and as described in special condition number 5.a and 5.b above. The Permittee must provide the GIS data set for seagrass and construction plan view for the post-construction survey. If construction is completed prior to June 1, the post-construction survey shall be completed between June 1 and July 30.

6. If the pre-construction survey identifies seagrass adjacent to the federal channel, the project may proceed under this permit when the project includes hydraulic dredging of sandy or coarse sediments (no more than 10% of the material passing a #230 sieve for no more than 10% of the total dredged material composition) and seagrass can be avoided with a minimum 25-foot buffer between seagrass and all dredging activities or when the project includes mechanical dredging of fine sediments (material passing a #230 sieve) and seagrass can be avoided with a minimum 100-foot buffer between seagrass and all dredging activities.

7. If the pre-construction survey identifies seagrass adjacent to the federal channel, the Corps will coordinate with NMFS HCD for a 10-day review period prior to verification of a project under this permit when the activity includes hydraulic dredging of sandy or coarse sediments (no more than 10% of the material passing a #230 sieve for no more than 10% of the total dredged material composition) and there is less than a 25-foot buffer between seagrass and all dredging activities or when the activity includes mechanical dredging of fine sediments (material passing a #230 sieve) and there is less than a 100-foot buffer between seagrass and all dredging activities.

8. Work vessels crossing seagrass beds shall have a minimum of eighteen inches of clearance below their operational draft (i.e. lowest point in the water).

9. Direct impacts to seagrass located outside of the federal channel are not authorized by this permit. The Permittee shall not anchor, place pipeline, or stage equipment in a manner that will cause any damage to seagrass. Divers shall survey all anchor and pipeline locations and will document any alterations to the seagrass, changes in bottom contours, and any changes to the extent of the seagrass (e.g., altered bottom strata including coverage by fill, furrowing from pipelines, or anchoring from dredge equipment/work boats). Unauthorized impacts to seagrass shall require remediation and may be subject to compensatory mitigation requirements.

10. Impacts to natural hardbottom (including corals and worm rock) and wetlands are not authorized by this permit. This permit recognizes that the construction of the IWW in certain areas resulted in ledges that provide habitat for a variety of fish and other marine organisms including sessile invertebrates such as corals and sponges. These ledges are part of the federal navigation project as they form the edge of channel and as such this permit recognizes there may be temporary impacts to these resources during dredging. The Permittee shall not anchor, place pipeline, or stage equipment in a manner that will cause any permanent damage to hardbottom or wetlands; these areas shall be avoided to the maximum extent practicable. If the side-scan sonar data or GIS data identifies the presence of hardbottom, a detailed benthic resource survey will be required (date of survey, species type, coverage, quantity, resource characteristics, etc.) prior to commencement of work. If high-functioning benthic groups are present, such as stony corals, and the resources are candidates for relocation, the Permittee may avoid impacts by implementing an approved relocation plan prior to construction. All hardbottom relocation plans for federally-listed coral species shall be provided to the Corps for review and coordination for a 10-day period with NMFS HCD and NMFS Protected Resources Division (PRD) prior to verification under this permit. If impacts to wetland resources cannot be avoided, the Permittee shall develop a compensatory mitigation plan in accordance with 33 C.F.R. Part 332 to be reviewed and approved by the Corps following a 10-day coordination period with NMFS HCD.

11. Anchor or pipeline damage to seagrass, hardbottom (other than the ledges identified in special condition number 10 above), or wetlands outside the federal channel limits shall be reported to the Corps within 48 hours of discovery of impact. If the post-construction survey or project monitoring reveals that unintentional impacts to seagrass, hardbottom, or wetlands have occurred outside the federal channel as described in Table 1 as a result of project-related activities (e.g., anchoring impacts, pipeline impacts, sedimentation and/or burial impacts, side slope sloughing, propeller wash, etc.), the Permittee shall immediately coordinate with the Corps to quantify the

impact, assess the ecological functional loss, and provide an in-kind compensatory mitigation plan in accordance with 33 C.F.R. Part 332. Within 30 days of discovery of the impact, the Corps shall coordinate with NMFS for review and approval of the recommended remediation.

Special Conditions Related to Federally Listed Species:

12. Manatee Conditions:

a. The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work - 2011" available at:

http://www.saj.usace.army.mil/Portals/44/docs/regulatory/sourcebook/endangered_species/Manatee/2011_StandardConditionsForIn-waterWork.pdf .

b. For any proposed project located within 500-feet of a Warm Water Aggregation Area (WWAA) or Important Manatee Area (IMA) (identified on the Manatee Key maps available at

http://www.saj.usace.army.mil/Portals/44/docs/regulatory/sourcebook/endangered_species/Manatee/County_Maps_2013.pdf , the Permittee shall comply with the listed restricted dredging protocols. If a proposed project is within 500-feet of a WWAA or IMA and the Permittee is unable to implement the specified dredging protocols, the Corps will coordinate with the Florida Fish and Wildlife Conservation Commission and the U.S. Fish and Wildlife Service. Upon completion of coordination, the Corps may elect to verify the project under this permit with the inclusion of any additional applicable special conditions. The Manatee Key 2013, or any future revised keys, is available at: <http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx>.

(Note: The manatee key may be subject to revision at any time. It is our intention that the most recent version of this technical tool will be utilized during the verification of any dredging activity under this permit).

c. During clamshell dredging operations, a dedicated observer shall monitor for the presence of manatees. The dedicated observer shall have experience in manatee observation and be equipped with polarized sunglasses to aid in observing. Nighttime lighting of waters within and adjacent to the work area shall be illuminated using shielded or low-pressure sodium-type lights, to a degree that allows the dedicated observer to sight any manatee on the surface within 200 feet of the dredging operation. The dredge operator shall gravity-release the clamshell bucket only at the water surface, and only after confirmation that there are no manatees within the safety distance identified in the standard construction conditions.

d. Barges shall install mooring bumpers that provide a minimum 4-foot standoff distance under maximum compression between other moored barges and large vessels.

f. Pipelines may be weighted or floated and shall be positioned such that they do not restrict manatee movement to the maximum extent possible. Pipelines transporting dredged material shall be weighted or secured to the bottom substrate as necessary to prevent movement of the pipeline and to prevent manatee entrapment or crushing.

g. In the event that such pipeline positioning has the potential to impact seagrass or nearshore hardbottom, the pipeline may be elevated or secured to the bottom substrate to minimize impacts.

13. Sea Turtle and Smalltooth Sawfish Conditions:

a. The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated March 23, 2006 and available at http://www.saj.usace.army.mil/Portals/44/docs/regulatory/sourcebook/Endangered_Species/sea_turtles/inwaterWorkSeaTurtle032306.pdf.

b. Sand placement projects in Brevard, Indian River, St. Lucie, Martin, Palm Beach, and Broward Counties shall occur between November 1 and April 30. During the period May 1 through October 31, no construction equipment or pipes may be operated, placed, and/or stored on the beach.

14. Biological Opinion: This permit does not authorize the Permittee to take an endangered species, in particular sea turtles, shortnose sturgeon, piping plovers, red knots, southeastern beach mice, Anastasia Island beach mice, or Johnson's seagrass. In order to legally take a listed species, the Permittee must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a Biological Opinion (BO) under ESA Section 7, with "incidental take" provisions with which you must comply). The following BOs provide incidental take provisions for the above federally listed species: 1) *NMFS Regional Biological Opinion on Hopper Dredging Along the South Atlantic Coast (SARBO)* dated October 29, 1997, including all addendums; 2) *NMFS Maintenance Dredging of the Ports and Intracoastal Waterway within the Range of Johnson's Seagrass Regional Biological Opinion* dated June 4, 2001; 3) *U.S. Fish and Wildlife Service (FWS) Statewide Programmatic Biological Opinion (SPBO) for the U.S. Army Corps of Engineers Civil Works and Regulatory sand placement activities updated March 13, 2015*; 4) *FWS Programmatic Piping Plover Biological Opinion (P3BO) for the effects of U.S. Army Corps of Engineers planning and regulatory shore protection activities dated May 22, 2013*; and 5) *FWS BO for Regional*

General Permit SAJ-93 dated January 29, 2016. The aforementioned referenced BOs contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with “incidental take” that is also specified in the BO. Authorization under this permit is conditional upon compliance with all of the mandatory terms and conditions associated with incidental take of the referenced BOs, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BOs, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with this permit. The USFWS or NMFS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA. Mandatory terms and conditions required for projects verified under this permit are described below.

a. Terms and conditions A1-A23 on pages 122-143 of the *SPBO* apply to the following sites: St. Johns County, St. Augustine Inlet Intersection; Volusia County, Volusia/Ponce and MSA 434 offload; and Martin County, Crossroads and M-5 offload. Terms and conditions for beach mouse protection, A18 through A21 apply to St. Johns County, St. Augustine Inlet Intersection, R-132 to R-152.

b. Terms and conditions B1-B23 on pages 143-154 of the *SPBO* apply to the following sites: Nassau County, Sawpit; St. Johns County, Matanzas; Palm Beach County, Jupiter; Palm Beach County, Ocean Ridge; and Miami-Dade County, Baker’s Haulover. Terms and conditions for beach mouse protection, B15 through B18 apply to St. Johns County, St. Augustine Inlet Intersection, R-132 to R-152.

c. The 10 terms and conditions on pages 29-32 of the *P3BO* apply to the following sites: Nassau County, Sawpit; St. Johns County, St. Augustine Inlet Intersection R-123 to R-152; Volusia County, Volusia/Ponce and MSA 434 offload; and Martin County, Crossroads and M-5 offload.

d. The 10 terms and conditions on pages 51-53 of the RGP SAJ-93 BO apply to the following sites: Nassau County, Sawpit; St. Johns County, St. Augustine Inlet Intersection R-123 to R-152; Volusia County, Volusia/Ponce and MSA 434 offload; and Martin County, Crossroads and M-5 offload.

15. This permit acknowledges the federal navigation channel is excluded from Johnson’s seagrass designated critical habitat; however, in the event that dredging related activities such as pipeline placement are proposed within Johnson’s seagrass designated critical habitat, consultation with the NMFS PRD may be required. Upon completion of consultation, the Corps may elect to verify the project under this permit with the inclusion of any additional applicable special conditions.

16. Where beach placement is proposed, the Permittee shall submit to the Corps for review plans and specifications for beach placement and a monitoring plan for sand compaction, scarp formation and leveling, lighting, beach profile surveys, sea turtle surveys and shorebird surveys. The beach profile template for the sand placement projects shall be designed to mimic the native beach berm elevation and beach slopes landward and seaward of the equilibrated berm crest. Prior to verification of a project with beach placement under this permit, the Corps will provide FWS with the pre-construction notification including any required information listed above for a 30-day period of review, including a request for a waiver if any of the terms and conditions of the BOs cannot be met.

17. Any take of, or sighting of, an injured or incapacitated federally listed species shall be reported immediately to the Corps and U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or in Vero Beach (1-772-562-3909) for south Florida.

Special Conditions Related to Historic Properties:

18. If, during the initial ground disturbing activities and construction work, there are archaeological/cultural materials unearthed (which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, 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), the Permittee shall immediately stop all work in the vicinity and notify the Compliance and Review staff of the State Historic Preservation Office (850-245-6333) and the Corps (904-232-1658) to assess the significance of the discovery and devise appropriate actions, including salvage operations. Based on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7.

19. In the unlikely event that human remains are identified, they will be treated in accordance with Section 872.05, Florida Statutes; all work in the vicinity shall immediately cease and the local law authority, the State Archaeologist (850-245-6444) and the Corps (904-232-1658) shall immediately be notified. Such activity shall not resume unless specifically authorized by the State Archaeologist and the Corps.

Special Conditions for Notification and Reporting:

20. No work shall be performed until the Permittee submits satisfactory plans for the proposed activity and receives written verification from the District Engineer that the proposed project is in accordance with the general and specific conditions of this permit.

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The pre-construction notification (PCN) shall include: the proposed date of construction; the total quantity and type of material to be dredged; type of dredged equipment; anticipated duration of dredging; the location and areal extent of the cut or shoals to be dredged; information on when the area was last dredged and the dredging frequency; the designated disposal sites, including miles of shoreline for beach placement; and any required pre-construction surveys for the areas to be dredged and the disposal site. The PCN shall also identify any terms and conditions that cannot be met and include a rationale for why a waiver may be needed.

21. Within 60 days of completion of the authorized work, the Permittee shall furnish the Corps an "As built Drawing" of the completed project, including a certified/sealed drawing which includes elevations and stations illustrating the total area, including depths. The Permittee shall also provide the Geographic Information Systems (GIS) data set for the area dredged. The information shall be submitted to: CESAJ-ComplyDocs@usace.army.mil and nmfs.ser.monitoringreportshc@noaa.gov

Hardcopies may be sent to:

Jacksonville District, Regulatory Division
South Permits Branch, Enforcement Section
Post Office Box 4970, Jacksonville, Florida 32232

22. The Permittee shall provide an annual report to the Corps by 31 March of each year that includes: a list of all verifications under this permit; total quantity of material dredged; GIS coverage of all cuts/shoals dredged; construction schedule; the results of all required mitigation and monitoring, including pre and post seagrass surveys with supporting GIS data set; and miles of shoreline where dredged material was placed on the beach for the prior year.

Special Conditions Related to the Activity Authorized:

23. This permit will not obviate the necessity to obtain any other permits, which may be required.

24. The District Engineer reserves the right to require that any request for authorization under this RGP be evaluated as a Standard Individual Permit or Letter of Permission.

25. This permit shall be valid for a period of 5 years from the above date of issuance, unless suspended or revoked by issuance of a public notice by the District Engineer. If SAJ-93 expires or is revoked prior to completion of the authorized work, authorization of activities that have commenced or are under contract (including if plans and

specifications have commenced for contract) under reliance on SAJ-93 will remain in effect, provided the activity is completed within 12 months of the date the SAJ-93 expired or was revoked.

26. The Permittee shall perform all work in accordance with the general conditions for permits. The general conditions attached hereto are made a part of this permit.

27. Assurance of Navigation: The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration of the structures or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

General Conditions:

1. The time limit for completing the work authorized ends on **April 26, 2021**.
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 or 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 and mailing address of the new owner in the space provided below and forward a copy of the permit to this office to validate the transfer of this authorization.

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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.

6. You must allow representatives 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.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344)

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or Construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 3 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

6. Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7, or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CER 209.170) accomplish the corrective measures by contract, or otherwise, and bill you for the cost.

7. When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

PERMIT NUMBER: RGP SAJ-93
PERMITTEE: Florida Inland Navigation District
PAGE 16 of 17

(TRANSFEREE-SIGNATURE) (DATE)

(NAME-PRINTED)

(ADDRESS)

8. You must allow representatives 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.

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Jori K White

for _____
(DISTRICT ENGINEER)
Jason A. Kirk, P.E.
Colonel, U.S. Army
District Commander

26 April 2016

(DATE)

PERMIT NUMBER: RGP SAJ-93
PERMITTEE: Florida Inland Navigation District
PAGE 17 of 17

***Attachments to Department of the Army
Regional General Permit SAJ-93***

1. LOCATION MAPS FOR FEDERAL NAVIGATION CHANNELS: 7 pages
2. FIND/USACE INTRACOASTAL WATERWAY DREDGED MATERIAL MANAGEMENT AREAS, 1 page, dated April 2015.
3. AS-BUILT CERTIFICATION FORM: 2 pages
4. BIOLOGICAL OPINIONS TERMS AND CONDITION: A1-A23 and B1-B23 of SPBO, pages 122-154; 10 terms and conditions of P3BO, pages 29-32; and 10 terms and conditions on RGP SAJ-93 BO, pages 51-53.



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
PO BOX 4970
JACKSONVILLE, FLORIDA 32232-8176

REPLY TO
ATTENTION OF

May 3, 2018

Regulatory Division
Regional General Permit SAJ-93
Modification #1

Mr. Mark Crosley, Executive Director
Florida Inland Navigation District
1314 Marcinski Road
Jupiter, Florida 33477

Dear Mr. Crosley:

The U.S. Army Corps of Engineers (Corps) hereby modifies the Florida Inland Navigation District's Regional General Permit (RGP), SAJ-93, issued on April 26, 2016. The RGP authorizes the Florida Inland Navigation District to maintenance dredge the Atlantic Intracoastal Waterway, Intracoastal Waterway, and Okeechobee Waterway federal navigation channels, including wideners, along the east coast of Florida. The aforementioned channels are located in the following counties: Nassau, Duval, St. Johns, Flagler, Volusia, Brevard, Indian River, St. Lucie, Martin, Palm Beach, Broward, and Miami-Dade. This is the first modification.

In an effort to minimize impacts to swimming sea turtles the following is added to the RGP as special condition number 13.c: *Where buoys are used to mark pipelines, the Permittee shall use light weight chain, non-looping wire rope, or plastic sheathing around nylon rope to secure the buoy line to the pipeline to prevent looping.*

This modification is effective on the date of this letter. Authorization of projects that have commenced or are under contract to commence in reliance on SAJ-93 prior to the date of this letter are not affected. If you have any questions concerning this letter, please contact me by email at tori.white@usace.army.mil or by telephone at (904) 232-1658.

Sincerely,

A handwritten signature in black ink that reads "Tori K White".

Tori K. White
Deputy, Regulatory Division



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX D

DMMA FL-3 Site Reconnaissance Report



July 19, 2018

Mr. Mark Crosley
Executive Director
Florida Inland Navigation District
1314 Marcinski Road
Jupiter, FL 33477

Re: Professional Engineering Services, Task 1.2 DMMA Reconnaissance (FL-3)
Flagler Reach I Maintenance Dredging and Permitting,
Flagler County, FL
FIND Work Order 18-06; TE Contract C2018-025

Dear Mr. Crosley:

This letter report documents the results of our July 5, 2018 site visit to Dredged Material Management Area (DMMA) FL-3 in Palm Coast, FL. Primary goals of the site visit included evaluation and documentation of geotechnical conditions, weir structural issues, and overall environmental site conditions. The sections below detail our findings. **Attachment A** provides plan views of the site and **Attachment B** contains photographs of site features from the site visit.

Geotechnical Conditions and Weir Structural Issues

Taylor Engineering staff observed the site to evaluate and document any readily visible geotechnical issues (e.g., erosion, settling, and cracking of the existing DMMA dike and access road) and weir structural issues. Staff walked the crest and toe of all dikes to document the condition of the interior and exterior dike faces and perimeter access road. Overall, staff did not identify any critical issues of immediate concern. A summary of our observations follows below.

- (1) The primary access road to the site is approximately 1.5 miles long with 4 access gates each with multiple locks. Each gate has a FIND lock for access.
- (2) In general, the containment basin and dikes are well vegetated.
- (3) No burrows were observed along the dike exterior.

The overall weir condition appeared excellent. The timber decking and weir structure showed no readily visible evidence of settling, cracking, or warping. In addition, the HDPE weir outfall pipes showed no signs of decay and the flanged outfall end is readily accessible with stainless hardware in good condition.

Environmental Conditions

Taylor Engineering staff observed the 44.3-acre containment basin and adjacent areas associated with the placement of a temporary pipeline to identify potential environmental issues. The following sections discuss other particular environmental conditions that were observed during the site visit which may require further action during the ongoing permitting process:

Temporary Pipeline Placement

Sovereignty Submerged Lands Easement No. 27855(3671-18), issued June 2, 1986, authorized an approximate 3,000' long x 300' wide temporary pipeline ingress and egress corridor across state lands for the operation of DMMA FL-3. Future use of FL-3 requires the use of this pipeline easement. The

easement was initially issued for a term of 30 years and has been expired since June 2, 2016. Taylor engineering is working with FIND staff to renew this easement so that will be available for the upcoming dredging project.

During our site visit Taylor Engineering staff observed the present condition of the wetland areas immediately east of the DMMA and along the easement. As stated in the management plan, this area consists predominantly of vegetated salt marsh, however, there are areas of un-vegetated sand flats and small upland areas located between the uplands of the mainland and the edge of the Intracoastal Waterway (ICW).

The placement of the temporary pipeline through the salt marsh will result in what will be considered temporary wetland impacts. As mentioned in the management plan, biological monitoring may be required to identify temporary impacts to the salt marsh vegetation associated with the placement of the pipeline and to formulate remedial action if impacts occur. Biological monitoring could include baseline monitoring prior to the placement of any pipeline into the salt marsh and subsequent yearly monitoring of the same areas once the pipeline has been removed to verify that impacted areas return to pre-placement condition. Clearing and grubbing of the pipeline corridor will likely be necessary for pipeline access to the site.

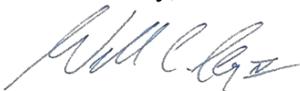
Summary and Recommendations

The site visit proved useful in determining potential geotechnical, structural, and environmental on-site issues. Moving forward, Taylor Engineering recommends the following actions:

- (1) Coordinate with FIND and FDEP to ensure pipeline easement is renewed.
- (2) Prior to use of the site:
 - a. Mow all dikes, roads, and exterior areas, including areas leading to the two eastern pipeline access gates.
 - b. Within 90 days of construction commencement, complete a biological survey to identify all animal burrows within site embankments. Backfill all burrows prior to use of the site. Restoration measures for the burrows can be found in "Technical Manual for Dam Owners, Impacts of Animals on Earthen Dams", FEMA 473; page 58 Section 5.3.1 Restoration Measures.

Please contact me with any questions you have regarding this report.

Sincerely,



William Aley, P.G.
Professional Geologist

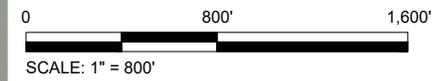
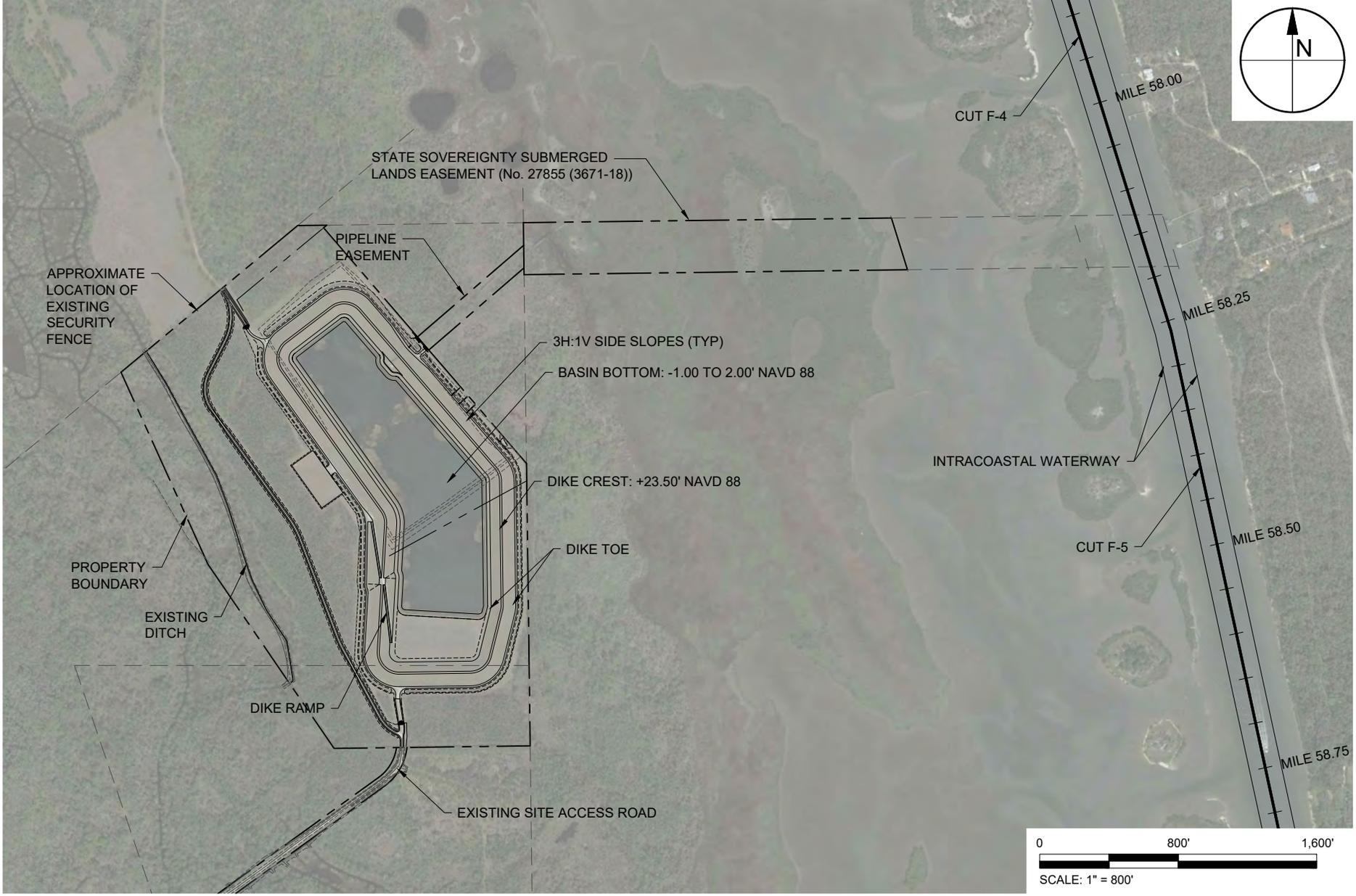
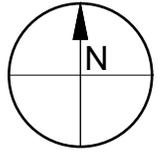
Attachments (2)



TAYLOR ENGINEERING, INC.

Delivering Leading-Edge Solutions

ATTACHMENT A
DMMA FL-3 Plan View



NESTOR PALMA X:\SIS\PROJECTS\C2018-025_FLAGLEREACH\PERMIT\C2018-025-P-FL-3 PLAN.DWG 6/20/2018 9:53:45 AM



TAYLOR ENGINEERING INC.

10151 DEERWOOD PARK BLVD
 BLDG 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 CERTIFICATE OF AUTHORIZATION # 4815

C-10
 DMMA FL-3 PLAN
 FLAGLER CO. ICWW DREDGING PERMIT
 FLAGLER COUNTY, FLORIDA

PROJECT	C2018-025
DRAWN BY	NP
SHEET	10 of 15
DATE	MAY 2018

SEAL	
WILLIAM C. ALEY IV, P.G.	DATE

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.



TAYLOR ENGINEERING, INC.

Delivering Leading-Edge Solutions

ATTACHMENT B
Site Photos – July 5, 2018



Image 1. Aerial view of site looking south.



Image 2. View toward southern access gate.



Image 3. View of eastern perimeter road looking north.



Image 4. View toward north of a toe drain outlet in southern stability berm.



Image 5. View toward west of cleared staging area.



Image 6. View toward west of cleared staging area and Conex shed.



Image 7. Weir boards and old seed bags stored in Conex shed.



Image 8. View of weir structure looking west.



Image 9. View looking east, toward the waterway, of weirs and timber deck walkway.



Image 10. View looking west of weirs and timber deck.



Image 111. View from weir deck looking west along eastern dike.



Image 12. View of concrete perimeter ditch weir.



Image 12. Looking east from dike crest toward the eastern perimeter ditch and fence line.



Image 14. Aerial view of eastern portion of site and pipeline corridor.



Image 15. Aerial view of outfall pipe and pipeline corridor.



Image 16. View of outfall pipe and drainage ditch looking east.



Image 17. View of outfall pipe and drainage ditch looking west.



Image 13. View of outfall pipe and drainage ditch looking west.



Image 19. View looking east toward vegetated pipeline corridor.



Image 20. Looking east along the planned pipeline corridor.



Image 14. Aerial view of pipeline corridor looking east, toward the Waterway.



Image 152. Looking west, toward DMMA, from planned pipeline corridor



Image 163. Aerial view of pipeline corridor across salt marsh.



Image 174. Looking east, toward Intracoastal Waterway, from planned pipeline corridor



Image 185. Looking east along salt marsh/upland area of planned pipeline corridor



Image 26. Looking east into toward Waterway from planned pipeline corridor.



Image 27. Looking west toward weir structure and norther portion of DMMA site



Image 28. Looking north toward northern access gate.



Image 29. View from storage area looking north toward DMMA.



Image 30. View from northern dike crest looking south.



Image 31. View of southern portion of DMMA looking east.



Image 32. Aerial view of DMMA looking east toward Waterway.



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX E
Geotechnical Information

ATTACHMENT E
USACE 2006 GEOTECHNICAL DATA
FLAGLER REACH I

CORE LOGS

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 1 SHEETS
1. PROJECT Intracoastal Waterway, Jacksonville to Miami Cut F-2		9. SIZE AND TYPE OF BIT See Remarks		
2. BORING DESIGNATION VB-IWW06M-F2-1		10. COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)		
3. DRILLING AGENCY Corps of Engineers - CESAW		11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER Alpine 270 Vibracore on D/B Snell		
4. NAME OF DRILLER L. Gaughf		12. TOTAL SAMPLES DISTURBED 2 UNDISTURBED (UD) 0		
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		13. TOTAL NUMBER CORE BOXES 1		
6. THICKNESS OF OVERBURDEN N/A		14. ELEVATION GROUND WATER N/A		
7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING STARTED 06-18-06 COMPLETED 06-18-06		
8. TOTAL DEPTH OF BORING 6.7 Ft.		16. ELEVATION TOP OF BORING -7.7 Ft.		
		17. TOTAL RECOVERY FOR BORING 100 %		
		18. SIGNATURE AND TITLE OF INSPECTOR		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE									
-7.7	0.0	[Dotted pattern]	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, moist, 2.5Y 7/3 pale yellow (SP)	100			-7.7											
					1			-9.7										
					100													
-12.4	4.7	[Dotted pattern]	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace coarse-grained sand-sized shell, trace silt, moist, 2.5Y 5/1 gray (SP)	100	2		-11.9											
					100													
-14.0	6.3	[Dotted pattern]	SAND, silty, mostly fine-grained sand-sized quartz, some sand to gravel-sized shell up to 1, little silt, 2.5Y 5/1 gray (SM)															
-14.4	6.7							-14.4										
<p>NOTES:</p> <ol style="list-style-type: none"> USACE Jacksonville is the custodian for these original files. Soils are field visually classified in accordance with the Unified Soils Classification System. Elevation based on predicted tide Laboratory Testing Results <table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE DEPTH</th> <th>LABORATORY CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.0/2.5</td> <td>SP*</td> </tr> <tr> <td>2</td> <td>4.2/4.7</td> <td>SP*</td> </tr> </tbody> </table> <p>*Lab visual classification based on gradation curve</p>										SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION	1	2.0/2.5	SP*	2	4.2/4.7	SP*
SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION																
1	2.0/2.5	SP*																
2	4.2/4.7	SP*																

Boring Designation VB-IWW06M-F3-1

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 2 SHEETS
1. PROJECT Intracoastal Waterway, Jacksonville to Miami Cut F-3			9. SIZE AND TYPE OF BIT See Remarks	
2. BORING DESIGNATION VB-IWW06M-F3-1		LOCATION COORDINATES X = 431,029 Y = 1,932,924		10. COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)
3. DRILLING AGENCY Corps of Engineers - CESAW		CONTRACTOR FILE NO.		HORIZONTAL NAD27
4. NAME OF DRILLER L. Gaughf			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER Alpine 270 Vibracore on D/B Snell	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	12. TOTAL SAMPLES 2
6. THICKNESS OF OVERBURDEN N/A		13. TOTAL NUMBER CORE BOXES 1		DISTURBED 0
7. DEPTH DRILLED INTO ROCK N/A		14. ELEVATION GROUND WATER N/A		UNDISTURBED (UD)
8. TOTAL DEPTH OF BORING 9.3 Ft.		15. DATE BORING 06-18-06		STARTED 06-18-06
		16. ELEVATION TOP OF BORING -8.1 Ft.		COMPLETED 06-18-06
		17. TOTAL RECOVERY FOR BORING 100 %		18. SIGNATURE AND TITLE OF INSPECTOR

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE
-8.1	0.0		SILT, inorganic-L, low plasticity, soft, mostly silt, some fine-grained sand-sized quartz, moist, 10Y 4/1 dark greenish gray (ML)	100			-8.1		
					1		Vibracore		
				100			-9.1		
							Vibracore		
-11.0	2.9		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace coarse-grained sand-sized shell, moist, 10Y 5/1 greenish gray (SM)		2		-11.1		
-13.4	5.3		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, little sand to gravel-sized shell up to 1/4, few silt, moist, 10YR 5/4 yellowish brown (SP-SM)						
-14.2	6.1		SHELL, mostly sand to cobble-sized shell up to 3', little fine-grained sand-sized quartz, few silt, moist, 5Y 4/1 dark gray	100			Vibracore		
-14.7	6.6		SILT, inorganic-L, low plasticity, soft, mostly silt, some fine-grained sand-sized quartz, moist, 5Y 3/1 very dark gray (ML)						
-17.4	9.3						-17.4		
NOTES:									
1. USACE Jacksonville is the custodian for these original files.									
2. Soils are field visually classified in accordance with the Unified Soils Classification System.									
3. Elevation based on predicted tide									
4. Laboratory Testing Results									
	SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION						
	1	1.0/1.5	ML*						
	2	3.0/3.5	SP-SM*						

DRILLING LOG (Cont. Sheet)			INSTALLATION Jacksonville District				SHEET 2 OF 2 SHEETS		
			PROJECT Intracoastal Waterway, Jacksonville to Miami		COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)		HORIZONTAL NAD27	VERTICAL MLW	
LOCATION COORDINATES X = 431,029 Y = 1,932,924			ELEVATION TOP OF BORING -8.1 Ft.						
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			*Lab visual classification based on gradation curve						

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DRILLING LOG		DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 2 SHEETS
1. PROJECT Intracoastal Waterway, Jacksonville to Miami Cut F-4			9. SIZE AND TYPE OF BIT See Remarks	
2. BORING DESIGNATION VB-IWW06M-F4-1		10. COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)		HORIZONTAL NAD27
3. DRILLING AGENCY Corps of Engineers - CESAW		11. MANUFACTURER'S DESIGNATION OF DRILL Alpine 270 Vibracore on D/B Snell		<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER
4. NAME OF DRILLER L. Gaughf		12. TOTAL SAMPLES		DISTURBED 2
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		LOCATION COORDINATES X = 432,174 Y = 1,929,300	13. TOTAL NUMBER CORE BOXES 0	
6. THICKNESS OF OVERBURDEN N/A		14. ELEVATION GROUND WATER N/A		UNDISTURBED (UD) 0
7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING		STARTED 06-18-06
8. TOTAL DEPTH OF BORING 7.8 Ft.		16. ELEVATION TOP OF BORING -8.2 Ft.		COMPLETED 06-18-06
		17. TOTAL RECOVERY FOR BORING 100 %		18. SIGNATURE AND TITLE OF INSPECTOR

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE									
-8.2	0.0						-8.2											
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, few sand to gravel-sized shell up to 7/8, trace silt, moist, 5Y 5/3 olive (SP)	100	1		Vibracore											
-9.6	1.4			100			Vibracore											
			SAND, silty, soft, mostly fine-grained sand-sized quartz, some silt, 10Y 3/1 very dark greenish gray (SM)		2													
-12.3	4.1																	
			SILT, inorganic-H, high plasticity, very soft, mostly silt, little sand to gravel-sized shell, few fine-grained sand-sized quartz, 10Y 3/1 very dark greenish gray (MH)	100			Vibracore											
-14.0	5.8																	
-14.7	6.5		SAND, silty, mostly fine-grained sand-sized quartz, some silt, trace shell, 10Y 4/1 dark greenish gray (SM)															
-15.0	6.8		SHELL, mostly sand to gravel-sized shell up to 1/4, little fine-grained sand-sized quartz, trace silt, 5Y 6/2 light olive gray															
-15.6	7.4																	
-16.0	7.8		SILT, inorganic-H, high plasticity, very soft, mostly silt, few sand to gravel-sized shell up to 1/8, 10Y 3/1 very dark greenish gray (MH) SHELL, mostly sand to gravel-sized shell up to 1/4, few silt, 5GY 5/1 greenish gray				-16.0											
<p>NOTES:</p> <ol style="list-style-type: none"> USACE Jacksonville is the custodian for these original files. Soils are field visually classified in accordance with the Unified Soils Classification System. Elevation based on predicted tide Laboratory Testing Results <table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE DEPTH</th> <th>LABORATORY CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5/1.0</td> <td>SP*</td> </tr> <tr> <td>2</td> <td>1.5/2.0</td> <td>SM*</td> </tr> </tbody> </table>										SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION	1	0.5/1.0	SP*	2	1.5/2.0	SM*
SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION																
1	0.5/1.0	SP*																
2	1.5/2.0	SM*																

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District		SHEET 2	
			OF 2 SHEETS	
PROJECT Intracoastal Waterway, Jacksonville to Miami	COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)	HORIZONTAL NAD27	VERTICAL MLW	
LOCATION COORDINATES X = 432,174 Y = 1,929,300	ELEVATION TOP OF BORING -8.2 Ft.			

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			*Lab visual classification based on gradation curve						

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DRILLING LOG		DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 2 SHEETS
1. PROJECT Intracoastal Waterway, Jacksonville to Miami Cut F-5		9. SIZE AND TYPE OF BIT See Remarks		
2. BORING DESIGNATION VB-IWW06M-F5-1		10. COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)		
3. DRILLING AGENCY Corps of Engineers - CESAW		11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER Alpine 270 Vibracore on D/B Snell		
4. NAME OF DRILLER L. Gaughf		12. TOTAL SAMPLES DISTURBED: 2 UNDISTURBED (UD): 0		
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		13. TOTAL NUMBER CORE BOXES 1		
6. THICKNESS OF OVERBURDEN N/A		14. ELEVATION GROUND WATER N/A		
7. DEPTH DRILLED INTO ROCK N/A		15. DATE BORING STARTED: 06-18-06 COMPLETED: 06-18-06		
8. TOTAL DEPTH OF BORING 9.1 Ft.		16. ELEVATION TOP OF BORING -6.7 Ft.		
		17. TOTAL RECOVERY FOR BORING 100 %		
		18. SIGNATURE AND TITLE OF INSPECTOR		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE						
-6.7	0.0		SHELL, mostly sand to gravel-sized shell up to 1/4, little fine-grained sand-sized quartz, few silt, moist, 5Y 6/3 pale olive	100			-6.7 Vibracore								
-9.4	2.7		SAND, silty, high plasticity, soft, mostly fine-grained sand-sized quartz, little fine-grained sand-sized quartz, trace shell, moist, 10Y 4/1 dark greenish gray (SM)	100	1		-8.7 Vibracore								
-11.7	5.0		SAND, clayey, medium plasticity, some fine-grained sand-sized quartz, some sand to gravel-sized shell up to 1, some clay, moist, 10G 5/1 greenish gray (SC)	100	2		-10.7 Vibracore								
-13.2	6.5		SHELL, mostly sand to gravel-sized shell up to 1/4, little silt, little fine-grained sand-sized quartz, moist, 10Y 6/1 greenish gray	100			-15.8 Vibracore								
-15.0	8.3		CLAY, fat, high plasticity, soft, mostly clay, little fine-grained sand-sized quartz, trace shell, moist, 5BG 3/1 very dark greenish gray (CH)												
-15.8	9.1														
<p>NOTES:</p> <ol style="list-style-type: none"> USACE Jacksonville is the custodian for these original files. Soils are field visually classified in accordance with the Unified Soils Classification System. Elevation based on predicted tide Laboratory Testing Results <table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE DEPTH</th> <th>LABORATORY CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.0/2.5</td> <td>SP-SM*</td> </tr> </tbody> </table>										SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION	1	2.0/2.5	SP-SM*
SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION													
1	2.0/2.5	SP-SM*													

DRILLING LOG (Cont. Sheet)			INSTALLATION Jacksonville District			SHEET 2 OF 2 SHEETS			
PROJECT Intracoastal Waterway, Jacksonville to Miami			COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)		HORIZONTAL NAD27	VERTICAL MLW			
LOCATION COORDINATES X = 433,285 Y = 1,924,265			ELEVATION TOP OF BORING -6.7 Ft.						
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 1 FT.	N-VALUE
			2 4.0/4.5 SM*						
			*Lab visual classification based on gradation curve						

15
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DRILLING LOG		DIVISION South Atlantic	INSTALLATION Jacksonville District		SHEET 1 OF 1 SHEETS
1. PROJECT Intracoastal Waterway, Jacksonville to Miami Cut F-6			9. SIZE AND TYPE OF BIT See Remarks		
2. BORING DESIGNATION VB-IWW06M-F6-1		LOCATION COORDINATES X = 434,297 Y = 1,920,754		10. COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)	HORIZONTAL NAD27
3. DRILLING AGENCY Corps of Engineers - CESAW		CONTRACTOR FILE NO.		11. MANUFACTURER'S DESIGNATION OF DRILL Alpine 270 Vibracore on D/B Snell	<input type="checkbox"/> AUTO HAMMER <input type="checkbox"/> MANUAL HAMMER
4. NAME OF DRILLER L. Gaughf			12. TOTAL SAMPLES		DISTURBED 2
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED			DEG. FROM VERTICAL	BEARING	UNDISTURBED (UD) 0
6. THICKNESS OF OVERBURDEN N/A			13. TOTAL NUMBER CORE BOXES 2		
7. DEPTH DRILLED INTO ROCK N/A			14. ELEVATION GROUND WATER N/A		
8. TOTAL DEPTH OF BORING 6.7 Ft.			15. DATE BORING		STARTED 06-18-06
			16. ELEVATION TOP OF BORING -5.5 Ft.		COMPLETED 06-18-06
			17. TOTAL RECOVERY FOR BORING 100 %		
			18. SIGNATURE AND TITLE OF INSPECTOR		

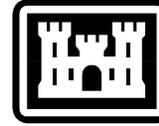
ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE									
-5.5	0.0		SAND, poorly-graded with silt, mostly fine-grained sand-sized quartz, few silt, few sand to gravel-sized shell up to 1/8", moist, 10YR 6/3 pale brown (SP-SM)	100			-5.5											
					1		-8.0											
			From El. -9.3 to -9.9 Ft., some sand to gravel-sized shell up to 3/8, few silt, moist, 10YR 6/4 light yellowish brown	100														
			From El. -9.9 to -12.2 Ft., few sand to gravel-sized shell, 10G 6/1 greenish gray	100	2		-10.0											
-12.2	6.7						-12.2											
			<p>NOTES:</p> <ol style="list-style-type: none"> USACE Jacksonville is the custodian for these original files. Soils are field visually classified in accordance with the Unified Soils Classification System. Elevation based on predicted tide Laboratory Testing Results <table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE DEPTH</th> <th>LABORATORY CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2.5/3.0</td> <td>SP-SM*</td> </tr> <tr> <td>2</td> <td>4.5/5.0</td> <td>SP-SM*</td> </tr> </tbody> </table> <p>*Lab visual classification based on gradation curve</p>	SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION	1	2.5/3.0	SP-SM*	2	4.5/5.0	SP-SM*						
SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION																
1	2.5/3.0	SP-SM*																
2	4.5/5.0	SP-SM*																

DRILLING LOG		DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 1 SHEETS
1. PROJECT Intracoastal Waterway, Jacksonville to Miami Cut F-9			9. SIZE AND TYPE OF BIT See Remarks	
2. BORING DESIGNATION VB-IWW06M-F9-1		LOCATION COORDINATES X = 435,806 Y = 1,916,341		10. COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)
3. DRILLING AGENCY Corps of Engineers - CESAW		CONTRACTOR FILE NO.		HORIZONTAL NAD27
4. NAME OF DRILLER L. Gaughf			11. MANUFACTURER'S DESIGNATION OF DRILL <input type="checkbox"/> AUTO HAMMER Alpine 270 Vibracore on D/B Snell <input type="checkbox"/> MANUAL HAMMER	
5. DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> INCLINED		DEG. FROM VERTICAL	BEARING	12. TOTAL SAMPLES 2
6. THICKNESS OF OVERBURDEN N/A		13. TOTAL NUMBER CORE BOXES 1		DISTURBED 2
7. DEPTH DRILLED INTO ROCK N/A		14. ELEVATION GROUND WATER N/A		UNDISTURBED (UD) 0
8. TOTAL DEPTH OF BORING 8.1 Ft.		15. DATE BORING 06-18-06		STARTED 06-18-06
		16. ELEVATION TOP OF BORING -7.7 Ft.		COMPLETED 06-18-06
		17. TOTAL RECOVERY FOR BORING 100 %		
		18. SIGNATURE AND TITLE OF INSPECTOR		

ELEV. (ft)	DEPTH (ft)	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/1 FT.	N-VALUE									
-7.7	0.0		SAND, silty, mostly fine-grained sand-sized quartz, some silt, moist, 10YR 4/1 dark gray (SM)	100			-7.7											
					100	1		-8.2										
								-9.7										
-11.4	3.7		SILT, inorganic-H, high plasticity, very soft, mostly silt, little fine-grained sand-sized quartz, moist, 10Y 3/1 very dark greenish gray (MH)	100														
-13.4	5.7		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace silt, moist, 10YR 5/2 grayish brown (SP)															
-15.8	8.1																	
			NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System. 3. Elevation based on predicted tide 4. Laboratory Testing Results <table border="1"> <thead> <tr> <th>SAMPLE ID</th> <th>SAMPLE DEPTH</th> <th>LABORATORY CLASSIFICATION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.5/1.0</td> <td>SM*</td> </tr> <tr> <td>2</td> <td>2.0/2.5</td> <td>SM*</td> </tr> </tbody> </table> *Lab visual classification based on gradation curve	SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION	1	0.5/1.0	SM*	2	2.0/2.5	SM*						
SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION																
1	0.5/1.0	SM*																
2	2.0/2.5	SM*																

GRANULOMETRIC TABLES

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F2-1 @ 2 ft

Analysis Date: 6/9/2009

Easting (ft): 587,023	Northing (ft): 1,935,010	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -9.7 MLW
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USCS: SP	Munsell: 2.5Y 7/3	Fines (%): #200 - 2.08 #230 - 1.96	Organics (%):	Carbonates (%): 1.30	Shells (%): 1
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.12	0.12
#5	-2.00	4.00	0.00	0.12
#7	-1.50	2.80	0.06	0.18
#10	-1.00	2.00	0.05	0.23
#14	-0.50	1.40	0.10	0.33
#18	0.00	1.00	0.16	0.49
#25	0.50	0.71	0.46	0.95
#35	1.00	0.50	0.64	1.59
#45	1.50	0.36	1.00	2.59
#60	2.00	0.25	1.47	4.06
#80	2.50	0.18	28.66	32.72
#120	3.00	0.13	56.65	89.37
#170	3.50	0.09	8.17	97.54
#200	3.75	0.08	0.38	97.92
#230	4.00	0.06	0.12	98.04

SAND, poorly-graded, mostly fine-grained quartz

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.34	2.95	2.87	2.65	2.37	2.21	2.02	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.58	0.17	2.65	0.16	0.49	-3.43	26.88

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F2-1 @ 4.2 ft

Analysis Date: 6/9/2009

Easting (ft): 587,023	Northing (ft): 1,935,010	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -11.9 MLW
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USCS: SP	Munsell: 2.5Y 4/1	Fines (%): #200 - 2.07 #230 - 1.89	Organics (%):	Carbonates (%):	Shells (%): 3
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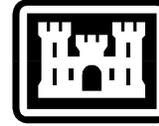
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.15	0.15
#10	-1.00	2.00	0.12	0.27
#14	-0.50	1.40	0.30	0.57
#18	0.00	1.00	0.17	0.74
#25	0.50	0.71	0.28	1.02
#35	1.00	0.50	0.56	1.58
#45	1.50	0.36	1.60	3.18
#60	2.00	0.25	8.10	11.28
#80	2.50	0.18	18.31	29.59
#120	3.00	0.13	58.25	87.84
#170	3.50	0.09	9.41	97.25
#200	3.75	0.08	0.68	97.93
#230	4.00	0.06	0.18	98.11

SAND, poorly-graded, mostly fine-grained quartz, trace shell fragments

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.38	2.97	2.89	2.68	2.37	2.13	1.61	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.56	0.17	2.68	0.16	0.55	-2.64	16.33

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F3-1 @ 1 ft

Analysis Date: 6/9/2009

Easting (ft): 587,265	Northing (ft): 1,933,094	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -9.1 MLW
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USCS:	Munsell: 10Y 4/1	Fines (%): #200 - 52.59 #230 - 51.78	Organics (%):	Carbonates (%): 1.30	Shells (%): 5
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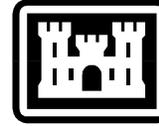
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	1.16	1.16
#4	-2.25	4.75	0.19	1.35
#5	-2.00	4.00	0.35	1.70
#7	-1.50	2.80	0.92	2.62
#10	-1.00	2.00	0.80	3.42
#14	-0.50	1.40	0.79	4.21
#18	0.00	1.00	0.47	4.68
#25	0.50	0.71	0.31	4.99
#35	1.00	0.50	0.32	5.31
#45	1.50	0.36	0.43	5.74
#60	2.00	0.25	0.91	6.65
#80	2.50	0.18	3.43	10.08
#120	3.00	0.13	28.45	38.53
#170	3.50	0.09	7.31	45.84
#200	3.75	0.08	1.57	47.41
#230	4.00	0.06	0.81	48.22

SILT, inorganic-L, some fine-grained quartz, few coarse sand-size shell fragments

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
				2.76	2.60	0.52	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.35	0.20			1.42	-2.45	8.15

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F3-1 @ 3 ft

Analysis Date: 6/9/2009

Easting (ft): 587,265	Northing (ft): 1,933,094	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -11.1 MLW
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USCS:	Munsell: 10Y 5/1	Fines (%): #200 - 10.22 #230 - 9.31	Organics (%):	Carbonates (%):	Shells (%): 0
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.00	0.00
#10	-1.00	2.00	0.00	0.00
#14	-0.50	1.40	0.33	0.33
#18	0.00	1.00	0.28	0.61
#25	0.50	0.71	0.25	0.86
#35	1.00	0.50	0.28	1.14
#45	1.50	0.36	0.36	1.50
#60	2.00	0.25	0.63	2.13
#80	2.50	0.18	5.90	8.03
#120	3.00	0.13	55.55	63.58
#170	3.50	0.09	24.20	87.78
#200	3.75	0.08	2.00	89.78
#230	4.00	0.06	0.91	90.69

SAND, poorly-graded with silt, mostly fine-grained quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.42	3.24	2.88	2.65	2.57	2.24	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.83	0.14	2.88	0.14	0.47	-3.12	22.66

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F4-1 @ 0.5 ft

Analysis Date: 6/9/2009

Easting (ft): 588,410	Northing (ft): 1,929,470	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -8.7 MLW
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USCS: SW	Munsell: 5Y 5/3	Fines (%): #200 - 2.02 #230 - 1.75	Organics (%):	Carbonates (%): 36.30	Shells (%): 12
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	1.35	1.35
#4	-2.25	4.75	0.18	1.53
#5	-2.00	4.00	0.19	1.72
#7	-1.50	2.80	0.44	2.16
#10	-1.00	2.00	0.37	2.53
#14	-0.50	1.40	0.73	3.26
#18	0.00	1.00	0.82	4.08
#25	0.50	0.71	0.92	5.00
#35	1.00	0.50	1.20	6.20
#45	1.50	0.36	1.22	7.42
#60	2.00	0.25	1.36	8.78
#80	2.50	0.18	5.67	14.45
#120	3.00	0.13	66.68	81.13
#170	3.50	0.09	15.86	96.99
#200	3.75	0.08	0.99	97.98
#230	4.00	0.06	0.27	98.25

SAND, poorly-graded, mostly fine-grained quartz, little medium sand-size shell fragments, trace silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.44	3.09	2.95	2.77	2.58	2.51	0.50	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.55	0.17	2.77	0.15	1.01	-3.65	17.37

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F4-1 @ 1.5 ft

Analysis Date: 6/9/2009

Easting (ft): 588,410	Northing (ft): 1,929,470	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -9.7 MLW
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USCS:	Munsell: 10Y 3/1	Fines (%): #200 - 13.53 #230 - 12.63	Organics (%):	Carbonates (%):	Shells (%): 12
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	7.89	7.89
#4	-2.25	4.75	2.23	10.12
#5	-2.00	4.00	3.34	13.46
#7	-1.50	2.80	8.09	21.55
#10	-1.00	2.00	3.47	25.02
#14	-0.50	1.40	2.92	27.94
#18	0.00	1.00	2.41	30.35
#25	0.50	0.71	2.15	32.50
#35	1.00	0.50	2.93	35.43
#45	1.50	0.36	3.40	38.83
#60	2.00	0.25	3.59	42.42
#80	2.50	0.18	4.43	46.85
#120	3.00	0.13	25.06	71.91
#170	3.50	0.09	12.76	84.67
#200	3.75	0.08	1.80	86.47
#230	4.00	0.06	0.90	87.37

SAND, silty, mostly fine-grained quartz, little fine-gravel to med. sand-size limerock frag, little coarse to med. sand-size shell frag, little silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.47	3.12	2.56	-1.00	-1.84	-3.14	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	1.00	0.50	2.56	0.17	2.24	-0.54	1.67

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F5-1 @ 2 ft

Analysis Date: 6/9/2009

Easting (ft): 589,521	Northing (ft): 1,924,435	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -8.7 MLW
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USCS:	Munsell: 5Y 6/3	Fines (%): #200 - 10.09 #230 - 9.79	Organics (%):	Carbonates (%): 60.00	Shells (%): 35
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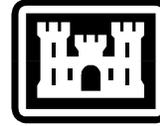
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.49	0.49
#4	-2.25	4.75	0.23	0.72
#5	-2.00	4.00	0.98	1.70
#7	-1.50	2.80	3.62	5.32
#10	-1.00	2.00	6.47	11.79
#14	-0.50	1.40	12.75	24.54
#18	0.00	1.00	12.67	37.21
#25	0.50	0.71	11.32	48.53
#35	1.00	0.50	9.86	58.39
#45	1.50	0.36	6.53	64.92
#60	2.00	0.25	5.93	70.85
#80	2.50	0.18	8.77	79.62
#120	3.00	0.13	8.35	87.97
#170	3.50	0.09	1.59	89.56
#200	3.75	0.08	0.35	89.91
#230	4.00	0.06	0.30	90.21

SAND, poorly-graded with silt, mostly medium to fine-grained quartz, little coarse to medium sand-size shell fragments, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	2.76	2.24	0.57	-0.48	-0.83	-1.54	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	0.53	0.69	0.57	0.67	1.42	0.18	2.14

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ 20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F5-1 @ 4 ft

Analysis Date: 6/9/2009

Easting (ft): 589,521	Northing (ft): 1,924,435	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -10.7 MLW
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USCS:	Munsell: 10Y 4/1	Fines (%): #200 - 30.22 #230 - 29.99	Organics (%):	Carbonates (%):	Shells (%): 25
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.05	0.05
#4	-2.25	4.75	0.25	0.30
#5	-2.00	4.00	0.00	0.30
#7	-1.50	2.80	0.26	0.56
#10	-1.00	2.00	0.25	0.81
#14	-0.50	1.40	1.38	2.19
#18	0.00	1.00	4.08	6.27
#25	0.50	0.71	7.13	13.40
#35	1.00	0.50	9.86	23.26
#45	1.50	0.36	7.99	31.25
#60	2.00	0.25	7.91	39.16
#80	2.50	0.18	16.12	55.28
#120	3.00	0.13	12.11	67.39
#170	3.50	0.09	1.90	69.29
#200	3.75	0.08	0.49	69.78
#230	4.00	0.06	0.23	70.01

SAND, silty, some fine-grained quartz, some silt, little medium sand-size shell fragments

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
			2.34	1.11	0.63	-0.16	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	1.54	0.34	2.34	0.20	1.09	-0.55	2.89

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F6-1 @ 2.5 ft

Analysis Date: 6/9/2009

Easting (ft): 590,533	Northing (ft): 1,920,924	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -8.0 MLW
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USCS:	Munsell: 10YR 6/1	Fines (%): #200 - 8.91 #230 - 8.54	Organics (%):	Carbonates (%): 17.50	Shells (%): 6
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.08	0.08
#10	-1.00	2.00	0.14	0.22
#14	-0.50	1.40	0.47	0.69
#18	0.00	1.00	1.11	1.80
#25	0.50	0.71	1.54	3.34
#35	1.00	0.50	3.22	6.56
#45	1.50	0.36	5.04	11.60
#60	2.00	0.25	8.70	20.30
#80	2.50	0.18	29.64	49.94
#120	3.00	0.13	36.00	85.94
#170	3.50	0.09	4.78	90.72
#200	3.75	0.08	0.37	91.09
#230	4.00	0.06	0.37	91.46

SAND, poorly-graded with silt, mostly fine-grained quartz, few silt, few medium sand-size shell fragments

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	2.97	2.85	2.50	2.08	1.75	0.76	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.27	0.21	2.50	0.18	0.74	-1.65	6.7

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F6-1 @ 4.5 ft

Analysis Date: 6/9/2009

Easting (ft): 590,533	Northing (ft): 1,920,924	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -10.0 MLW
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USCS:	Munsell: 10G 6/1	Fines (%): #200 - 5.57 #230 - 5.27	Organics (%):	Carbonates (%):	Shells (%): 0
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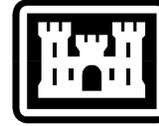
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.11	0.11
#4	-2.25	4.75	0.00	0.11
#5	-2.00	4.00	0.00	0.11
#7	-1.50	2.80	0.00	0.11
#10	-1.00	2.00	0.11	0.22
#14	-0.50	1.40	0.15	0.37
#18	0.00	1.00	0.16	0.53
#25	0.50	0.71	0.12	0.65
#35	1.00	0.50	0.14	0.79
#45	1.50	0.36	0.43	1.22
#60	2.00	0.25	1.89	3.11
#80	2.50	0.18	24.46	27.57
#120	3.00	0.13	55.20	82.77
#170	3.50	0.09	10.89	93.66
#200	3.75	0.08	0.77	94.43
#230	4.00	0.06	0.30	94.73

SAND, poorly-graded with silt, mostly fine-grained quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	3.06	2.93	2.70	2.45	2.26	2.04	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.63	0.16	2.70	0.15	0.47	-3.68	35.55

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F9-1 @ 0.5 ft

Analysis Date: 6/9/2009

Easting (ft): 592,042	Northing (ft): 1,916,511	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -8.2 MLW
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USCS:	Munsell: 10YR 4/1	Fines (%): #200 - 18.46 #230 - 17.96	Organics (%):	Carbonates (%): 5.00	Shells (%): 4
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Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.12	0.12
#4	-2.25	4.75	0.00	0.12
#5	-2.00	4.00	0.00	0.12
#7	-1.50	2.80	0.00	0.12
#10	-1.00	2.00	0.07	0.19
#14	-0.50	1.40	0.08	0.27
#18	0.00	1.00	0.25	0.52
#25	0.50	0.71	0.37	0.89
#35	1.00	0.50	1.16	2.05
#45	1.50	0.36	2.71	4.76
#60	2.00	0.25	5.61	10.37
#80	2.50	0.18	23.77	34.14
#120	3.00	0.13	37.73	71.87
#170	3.50	0.09	8.79	80.66
#200	3.75	0.08	0.88	81.54
#230	4.00	0.06	0.50	82.04

SAND, silty, mostly fine-grained quartz, little silt, trace shell fragments

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
		3.18	2.71	2.31	2.12	1.52	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.49	0.18	2.71	0.15	0.61	-2.18	14.75

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F9-1 @ 2 ft

Analysis Date: 6/9/2009

Easting (ft): 592,042	Northing (ft): 1,916,511	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -9.7 MLW
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USCS:	Munsell: 10Y 4/1	Fines (%): #200 - 18.19 #230 - 17.15	Organics (%):	Carbonates (%):	Shells (%): 2
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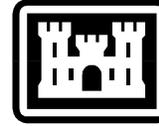
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	1.71	1.71
#4	-2.25	4.75	0.10	1.81
#5	-2.00	4.00	0.18	1.99
#7	-1.50	2.80	0.61	2.60
#10	-1.00	2.00	0.54	3.14
#14	-0.50	1.40	0.42	3.56
#18	0.00	1.00	0.46	4.02
#25	0.50	0.71	0.64	4.66
#35	1.00	0.50	1.37	6.03
#45	1.50	0.36	2.42	8.45
#60	2.00	0.25	6.18	14.63
#80	2.50	0.18	21.73	36.36
#120	3.00	0.13	35.64	72.00
#170	3.50	0.09	8.47	80.47
#200	3.75	0.08	1.34	81.81
#230	4.00	0.06	1.04	82.85

SAND, silty, mostly fine-grained quartz, little silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
		3.18	2.69	2.24	2.03	0.62	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.30	0.20	2.69	0.15	1.13	-2.89	12.57

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F11-1 @ 4 ft

Analysis Date: 6/9/2009

Easting (ft): 592,780	Northing (ft): 1,913,686	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -5.1 MLW
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USCS:	Munsell: 10YR 4/1	Fines (%): #200 - 5.12 #230 - 4.85	Organics (%):	Carbonates (%): 2.50	Shells (%): 2
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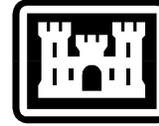
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.05	0.05
#10	-1.00	2.00	0.09	0.14
#14	-0.50	1.40	0.09	0.23
#18	0.00	1.00	0.13	0.36
#25	0.50	0.71	0.09	0.45
#35	1.00	0.50	0.20	0.65
#45	1.50	0.36	0.67	1.32
#60	2.00	0.25	1.51	2.83
#80	2.50	0.18	5.75	8.58
#120	3.00	0.13	69.02	77.60
#170	3.50	0.09	16.35	93.95
#200	3.75	0.08	0.93	94.88
#230	4.00	0.06	0.27	95.15

SAND, poorly-graded with silt, mostly fine-grained quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
3.86	3.20	2.98	2.80	2.62	2.55	2.19	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.77	0.15	2.80	0.14	0.41	-3.64	32.45

GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

Granularmetric Report



US Army Corps of Engineers
Jacksonville District

Project Name:
Intracoastal Waterway, Jacksonville to Miami

Sample Name: VB-IWW06M-F11-1 @ 7 ft

Analysis Date: 6/9/2009

Easting (ft): 592,780	Northing (ft): 1,913,686	Coordinate System: State Plane, FLE (U.S. Ft.)	Elevation (ft): -8.1 MLW
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USCS:	Munsell: 10YR 5/1	Fines (%): #200 - 8.56 #230 - 8.48	Organics (%):	Carbonates (%):	Shells (%): 0
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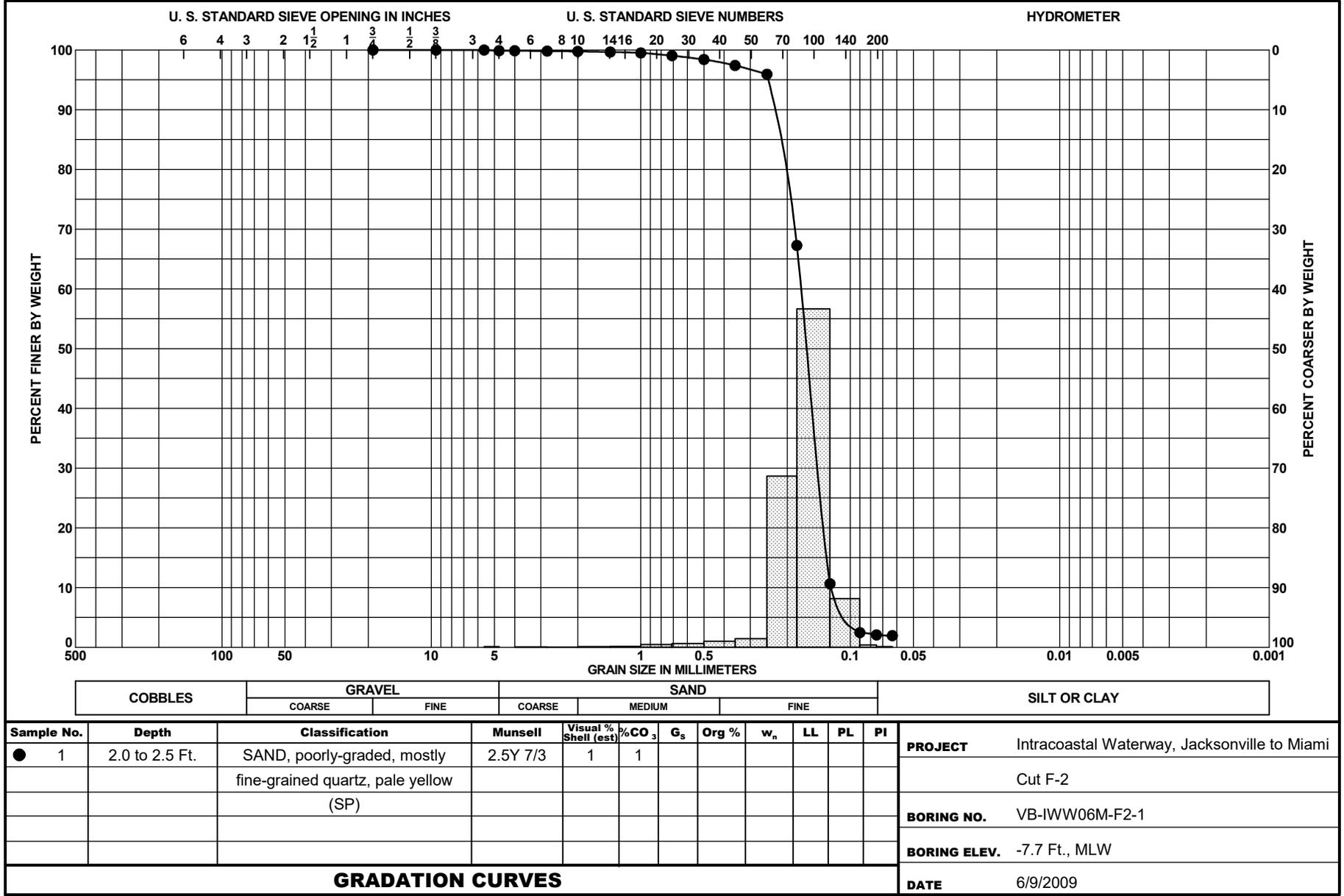
Sieve Number	Sieve Size (Phi)	Sieve Size (Millimeters)	% Weight Retained	C. % Weight Retained
3/4"	-4.25	19.00	0.00	0.00
3/8"	-3.25	9.50	0.00	0.00
#3.5	-2.50	5.60	0.00	0.00
#4	-2.25	4.75	0.00	0.00
#5	-2.00	4.00	0.00	0.00
#7	-1.50	2.80	0.00	0.00
#10	-1.00	2.00	0.08	0.08
#14	-0.50	1.40	0.13	0.21
#18	0.00	1.00	0.12	0.33
#25	0.50	0.71	0.13	0.46
#35	1.00	0.50	0.33	0.79
#45	1.50	0.36	0.81	1.60
#60	2.00	0.25	1.32	2.92
#80	2.50	0.18	10.43	13.35
#120	3.00	0.13	71.89	85.24
#170	3.50	0.09	5.62	90.86
#200	3.75	0.08	0.58	91.44
#230	4.00	0.06	0.08	91.52

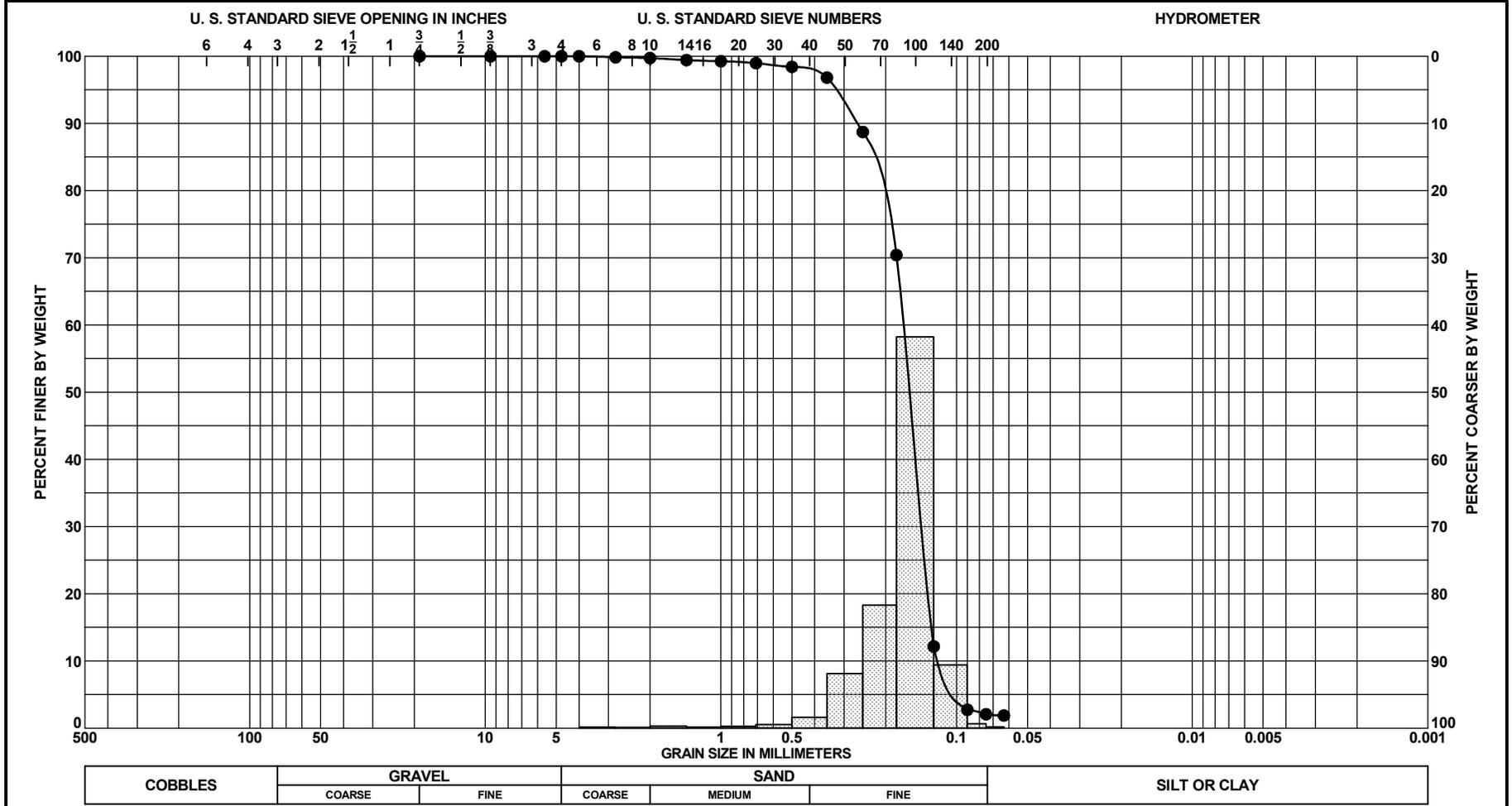
SAND, poorly-graded with silt, mostly fine-grained quartz, few silt

Phi 5	Phi 16	Phi 25	Phi 50	Phi 75	Phi 84	Phi 95	
	2.99	2.93	2.75	2.58	2.52	2.10	
Moment Statistics	Mean Phi	Mean mm	Median Phi	Median mm	Sorting	Skewness	Kurtosis
	2.68	0.16	2.75	0.15	0.38	-3.91	31.39

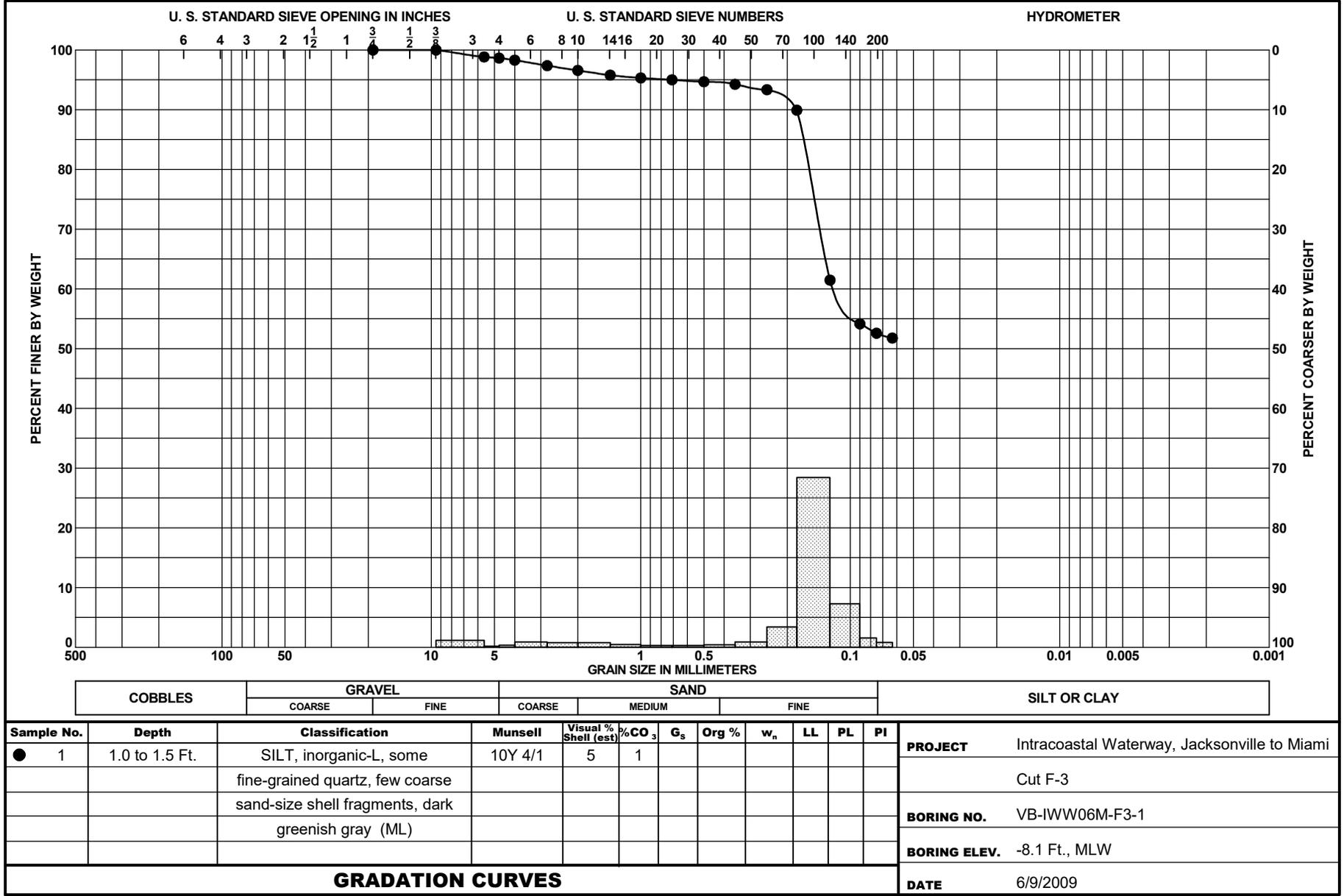
GRANULARMETRIC REPORT % IWW_ENTIRE_JAX_MIAMI_SHELL2006-NEW-TEMPLATE.GPJ CESAJ.20171021.GDT 5/17/18

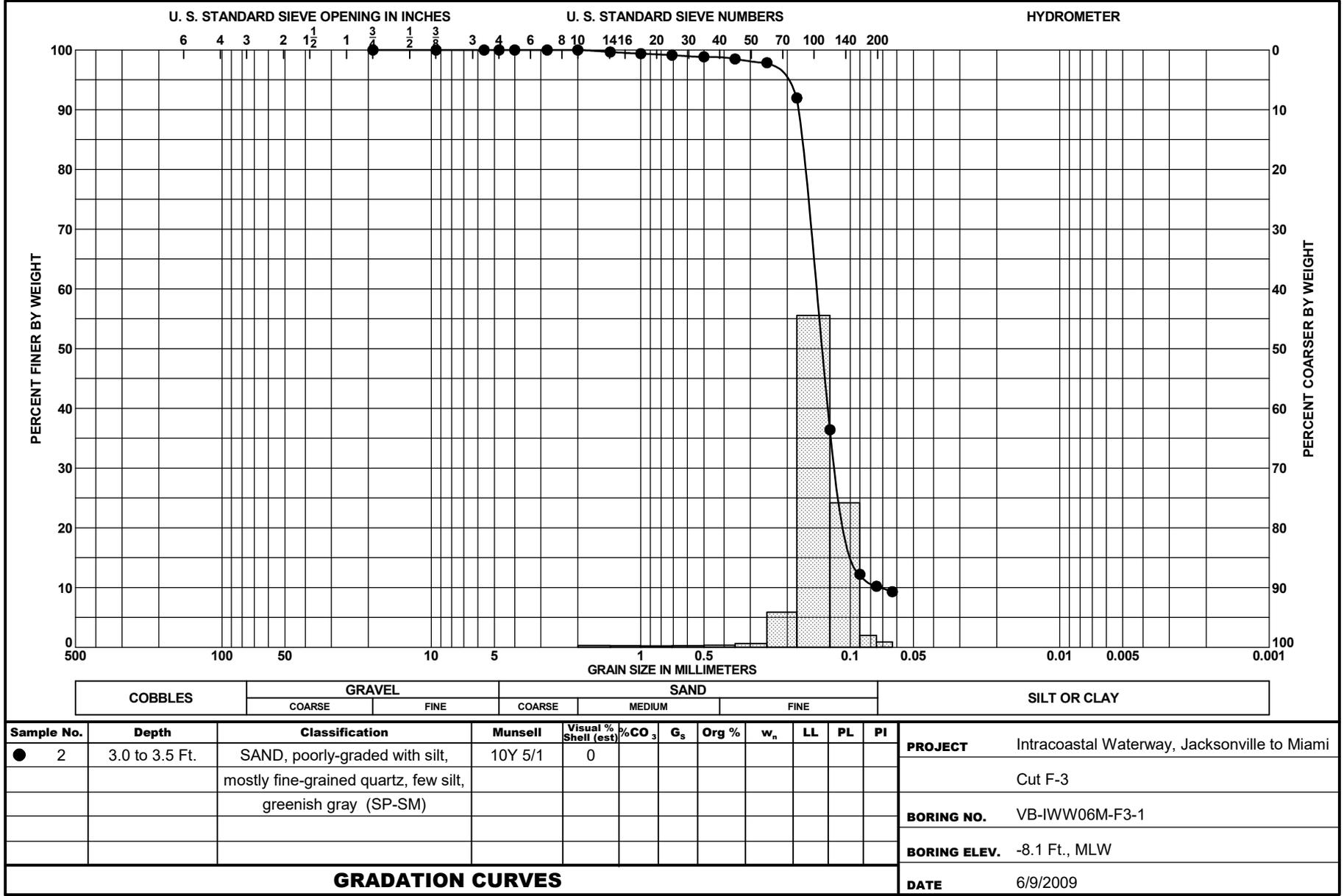
GRAIN SIZE DISTRIBUTION CURVES

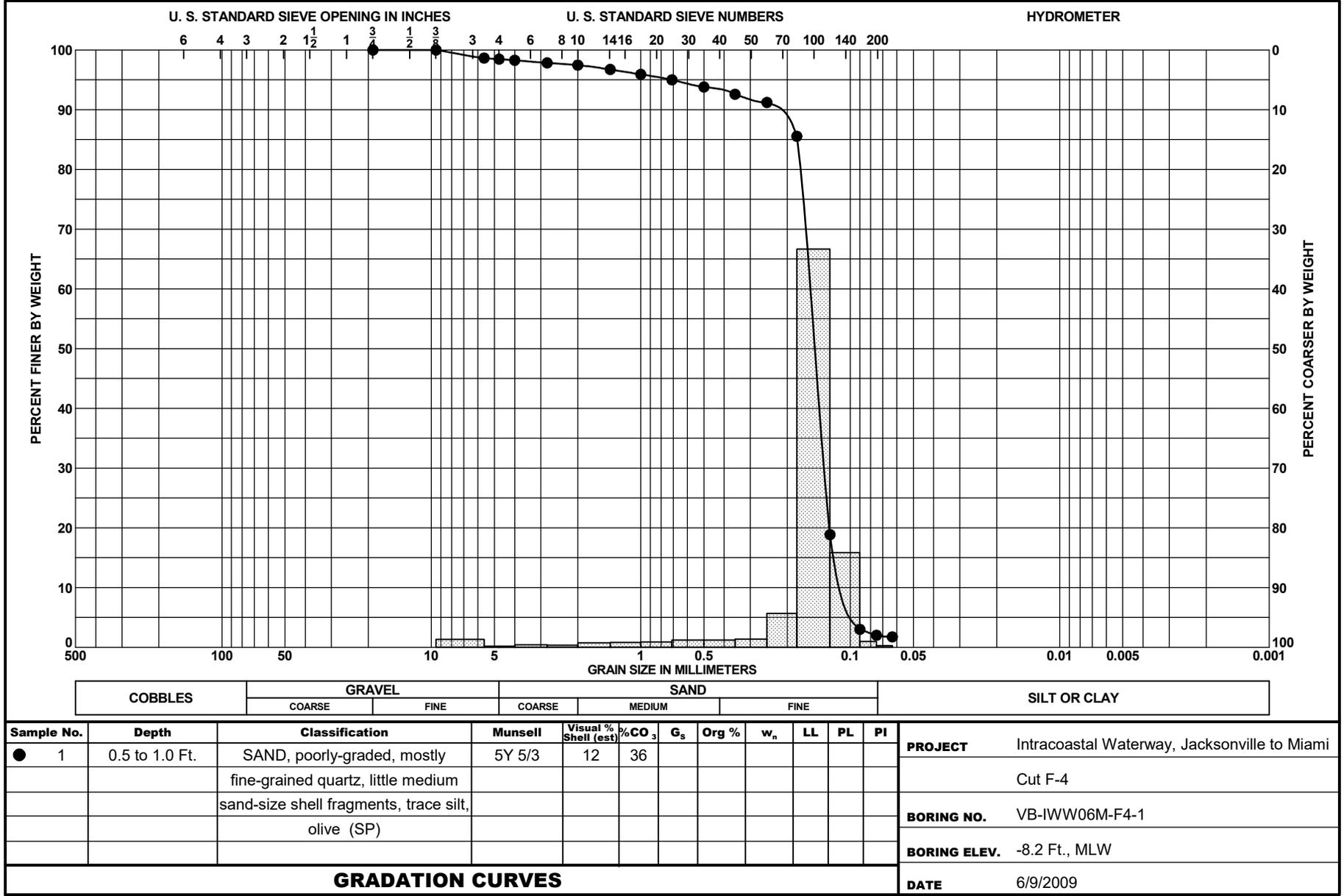


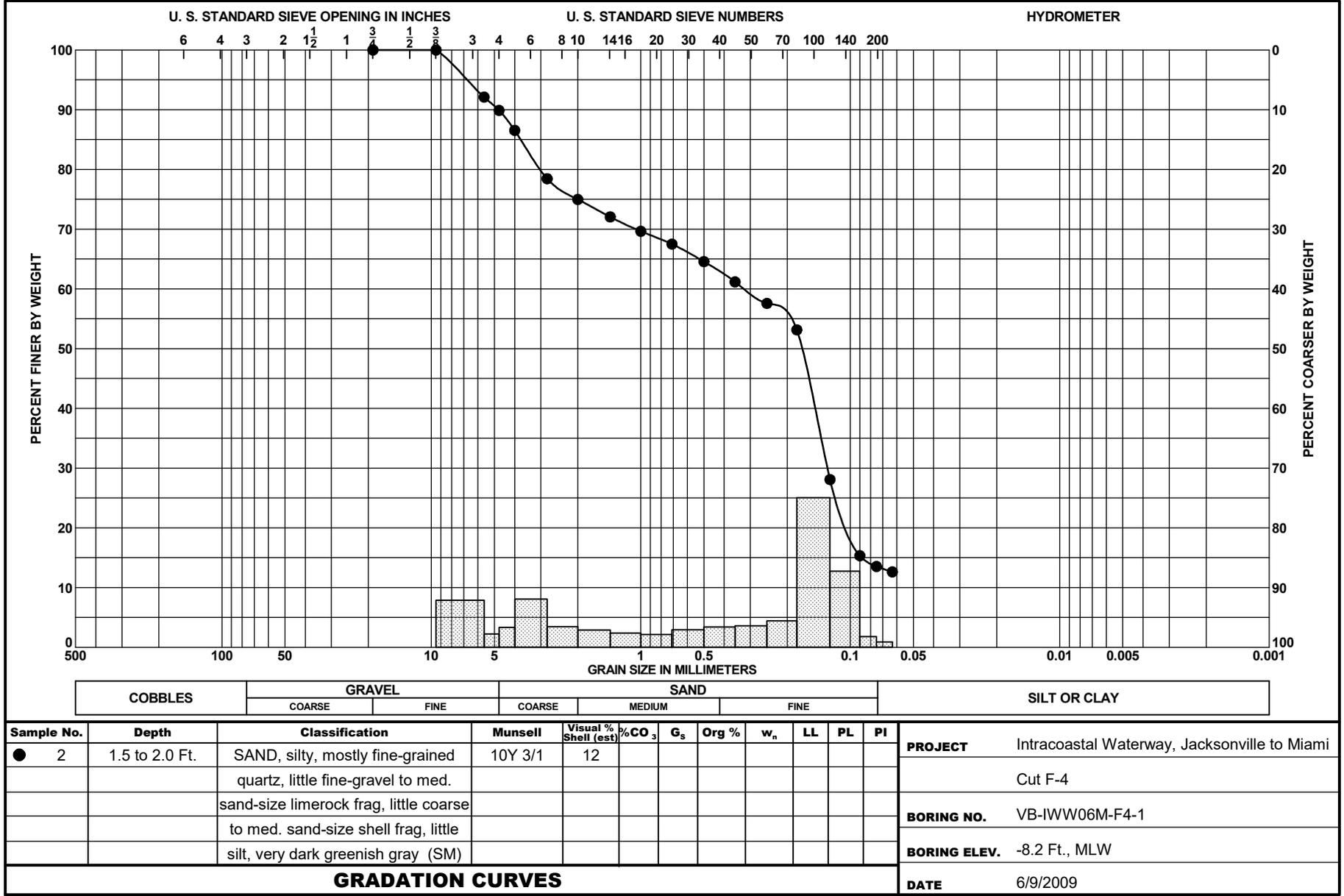


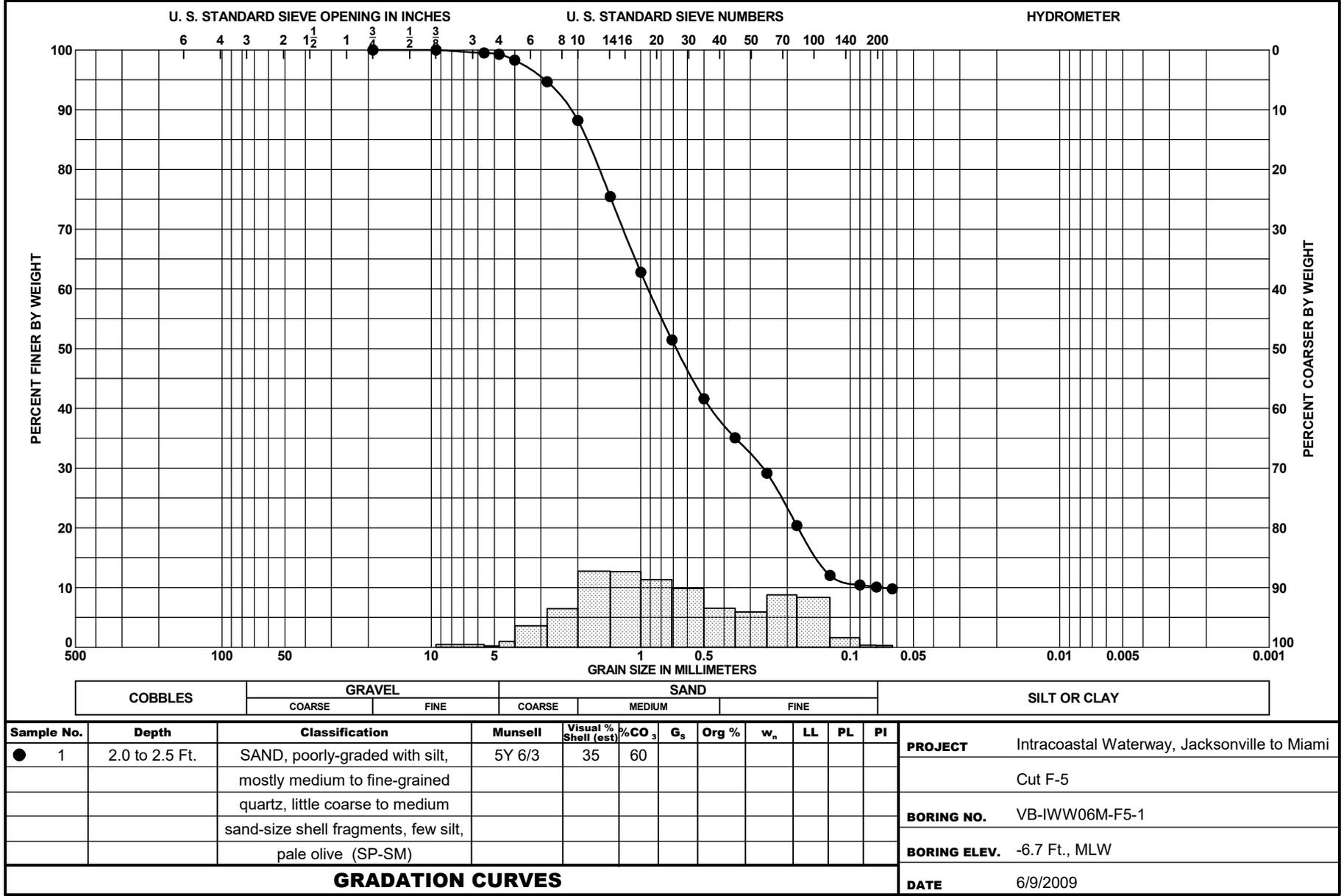
Sample No.	Depth	Classification	Munsell	Visual % Shell (est)	%CO ₃	G _s	Org %	w _n	LL	PL	PI	GRADATION CURVES		
												PROJECT	DATE	
● 2	4.2 to 4.7 Ft.	SAND, poorly-graded, mostly fine-grained quartz, trace shell fragments, dark gray (SP)	2.5Y 4/1	3								PROJECT	Intracoastal Waterway, Jacksonville to Miami	
													Cut F-2	
												BORING NO.	VB-IWW06M-F2-1	
												BORING ELEV.	-7.7 Ft., MLW	
													DATE	6/9/2009

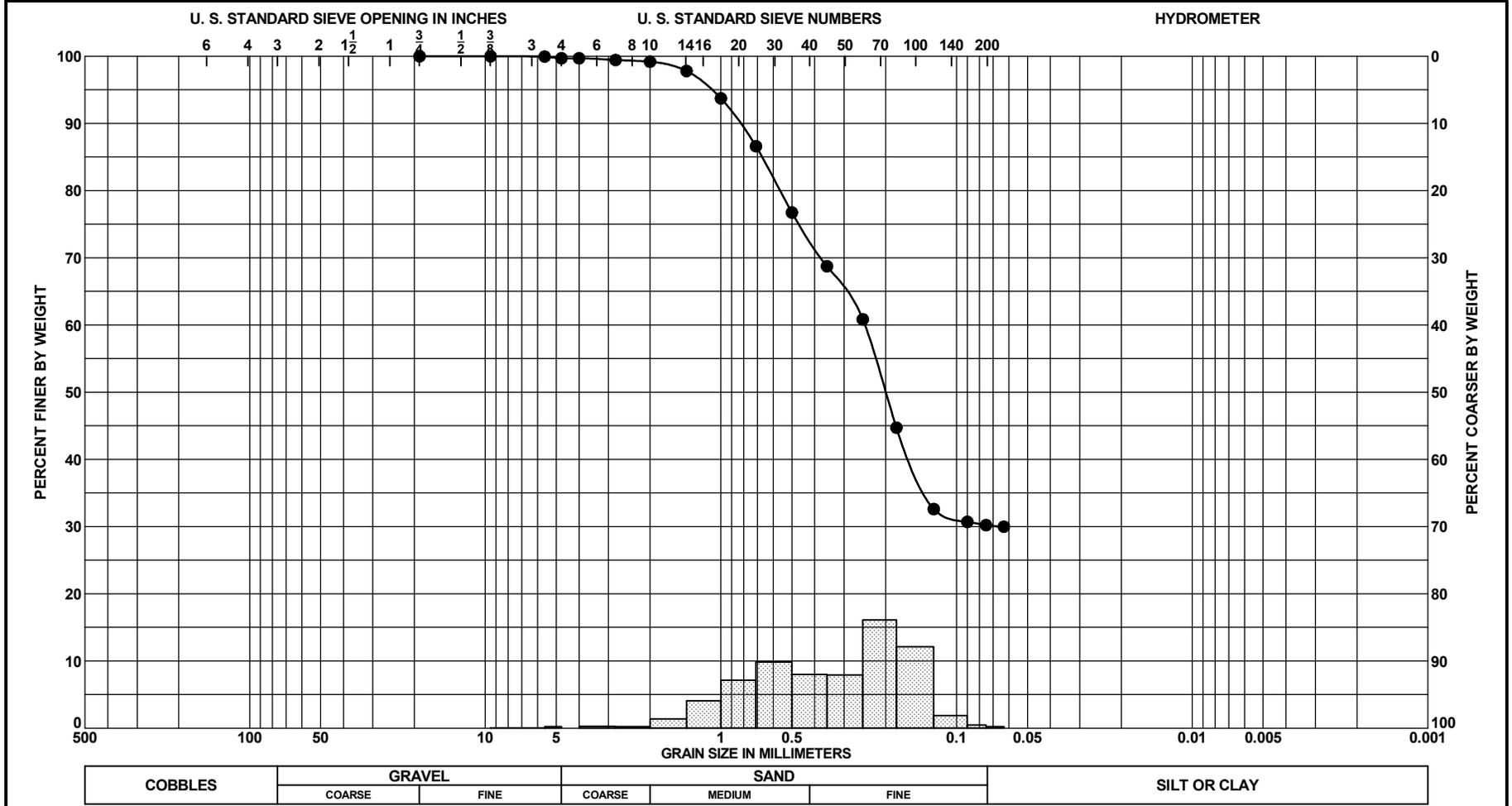




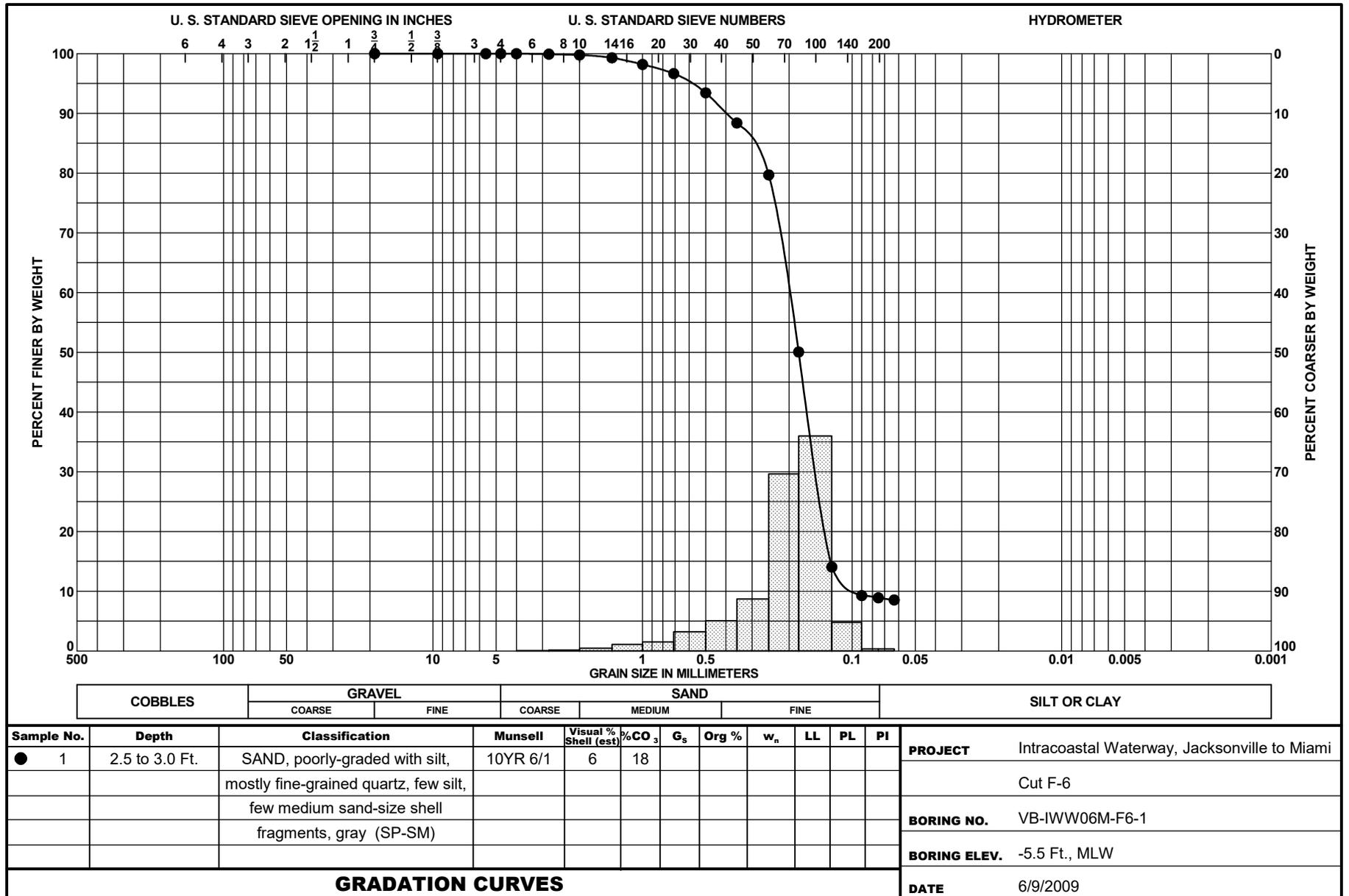


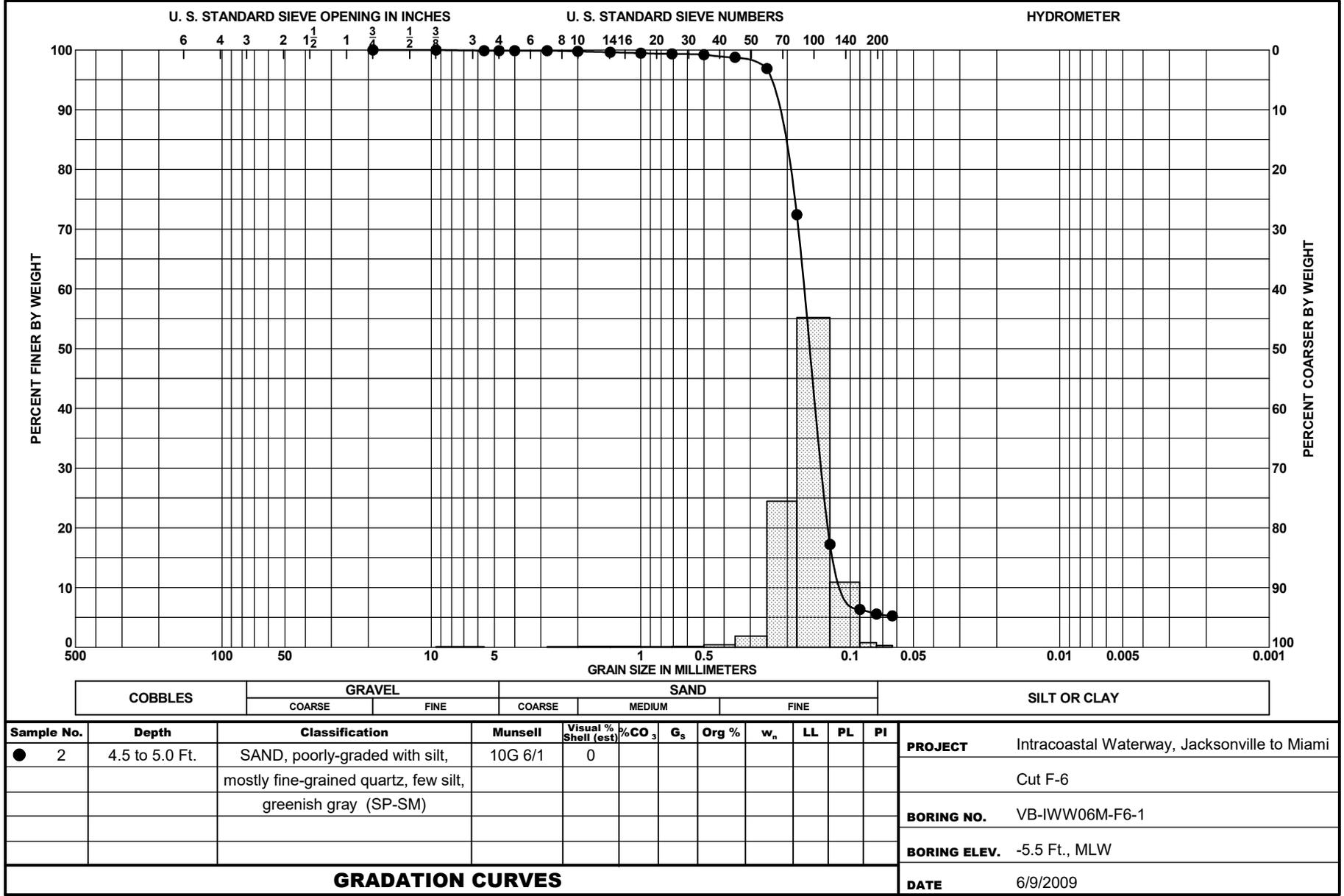


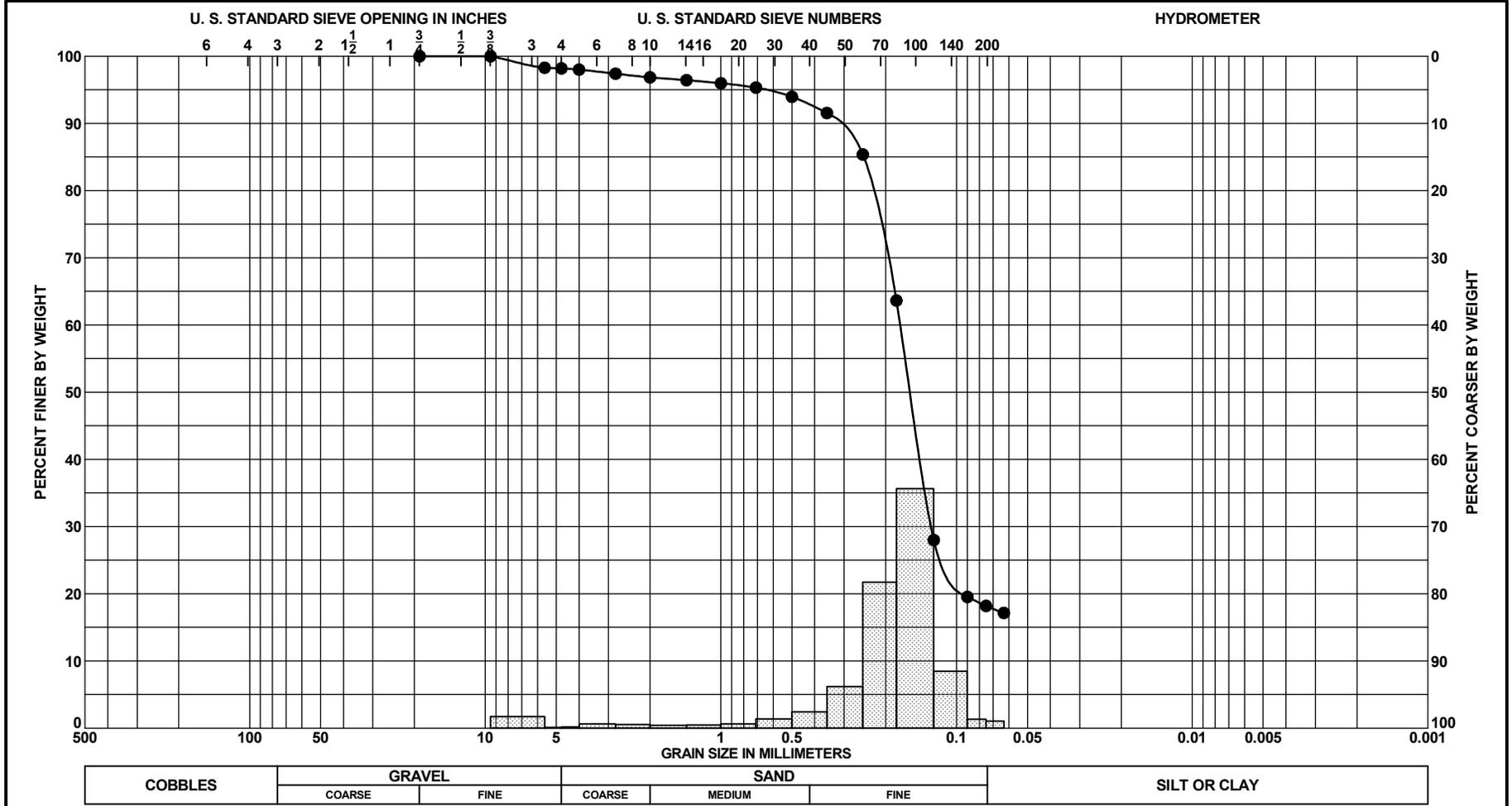




Sample No.	Depth	Classification	Munsell	Visual % Shell (est)	%CO ₃	G _s	Org %	w _n	LL	PL	PI	PROJECT
● 2	4.0 to 4.5 Ft.	SAND, silty, some fine-grained quartz, some silt, little medium sand-size shell fragments, dark greenish gray (SM)	10Y 4/1	25								Intracoastal Waterway, Jacksonville to Miami
												Cut F-5
												BORING NO. VB-IWW06M-F5-1
												BORING ELEV. -6.7 Ft., MLW
GRADATION CURVES												DATE 6/9/2009

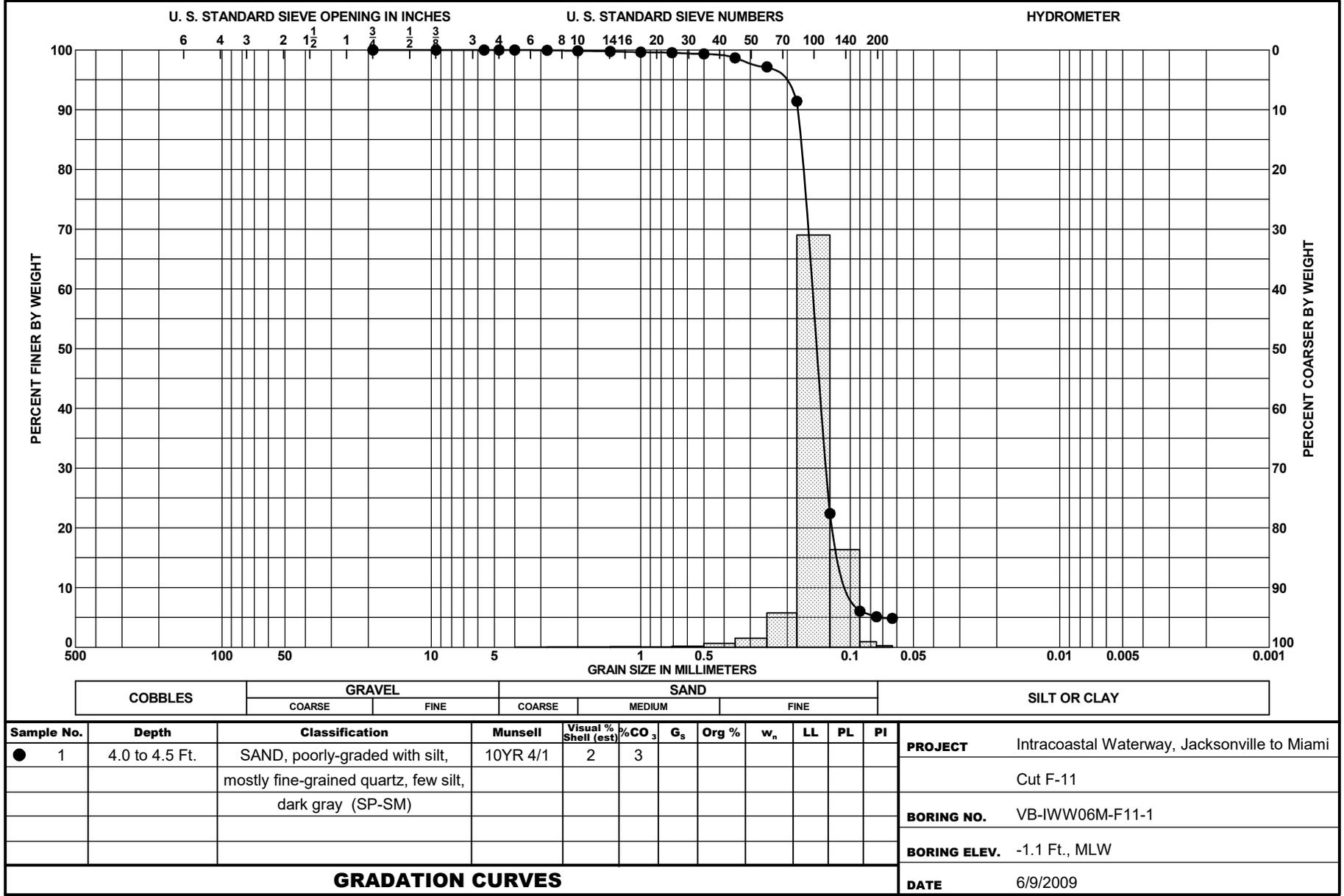


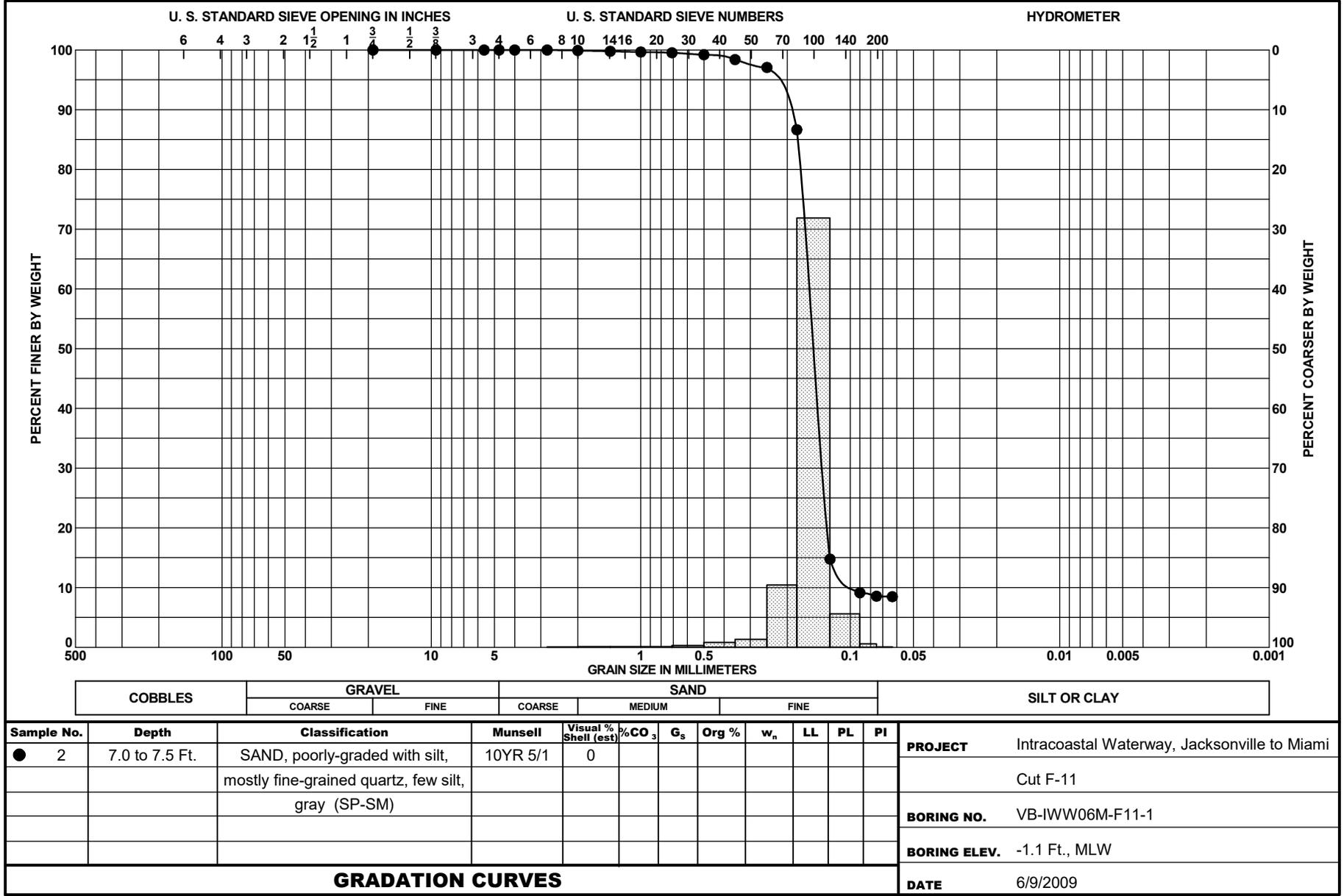




COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual % Shell (est)	%CO ₃	G _s	Org %	w _n	LL	PL	PI	PROJECT
● 2	2.0 to 2.5 Ft.	SAND, silty, mostly fine-grained quartz, little silt, dark greenish gray (SM)	10Y 4/1	2								Intracoastal Waterway, Jacksonville to Miami
												Cut F-9
												BORING NO. VB-IWW06M-F9-1
												BORING ELEV. -7.7 Ft., MLW
GRADATION CURVES												DATE 6/9/2009





COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Sample No.	Depth	Classification	Munsell	Visual % Shell (est)	%CO ₃	G _s	Org %	w _n	LL	PL	PI
● 2	7.0 to 7.5 Ft.	SAND, poorly-graded with silt, mostly fine-grained quartz, few silt, gray (SP-SM)	10YR 5/1	0							

PROJECT	Intracoastal Waterway, Jacksonville to Miami
	Cut F-11
BORING NO.	VB-IWW06M-F11-1
BORING ELEV.	-1.1 Ft., MLW
DATE	6/9/2009

GRADATION CURVES



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX F
Bathymetric Survey

HYDROGRAPHIC SURVEY OF THE INTRACOASTAL WATERWAY FLAGLER COUNTY

PREPARED FOR:
**FLORIDA INLAND
NAVIGATION DISTRICT**

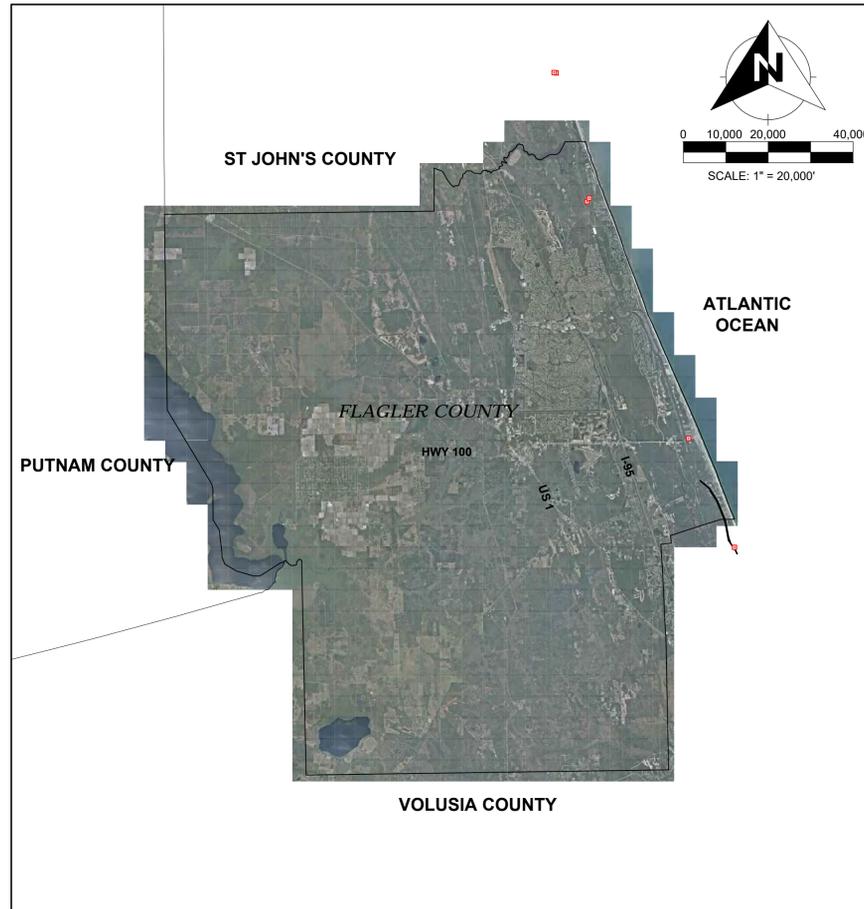


**1314 MARCINSKI ROAD
JUPITER, FLORIDA 33477**

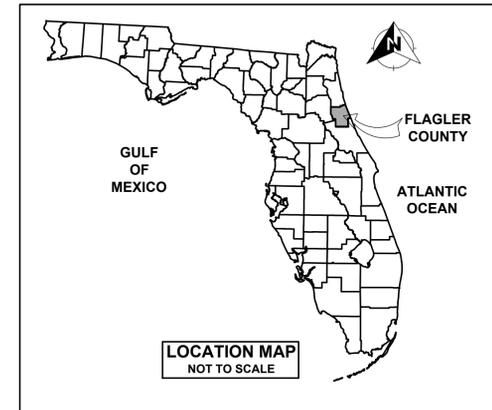
PREPARED BY:
SEA DIVERSIFIED, INC.



**21 NW 2ND STREET
DELRAY BEACH,
FLORIDA 33444**



KEY-VICINITY MAP



HYDROGRAPHIC SURVEY NOTES:

- REFER TO SEA DIVERSIFIED PROJECT NUMBER 13-2078.
- THIS HYDROGRAPHIC SURVEY WAS CONDUCTED ON MAY 16, THROUGH JUNE 23, 2014.
- THIS SURVEY WAS PREPARED FOR THE FLORIDA INLAND NAVIGATION DISTRICT.
- THE PURPOSE OF THIS SURVEY WAS TO DETERMINE THE GENERAL BATHYMETRIC CONDITIONS OF THE INTRACOASTAL WATERWAY CHANNEL (ICWW) IN FLAGLER COUNTY, FLORIDA.
- THE INFORMATION DEPICTED HEREIN REPRESENTS THE RESULTS OF THE SURVEY ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THE TIME.
- HORIZONTAL DATA ARE IN FEET AND RELATIVE TO THE FLORIDA STATE PLANE COORDINATE SYSTEM BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR FLORIDA, EAST ZONE (0901), NORTH AMERICAN DATUM (NAD) OF 1983, 1990 ADJUSTMENT.
- VERTICAL DATA ARE IN FEET AND RELATIVE TO MEAN LOWER LOW WATER (MLLW), MEAN LOWER LOW WATER WAS TRANSLATED FROM THE NORTH AMERICAN VERTICAL DATUM OF 1989 (NAVD88) UTILIZING THE LATEST VERSION VDATUM (VERTICAL DATUM TRANSFORMATION) PROVIDED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA), NATIONAL OCEAN SERVICE (NOS).
- BATHYMETRIC DATA WAS COLLECTED ALONG THE CHANNEL CENTERLINE AND TWO LINES OFFSET PARALLEL TO THE CENTERLINE. WIDENER AND IMPOUNDMENT BASIN DATA WAS COLLECTED AT FIFTY FOOT INTERVALS USING A TRIMBLE SPS461 REAL-TIME-KINEMATIC (RTK) GLOBAL POSITIONING SYSTEM (GPS) FOR POSITIONING AND A TELEDYNE (ODOM) MB1 MULTIBEAM SOUNDER OPERATING AT A 219 kHz WITH INTEGRATED TSS MODEL DMS-05, DYNAMIC MOTION SENSOR. HORIZONTAL POSITION ACCURACY WAS VERIFIED BY CHECKS AT CONTROL POINTS TABULATED HEREIN. THE SOUNDER WAS CALIBRATED PRIOR TO THE START OF THE SURVEY FOLLOWING MANUFACTURER RECOMMENDED PROCEDURES.
- RTK DERIVED TIDES WERE APPLIED REAL-TIME DURING THE COURSE OF SURVEY UTILIZING THE TRIMBLE VRS NETWORK. RTK DERIVED TIDES WERE VERIFIED THROUGH TIDE RECORDINGS FROM SELF-RECORDING PRESSURE GAUGES (LEVEL TROLL 500). THE GAUGES WERE SET RELATIVE TO NAVD88. WATER LEVELS WERE RECORDED AT SIX-MINUTE INTERVALS DURING SURVEY OPERATIONS.
- ELEVATIONS DISPLAYED HEREON WERE INTERPOLATED FROM GRIDDED SOUNDING DATA ALONG INTRACOASTAL WATERWAY CHANNEL CUT STATIONS. FULL BOTTOM COVERAGE WAS NOT ACQUIRED. INTRACOASTAL WATERWAY CHANNEL LOCATION IS BASED UPON COORDINATE FILES PROVIDED BY THE U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT.
- AIDS TO NAVIGATION (NAF-AIDS) WERE LOCATED WITH A TRIMBLE SPS351 DIFFERENTIAL GLOBAL POSITIONING SYSTEM (DGPS) USING THE U.S. NAVBEACON SYSTEM FOR CORRECTIONS. NAF-AID POSITIONING WAS DERIVED FROM THE AVERAGE OF FIVE POSITIONS.
- AZIMUTHS SHOWN HEREON ARE GRID RECKONED CLOCKWISE FROM NORTH.
- AERIAL PHOTOGRAPHY OBTAINED FROM THE FLORIDA DEPARTMENT OF TRANSPORTATION AND IS PROVIDED FOR GRAPHICAL PURPOSES ONLY. FLIGHT DATE WAS 2012.
- THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

CERTIFICATION

I HEREBY CERTIFY THAT THE HYDROGRAPHIC SURVEY SHOWN HEREON IS BASED ON A RECENT FIELD SURVEY CONDUCTED UNDER MY PERSONAL DIRECTION AND IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER SJ-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

WILLIAM T. SADLER JR., P.E., P.S.M.
FLORIDA PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA REGISTRATION NO. 5859
L.B. 7342

DATE: _____

ABBREVIATIONS	
CSWY	CAUSEWAY
FPL	FLORIDA POWER AND LIGHT
ICWW	INTRACOASTAL WATERWAY
MLLW	MEAN LOWER LOW WATER
NAD	NORTH AMERICAN DATUM
NAVD	NORTH AMERICAN VERTICAL DATUM
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ASSOCIATION
PKWY	PARKWAY
SR	STATE ROAD

LEGEND			
	GREEN CHANNEL MARKERS	-13.00	SOUNDINGS MLLW (TYP.)
	INFORMATION SIGN	-12.0	MLLW OR SHALLOWER
	RED CHANNEL MARKERS		

SHEET INDEX	
SHT NO.	DESCRIPTION
C1	COVER - NOTES - LOCATION / AERIAL MAP
C2	KEY MAP - CENTERLINE TABULATION - SHEET STATIONING TABULATION
S3-S12	ELEVATION DATA
N13-N14	CHANNEL MARKER DATA

CONTROL TABULATION					
DESIGNATION	NAD 83/90 SPCS 0901		NAVD 88	DESCRIPTION	STAMPING
	NORTHING (FEET)	EASTING (FEET)	ELEVATION (FEET)		
872 0686 TIDAL 1	1956259.66	582187.01	10.66	SURVEY DISK SET IN RETAINING WALL (PID AQ1557)	1 1974
872 0686 TIDAL 2	1956351.53	581709.85	12.91	SURVEY DISK SET IN RETAINING WALL (PID AQ1556)	2 1974
872 0729 A TIDAL	1926042.46	589449.77	4.43	COPPER CLAD ROD ENCASED IN PVC PIPE (PID AQ1927)	0729 A 1978
872 0729 B TIDAL	1926849.716	589980.72	8.77	DISK SET IN TOP OF CONC. MONUMENT (PID AQ1926)	072 B 1978 CLB
872 0833 A TIDAL	1870450.21	613389.45	4.42	COPPER CLAD ROD ENCASED IN PVC PIPE (PID AQ1748)	0833 A 1978

REVISIONS:

NO.	DATE	DESCRIPTION

PROJECT: HYDROGRAPHIC SURVEY (-12 PROJECT)
OF
THE INTRACOASTAL WATERWAY
FLAGLER COUNTY, FLORIDA

SHEET TITLE: COVER SHEET / NOTES / KEY MAP



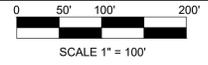
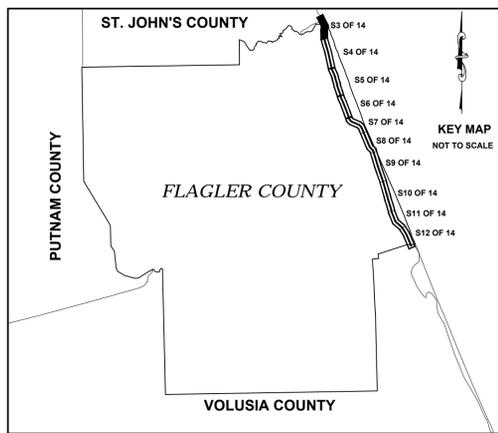
SEA DIVERSIFIED, INC.
SURVEYING AND ENGINEERING APPLICATIONS
21 NW 2ND STREET
DELRAY BEACH, FLORIDA 33444
TEL: (561) 243-4920 FAX: (561) 243-4957
WWW.SEADIVERSIFIED.COM



DATE: 6-23-14
DRAWN BY: W.J.R.
CHECKED BY: R.W.B.
SCALE: AS NOTED
SHEET:

C1

CADD ID: 13-2078
TOTAL NUMBER OF SHEETS: 14

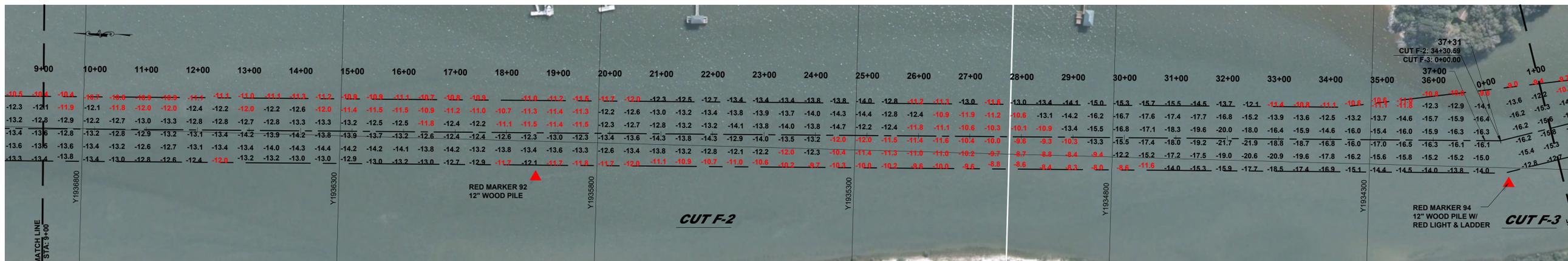
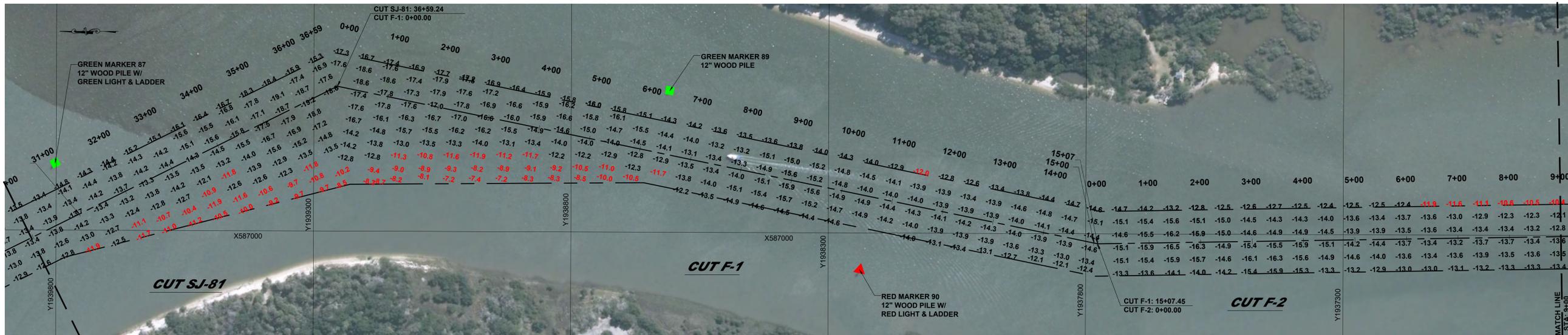
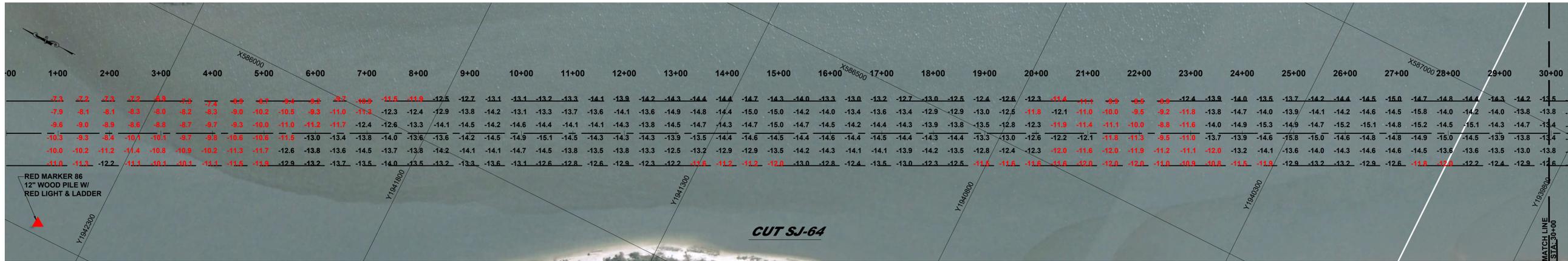


REVISIONS:

NO. DATE DESCRIPTION

PROJECT: HYDROGRAPHIC SURVEY (-12 PROJECT) OF THE INTRACOASTAL WATERWAY FLAGLER COUNTY, FLORIDA

SHEET TITLE: INTRACOASTAL CUT SJ-81, CUT F-1, F-2 & F-3



PREPARED FOR:
SEA DIVERSIFIED, INC.
SURVEYING AND ENGINEERING APPLICATIONS
21 NW 2ND STREET
DELRAY BEACH, FLORIDA 33444
TEL: (561) 948-4820 FAX: (561) 243-4857
WWW.SEADIVERSIFIED.COM



DATE: 09-2014
DRAWN BY: W.J.R.
CHECKED BY: R.W.B.
SCALE: 1" = 100'
SHEET:

S3

CADD ID: 13-2078
TOTAL NUMBER OF SHEETS: 14



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX G
Submerged Utility Information



Memo

To: Mark Crosley, Executive Director, FIND

From: William Warren

Date: Thursday, March 7, 2019

Re: Flagler Reach I Desktop Utility Survey

Taylor Engineering conducted a desktop utility survey to investigate potential utility crossings within the project limits. This included a formal request for a design level report from Sunshine 811. The following Sunshine 811 ticket numbers are associated with our request: 056902133, 056902215, 056902257, 056902301, 056902331, and 056902393. The ticket reports listed all documented utilities located within the Intracoastal Waterway from the St. Johns/Flagler border to the southern limit of Reach I. The reports provided by Sunshine 811 revealed no documented utilities within the project limits.



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX H

DMMA FL-3 Management Plan
DMMA FL-3 Pipeline Easement
DMMA FL-3 As-Built Surveys

**Management Plan
FL-3/MSA 3005A
Dredged Material Management Area**

February 1995

**Management Plan
FL-3/MSA 3005A
Dredged Material Management Area**

Prepared for:

FLORIDA INLAND NAVIGATION DISTRICT

by:

R. Bruce Taylor
William F. McFetridge
Michael L. Cochrane

Taylor Engineering, Inc.
9086 Cypress Green Drive
Jacksonville, Florida 32256
(904) 731-7040

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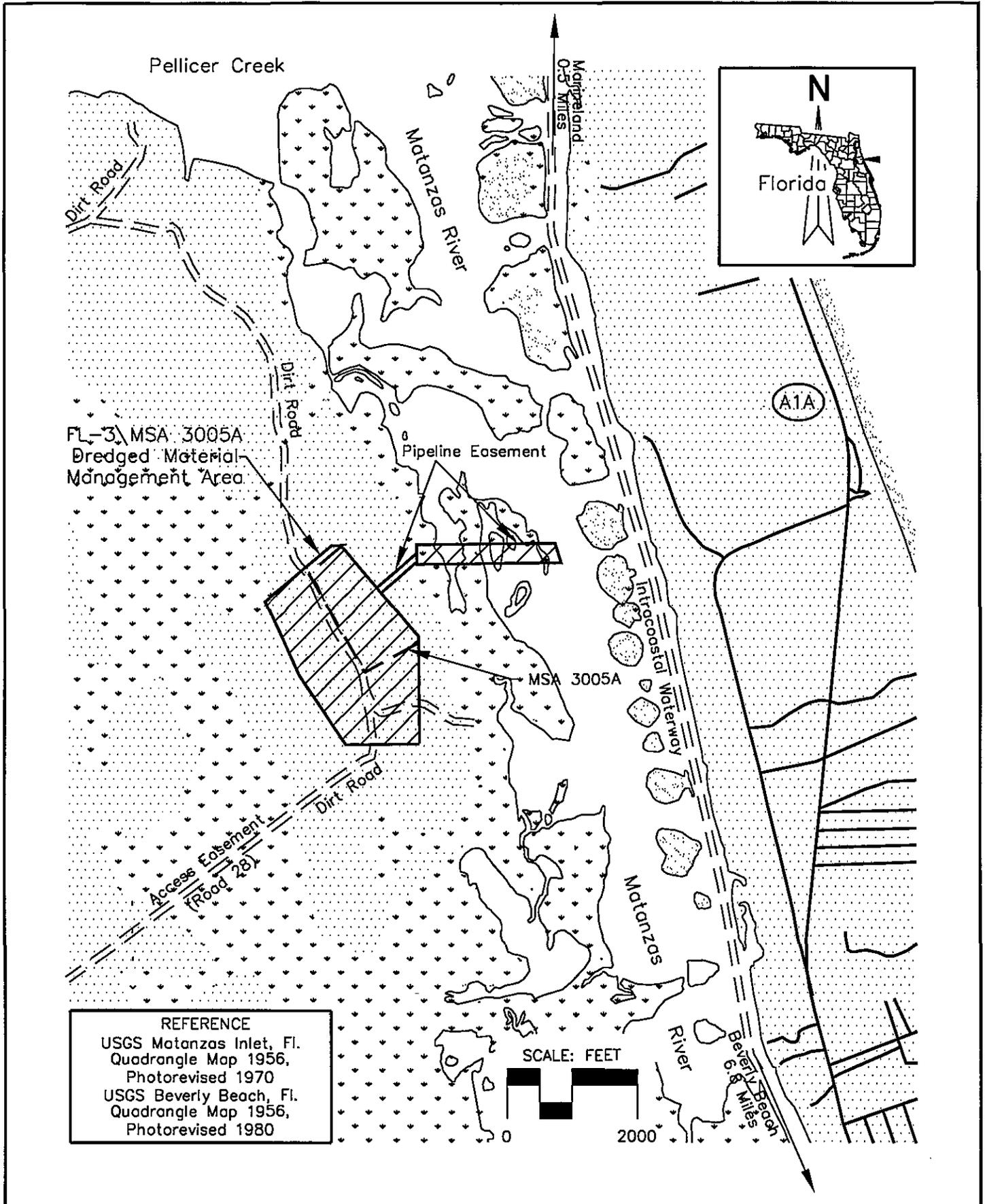
1.0 INTRODUCTION

A key element in the long-term use of any dredged material management area is the development and implementation of a site-specific management plan. This report outlines the management plan for Site FL-3/MSA 3005A. It is intended to provide guidance for the development and operation of the material management area so that optimum efficiency is achieved in both effluent quality and containment facility service life while minimizing the impact of the site on the environment and on adjacent property.

This plan document addresses those facets of site design and operation which directly influence site efficiency or reduce off-site conflicts. These include elements of site preparation prior to initial dredging, techniques of decanting and dewatering the dredged material during and immediately following a maintenance event, and criteria for post-dredging site operation and maintenance. Throughout, the goal of each phase of site management is to ensure that the site not only achieves its minimum design 50-year service life, but that it also fulfills its potential as a permanent operating facility for the intermediate storage and rehandling of maintenance material dredged from the Intracoastal Waterway (ICWW).

Site FL-3/MSA 3005A (hereafter referred to as Site FL-3; Figure 1.1) is one of three sites selected for development as dredged material management facilities to provide long-term capacity for the management of sediments dredged from the ICWW in Flagler County, Florida (Taylor et al., 1993). Specifically, Site FL-3 was selected as the primary site to serve that portion of the ICWW in Flagler County defined as Reach I (Figure 1.2). Reach I extends from Marineland, north of Palm Coast (Cut F-2, Station 0+00, ICWW mile 55.71) southward 4.43 miles to the northern entrance of the Palm Coast canal system (Cut F-11, Station 0+00, ICWW mile 60.14).

Several considerations led to the selection of Site FL-3 to serve Reach I. First, the site incorporates an existing dredged material easement. Acquired in 1985, this 33.9-acre easement — designated MSA 3005A — received 115,475 cubic yards (cy) of material dredged from the adjacent section of the ICWW in 1986. For this operation a containment basin encompassing approximately 24.8 acres was constructed within a larger area of planted pine. While the basin is not yet full, the remaining capacity (less than 100,000 cy) falls far short of the long-term requirements of Reach I (756,630 cy; Taylor et al., 1993). Moreover, the basin cannot be sufficiently expanded within the bounds of the existing easement to provide the needed additional capacity. This limitation is overcome by expanding the site to the area of planted pine lying west and south of MSA 3005A. Because of the area's previous disturbance, this expansion carries minimal environmental constraints. Second, Site FL-3 is located in an isolated area of northern Flagler County, surrounded by undeveloped or agricultural



REFERENCE
 USGS Matanzas Inlet, Fl.
 Quadrangle Map 1956,
 Photorevised 1970
 USGS Beverly Beach, Fl.
 Quadrangle Map 1956,
 Photorevised 1980

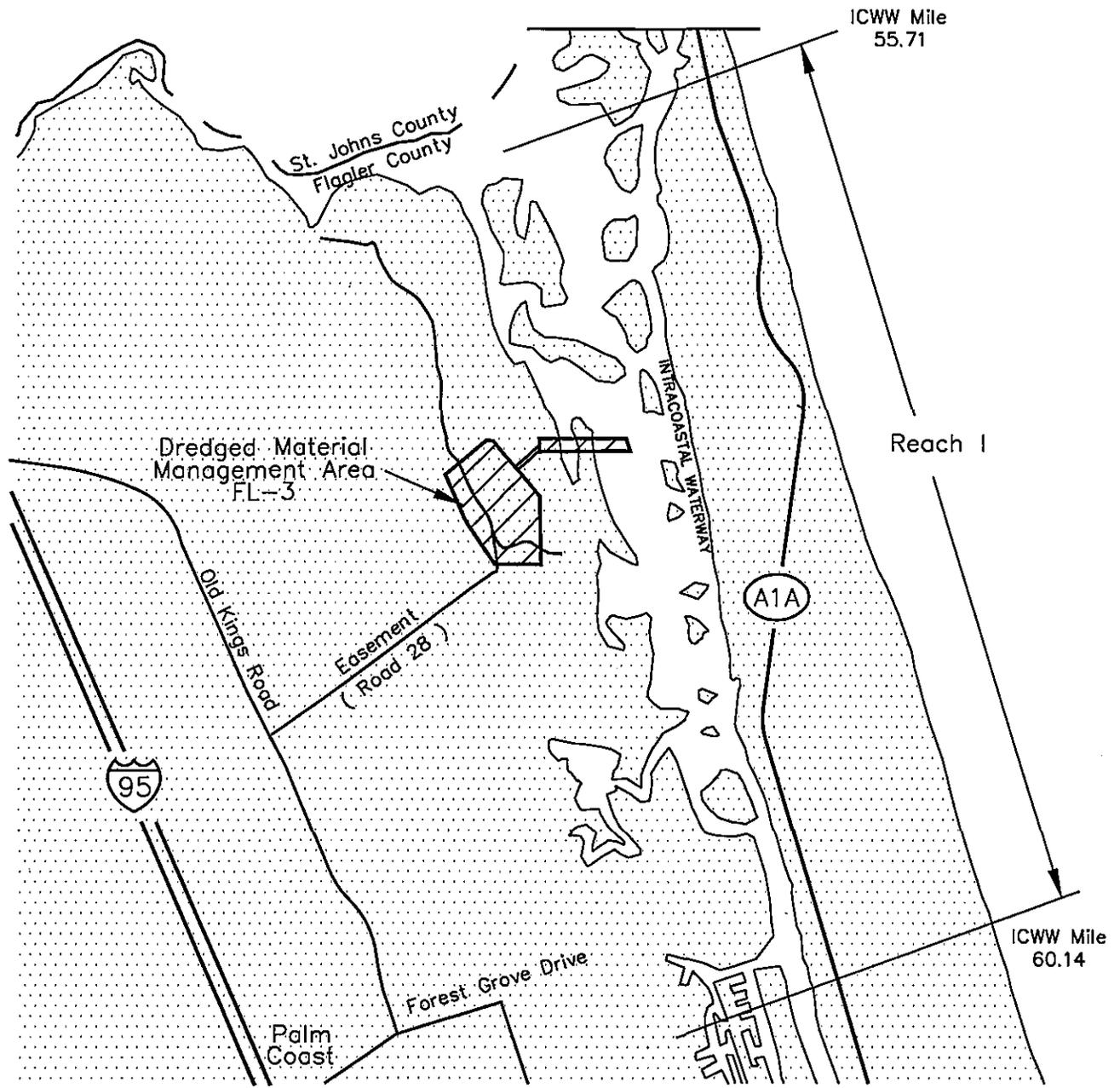
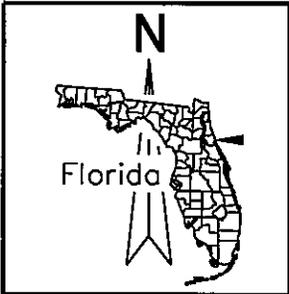
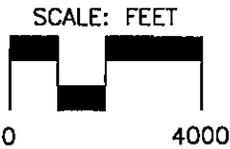
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Figure 1.1
 Location of
 Dredged Material Management Area
 FL-3\MSA 3005A
 Flagler County, Florida

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Figure 1.2
 Reach I
 Intracoastal Waterway
 Flagler County, Florida

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lands. To the north lie pasture and grazed forest, to the east mixed upland and wetland forest, to the south additional planted pine, and to the west forested and herbaceous wetlands. Thus, the adjacent land use presently provides limited potential for conflict with the operation of a dredged material management area. Last, the site is located close to the Waterway, thus affording reasonable pumping distances (3.37 miles, maximum) from the extreme ends of the reach to the site.

Beyond satisfying a minimum capacity requirement, the management objective for the FL-3 dredged material management area is to process (i.e., decant and dewater) the dredged material efficiently and to operate the facility so as to extend its usefulness beyond its design service life. The potential long-term efficiency of the material management area is established by the design and construction of the facility, while the degree to which this potential is realized is largely determined by operating procedures. Specific elements of site design and operation during and following dredging activities will be discussed in turn as they relate to site efficiency and local impacts. However, design features and construction practices, beginning with site preparation, provide the physical and figurative foundation for the project. These features and practices, then, reflect the level of effort that has gone into the selection of Site FL-3.

The management plan begins in Section 2.0 with a discussion of site preparation and design. Site operational considerations during dredging are discussed in Section 3.0. Post-dredging site management is addressed in Section 4.0.

2.0 PRE-DREDGING SITE PREPARATION AND DESIGN FEATURES

2.1 Site Design

No attempt will be made here to address, in detail, all elements of site design. These are described elsewhere in the permit documentation. Rather, the present discussion will be limited to those aspects of site design which directly influence site construction and operation.

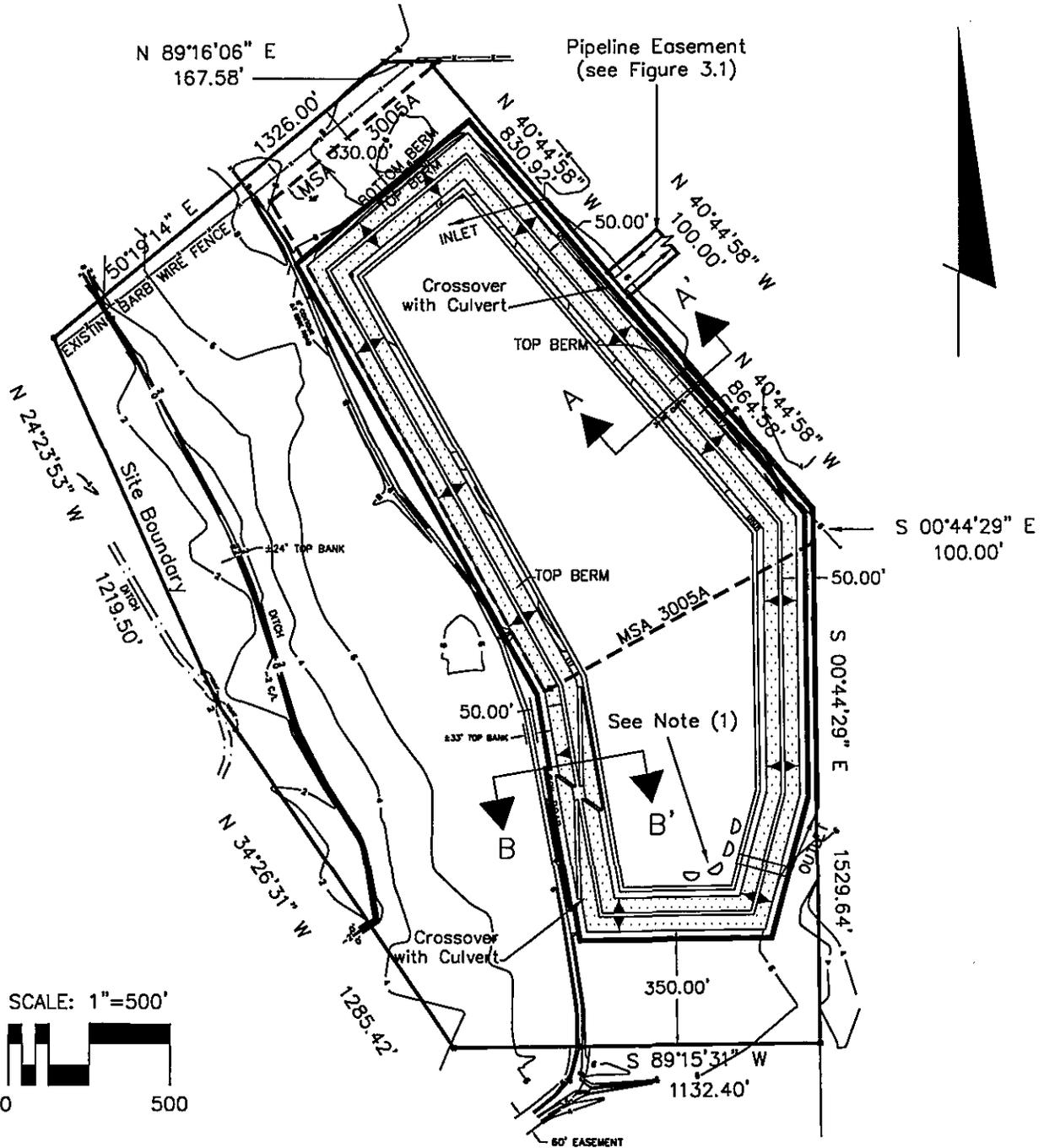
2.1.1 Containment Basin Configuration

The configuration of the FL-3 containment basin must satisfy two requirements. First, it must provide adequate capacity for the projected 50-year material storage requirements of Reach I. A comprehensive evaluation of dredging records and survey data indicates a relatively high dredging requirement for this portion of the ICWW (Attachment 1). A total in situ volume of 253,383 cubic yards (cy) of shoaling has been documented in this reach since the present 12-ft project depth was established in 1951. Over the same period the channel in this reach has been dredged three times, the latest in 1986. From early 1986 to mid-1987, an additional 25,000 cy of shoaling has been identified in areas not previously dredged. The projected 50-year storage requirement for Reach I — 756,630 cy — therefore represents the in situ volume of historic dredging plus the documented in situ volume of recent shoaling, multiplied by a bulking plus over-dredging factor of 2.15. The basin configuration presented in Figures 2.1 and 2.2 and discussed in the following paragraphs provides a capacity of 764,965 cy, thereby exceeding the projected 50-year storage requirement of Reach I.

Second, the FL-3 containment basin configuration must minimize the impacts of site construction and operation on adjacent development as well as environmentally sensitive on-site habitats. This is accomplished by locating the site in an undeveloped area within a pine plantation. Additional isolation is provided by on-site buffer areas surrounding the containment basin. As shown in Figure 2.1, the outside toe of the containment dike is set back 330 ft from the northern site boundary, 350 ft from the southern boundary, and from 550 to 900 ft from the western boundary. This ensures continued separation from future development. On the east, where wetlands will preclude future development, the dike is set back 50 ft from the site boundary. As specified, these buffers result in a containment basin footprint of 44.29 acres. The 1985 construction of a containment basin in the existing easement (MSA 3005A) resulted in the clearing of approximately 24.8 acres of planted pine. The expansion of the existing containment basin will require clearing an additional 24.2 acres

Notes:

- Weirs: Four 9ft. Diameter CM Half-Pipes With Removable Flash Boards Adjustable From Excavated Grade @ the Weirs (+2.2' NGVD) to 17.6' Above Excavated Grade @ Weirs (+19.8' NGVD) with Connecting Manifold. Weirs Must be Located at the Deepest Point of Excavated Basin, Not on 20-ft Excavation Setback.
- Containment Area:
 Within Outside Toe of Dike: 44.3 Acres
 Within Inside Toe of Dike: 30.5 Acres
 Capacity: 764,965 Cubic Yards
- Sections A-A', B-B', See Sheet 5 of 6.
- Elevation Datum: NGVD of 1929.
- Total Area of Site- 106.35 Acres. Of This, 57.35 Acres Outside Perimeter Ditch to Remain as Undisturbed Buffer.
- Perimeter Ditch/Service Road, See Sheet 5 of 6.



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Figure 2.1
 Site Plan, FL-3
 Dredged Material Management Area
 Flagler County, Florida

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of planted pine. Thus, site development will impact no areas of undisturbed native vegetation. All on-site wetlands are contained within the buffer area and thus will remain undisturbed (Mosura-Bliss, 1994; Figure 2.2).

To summarize, the total acreage of Site FL-3 is 106.35 acres. Of this, the containment basin (i. e., the footprint of the containment dike) comprises 44.29 acres. The excavation of a perimeter ditch and the construction of access roads surrounding the containment basin will impact an additional 4.71 acres. Thus, the fully developed containment facility will impact a total of 49.0 acres. The remaining 57.35 acres, or 54 percent of the total site area, will remain as undisturbed buffer. Management of natural resources within the buffer area during each phase of site operations is discussed in more detail in Section 4.5.

2.1.2 Site Capacity

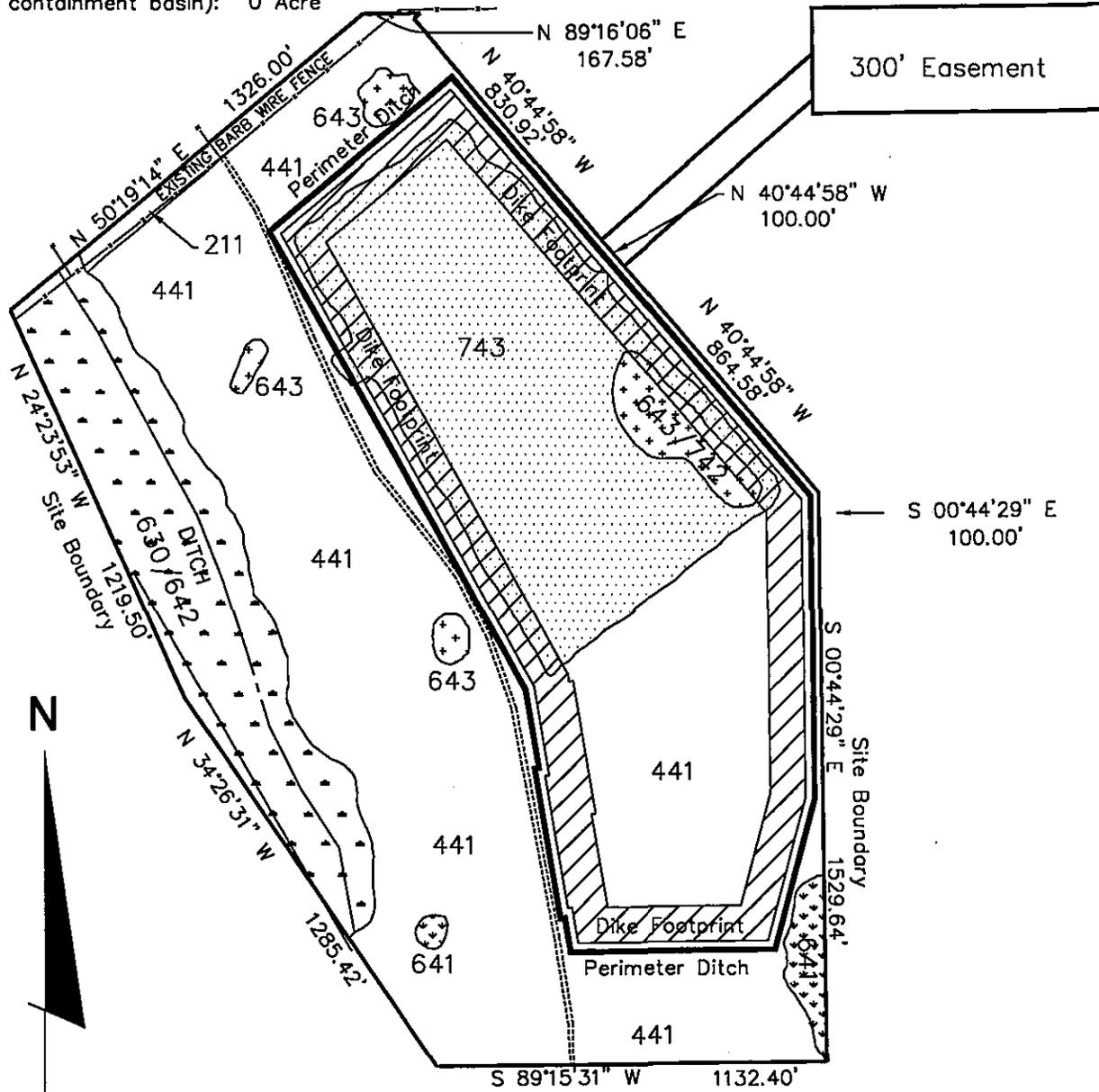
As stated in the previous section, Site FL-3 provides a material storage capacity of 764,965 cy. Obtaining this capacity within a containment area of 44.29 acres will require the construction of a containment dike to a crest elevation of +23.80 ft NGVD, or 15.0 ft above the existing mean site elevation of +8.80 ft NGVD (Figure 2.3). A conservative dike cross-sectional design, including side slopes of 1V : 3H and a dike crest width of 12 ft, will require 185,947 cy of material for construction. Ramps to provide equipment access to the interior of the containment basin for material dewatering and transfer will require an additional 2,887 cy of material. Excavating the basin interior to a mean elevation of +4.51 ft NGVD (4.29 ft below average existing site grade) will provide 188,834 cy of material for dike and ramp construction. Grading the basin interior to a slope of approximately 0.2 percent will provide drainage from the inlet point to the outlet structures. Excavation will be set back 20 ft from the inside toe of the dikes and will maintain the 1V : 3H side slope of the dikes. When the containment basin is filled to capacity, the surface of the deposition layer will be a minimum of 4.0 ft below the dike crest, comprising a 2.0 ft minimum of freeboard and 2.0 ft of ponding depth above the maximum deposition surface. The resulting capacity of the containment basin will be 764,965 cy. This represents approximately 101 percent of the projected 50-year material storage requirement for Reach I.

2.2 Site Preparation

Site preparation required for the FL-3 dredged material management area will consist of two phases. The first phase will include the clearing and grubbing of vegetation in the containment basin area and the fence line and the installation of security fencing. This phase will be completed as soon as practical following site

NOTES

1. Total Area of On-Site Wetlands: 15.9 acres (includes 1.8 acres classified as wet prairie/borrow area within existing containment basin)
2. 13.0 Acres of Wetland Forest Mixed/Saltwater Marsh (630/642) under Jurisdiction of Florida Department of Environmental Protection and U.S. Army Corps of Engineers (COE)
3. All Remaining Wetlands on Site under Jurisdiction of St. Johns River Water Management District and COE.
4. Total Area of On-Site Wetlands Impacted by Site Development (excluding wet prairie/borrow area within existing containment basin): 0 Acre

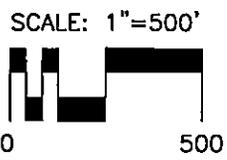


LEGEND --- VEGETATION COMMUNITIES
 Florida Land Use, Cover, and Forms System
 (Florida Department of Transportation, 1985)

211	Improved Pasture	1.5
441	Coniferous Plantation	63.7
630/642	Wetland Forest Mixed/Saltwater Marsh	13.0
641	Freshwater Marsh	1.1
643/742	Wet Prairie/Borrow Area	1.8
743	Spoil Area	23.0
814	Roads and Highways	1.3

Total 106.3 Acres

Source: WAR 1994

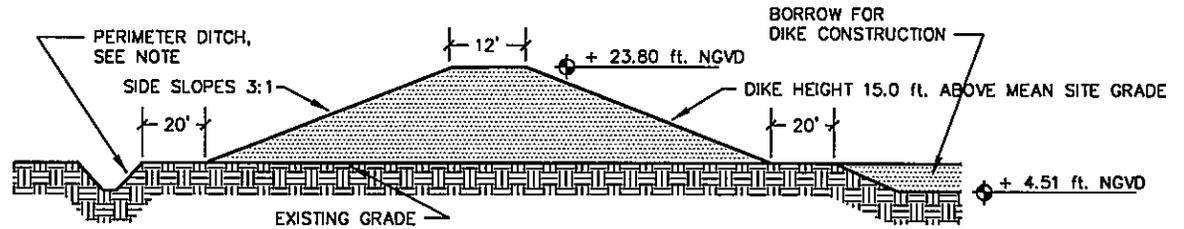


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Figure 2.2
 Vegetation and Land Use Map, FL-3
 Dredged Material Management Area
 Flagler County, Florida

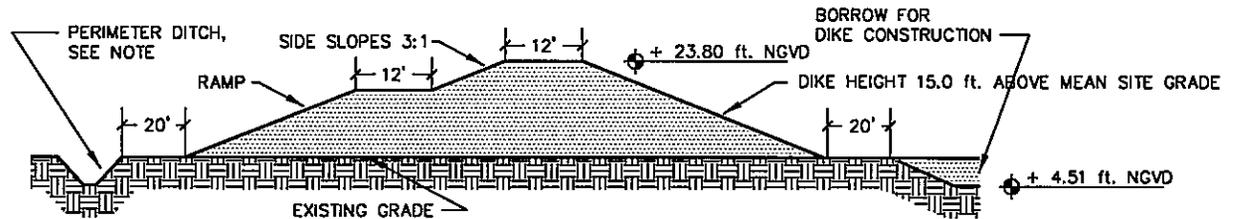
PROJECT	C-9312
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DATE	Feb., 1995

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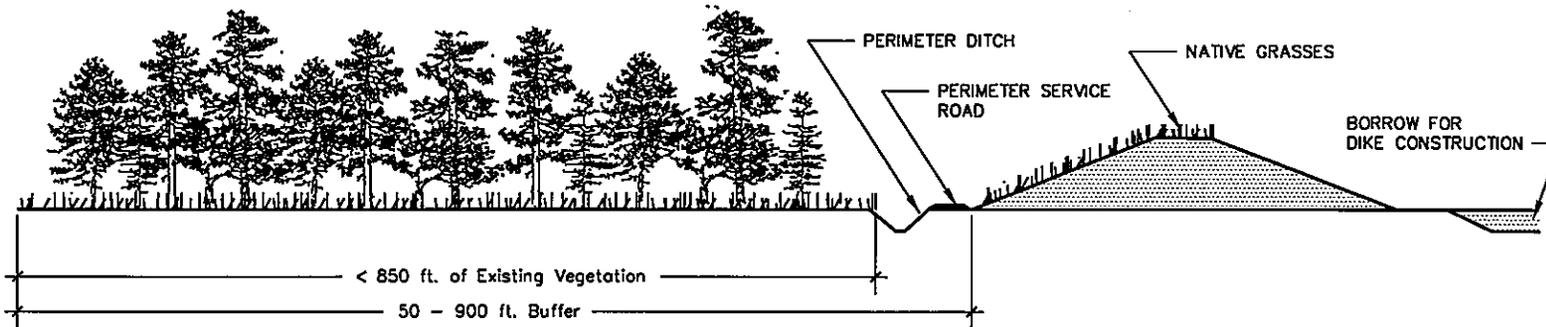


Section A-A'
N.T.S.

NOTE
 PERIMETER DITCH:
 SIDE SLOPE 1:2
 BOTTOM WIDTH 2 ft.
 MEAN INVERT ELEV. +4.5 ft. NGVD
 BOTTOM SLOPE AS REQUIRED FOR DRAINAGE



Section B-B'
N.T.S.



Dredged Material Management Area - Vegetation Plan
N.T.S.

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Figure 2.3
 Typical Dike and Ramp Sections, Vegetation Plan
 Site FL-3/MSA 3005A
 Flagler County, Florida

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acquisition. The second phase of site preparation will consist of containment basin construction and related earthmoving operations and the installation of outlet structures and other design features. This phase of site preparation will be subject to the scheduling and budget priorities of the Jacksonville District Corps of Engineers and therefore may not immediately follow completion of the first phase. However, a fence and operational security procedures will control access to the site before excavation, grading, and dike construction begins. In the remainder of this section, each element of site preparation is discussed in more detail.

2.2.1 Clearing and Grubbing

The first phase of site preparation begins with the required clearing and grubbing of vegetation. Historically, containment area construction has often been accomplished without any interior site preparation. This results from several reasons. First, clearing vegetation from the site interior adds significantly to the initial construction cost of the containment area. Second, Haliburton (1978) and Gallagher (1978) have established that a limited growth of herbaceous vegetation or native grasses can improve sedimentation by filtration. However, much of Site FL-3 — including all of the proposed containment basin footprint outside of the existing easement — contains woody vegetation (e.g., planted pine and shrubby undergrowth). If allowed to remain in place, such vegetation can constrict or channelize the flow through the containment basin, resulting in short-circuiting, reduced retention times, resuspension of sediment through increased flow velocities, and the deterioration of effluent quality. Moreover, a failure to clear existing vegetation will make the periodic removal of the dewatered dredged material much more difficult. Therefore, the containment area should be cleared and grubbed prior to construction. Notably, much of this area contains young but harvestable timber.

2.2.2 Excavation and Grading

The second phase of site preparation includes all earthmoving operations required to construct the containment dike and basin to the design geometry. Preliminary site design (Figures 2.1, 2.3) specifies that the 188,834 cy of material for initial dike construction will be obtained by excavating the containment basin interior to an average elevation of +4.51 ft NGVD, or 4.29 ft below the existing mean site grade of +8.80 ft NGVD. This will allow the excavation to be set back 20 ft from the interior toe of the dike. Excavation of the perimeter ditch (Section 2.3.6) will produce an additional 4,200 cy of material. Should some material excavated from the basin interior be unsuitable for dike construction, the ditch material will make up the deficit. Alternatively, the material excavated from the ditch can contribute to the dike requirement, thereby reducing the required depth of excavation

in the basin interior. The final excavation depth and distribution of material will be determined as part of the final design phase.

Data by which to characterize soil conditions on site are very limited. The Flagler County soil survey (Soil Conservation Service, 1993), completed before the construction and use of the containment basin, identifies a variety of poorly-drained soils on site, including Wabasso, Eau Gallie, and Myakka fine sands; and Hicoria, Riviera, and Gator depressional fine sands. Very poorly-drained Turnbull and Pellicer soils occur along the western edge of the site within the tidal wetland. After site acquisition more specific geotechnical information will be obtained by subsurface survey before final design and construction of the containment basin.

The interior of the containment basin must also be graded following excavation. Construction efficiency may initially dictate taking dike material from a perimeter trench inside the containment dike. However, this trench must be eliminated and the site interior regraded before initiating dredging operations to avoid flow channelization and unacceptable effluent quality. Irregular basin topography will produce nonuniform flow patterns and deposition geometry which, in turn, will result in the ponding of surface water. Ponding will inhibit drying of the deposition layer and make initial attempts at surface trenching more difficult. For these reasons, a uniform grade with an adequate slope (about 0.2 percent) must be provided from inlet to weir as part of the initial construction of the facility. Thus, although the mean excavated grade of the basin interior is +4.51 ft NGVD, the floor of the basin will slope uniformly from an elevation of approximately +6.8 ft NGVD near the inlet to approximately +2.2 ft NGVD at the weirs. Differential settling of varying grain size fractions (i.e., rapid precipitation of the coarser fractions nearer the inlet with increasingly finer sediments deposited nearer the outlet) will quickly establish a deposition surface sloping downward from inlet to weir once dredging operations begin.

2.3 Additional Design Features

2.3.1 Inlet

The number and locations of the dredge slurry outfalls, or pipeline inlets, are the primary factors which govern the pattern of deposition within the containment basin. The disadvantage of a single, fixed inlet is a characteristic mounding of coarse material in the vicinity of the inlet which, if not mechanically redistributed, will reduce the retention area. However, the anticipated infrequent requirement for maintenance dredging in this portion of the ICWW — likely to be no more than once every 5 to 10 years — cannot justify the cost of a fixed, multiple inlet manifold system for the FL-3 containment basin. More appropriate is the use of a single inlet that

can be repositioned between successive dredging operations or within a single dredging event. The single inlet should also be fitted with a flow-splitter or a spoon to break the momentum of the jet and to distribute the slurry. However, regrading the dewatered sediment prior to each succeeding dredging operation will still be necessary. Moreover, the efficient use of the containment area and maximum solids retention performance will also require that the initial uniform slope (about 0.2 percent) from inlet to weir be reestablished between each dredging operation.

Preliminary analysis of the dredged material settling behavior within the FL-3 dredged material management area (Section 2.3.3) indicates that the maximum available distance between inlet and weir is adequate to meet solids retention requirements. Movement of the inlet to achieve a more even distribution should not be allowed to result in a significant reduction in the separation distance between inlet and outlet without the implementation of additional precautions to ensure water quality standards are met. These may include increasing the ponding depth or the use of floating baffles or turbidity screens surrounding the weirs.

2.3.2 Weirs

The outlet control structures within the containment basin consist of a system of weirs whose primary function is to control the release of the ponded water. Adjustment of weir height controls ponding depth within the containment basin which in turn controls basin retention time. Several additional aspects of weir design control the flow of water inside the basin and thereby strongly influence the efficiency of solids retention and the quality of effluent released from the site. These include the type of weir employed, the length of the weir crest, and the location of the weirs within the containment area. Each of these design aspects and its effect on basin efficiency is discussed in the following paragraphs.

A rectangular, sharp-crested weir will be used in the FL-3 containment basin. This type of weir represents a compromise between considerations of performance, adjustability, maintenance, and economy. A straight, rectangular weir passes flow over its crest normal to the weir crest axis. The term *sharp-crested* indicates that the thickness (T) of the weir crest is less than the depth of flow (h) over the weir — typically $h/T > 1.5$. The depth of withdrawal is the depth at which gravity forces on suspended sediment particles exceed the inertial forces associated with flow over the weir. It therefore represents the depth of the surface layer of ponded water which is drawn over the weir and released from the containment basin. Maintaining the depth of withdrawal less than the ponding depth reduces the possibility of resuspending sediment which has settled out of the water column. Moreover, since the concentration of suspended sediment increases with depth, minimizing

the depth of the withdrawal layer maximizes the retention of suspended solids. Specific expected performance characteristics of the weir system are discussed later in this section.

The minimum required weir crest length for the FL-3 containment facility was determined using the Selective Withdrawal Model developed by the U.S. Army Engineer Waterways Experiment Station (WES). Project planning guidelines used by the Jacksonville District Corps of Engineers indicate that an 18-inch O.D. dredge will likely be used for future channel maintenance in Reach I of Flagler County. However, to ensure a conservative containment basin design, determination of weir crest length was based on the use of a 24-inch O.D. dredge (discharge velocity of 16 ft/sec, a volumetric discharge of 6,430 cy/hr, and a 20/80 solids/liquid slurry mix). Results of the Selective Withdrawal Model indicate that for a 24-inch O.D. dredge a weir crest length of 36 ft produces a depth of withdrawal of 2.11 ft. As discussed in the next section, this is significantly less than the recommended minimum ponding depth at the weirs (3.3 ft). Moreover, the use of an 18-inch O.D. dredge would produce a withdrawal depth substantially less than that produced by a 24-inch O.D. dredge for a given weir crest length. The 36-ft weir crest length will be provided by four corrugated metal half-pipes, each with a 9-ft weir section. The four half-pipes will be connected by a common manifold which provides drainage from the containment basin via a single pipe under the dike.

The height of each weir crest is adjustable by means of removable flashboards. The adjustment range of 17.6 ft extends from the excavated grade elevation at the weirs (+2.2 ft NGVD) to a maximum elevation of +19.8 ft NGVD. The minimum elevation of the weirs allows for the removal of stormwater prior to the site's initial use, while the maximum elevation provides 2.0 ft of freeboard above the maximum ponded water elevation. The flashboards are typically full dimension, undressed 6 x 6 stock to provide rigidity against hydrostatic pressure. The use of 6 x 6-inch flashboards results in a minimum weir crest adjustment increment of six inches, a dimension which approximates the projected depth of flow over the weir crest (4.8 inches) at the point the weir discharge approximately equals the liquid inflow to the containment basin. This design provides adequate adjustment resolution to maximize weir performance and effluent quality throughout the dredging operation and the subsequent release of the ponded water.

The final weir design parameter considered is the location of the weirs within the containment basin. First, as shown in Figure 2.1, the weir crests must be located a minimum of 100 ft from the inside toe of the dike. This is necessary for two reasons. A 100-ft separation between the weir crests and the dike ensures that the weirs are located on the floor of the excavated basin, not on the 20-ft excavation setback (Section 2.2.2). The weirs must be placed at the deepest point of the basin to allow complete removal of stormwater before the first use of

the containment basin and to allow the removal of all ponded water after the first dredging operation. The 100-ft separation also reduces the likelihood of flow constriction, a condition which can cause sediment resuspension or dike instability.

The second consideration requires that the weirs be located so that their distance from the dredge pipe inlet is maximized and the return distance to the receiving waters is minimized. This provides adequate retention time within the basin to ensure that the effluent released from the site meets established standards, and promotes the efficient transport of effluent from the containment basin using gravity flow to the greatest extent possible. As shown in Figure 2.1, the final position of the weirs — in the southeast corner of the basin, diagonally opposite the discharge pipe — represents a compromise between these two criteria. This location provides approximately 2,300 ft of separation between the inlet and the weirs. Hydraulic analysis (Section 2.3.3) indicates this distance results in adequate retention time and facilitates the return of the decanted effluent to the Matanzas River.

Analysis of weir performance based on nomograms developed at the Waterways Experiment Station under the Dredged Material Research Program (Walski and Schroeder, 1978) indicates that the weir design described above will produce an effluent suspended sediment concentration of less than 0.63 g/l. Relating suspended solids concentration to Florida effluent quality standards — based on the turbidity of the effluent relative to the ambient turbidity of the receiving waters — is problematic. The level of turbidity — expressed in terms of optical clarity — produced by a specific suspended sediment concentration is highly dependent on the characteristics of the suspended material. However, WES guidelines (Palermo et al., 1978; Walski and Schroeder, 1978) indicate that this value falls well below typical standards for maximum allowable effluent turbidity discharged into estuarine waters.

2.3.3 Ponding Depth and Basin Performance

Ponding depth refers to the height of the water column (with its suspended sediment load) maintained above the depositional surface during dredging operations. It is regulated by the height of the weir crest and, to a lesser extent, by dredge plant output. Because of the initial slope of the basin interior (about 0.2 percent) the ponding depth will vary within the basin. The ponded water will be most shallow nearest the inlet and increase to its maximum depth nearest the weirs. Conceptually, ponding depth is typically discussed in terms of its mean value over the entire basin interior. However, as a practical operational criterion, ponding depth may be more usefully specified at the weirs where it can be measured directly. For the FL-8 containment basin, the measured ponding depth at the weirs will exceed the mean ponding depth for the entire basin by 2.3 ft, based on an interior

slope of 0.2 percent and an inlet-to-weir distance of 2300 ft. Throughout the remainder of this report, ponding depth is expressed in terms of both its mean value and its measured value at the weirs for an assumed slope of 0.2 percent.

Ponding should be maintained at the greatest possible depth during dredging operations. Increased ponding depths produce increased retention times and decreased flow velocities through the containment basin and therefore improve solids retention and effluent quality. The limiting consideration for increased ponding depth is the amount of hydrostatic pressure the dike can withstand without loss of structural integrity.

An analysis of containment basin efficiency was performed to determine the minimum operational ponding depth and basin retention time needed for adequate solids retention performance and acceptable effluent quality. The required retention time is, in turn, dependent on the physical characteristics of the sediment to be dredged. Since the fine-grained component of the sediment requires the longest period of time to settle out of the water column, the fine fraction of the dredged material determines the required basin retention time and, in turn, the required ponding depth.

Data characterizing the finest sediment anticipated in Reach I is contained in the results of a series of core borings performed by the Jacksonville District Corps of Engineers prior to the most recent channel maintenance operation (COE, 1986). In September, 1985, borings were taken at 11 locations in Cuts F-2 through F-5. With one exception, the borings identified channel sediments to be predominantly fine sand with minor components of silt and clay (i.e., less than 7 percent). However, one boring — CB-IW85M-17, located at Cut F-5, station 4+00, directly east of Site FL-3 — documented channel sediment in this location as fine gray clayey silt with organics (Figure 2.4). Over 72 percent of the sample obtained from this boring consisted of silt-sized particles, that is, particles with a grain diameter less than 0.074 mm. Suspended sediment settling tests performed on this material yielded a mean zone settling velocity of 0.81 cm/min. This settling velocity was then used to determine the retention time needed to provide adequate sedimentation within the containment basin.

Retention time relates directly to the depth of ponded water maintained within the basin. The preliminary design of the containment basin provides a minimum 2.0 ft mean ponding depth above the deposition surface. Analysis of the hydraulic characteristics of the proposed containment basin indicates that a 2.0 ft mean ponding depth (4.3 ft at the weirs) will provide a maximum retention time of 19.16 hours during which the flow over the weirs balances the liquid discharge of the dredge. Again, to ensure a conservative design, the analysis is based on the design discharge of a 24-inch dredge. In comparison, the time required for the sediment to settle out of

THOMPSON ENGINEERING TESTING, INC.
SIEVE AND HYDRONETER ANALYSIS
ASTM D422

PROJECT : JACKSONVILLE DISTRICT
CLIENT : U.S. ARMY CORPS ENGINEERS
BORING NO. CB-1485-17
SAMPLE NO. 2

OUR JOB NO.: F85004
ANALYSIS DATE : 8/29/85
SAMPLE WT. 36.69 GMS.
DEPTH 2.0-4.0 FT.

SIEVE ANALYSIS

SIEVE NUMBER	SIEVE DIA. (MM)	CUMULATIVE WEIGHT RETAINED	PERCENT RETAINED	PERCENT PASSING
4	4.75	0	0	100
10	2	0	0	100
20	.85	0	0	100
40	.425	.1	.3	99.7
60	.25	.2	.5	99.5
100	.15	.8	2.2	97.8
200	.075	10	27.3	72.7

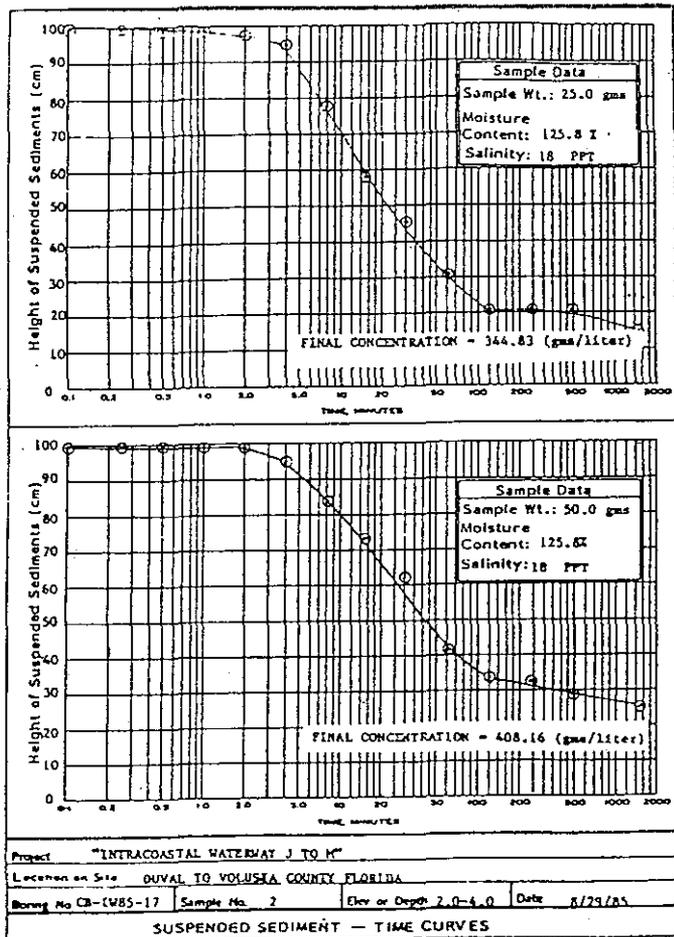
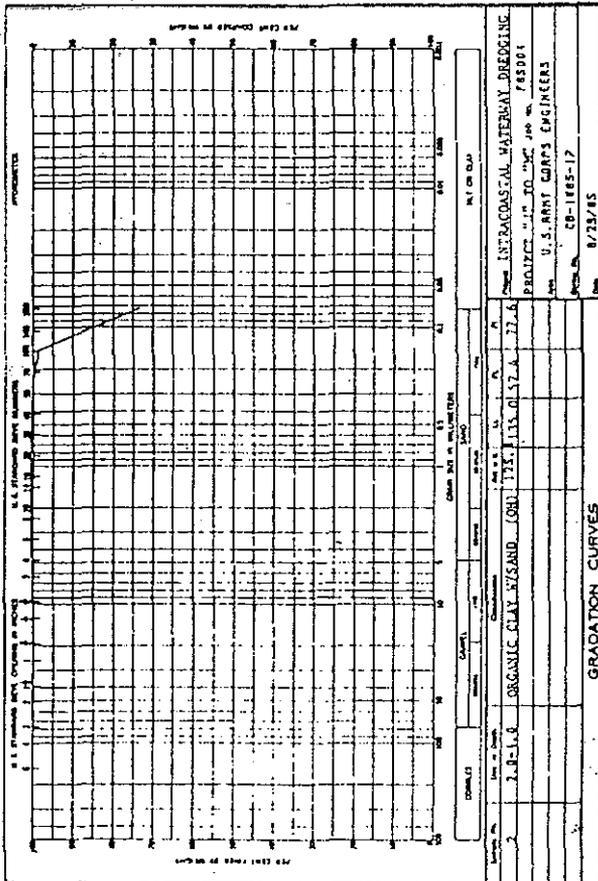
GRAVEL OR SHELL, PASSING 3/8 IN. AND RETAINED ON NO. 4 SIEVE -----0%

SAND, PASSING NO. 4 SIEVE AND RETAINED ON NO. 200 SIEVE -----27.3%

---COARSE SAND, PASSING NO. 4 SIEVE AND RETAINED ON NO. 10 SIEVE -----0%

---MEDIUM SAND, PASSING NO. 10 SIEVE AND RETAINED ON NO. 40 SIEVE -----.3%

---FINE SAND, PASSING NO. 40 SIEVE AND RETAINED ON NO. 200 SIEVE -----27%



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Figure 2.4 Sediment Data, Reach II, Intracoastal Waterway, Flagler County, Florida (from COE, 1986).

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the 2.0 ft mean ponding depth (4.3 ft at the weirs) is approximately 75 minutes, based on the measured zone settling velocity of the finest material found in core boring CB-IW85M-17 (Figure 2.4). However, research (Shields, Thackston and Schroeder, 1987) by the WES under the DMRP indicates that the measured settling time should be multiplied by a correction factor of 2.25 to account for field conditions. This yields an adjusted required settling time of 169 minutes, or 2.81 hours. Therefore, the 2.0-ft minimum ponding depth (4.3 ft at the weirs) will provide a maximum retention time that exceeds the required retention time by a factor of 6.8. However, to ensure adequate basin performance under all foreseeable conditions, the operational ponding depth recommended for the FL-3 containment basin is 4.0 ft. A ponding depth of 4.0 ft (6.3 ft at the weirs) provides a maximum retention time of 38.3 hours, exceeding the adjusted settling time required to maintain adequate sedimentation and effluent quality by a factor of 13.6.

However, care must be taken not to increase ponding depth above the minimum too quickly. This may lead to dike saturation, piping, slumping, and other conditions of dike instability. Operational experience has demonstrated that if ponding depth is increased at a sufficiently slow rate, the permeability of the dike is reduced as fine sediments are filtered and trapped by percolation. Restricting the operational ponding depth to 4.0 ft (6.3 ft at the weirs) should minimize the occurrence of unstable dike conditions and still provide a sufficient safety factor to ensure efficient solids removal.

In addition to the recommendation of a ponding depth which exceeds that required for adequate basin performance, several additional considerations emphasize the conservative design of the FL-3 containment basin. DMRP research indicates that under field conditions the actual depth of withdrawal may be significantly less than that predicted by the WES Selective Withdrawal Model referenced above. Therefore, the use of the WES Selective Withdrawal Model provides a conservative containment basin design. Moreover, the design dredge discharge rate of 6,430 cy/hr is based on a minimum distance from the dredge plant to the material management site. Increasing pumping distance results in increased line losses in the dredge pipe, thereby reducing output. This, in turn, produces an increase in containment basin retention time. The maximum pumping distance for Site FL-3 to serve all of Reach I is 3.37 miles. Thus, actual dredging operations may lead to significant increases in basin retention time and a further decrease in the turbidity of the effluent released from the site. However, because the design of Site FL-3 is based on the maximum dredge plant pumping rate, the site does not require reduced dredge output for compliance with state water quality standards.

2.3.4 Interior Earthworks

Compartmentalizing the FL-3 containment basin with parallel containment basins or spur dikes is neither required nor desirable. The projected infrequency of required dredging — no more than once every 5 to 10 years based on analysis of historic dredging records — does not warrant the use of parallel containment basins. Similarly, several considerations conspire against modifying the basin with spur dikes. First, the increased retention times which may result from their use do not offset the loss of capacity within the containment basin. Second, although they are intended to improve the efficiency of fine particle retention, spur dikes are often counter-productive because they constrict flow, leading to increased velocities and the possibility of sediment resuspension. For this site, the increased irregularity of the containment basin geometry would result in more dead zones, a reduced effective retention area, and less uniform deposition. Finally, a preliminary analysis of the efficiency of the FL-3 containment basin indicates that retention times adequate to allow precipitation of the finest category of sediment likely to be encountered are achievable without recourse to spur dikes.

2.3.5 Ramps

An important goal of the Long-Range Dredged Material Management Program for Florida's ICWW is to manage each dredged material management site as a permanent operating facility. Therefore, ramps to provide heavy equipment access to the containment basin interior have been integrated into the design of the containment dike (Figures 2.1 and 2.3). This was done to provide for the efficient removal of the dewatered dredged material as prevailing restrictions and market conditions dictate. Thus, the site is designed to function more as a material processing and rehandling station than as a permanent storage facility. Although the design capacity of the FL-3 containment basin meets the projected 50-year disposal requirement for Reach I, its capacity can be effectively expanded further by removing the dewatered material off site. In this manner, the useful service life of the site may be extended indefinitely. In addition to providing for material removal, the ramps allow easy entry for equipment to be utilized in the dewatering process. This latter process is discussed in Section 4.1.

The ramps will be positioned on the western side of the containment dike, accessible from Old Kings Road via the existing graded access road contained in the site's ingress-egress easement (Figure 2.1). The ramps will obliquely traverse the containment dike and will maintain the same 1V : 3H side slope as the dike. The road surface of the ramps will be 12 ft wide with an ascending/descending grade of five percent.

2.3.6 Perimeter Ditches

Saltwater migration from the containment basin interior into the on-site shallow aquifer is not expected to be a significant problem because of the relatively infrequent periods of short duration in which saltwater will be present on site and because of additional precautions incorporated in the facility design and operation. As discussed elsewhere in this report, ponded saltwater from the ICWW (Matanzas River) will be present within the containment area only during actual dredging operations and for a short period immediately following dredging to allow the clarified effluent to be released back to the ICWW. Such periods are expected to last approximately 6 to 10 weeks, no more frequently than once every 5 to 10 years. A ditch system will be constructed around the outer perimeter of the dike to ensure that the horizontal migration of saltwater on site is contained at or near the diked area. These ditches will completely surround the containment area, thereby inhibiting the horizontal migration of water. Notably, Site FL-3 is bounded on the east and west by salt or brackish wetlands that will further isolate possible impacts to the local shallow aquifer.

The perimeter ditches are to be constructed at a 20-ft setback from the outside toe of the containment dike with a 1V : 2H side slope and a bottom width of 2.0 ft. To effectively intercept saltwater migration during the initial dredging operation, the ditch invert must be at or below the excavated interior grade of the containment basin. Therefore, the mean invert elevation of the ditch should be +4.5 ft NGVD, or approximately 2.5 ft below the route's mean preconstruction elevation of +7.0 ft NGVD. The preceding parameters yield a mean ditch top width of 12 ft. As needed for drainage, the ditch will slope downward from the dike's northwest corner near the inlet to its southeast corner near the weirs. The ditch will connect to existing ditches within the pipeline easement and thereby drain northeastward to the Matanzas Flats marsh system adjacent to the ICWW.

The ditch will also serve to control the flow of stormwater runoff from portions of the site outside of the containment basin. Preliminary analysis indicates that the perimeter ditch will provide adequate conveyance for the 25-year storm runoff from the exterior face of the containment dike, the perimeter road, and portions of the buffer area. Control and conveyance of stormwater runoff from within the containment basin will be discussed in Section 4.2.1.

2.3.7 Dike Erosion and Vegetation

The stability of the containment dike must also be ensured against erosion from rainfall runoff and wind. Immediately following dike construction, native grasses will be planted on the exterior dike slopes and crest

(Figure 2.3). While they quickly form soil binding mats, these grasses do not root so deeply as to weaken the dike. An acceptable turf cover may be planted by approved techniques of sprigging, sodding, or seeding (broadcast or hydroseeding), or a combination of these methods, as determined by the contractor. Contract responsibilities shall include the maintenance of the vegetation until adequately established, as certified by the COE. Another important benefit of vegetating the dike in this manner will be the site's improved appearance.

2.3.8 Site Security

Site security will be provided for the project area to restrict access, prevent vandalism and damage to site facilities, and to ensure public safety. As stated in Section 2.2, permanent security fencing will be erected around the site perimeter during the initial phase of site construction. Locked gates will control site access. The FIND will hold the gate keys and distribute them on an as-needed basis to agents of the COE, dredging contractors, and other authorized parties.

In addition, on-site operators should be present at all times during active dredging operations and decanting procedures following a dredging event, as well as at any time when significant ponded water remains within the containment basin. This is to ensure proper operation, adjustment, and maintenance of the weirs and to prevent premature release of effluent through unauthorized weir operation. Active on-site operations are discussed in more detail in Section 3.0.

2.4 Groundwater Monitoring

A comprehensive groundwater monitoring program will be a key element of site management. However, as discussed in Section 2.2.2, data characterizing soil and groundwater conditions on site are both limited and qualitative. Nevertheless, containment basin construction will likely require excavation to an elevation which, at times, may be below the seasonal high water table in soil conditions conducive to groundwater flow. Material dredged from the ICWW will be discharged into the FL-3 containment basin as a slurry consisting of approximately 20 percent marine sediments and 80 percent saline water. During periods in which saline water is ponded within the containment basin, hydrostatic forces acting on the impounded mixture could potentially cause the infiltration of saline water from the basin into the groundwater. However, two factors limit the off-site movement of saline water. First, a system of perimeter ditches (discussed in Section 2.3.6) surrounding the containment basin will interdict outward movement of water from the basin. Second, ponded saline water will

be present in the basin for relatively short periods (on the order of 6 to 10 weeks) no more than once every 5 to 10 years. Thus, the risk of saline water infiltration to off-site groundwater is considered minimal.

Notwithstanding the above, an on-site groundwater monitoring program will be implemented to provide a means of early detection of any changes in local groundwater chemistry due to site operations. The program will begin before construction of site facilities and remain in place throughout the life of the site. The groundwater monitoring activities to be initiated before site construction are discussed below.

The implementation of the groundwater monitoring program requires the installation of shallow test wells before construction of site facilities. Initially, two wells will be sunk within the buffer area, one on each the north and south sides of the containment basin. As noted in Section 2.3.6, Site FL-3 is bounded on the east and west by salt or brackish wetlands and no wells are required in these areas. However, more wells may be sunk if it is determined that increased monitoring capability is required.

Existing on-site groundwater conditions will be documented following the installation of the test wells. The primary purpose of this effort is to document preconstruction groundwater chloride concentrations. Expansion of the monitoring program to include additional groundwater components will be contingent upon future permitting requirements. This information will be used to establish a baseline characterization of groundwater conditions prior to site development. Monitoring activities to be implemented during dredging operations and between dredging events are discussed in Sections 3.5 and 4.6.

Though little change in groundwater conditions is anticipated prior to the first dredging event, groundwater monitoring should continue on a regular schedule. It is recommended that samples be taken monthly for the first year after the wells are installed and quarterly thereafter until the first use of the site as a containment facility.

In addition to documenting site preconstruction baseline conditions, results of the preconstruction monitoring activities will be used to identify changes in groundwater elevation due to either site development or changes in off-site groundwater demand.

2.5 Migratory Bird Protection

The Jacksonville District Corps of Engineers district-wide migratory bird protection policy (COE, 1993) will be followed to ensure that operation and construction of the dredged material disposal area will not adversely impact migratory birds. The purpose of the migratory bird protection policy is to "provide protection to nesting migratory bird species that commonly use the dredged material disposal sites within the Jacksonville District while facilitating disposal of dredged material to meet the Federal standard for navigation channel and harbor maintenance as authorized by Congress" (pg. 1).

Issues related to migratory bird protection will be addressed during all phases of site operation. Specific actions taken to protect migratory birds during pre-dredging site preparation are identified below.

Should construction activities at Site FL-3 take place during the migratory bird nesting season (April 1 through September 1), the site protection plan presented in Appendix I of the Migratory Bird Policy (COE, 1993) will be implemented. This plan provides for education of contractor personnel, daily monitoring for nesting activity, steps to deter nesting in the construction area, avoidance of nests that may be present and, if necessary to protect nesting birds, cessation of construction activities. Alternatives that may be considered to prevent impacts to nesting birds include creation of undesirable habitat (e.g., flagging construction area, placement of ground cover, seeding or sodding exposed areas), dissuasion through noise or activity, or creation of alternative nesting sites. A final alternative, incidental take, is undesirable and should not be considered unless an emergency situation exists.

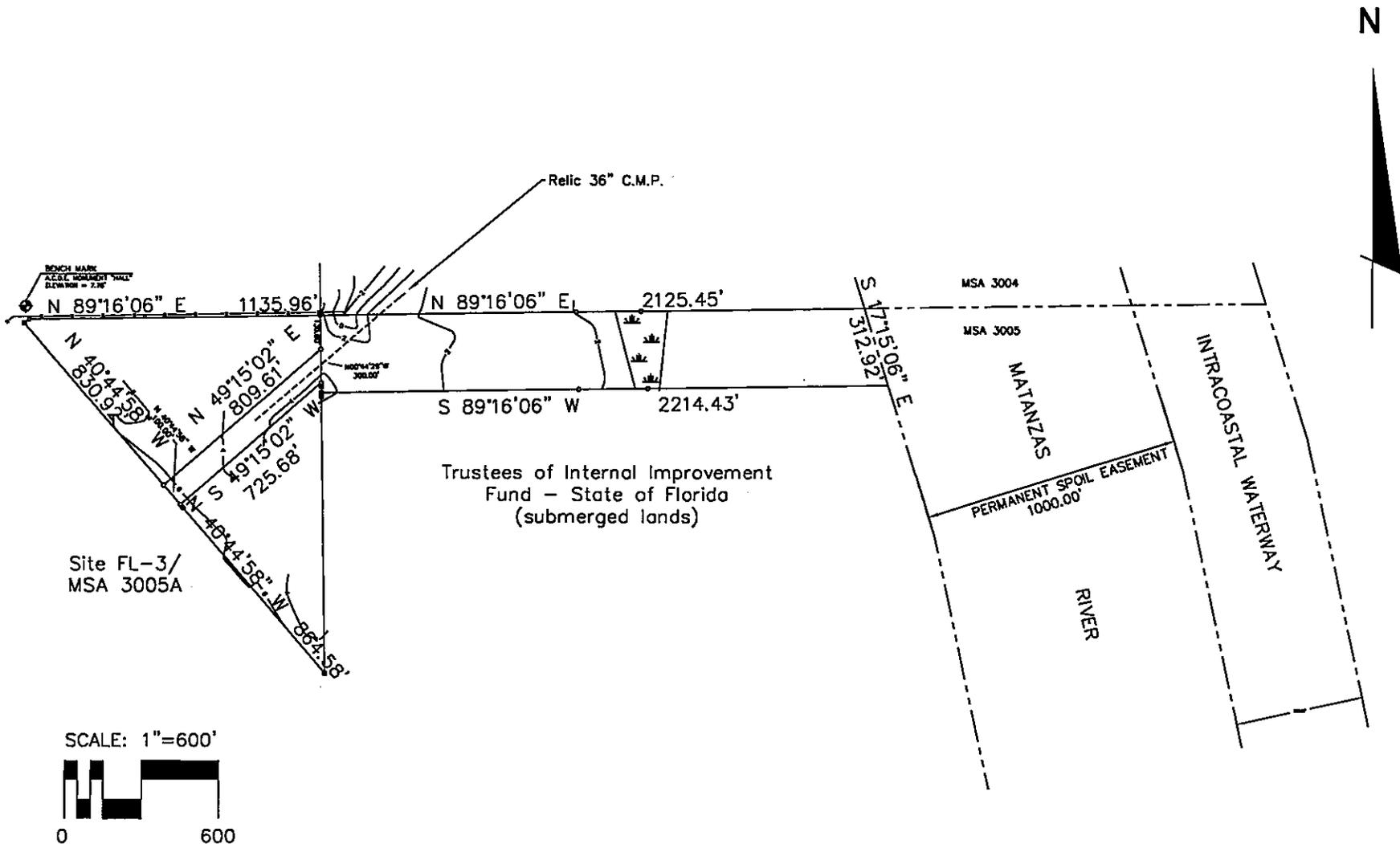
3.0 OPERATIONAL CONSIDERATIONS DURING DREDGING

The primary objectives of site management during dredging operations are (1) to maintain acceptable effluent quality during the decanting process, (2) to maximize the dewatering rate of the deposited material by controlling the pattern of deposition, and (3) to minimize the impact of site operations on adjacent areas. To this end, five elements of site management are discussed. The first addresses placement and handling of pipelines to and from the containment basin. The second examines the operation and monitoring of the dredged slurry inlets to the containment basin. Here, site operational guidelines and procedures are intended to promote the efficient use of the containment basin and to help meet effluent water quality standards. The third site management consideration addressed, and the one most critical for determining the quality of effluent released from the site, is weir operation. Fourth, a monitoring program is presented to ensure that the operation of the containment area does not degrade the shallow aquifer groundwater in the immediate vicinity of the dredged material management site. Finally, measures to ensure compliance with the Jacksonville District's Migratory Bird Policy are discussed.

3.1 Pipeline Placement and Retrieval

Each dredging operation over the design life of Site FL-3 will require placing and retrieving both supply and return pipelines. The route to be used for this purpose, shown in Figure 3.1, lies within a dedicated easement extending 0.75 miles from the westerly right-of-way line of the ICWW to the eastern boundary of the site near its northeast corner. The easement crosses both unvegetated salt and mud flats and vegetated fresh- and saltwater and brackish water marsh. In all areas the pipelines will be placed to minimize impacts to wetland vegetation. Within the site boundary, the dredge discharge pipeline will enter the containment basin in its northwest corner by passing over the dike crest (Figure 2.1). The return pipeline will connect to the weir-manifold system near the southeastern corner of the containment dike and return to the MHW shoreline of the Matanzas River (ICWW) by the same route described above.

The pipelines will be placed immediately before dredging begins and will remain in place until dredging and dewatering operations are complete. The dredge discharge pipeline will remain in place only during active dredging operations. The return pipeline will remain in place only until all ponded water is removed from the containment basin. The time required to complete the dredging phase of operations will depend on the quantity and distribution of the material to be dredged. As discussed previously, a 10-year dredging cycle is likely to produce a bulked volume of approximately 150,000 cy of material. This volume corresponds to an in situ volume



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Figure 3.1
 Location of FL-3 Pipeline Easement
 Dredged Material Management Area
 Flagler County, Florida

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of approximately 75,000 cy. Dredging this relatively small volume of material and transporting it to the containment basin — combined with reasonable delays associated with dredging projects of this complexity — yields an estimated three to five weeks needed to complete each dredging operation.

Immediately upon completion of dredging, the dredge discharge pipeline will be removed. However, the return water pipeline will remain in place to decant all ponded water and any water released by initial trenching procedures (Section 4.1). After completion of this procedure — projected to require an additional three to five weeks beyond the completion of dredging — the return water pipeline will also be removed. Ponded stormwater expected to collect in the containment area will be subsequently removed via the weir system so that any suspended sediment will be retained in the containment basin. However, unlike the clarified effluent removed during dredging operations, stormwater will be routed to the perimeter ditch. From the perimeter ditch the stormwater will drain off site. Runoff removal is discussed further in Section 4.2.1.

3.2 Inlet Operation

The operation of the inlet pipe will be primarily determined by the quality of the sediment to be dredged. As discussed in Section 2.3.3, limited available data indicate that the shoal sediments to be dredged in Reach I may contain up to 76 percent silt-sized particles. However, sediment of this type was identified only at a single boring location. Nine additional borings taken in Reach I at the same time (COE, 1986), as well as a single sample taken in 1993 (Schropp and Taylor, 1993), yielded sediment characterized as fine sand with minor components of silt and clay (i.e., less than seven percent). More specific data characterizing channel sediment will be obtained prior to future dredging operations. These data will include, at a minimum, core boring logs and a qualitative categorization of each strata of sediment; laboratory data, including sediment size distribution curves and/or Atterberg limits; and suspended sediment settling-time curves from each boring location.

Subject to this event-specific information which characterizes the sediment to be dredged, the following strategy of inlet operation is recommended. As discussed, it is based on the sediment characteristics common to this region, comprising primarily fine sand with components of silts and clays. This strategy makes no attempt to segregate material grain size fractions by manipulation of the inlet. Some segregation will occur naturally as a result of differential settling. The coarsest fraction of the material will settle out of suspension very rapidly and form a mound near the inlet. Successively finer fractions, characterized by lower settling velocities, will be deposited closer to the outlet weirs. The finest fraction of sediment deposited nearest the weirs may require specialized dewatering procedures to achieve rapid drying.

The inlet pipeline will be repositioned during dredging operations to minimize the mounding of coarse sediment and to distribute the deposited material more uniformly. This will require extending the pipeline and resting each extension on the sediment mound formed at the previous position. A minimum distance of 100 ft must be maintained between the inlet and the inside toe of the dike to preclude erosion or undercutting of the interior dike slope. The resulting deposition pattern will maintain a consistent slope from inlet to weir, minimize dead zones and channelization, and reduce the need to grade the deposited material to reestablish the desired 0.2 percent slope between successive dredging operations.

3.2.1 Monitoring Related to Inlet Operation

During active dredging operations, several monitoring procedures related to inlet operations will be required. Ponding depth, as previously mentioned, is a critical parameter for best containment area performance. By increasing retention time, an increase in the ponding depth improves the solids retention performance of the basin and thereby the quality of the effluent released over the weirs. However, unbalanced hydrostatic forces resulting from too great a ponding depth under saturated foundation conditions can lead to slope instability, slumping, and the potential for dike failure. Obviously, the latter situation must be avoided. Therefore, ponding depth should be increased above the 2.0-ft minimum mean depth only under close monitoring by visual inspection of dike integrity. (As discussed in Section 2.3.3, a 2.0-ft mean ponding depth corresponds to approximately 4.3 ft at the weirs as a result of the initial slope of the basin interior.) Indications of impending instability include evidence of seepage related to piping and foundation saturation at the outer dike toe and small-scale slumping. If no effluent is released at the weirs, the output of an 18-inch dredge (i.e., 3,560 cy/hr slurry at a 20/80 solids/liquid mix, or 2,848 cy/hr liquid) will produce an increase in ponding depth of about 0.7 in./hr and a rise in the water surface (i.e., deposition layer plus ponding) of about 0.9 in./hr. These rates are slow enough to allow close continual monitoring of the entire dike perimeter. However, ponding depth should not be permitted to increase beyond a maximum of 5.0 ft (7.3 ft at the weirs). Dike stability should be monitored continuously during periods when ponding depth is maintained above the 2.0-ft minimum.

Optimal operating efficiency requires that flow through the containment basin approximate plug flow to the greatest degree possible, thereby minimizing the uneven distribution of flow velocities and sediment resuspension and maximizing retention time. Therefore, the pattern of sediment deposition should be monitored for indications of irregular distribution, channelization, and short-circuiting. If evidence of such anomalies is found, the inlet pipe should be repositioned until a more uniform depositional surface is formed.

Last, the incoming slurry should be periodically monitored at the containment basin inlet to confirm or refine dredge output specifications, including volumetric output and slurry solids content. These parameters, in combination with the duration of actual dredge operation, can be used as an independent measure of deposition volume for purposes of determining remaining site capacity. Additionally, the computed deposition volume can be used with pre- and post-dredging bathymetric surveys of the channel and topographic surveys within the containment basin following placement and dewatering of the deposition layer to refine the bulking factor employed to translate in situ dredging volume to required storage volume. Also, within the same monitoring program, the quality of dredged sediment should be established by laboratory analysis of grain size distributions, settling velocities, specific gravity, and Atterberg limits.

3.3 Weir Operation

The most effective way to control effluent quality during dredging operations is to change the ponding depth and rate of flow over the weir through adjustments to the weir crest elevation. Before dredging, the weir crest elevation should be set as high as necessary to prevent the early release of stormwater or groundwater seepage. At the start of dredging operations, the crest should be set to provide the recommended mean operational ponding depth of 4.0 ft. With the initial bottom slope within the basin of 0.2 percent, a mean ponding depth of 4.0 ft produces a depth of 6.3 ft at the weirs. For Site FL-3, this will result in an initial weir crest elevation of 6.3 ft above the excavated grade at the weirs, or +8.5 ft NGVD. To maintain the recommended operational mean ponding depth of 4.0 ft as dredging progresses, the crest elevation should be increased at approximately the same rate as the growth of the deposition layer.

Once dredging begins, the weir crest should be maintained at its initial elevation until the ponded water surface approaches the weir crest. During this initial phase of operation when no effluent is released, the discharge of the dredge plant will increase the ponding depth at a rate of approximately 0.7 in./hr and increase the ponded water surface elevation (ponding depth plus deposition layer) at a rate of approximately 0.9 in./hr. This relatively slow rise should allow for close continual monitoring of the entire dike perimeter for indications of slope instability, as discussed. Inspection is most critical during the initial phase of operations and during subsequent periods when the ponded water surface is raised above its previous maximum elevation. Experience has shown that as the ponded water percolates into the interior dike slope, the coarser dike material filters the fine suspended sediment. This reduces the permeability of the dike and decreases the susceptibility of the dike to piping and saturation.

As the mean ponding depth approaches 4.0 ft — corresponding to 6.3 ft at the weirs — release of the supernatant can be considered. Notably, the weirs are only flow control structures and therefore cannot improve effluent quality beyond that of the surface water immediately upstream of the weir crests. Thus, the decision to release must be based on the results of turbidity testing or suspended sediment concentration analysis conducted on the waters inside the containment basin immediately upstream of the weirs. These tests must reflect conditions at the maximum depth of withdrawal. For Site FL-3, this was determined from recommended WES procedures to be 2.11 ft, based on the design output of a 24-inch dredge and a design weir loading of 1.07 ft³/ft. If adequate water quality is not achieved prior to the ponded water surface reaching the initial weir crest elevation, the dredge plant must be shut down until the surface water turbidity reaches acceptable limits or until alternative measures are implemented such as the installation of turbidity screens or floating baffles. If the desired water quality is achieved with the water surface less than the initial weir crest elevation, the water surface should still be permitted to rise to the weir crest provided dike integrity is not threatened.

Once flow over the weirs has begun and acceptable quality effluent is being produced, as indicated by effluent sample analysis, the hydraulic head over the weir becomes the most readily used criterion for weir operation. For a design weir loading of 1.07 ft³/ft, the operational static head has been calculated to be 0.47 ft or 5.6 inches, based on an empirical relationship developed for sharp-crested weirs. This represents the operating head of the water upstream of the weir at a point where velocities are small (one to two percent of the velocity at the weir crest).

Actual operating head over the weir can be measured on site by two methods. First, the static head can be determined directly by installing a stage gauge inside the basin. The gauge should be located a sufficient distance from the weirs where velocities caused by the weir are small — at least 40 to 50 ft from the weir. Water surface elevation can be read from the gauge, with the difference between the gauge elevation and the weir crest elevation indicating the static head. Second, the static head can be determined indirectly by measuring the flow depth over the weir. The ratio of flow depth over the weir to static head — shown to be 0.85 for sharp-crested weirs — yields a design flow depth for the FL-3 facility of 0.35 ft or 4.3 in. If the head over the weir, as measured by either method, falls below these design values as a result of unsteady dredge output or intermittent operation, effluent quality should increase. However, if the head exceeds these values, the ponding depth should be increased by adding a flash board, unless of course maximum ponding depth has been reached. If increasing the ponding depth is not possible without threatening the integrity of the dike, dredging should be interrupted to prevent the release of unacceptable effluent.

At all times, each of the four weir sections must be maintained at the same elevation to prevent flow concentration and a decrease in effluent quality related to an increase in weir loading. Preventing floating debris from collecting in front of the weir sections is also important. An accumulation of debris at the weirs will reduce the effective weir crest length. This reduction will increase the depth of withdrawal and produce a corresponding increase in effluent suspended solids concentration.

After dredging has been completed, the ponded water must be slowly released, allowing the flow over the weir to drop essentially to zero before the next flash board is removed. Monitoring of effluent quality should continue during this process. If turbidity violates water quality standards, the effluent must be retained until analysis of the interior surface waters shows the suspended solids concentration to be within acceptable limits. The decanting process should then continue in this manner until all ponded water is released over the weirs. Trenching and other dewatering techniques are considered post-dredging site operating procedures. These procedures are discussed in Section 4.0.

3.4 Effluent Monitoring

Monitoring the effluent released from the FL-3 dredged material management area will be an integral part of facility operation. The containment basin has been designed to produce effluent which meets the water quality standards for Class II waters as set forth in Chapter 17-302 of the Florida Administrative Code. These rules require that site compliance be documented by results obtained from a comprehensive monitoring program. Therefore, the monitoring program should be in place at all times during active dredging operations. Effluent samples should be taken and analyzed as often as practical. The minimum recommended sampling frequency is two times per eight hour shift.

Although effluent turbidity is but one of 29 parameters addressed in Florida's state water quality standards, compliance with these standards has been historically based on turbidity alone for several reasons. First, turbidity is reliably measured in the field and is the only water quality parameter over which the site operator may exercise direct control. Second, turbidity is a strong indicator of general effluent quality since many contaminants, most notably metals, exhibit a strong affinity for fine particles. Thus, reducing turbidity should result in an overall improvement in effluent quality.

However, the disturbance of contaminated sediments may result in the release of other pollutants (predominantly nutrients and hydrocarbons) which do not necessarily associate with fine particles. Thus, if the

in situ sediments contain elevated levels of these contaminants, turbidity may be an inadequate indicator of effluent quality. Effluent monitoring should therefore be based on the results of comprehensive elutriate and dry analysis of the sediment to be dredged before dredging begins. Testing required under the effluent monitoring program should then focus on those contaminants whose presence in the sediment has been established.

Because effluent turbidity is a primary water quality parameter for site operation, compliance with turbidity standards will control both the dredge plant output and the release of effluent. State standards for effluent turbidity are expressed in terms of its optical clarity relative to the ambient conditions of the receiving waters. By comparison, containment area design guidelines published by the U.S. Army Engineer Waterways Experiment Station (WES) under the Dredged Material Research Program (DMRP) relate containment area performance to the suspended solids concentration of the effluent. However, translating suspended solids concentration to a measure of turbidity is highly dependent on the characteristics of the suspended material. For the operation of this site, as well as the design and operation of similar sites, it would be advantageous to use the effluent monitoring program results in combination with known sediment characteristics to relate suspended solids concentration to the state performance criterion based on turbidity. This should be a primary objective of the site monitoring program.

3.5 Groundwater Monitoring

As discussed in Section 2.4, a groundwater monitoring program will be implemented at Site FL-3. A key element of this program will be sampling and analysis of groundwater during the time dredging and decanting operations are under way. Each operation — from the beginning of dredging to the completion of decanting — is expected to take approximately 6 to 10 weeks.

The site's first use as a containment facility will likely be the most crucial period for saline water migration from the containment basin. During this time, soils forming the dike will be most porous due to their disruption during site construction. However, operational experience has shown that dike material filters and traps the finer fraction of dredged sediments, thus reducing dike permeability. Notwithstanding these considerations, the initial period of each dredging operation requires frequent groundwater sampling and analysis. During this time, it is recommended that samples be taken twice every 24 hours. This sampling regimen should begin with the commencement of dredging and continue for a period equivalent to the time required for the hypothetical flow of groundwater from the basin to reach the furthestmost sampling well. The time for this to occur is a function of several factors including soil permeability and the distance from the containment basin to

the sampling wells. This will be determined as part of the final site design process. For the period of operation following the time at which potential saline water migration is expected to reach the furthest sampling well, sampling should be carried out a minimum of once every 24 hours for the remainder of the time saline water is impounded within the containment basin. If at any time elevated chloride levels are detected, pumping will be stopped and ponding depth will be reduced until chloride concentrations return to an acceptable level.

3.6 Migratory Bird Protection

Should dredging be necessary during the migratory bird nesting season (April 1 through September 1), procedures presented in Appendix I of the Migratory Bird Policy (COE, 1993) will be implemented. These procedures include a variety of measures, summarized in Section 2.4, to ensure avoidance of impacts to migratory birds during periods of active dredging operations.

4.0 POST-DREDGING SITE MANAGEMENT

The post-dredging phase of site operation begins following the completion of dredging and the decanting of all ponded water over the weirs. It continues until the start of the next planned dredging event. Post-dredging site management will be accomplished through the joint efforts of the FIND and the Jacksonville District, COE, and will include, at a minimum, quarterly site inspection. During the post-dredging phase, dredged material deposited within the containment basin is actively managed to reduce its moisture content. In addition, the material is made suitable for handling and can be removed from the site should market conditions prove favorable. However, because Site FL-3 is intended to be a permanent site, other management procedures between active dredging operations will also be required. These include a comprehensive monitoring and data collection effort to guide the efficient use and environmental compliance of the dredged material management area, handling of stormwater runoff, monitoring and maintenance of site habitat, mosquito control measures, and providing adequate site security. These are discussed below.

4.1 Dewatering Operations

Dewatering techniques to be used at Site FL-3 are highly dependent on the physical characteristics of the dredged material. As discussed, this material is expected to be predominantly fine sand with a small fraction of fines. Because each dredging operation will generate relatively small volumes of material, the deposition layer resulting from each operation will be relatively thin. For example, the placement of 150,000 cy — a typical quantity anticipated for the FL-3 facility based on a 10-year dredging cycle — will produce a deposition layer thickness, or lift, averaging approximately 3 ft. Under these conditions, evaporation and percolation should be adequate to dry the material without any additional measures. However, should a single dredging operation generate significantly greater volumes of material, or produce a greater proportion of fine-grained material, supplementary dewatering techniques may be required. The most appropriate dewatering techniques for this purpose are surface water removal, progressive trenching to promote continued drainage and, if required, progressive reworking or removal of the dried surface layer. Each procedure and its specific application to the present situation is discussed below.

Decanting all remaining surface water is necessary before significant evaporative drying of the fine-grained material can occur. Most of the ponded water will be removed following the completion of dredging operations by simply continuing to lower the weir crest. However, it is unlikely that all ponded water can be drained off in this manner because of the topography of the deposition layer surface. As discussed, differential

settling of various size fractions of the sediment results in partial segregation of the dredged material within the containment basin. Coarser sand- and gravel-sized particles settle nearer the inlet, while finer particles concentrate nearer the weirs. A depression near the weirs may result as this fine material consolidates under its own weight. However, the sand-sized fraction, concentrated nearer to the inlet, should experience relatively little consolidation because of its lower initial water content. Therefore, to remove the ponded water which may remain in the area of fine material deposition, a trench must be dug to connect the depression to the weirs. Excavating a sump adjacent to the weirs to receive the remaining ponded water may also be necessary. During this phase of operations, the weir crest must be raised to prevent the premature release of ponded water which, as a result of the excavation, will contain high suspended solids concentrations. Clarified water can then be released over the weirs as soon as effluent turbidity standards are met.

The area of predominantly sandy material is expected to be relatively free-draining. However, the crust that will eventually form over the layer of fine-grained material nearer the weirs will trap water beneath its surface. Therefore, a system of trenches will be required to completely dry the fine material. Before crust forms on the surface of the drying material, an initial perimeter trench can be excavated by dragline or clamshell operating from the crest of the containment dike. More intensive trenching should wait until a crust of significant thickness (greater than five to six inches) has developed on the deposition surface. During this phase of trenching, conventional low ground pressure equipment can be used within the interior of the containment basin. A system of radial or parallel trenches should then be constructed throughout the fine sediment area. The depth of each trenching operation is dictated by the resistance to slumping of the semiliquid layer beneath the crust. However, the volume of material placed in the FL-3 containment basin should not require more than three trenching operations to adequately lower its water content throughout. Alternatively, the dried surface material can be transferred to a more well-drained area within the containment basin. This would expose the wetter under layers and restore a relatively high rate of evaporative drying.

Dewatering will continue until the crust extends over the entire depth of the deposition layer. The time required to complete this phase of site operation will depend on the physical characteristics of the sediment, as well as climatic conditions (e.g., rainfall, relative humidity, season, etc.). During the entire dewatering phase of the site operation, the weirs must be operated to control the release of residual water and impounded stormwater. The clarified effluent will be routed to the perimeter ditch to drain off site.

4.2 Grading the Deposition Material

Following the completion of dewatering, the deposition material must be graded to prepare for the next dredging operation. Grading normally consists of distributing the mounded coarser sediment such as sand, shell, and gravel over the remainder of the containment area to reestablish the initial uniform 0.2 percent downward slope from inlet to weir. Distributing the mounded, coarse material over the entire containment basin affords additional benefits such as providing a free-draining substrate in the area of fine sediment deposition by separating successive depositions, thereby improving subsequent dewatering of this material. Distributing the mound of sand, shell, and gravel also reestablishes the effective plan area of the containment basin.

4.2.1 Stormwater Control

Beyond preparing the site for the next dredging operation, grading of the dewatered deposition layer provides several additional benefits. One is the control and release of stormwater runoff. A shallow, uniform slope toward the weirs ensures adequate drainage and eliminates the ponding of runoff in irregular depressions. It also minimizes flow velocities and the risk of channelization and erosion. In compliance with regulatory policy, a sump or retention area of adequate capacity should be constructed adjacent to the weirs (with the weir flashboards in place) to retain the runoff from the first one inch of rainfall. For the FL-3 containment basin interior area of 37.42 acres (from the dike crest centerline inward), a circular basin with a radius of 150 ft and an average depth of 2 ft will provide a retention pond with the required minimum capacity of approximately 142,000 ft³. A site operator would be responsible for the gradual release of the ponded runoff at intervals determined by local weather conditions. Providing shallow trenches or swales from the center of the retention basin to one or more weir sections may also be necessary to efficiently release stormwater runoff.

As discussed (Section 3.1), the clarified runoff will be transported from the weir outlet manifold to the perimeter ditch. The perimeter ditch, in turn, will drain to the Matanzas River. However, construction details such as required slope and stabilization measures in the ditch system will be deferred to the final design phase of site development.

4.3 Material Rehandling/Reuse

As discussed in Section 1.0, Site FL-3 is one of three dredged material management areas being developed to serve the long-term maintenance requirements of the ICWW within Flagler County. Throughout this report, as well as the accompanying permit documentation, it has been emphasized that although each site has been designed for a specific service life, the site is to be operated as a permanent facility for the intermediate storage and rehandling of dredged material. Although the capacity of Site FL-3 is designed to meet the projected 50-year capacity required to serve Reach I, at some point the dewatered material must be removed off site. The ultimate use of this material is discussed in the following paragraphs.

Based on a comprehensive analysis of dredging records, the bulked volume of dredged material projected over the 50-year design service life of the three Flagler County facilities exceeds 2.5 million cy. Although relatively modest by some dredging standards, this volume still represents a significant quantity of potentially valuable material. Even if the possible return on the sale of this material were disregarded, the cost saving of permanent storage alone would justify an effort to determine the potential demand for dewatered dredged material.

If such a determination reveals that material resale and/or reuse is practical, it must then be demonstrated that the engineering properties of the dredged material satisfy the requirements of its intended use. It is anticipated that much of the material can be used as is, having been partially segregated through differential settling. However, the feasibility of compartmentalized segregation of material during dredging or mechanical separation following dewatering should be explored if market conditions dictate. Portions of the material determined to be unsuitable for fill or other construction purposes because of high organic silt or clay content might be used for landfill capping or agricultural purposes.

If a determination is made that resale or reuse is not feasible, locating and developing a centralized permanent storage facility will be necessary. The appropriate location for such a facility would appear to be inland where lower real estate values and development potential make permanent storage more economically feasible. The optimal distance from the initial containment area to the permanent storage site would represent a compromise between lower land costs and higher transportation costs.

4.4 Monitoring Containment Area Performance

Monitoring of the containment area between successive dredging events will include two topographic surveys of the deposition surface. First, a post-dredging survey should be performed as soon as possible following the completion of material dewatering operations and initial grading of the deposition surface. From this, a refined estimate of the quantity of material deposited can be obtained. Second, a pre-dredging survey should be performed prior to the start of the next dredging operation. Used in combination with information obtained from the previous post-dredging survey, the pre-dredging survey will establish the amount of material consolidation and remaining site capacity.

In conjunction with the monitoring described above, a series of core borings taken after the completion of dewatering will further define the progress of consolidation. Core borings will also provide a means to determine the engineering properties of the dewatered material and its suitability for reuse. Samples will be analyzed for grain size distribution, Atterberg limits, moisture and organic content, and other sediment characteristics which may affect its marketability.

4.5 Additional Environmental Considerations

4.5.1 Monitoring of Habitat and Vegetation

A primary consideration in the design and operational guidelines for Site FL-3 is the desire to limit adverse impacts to on-site vegetation communities and habitat due to the construction and operation of the dredged material management facility. To a significant extent, the adverse environmental impacts associated with site construction were limited by locating the site in a pine plantation and incorporating within the proposed containment basin an existing dredged material area. As discussed in Section 2.1 and shown in Figure 2.2, site development will impact no areas of undisturbed native vegetation. All on-site wetlands are contained within the buffer area and thus will remain undisturbed.

Although the buffer zone outside the containment area is also predominantly planted pine, additional biological monitoring will be required to document the possible impacts of site operation. If required to update existing information, an environmental survey of these areas will be performed prior to site construction to establish current baseline habitat and vegetation conditions. Periodic resurveys should then continue throughout the service life of the site. Degradation of habitat related to saltwater intrusion, the interruption of natural

drainage patterns, groundwater impacts, or other aspects of site construction or operation should be noted, corrective actions taken, and guidelines developed to minimize further adverse impact. Similarly, any beneficial aspects of site management should be recognized and encouraged, and the lessons learned should be applied to the future operation of this and other comparable dredged material management areas.

4.5.2 Migratory Bird Protection

As discussed in Section 2.4, migratory birds may nest on the sandy substrate left in the containment basin following dewatering. Should post-dredging site management activities be required during the April 1 through September 1 nesting season, they will be carried out in accordance with the site protection plan (COE, 1993) summarized in Section 2.4.

4.5.3 Groundwater Monitoring

As discussed in Sections 2.4 and 3.5, a groundwater monitoring program will be implemented at Site FL-3 to detect saline water migration from the containment basin into local groundwater. The need to monitor groundwater is most critical during dredging and dewatering operations. However, sample collection and analysis will also be carried out between dredging events as part of the site operator's regular inspection routine.

After all ponded water resulting from the previous dredging operation has been released, a period of post-dredging sample collection will begin. During this period, groundwater samples will be collected and analyzed monthly for the first year following the cessation of dredging operations and quarterly thereafter unless otherwise needed. More frequent sampling intervals may be required should conditions warrant. Should elevated chloride levels be detected at any time, the source will be determined. If the containment basin is the source, corrective actions will be taken. These may include the installation of a system of well points around the dike to reverse groundwater flow. If the chlorides originate from a source external to the FL-3 facility (i.e., intrusion caused by off-site groundwater demand), the proper authorities will be notified.

4.5.4 Mosquito Control

The mosquito control program for Site FL-3 will emphasize physical rather than chemical control. The time during which standing water remains inside the containment area will be kept to a minimum, thereby reducing the potential for mosquito breeding. The phase of operation most favorable for breeding occurs during

the dewatering of sediment when desiccation cracks form in the crust as the fine sediment deposits shrink through evaporative drying. Trenching procedures (Section 4.1) will accelerate the dewatering process by allowing much of the moisture within the cracks to drain to the weirs. However, adverse climatic conditions could delay the dewatering phase long enough to result in successful breeding within the desiccation cracks. This would require a short-term spray program coordinated through the Flagler County Mosquito Control Board.

4.6 Site Security

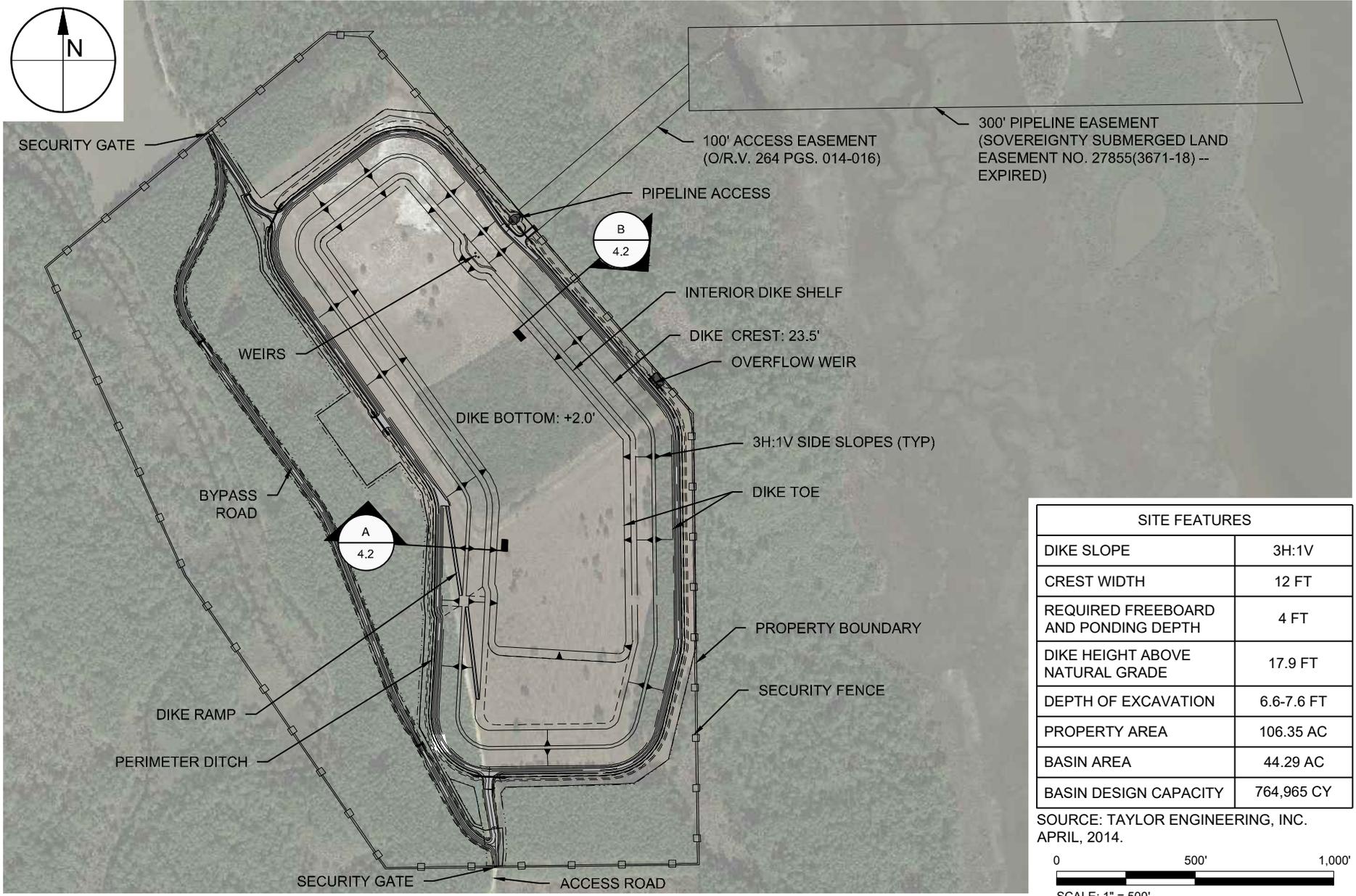
A key element in the proper management of Site FL-3 is the provision of adequate site security. Dredged material containment areas have typically been subject to a variety of unauthorized activities including illegal dumping, vandalism, hunting, and the destruction of dikes through the use of off-road vehicles. The occurrence of such activities on Site FL-3 will be controlled by the installation of security fencing around the entire site perimeter. Access to the site will at all times be limited to agents and representatives of the FIND and the Jacksonville District Corps of Engineers. Containment area access gates will remain locked at all times except during dredging and maintenance operations. The presence of an on-site operator during all phases of active dredging and dewatering operations should further discourage unauthorized site entry and unsanctioned activities. Between operations the site operator will be responsible for carrying out regularly scheduled inspections. The primary purpose of these inspections will be to perform routine operational functions and to ensure that the security of the facility is maintained. Breaches in site security will be identified and appropriate actions will be taken as quickly as possible to restore the site to a fully operational standby condition. Other operator responsibilities during these visits will include weir operation and stormwater release, monitoring of stormwater effluent quality and groundwater monitoring wells, as well as the performance of routine inspections of dike integrity and buffer area conditions.

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- U.S. Army Corps of Engineers (COE). 1993. *Draft Final Migratory Bird Protection Policy*. U.S. Army Corps of Engineers, Jacksonville District, Jacksonville, FL.

U.S. Army Corps of Engineers (COE). 1986. *Intracoastal Waterway, Jacksonville to Miami, Florida, Plans for Maintenance Dredging, 12-Foot Project, Cut Du-8 to Cut V-36 and 10-Foot Project, Vicinity of Jupiter Inlet*. D. O. File No. 8A-34,640 and 8B-34,761. U.S. Army Corps of Engineers, Jacksonville District, Jacksonville, FL.

Walski, T. M., and Schroeder, P. R. 1978. *Weir Design to Maintain Effluent Quality from Dredged Material Containment Areas*. Technical Report D-78-18. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.



SITE FEATURES	
DIKE SLOPE	3H:1V
CREST WIDTH	12 FT
REQUIRED FREEBOARD AND PONDING DEPTH	4 FT
DIKE HEIGHT ABOVE NATURAL GRADE	17.9 FT
DEPTH OF EXCAVATION	6.6-7.6 FT
PROPERTY AREA	106.35 AC
BASIN AREA	44.29 AC
BASIN DESIGN CAPACITY	764,965 CY

SOURCE: TAYLOR ENGINEERING, INC. APRIL, 2014.

0 500' 1,000'

SCALE: 1" = 500'



TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD.
 BLDG. 300, SUITE 300
 JACKSONVILLE, FL 32256
 CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 4.1
 DMMA FL-3 PLAN VIEW
 INTRACOASTAL WATERWAY
 FLAGLER COUNTY, FLORIDA

PROJECT	C2014-074
DRAWN BY	AF
SHEET	6 of 11
DATE	SEPT 2016



Taylor Engineering, Inc.
 10151 Deerwood Park Blvd. Bldg. 300, Suite 300
 Jacksonville, Florida 32256
 P 904.731.7040
 F 904.731.9847

**LETTER
 OF
 TRANSMITTAL**

TO: Mr. Paul Safirulla Harry Pepper & Associates, Inc. 9000 Regency Square Blvd., Suite 100 Jacksonville, FL 32211	DATE: 1/14/2016
	PROJECT NO.: c2012-057-01
	ATTENTION: Mr. Paul Safirulla
	RE: Dredged Material Management Area FL-3 Construction As-Built Drawings Submittal #59C-01.77.00

WE ARE SENDING YOU: Attached Via Email Via Fed Ex Hand Delivery Under separate cover the following:

Shop Drawings Prints Plans Reports Samples Reproducibles

Copy of Letter Change Order Specifications Diskettes Other:

COPIES	DATE	DRAWING NUMBER	DESCRIPTION
1	01/14/16	N/A	As-Built Drawings Submittal #59C-01.77.00

For approval Approved as submitted Resubmit copies for approval

For your use Approved as noted Submit copies for distribution

As requested Returned for corrections Return corrected prints

For Bids due: For review and comment For your information

Other Materials returned after loan to us.

REMARKS:
If you should have any questions regarding this request, please do not hesitate to contact me at 904.731.7040 ext 264 or via email at rdirenzo@tayloengineering.com.

SIGNED: 

If enclosures are not as noted, please notify us at once.

RECEIVED: _____

FOR INTERNAL USE:

General Permits Design File Accounting Proposal Correspondence

Drainage R/W - Survey Structures Utilities Geotech Submittals

Dredged Material Management Area FL-3
Construction Project

SUBMITTAL:
#59C—01.77.00: As-Built Drawings

COMMENTS

Taylor Engineering marks this submittal as **Approved as Submitted**.

SUBMITTAL REVIEW	
<input checked="" type="checkbox"/> Approved	
<input type="checkbox"/> Rejected	
<input type="checkbox"/> Revise and Resubmit	
<input type="checkbox"/> Approved as Corrected	
<input type="checkbox"/> Submittal not Required-Returned without review	
<input type="checkbox"/> Submittal received, for information only	
<input type="checkbox"/> Submit Specified Item	
<p>Taylor Engineering has reviewed this submittal only for general conformance with the design concept of the project and general compliance with the information supplied in the contract documents. Corrections or comments made on the submittals during this review do not relieve the Contractor from compliance with any requirements of the contract documents. Approval of a specific item shall not include approval of an assembly of which the item is a component. The Contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating all work with that of other trades, and performing the work in a safe and satisfactory manner.</p>	
<p>TAYLOR ENGINEERING, INC.</p>	
Date Received:	1/11/2016
Date Returned:	1/14/2016
Reviewed By:	Keith Knight
Project No.:	C2012-057-01
Submittal No.:	59C-01.77.00

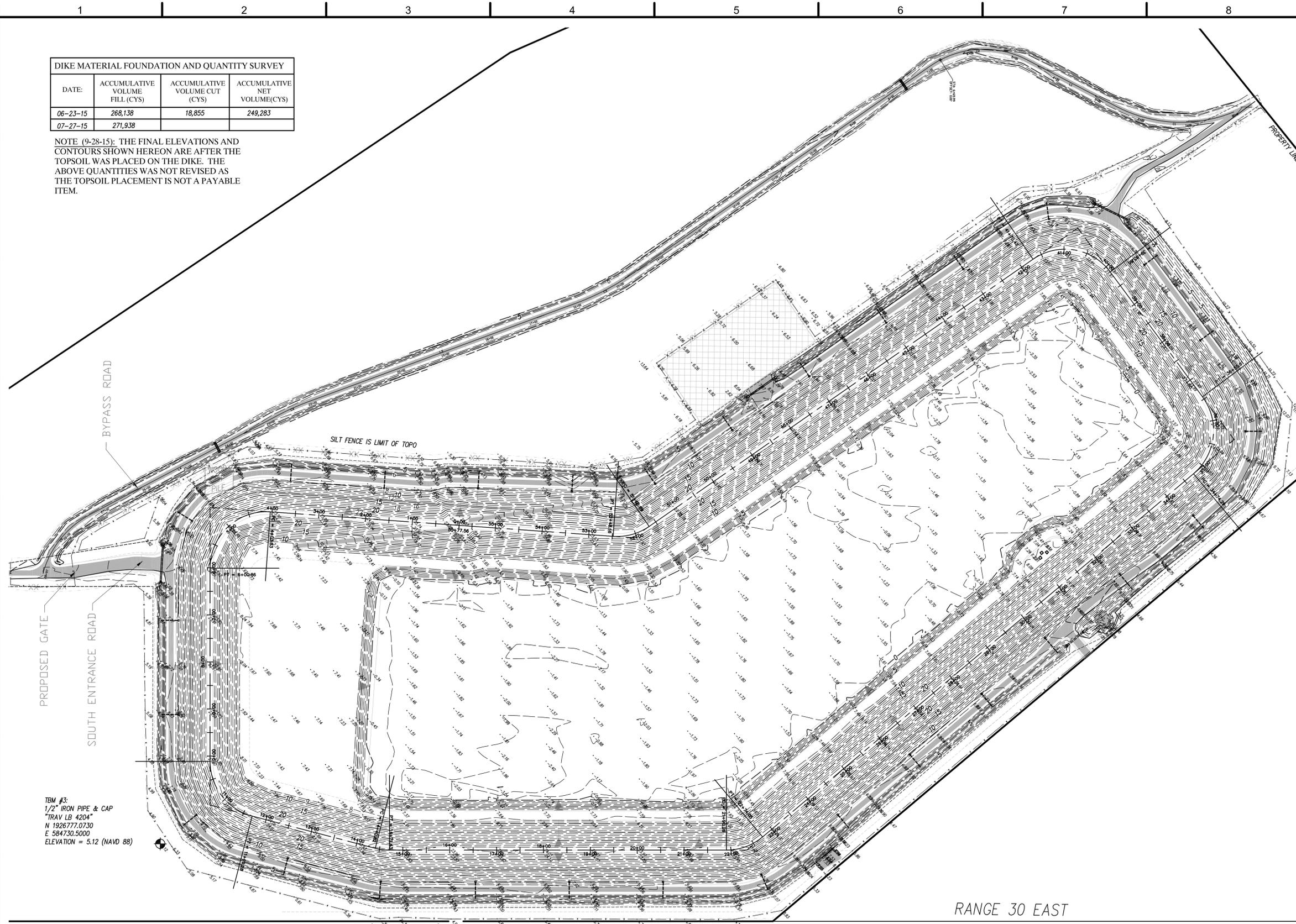
TRANSMITTAL OF SHOPDRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE <i>(Read instructions on page two prior to initiating this form)</i>					DATE: Mo / Day / Yr 01/11/2016		TRANSMITTAL NO 059C		
SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS <i>(This section will be initiated by the contractor)</i>									
TO: BOB DIRIENZO, E.I. TAYLOR ENGINEERING, INC. 10151 DEERWOOD PARK BLVD BLDG 300, SUITE 300 JACKSONVILLE, FL 32256 PH: 904.731.7040			FROM: PAUL SAFIRULLA HARRY PEPPER & ASSOCIATES 9000 REGENCY SQUARE BLVD. SUITE 100 JACKSONVILLE, FL 32211 OFFICE: 904.721.3300			CONTRACT NO . C2012-057-XX		CHECK ONE: <input type="checkbox"/> NEW SUBMITTAL <input checked="" type="checkbox"/> RE-SUBMITTAL OF TRANSMITTAL <u>059B</u>	
SPECIFICATION SEC NO. 01 77 00 PROJECT CLOSEOUT <i>(Cover only one section with each transmittal)</i>			PROJECT TITLE AND LOCATION DREDGED MATERIAL MANAGEMENT AREA FL-3 CONSTRUCTION						
ITEM NO.	DESCRIPTION OF ITEM SUBMITTED <i>(Type size, model number/etc.)</i>	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. <i>(See instruction no. 8)</i>	NO. OF COPIES	SPEC. PARA NO.	DRAWING SHEET NO.	FOR CONTR-ACTOR USE CODE	VARIATION <i>(See instruction No. 6)</i>	FOR T.E. USE CODE	
a.	b.	c.	d.	e.	f.	g.	h.	i.	
1	Updated – Final As-Built Drawings <i>Added pipe invert on drawings 2 & 22</i>		1			GA	N		
REMARKS:					 Paul Safirulla <hr/> NAME AND SIGNATURE OF THE CONTRACTOR				
SECTION II - APPROVAL ACTION									
ENCLOSURES RETURNED (List by Item No.)			NAME, TITLE OF APPROVING AUTHORITY				DATE		

DREDGED MATERIAL
MANAGEMENT AREA FL-3
FLAGLER COUNTY, FLORIDA

DIKE MATERIAL FOUNDATION AND QUANTITY SURVEY

DATE:	ACCUMULATIVE VOLUME FILL (CYS)	ACCUMULATIVE VOLUME CUT (CYS)	ACCUMULATIVE NET VOLUME(CYS)
06-23-15	268,138	18,855	249,283
07-27-15	271,938		

NOTE (9-28-15): THE FINAL ELEVATIONS AND CONTOURS SHOWN HEREON ARE AFTER THE TOPSOIL WAS PLACED ON THE DIKE. THE ABOVE QUANTITIES WAS NOT REVISED AS THE TOPSOIL PLACEMENT IS NOT A PAYABLE ITEM.



BY	DESCRIPTION	DATE	SHEET	NO.
TLP	UPDATED TOPOGRAPHICAL INFORMATION	3-24-15	1	1
TLP	CORRECTED MARCH FIGURES FOR VOLUME CALCULATIONS.	4-8-15	2	2
TLP	UPDATED TOPOGRAPHICAL INFORMATION & VOLUME TABLE.	5-22-15	3	3
TLP	UPDATED TOPOGRAPHICAL INFORMATION & VOLUME TABLE.	6-23-15	4	4
TLP	CORRECTED ACCUMULATIVE VOLUME FILL FOR 7-27-15.	8-3-15	5	5
TLP	UPDATED TOPOGRAPHICAL INFORMATION	9-28-15	6	6
TLP	ADDED ELEVATION FOR 42\"/>			

PROJECT NO	14-200
DATE	FEBRUARY 26, 2015
DRAWN	TP/BP
CHECKED	DP
SCALE	1" = 100'

DRAWING TITLE
DIKE AS-BUILT SURVEY

PRIVETT & ASSOCIATES, INC.
SURVEYORS & LAND PLANNERS

LICENSED SURVEY FIRM No. 166, GA. No. 4204, FL.
1201 SHADOWLAWN DRIVE ST. MARYS, GEORGIA 31558 2732 TOWNSEND BOULEVARD JACKSONVILLE, FLORIDA 32211
(912) 882-3738 (904) 743-7658

SHEET 2 OF 22

DRAWING NUMBER: T-2-2267(B)-2-15

TREVIA PINETTE, 12/17/2015 2:18:00 PM, K:\2014\14-200 Dredged Material Management Area FL-3\dwg\Finals\AS-BUILT\SHEET 2 DIKE AS-BUILT.dwg

FIELD BOOK 404, PAGES 24-47

RANGE 30 EAST
RANGE 31 EAST

TAYLOR ENGINEERING INC.
 10151 DEERWOOD PARK BLVD.
 BLDG. 300, SUITE 300
 JACKSONVILLE, FLORIDA 32256
 (904)-731-7040
 1675 PALM BEACH LAKES, SUITE 210
 WEST PALM BEACH, FLORIDA 33401
 (561)-640-7310
 CERTIFICATE OF AUTHORIZATION # 4815

KEITH A. KNIGHT P.E.# 58084
 PROJECT TITLE
**DREDGED MATERIAL
 MANAGEMENT AREA FL-3
 FLAGLER COUNTY, FLORIDA**

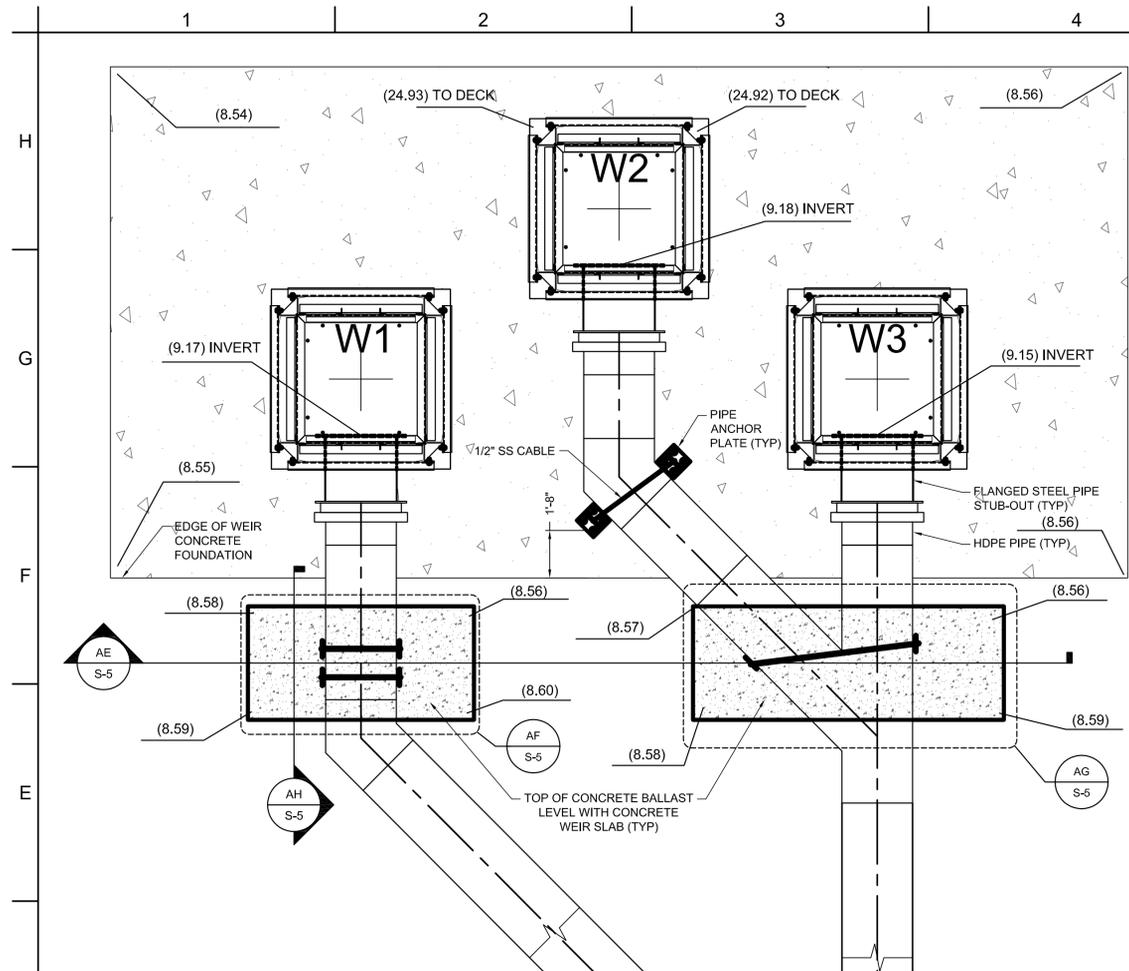
NO	SHT	REVISIONS / SUBMISSIONS	DATE
1	29	ADDED THIS SHEET TO AS-BUILTS	9-28-15
2	22	ADDED THIS SHEET TO AS-BUILTS AS SHEET 22	9-28-15
3	22	ADDED 42" HDPE INVERT ELEVATION	12-16-15

PROJECT NO	C2012-057
DATE	APRIL 2014
DESIGNED	KAK/RD
DRAWN	RLJ/CAS
CHECKED	AF
REVIEWED	JTA
SCALE	AS SHOWN

DRAWING TITLE
CONCRETE BALLAST DETAILS

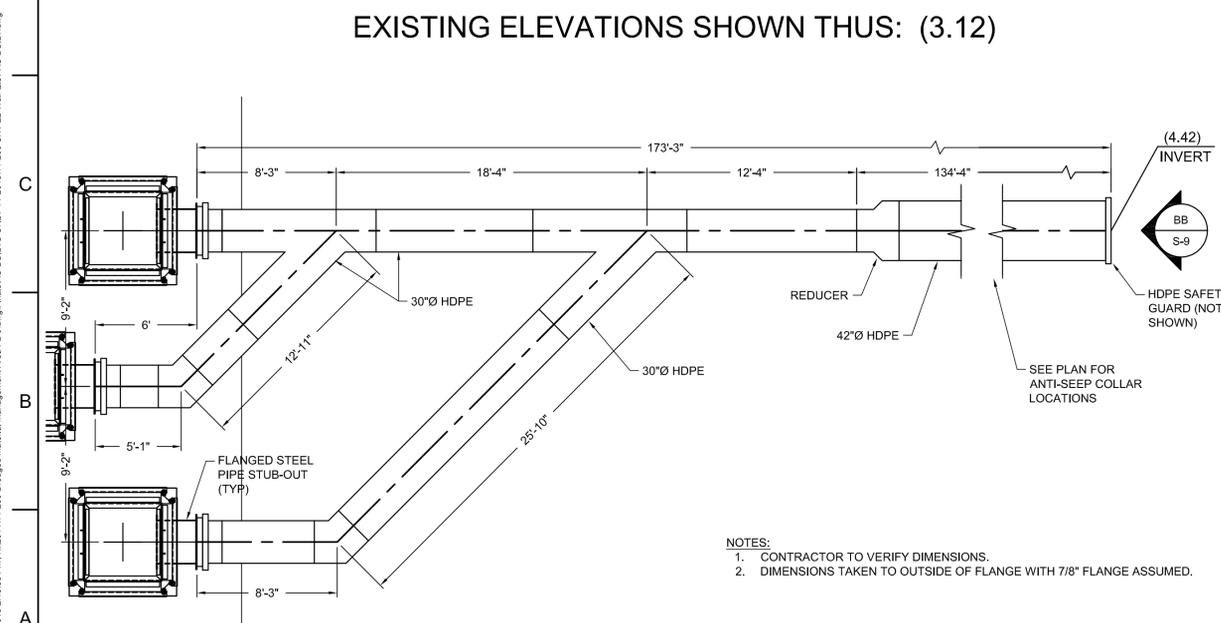
S-5
SHEET 22 OF 22

DWG No. T-2-2267(B)-2-15

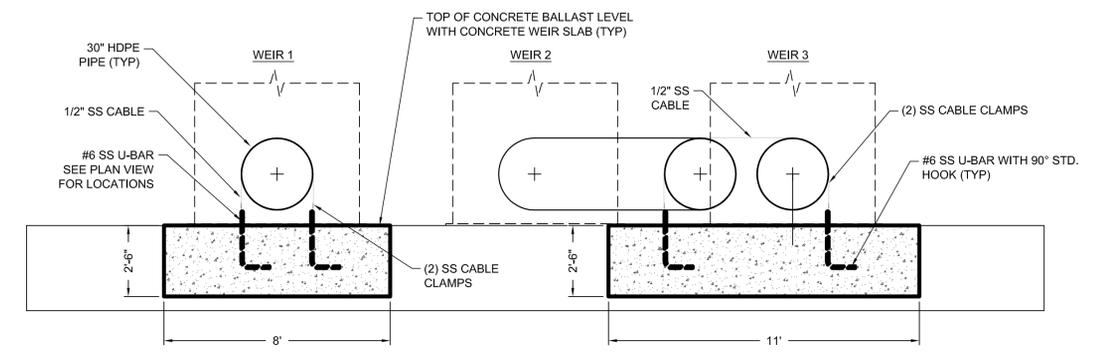


CONCRETE BALLAST - PLAN VIEW
 22X34: 1" = #
 11X17: 1" = #

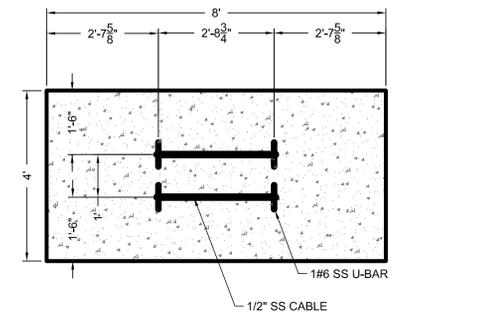
EXISTING ELEVATIONS SHOWN THUS: (3.12)



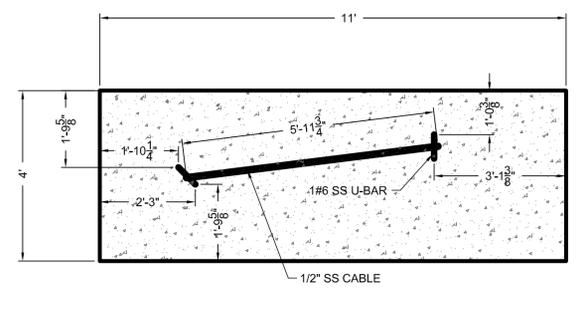
HDPE WEIR PIPE LAYOUT
 22X34: 1" = #
 11X17: 1" = ##



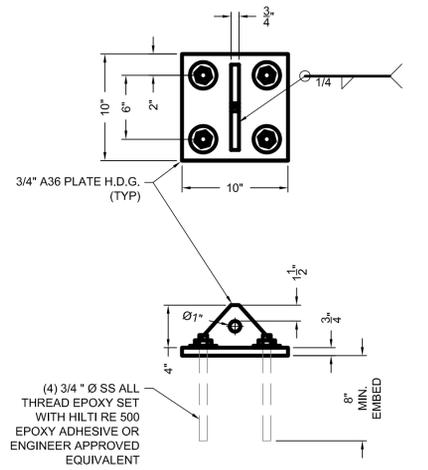
CONCRETE BALLAST - CROSS-SECTION
 AE S-5 22X34: 1" = #
 11X17: 1" = #



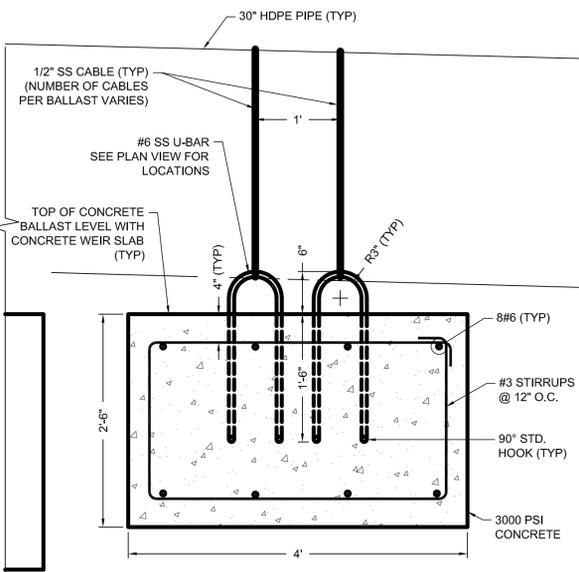
CONCRETE BALLAST - DETAIL
 AF S-5 22X34: 1/2" = 1"
 11X17: 1/4" = 1"



CONCRETE BALLAST - DETAIL
 AG S-5 22X34: 1/2" = 1"
 11X17: 1/4" = 1"



PIPE ANCHOR PLATE
 22X34: 1-1/2" = 1"
 11X17: 3/4" = 1"



CONCRETE BALLAST - SECTION
 AH S-5 22X34: 1" = 1"
 11X17: 1/2" = 1"

TRENDA PINETTE: 12/17/2015 2:15:33 PM; K:\2011\11-2015\Dredged Material Management Area FL-3\dwg\Final\AS-BUILTS ONLY\11-2015\11-2015-220 SHEET 22 Weir Elev AS-BUILD.dwg



**INTRACOASTAL WATERWAY
MAINTENANCE DREDGING
FLAGLER COUNTY REACH I, FLORIDA**

APPENDIX I
Draft Submittal Register



**SECTION 01 33 00A
SUBMITTAL REGISTER**



PROJECT NAME: Atlantic Intracoastal Waterway Maintenance Dredging, Flagler Reach I, Flagler County, Florida			CONTRACTOR:										
TRANSMITTAL NO.	SPEC. SECTION NO.	DESCRIPTION OF ITEMS SUBMITTED	TYPE				CONTRACTOR ACTION				ENGINEER ACTION		REMARKS
			NOTICE	PRECONSTRUCTION	ENGINEERING	INFORMATION	REVIEWER	SUBMISSION DATE	APPROVAL	MAINTENANCE	DATE	APPROVAL	
SECTION 01 33 00 APPROVAL CODES: AP - APPROVED RE - REJECTED RR - REVISE AND RESUBMIT AC - APPROVED AS CORRECTED SNR - SUBMITTAL NOT REQUIRED - RETURNED WITHOUT REVIEW SRI - SUBMITTAL RECEIVED, FOR INFORMATION ONLY SSI - SUBMIT SPECIFIED ITEM													
SECTION 00 73 19 SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS													
1	00 73 19	Accident Prevention Plan	X	X		X							
2	00 73 19	Activity Hazard Analysis				X							
3	00 73 19	Accident Reports				X							
4	00 73 19	Drug Free Work Place Compliance		X		X							
5	00 73 19	Personnel Qualification Requirements		X	X								
SECTION 01 29 00 MEASUREMENT AND PAYMENT													
6	01 29 00	Schedule of Values			X								
7	01 29 00	Construction Schedule		X	X								
8	01 29 00	Revised Construction Schedule			X								
9	01 29 00	Payment Surveys			X								
SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION													
10	01 31 00	List of Subcontractors		X		X							
11	01 31 00	Signature of Authority		X		X							
SECTION 01 33 00 SUBMITTAL PROCEDURES													
12	01 33 00	Draft Submittal Register		X	X								
13	01 33 00	Revised Submittal Register			X								

PROJECT NAME: Atlantic Intracoastal Waterway Maintenance Dredging, Flagler Reach I, Flagler County, Florida

CONTRACTOR:

TRANSMITTAL NO	SPEC. SECTION NO.	DESCRIPTION OF ITEMS SUBMITTED	TYPE				CONTRACTOR ACTION			ENGINEER ACTION		REMARKS
			NOTICE SUBMITTED PERIOD	PRE-COMMITTEE	ENGINEER APPROVED	INFORMATION ONLY	REVIEWER	SUBMISSION DATE	APPROVAL	MATERIAL	DATE	

SECTION 01 33 00 APPROVAL CODES:
 AP - APPROVED
 RE - REJECTED
 RR - REVISE AND RESUBMIT
 AC - APPROVED AS CORRECTED
 SNR - SUBMITTAL NOT REQUIRED - RETURNED WITHOUT REVIEW
 SRI - SUBMITTAL RECEIVED, FOR INFORMATION ONLY
 SSI - SUBMIT SPECIFIED ITEM

SECTION 01 35 43 ENVIRONMENTAL PROTECTION

14	01 35 43	Environmental Protection Plan	X	X	X							
15	01 35 43	Manatee Observation: Daily Reports				X						
16	01 35 43	Manatee Observation: Summary Report				X						
17	01 35 43	Turbidity and Water Quality Management and Monitoring Plan	X	X	X							
18	01 35 43	Daily Turbidity Monitoring Reports				X						
19	01 35 43	Project Environmental Summary Sheet				X						

SECTION 01 40 00 CONTRACTOR QUALITY CONTROL

20	01 40 00	Contractor Quality Control Plan	X	X	X							
21	01 40 00	Preparatory and Initial Phase Checklists				X						
22	01 40 00	Registered Surveyor Qualifications				X						
23	01 40 00	Quality Control Logs				X						

SECTION 01 50 00 TEMPORARY FACILITIES AND CONTROLS

24	01 50 00	Mobilization/Demobilization Plan		X	X							
25	01 50 00	Security Plan		X	X							
26	01 50 00	Hurricane and Severe Storm Plan		X		X						
27	01 50 00	Temporary Facility Shop Drawings		X		X						
28	01 50 00	Boat Operator's License		X		X						

SECTION 01 78 00 PROJECT CLOSEOUT

29	01 78 00	Record Drawings			X							
30	01 78 00	As-Built Drawings			X							
31	01 78 00	Request for Inspection				X						

SECTION 32 72 00 MARSH GRASS PLANTING

32	32 72 00	Marsh Grass Materials		X	X							
----	----------	-----------------------	--	---	---	--	--	--	--	--	--	--

PROJECT NAME: Atlantic Intracoastal Waterway Maintenance Dredging, Flagler Reach I, Flagler County, Florida

CONTRACTOR:

TRANSMITTAL NO	SPEC. SECTION NO.	DESCRIPTION OF ITEMS SUBMITTED	TYPE				CONTRACTOR ACTION			ENGINEER ACTION		REMARKS
			NOTICE SUBMITTED PERIOD	PRE-CONSTRUCTION	ENGINEERING APPROVED	INFORMATION ONLY	REVIEWER	SUBMISSION DATE	APPROVAL	MATERIAL	DATE	

SECTION 01 33 00 APPROVAL CODES:
 AP - APPROVED
 RE - REJECTED
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 SRI - SUBMITTAL RECEIVED, FOR INFORMATION ONLY
 SSI - SUBMIT SPECIFIED ITEM

SECTION 35 20 23 DREDGING AND DREDGED MATERIAL PLACEMENT

33	35 20 23.13	Notice to Mariners		X		X							
34	35 20 23.13	Notification of Discovery of Historical Resources				X							
35	35 20 23.13	Notice of Misplaced Material				X							
36	35 20 23.13	Notification of Aids Relocation		X		X							
37	35 20 23.13	Dredge Plan	X	X	X								
38	35 20 23.13	Maintenance of Marine Traffic Plan	X	X	X								
39	35 20 23.13	DMMA Facility Operation Plan: Site Plan		X	X								
40	35 20 23.13	DMMA Facility Operation Plan: Placement Operations Plan		X	X								
41	35 20 23.13	Daily Dredging Report of Operations				X							
42	35 20 23.13	Daily DMMA Placement Report of Operations				X							
43	35 20 23.13	Waterfront Marine Structures Photo-Documentation		X		X							
44	35 20 23.13	Pre-Construction Bathymetric Survey		X	X								
45	35 20 23.13	Pre-Construction Utility Survey		X	X								
46	35 20 23.13	Post-Construction Bathymetric Survey (by Acceptance Section and Comprehensive)			X								



INTRACOASTAL WATERWAY MAINTENANCE DREDGING FLAGLER COUNTY REACH I, FLORIDA

APPENDIX j General Forms

Certification Letter

Example Turbidity Form

Example Manatee Reporting Log

Example Daily Report of Operations

Project Environmental Summary Sheet

Phase Checklists

Payment Documents

TURBIDITY MONITORING

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

DATE: _____ **COLLECTOR:** _____

DATE AND TIME OF TURBIDITY METER CALIBRATION: _____

DREDGE STATUS: WORKING (____) NOT WORKING (____) STATION (_____)

WEATHER AND WATER OBSERVATIONS:

WIND VELOCITY: _____ DIRECTION FROM: _____ CURRENT DIRECTION: _____

TIDAL STAGE: HIGH: _____ LOW: _____ (PREDICTED) EST

WEATHER CONDITIONS: _____

IWW BACKGROUND STATION

WATER BODY DEPTH _____

Approximately 100 ft up-current of dredge

ICWW BG SAMPLE COLLECTION DATA	1-FT BELOW SURFACE	MID-DEPTH	1-FT ABOVE BOTTOM
WATER TEMPERATURE (°F)			
COLLECTION DEPTH			
COLLECTION TIME			
ANALYSIS TIME			
TURBIDITY (NTU)			

IWW COMPLIANCE STATION

WATER BODY DEPTH _____

Immediately outside the 150-meter mixing zone

ICWW CS-1 SAMPLE COLLECTION DATA	1-FT BELOW SURFACE	MID-DEPTH	1-FT ABOVE BOTTOM
WATER TEMPERATURE (°F)			
COLLECTION DEPTH			
COLLECTION TIME			
ANALYSIS TIME			
TURBIDITY (NTU)			
TURBIDITY VARIANCE (NTU) (Compliance - Background)			

DMMA BACKGROUND STATION DATA

WATER BODY DEPTH _____

Approximately 100 ft up-current of discharge

DCC BG SAMPLE COLLECTION DATA	1-FT BELOW SURFACE	MID-DEPTH	1-FT ABOVE BOTTOM
WATER TEMPERATURE (°F)			
COLLECTION DEPTH			
COLLECTION TIME			
ANALYSIS TIME			
TURBIDITY (NTU)			

COLLECTOR'S INITIALS: _____

DMMA COMPLIANCE STATION

WATER BODY DEPTH _____

Inside DMMA at weir discharge structure

DCC CS-1 SAMPLE COLLECTION DATA	1-FT BELOW SURFACE	MID-DEPTH	1-FT ABOVE BOTTOM
WATER TEMPERATURE (°F)			
COLLECTION DEPTH			
COLLECTION TIME			
ANALYSIS TIME			
TURBIDITY (NTU)			
TURBIDITY VARIANCE (NTU) (Compliance - Background)			

TURBIDITY REVIEW

DID THE ANY OF THE COMPLIANCE STATION'S NTU EXCEED BACKGROUND NTU BY MORE THAN 29 NTU? CIRCLE: YES OR NO

IF SO, WHEN AND AT WHAT COMPLIANCE STATION: _____

INDICATE LOCATION OF STATIONS ON MAP AND IN TABLE BELOW.

STATION	X	Y
IWW BG		
IWW CS		
DMMA BG		
DMMA CS		

SAMPLES ARE COLLECTED AND IMMEDIATELY ANALYZED FOR TURBIDITY WITH A _____ TURBIDITY METER. THE METER IS CLEANED AND CALIBRATED ACCORDING TO UNIT INSTRUCTIONS BEFORE EACH DAY'S SAMPLING.

I HEREBY ATTEST TO THE ACCURACY, PRECISION, AND AUTHENTICITY OF THE DATA PRESENTED IN THIS REPORT.

COLLECTOR'S SIGNATURE: _____ DATE: _____

COLLECTOR'S INITIALS: _____

DAILY MANATEE REPORTING LOG

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

DATE: _____ **OBSERVER:** _____

1. **MANATEES SIGHTED:** YES _____ NO _____
(If "NO" proceed to Signature)

2. **TIME:** _____

3. **NUMBER OF MANATEES SIGHTED:**
ADULT: _____ JUVENILE: _____

4. **NUMBER OF MANATEES INJURED:**
ADULT: _____ JUVENILE: _____ Work Related: YES _____ NO _____

5. **NUMBER OF MANATEES KILLED:**
ADULT: _____ JUVENILE: _____ Work Related: YES _____ NO _____

6. **LOCATION:**

7. **REMARKS:**

8. **SIGNATURE:** _____

9. **TITLE:** _____

DATE: _____
 DAY OF WEEK: _____
 MONTH NO: _____ REPORT NO: _____

DAILY REPORT OF OPERATIONS

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

WEATHER SUMMARY

TIME	CONDITIONS	TEMPERATURE (F)	HUMIDITY (%)	PRECIPITATION (IN)	WIND SPEED (MPH) AND DIRECTION

PROGRESS SUMMARY

ITEM	DAY	TO DATE
WORKED HOURS		
DOWN TIME		
ESTIMATED VOLUME DREDGED (CY)		
DREDGE ADVANCE (FT)		
ESTIMATED VOLUME TRANSFERRED OFF-SITE FROM DMMA (CY)		

DREDGE AREA – DREDGING IN PROGRESS

ACCEPTANCE SECTION NO.	CUT	START STATION	END STATION	START TIME	END TIME

EXPLANATION OF DOWNTIME

DMMA – OPERATIONS IN PROGRESS

MATERIAL TRANSFERRED FROM BARGE (CY)	MATERIAL TRANSFERRED OFF-SITE (CY)	START TIME	END TIME	DESCRIPTION OF ON-SITE ACTIVITY

EXPLANATION OF DOWNTIME

CQC SYSTEM MANAGER INITIALS: _____

DATE: _____
DAY OF WEEK: _____
MONTH NO: _____ REPORT NO: _____

SUPPORT EQUIPMENT USED TODAY

ITEM	LOCATION (DREDGE/DMMA)	TOTAL HOURS	DOWN TIME

ON-SITE PERSONNEL HOURS TODAY

EMPLOYEE	COMPANY/SUB	POSITION	HOURS

PROJECT ENVIRONMENTAL SUMMARY SHEET

Note: This sheet shall be submitted within 30 days following completion of the project. The Contractor will prepare this sheet so as to include all Subcontractor information also. Use additional sheets as necessary.

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

DATE: _____ **NTP DATE:** _____

1. PROJECT ACTIVITIES THAT HAVE OCCURRED:

Permit Condition/ Activity	% Completion	Date of Anticipated Completion	Date of Actual Completion
_____	_____	_____	_____

2. DESCRIBE PROJECT SURVEY BENCHMARK IF A STRUCTURE IS INVOLVED:

3. CHECK WHETHER THE FOLLOWING ENVIRONMENTAL INCIDENTS OCCURRED:

	<u>Yes</u> *:	<u>No</u> :
a. Spill of petroleum or hazardous substance	<input type="checkbox"/>	<input type="checkbox"/>
b. Surface water or ground water contamination event	<input type="checkbox"/>	<input type="checkbox"/>
c. Air pollution event	<input type="checkbox"/>	<input type="checkbox"/>
d. Monitoring sample outside limit	<input type="checkbox"/>	<input type="checkbox"/>
e. Required sampling or monitoring not conducted	<input type="checkbox"/>	<input type="checkbox"/>
f. Event which threatened or actually harmed:		
i. Vegetation, habitat, or wetland	<input type="checkbox"/>	<input type="checkbox"/>
ii. Human, fish, bird, or other wildlife species	<input type="checkbox"/>	<input type="checkbox"/>
iii. Protected soil or water bottom	<input type="checkbox"/>	<input type="checkbox"/>
iv. Historic, archeological, or cultural resources	<input type="checkbox"/>	<input type="checkbox"/>
g. Regulatory violation, regulatory warning, permit violation, newsworthy event, or other (describe):	<input type="checkbox"/>	<input type="checkbox"/>

4. FOR EACH ASTERISKED (*) 'YES' ITEM:

- Describe incident and how discovered:
- Describe how, when, and if incident reported (initially and subsequently):
- Describe act which resulted in incident:
- Describe any failures of containment systems, contingency plans, or emergency procedures:
- Describe severity or extent of incident and landowner(s) affected:
- Describe how situation corrected and verified:
- List and describe costs involved with incident correction (\$_____):
- Additional sheets, sketches, pertinent photographs with annotations and dates, daily reports, or

Typed or Handwritten Name: _____
Position: _____

Contractor Signature: _____
Phone Number: _____

PROJECT ENVIRONMENTAL SUMMARY SHEET

Note: This sheet shall be submitted within 30 days following completion of the project. The Contractor will prepare this sheet so as to include all Subcontractor information also. Use additional sheets as necessary.

other items attached? Yes___ No___

Typed or Handwritten Name: _____
Position: _____

Contractor Signature: _____
Phone Number: _____

PREPATORY PHASE CHECKLIST

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

SPECIFICATION SECTION & PARAGRAPH: _____ **TITLE:** _____
DRAWING SHEET NUMBER: _____ **WORK SEGMENT:** _____

A. PERSONNEL PRESENT

NAME	POSITION	COMPANY
1.		
2.		
3.		
4.		
5.		

**Attach additional sheets as necessary*

B. HAS EACH SPECIFICATION PARAGRAPH AND DRAWING BEEN STUDIED?
YES _____ NO _____

C. SUBMITTALS INVOLVED

NUMBER AND ITEM	CODE	CONTRACTOR OR ENGINEER APPROVAL
1.		
2.		
3.		
4.		
5.		

**Attach additional sheets as necessary*

HAVE ALL ITEMS INVOLVED BEEN APPROVED?

YES _____ NO _____

IF NO, LIST: _____

D. ARE ALL MATERIALS ON HAND?

YES _____ NO _____

HAVE ALL MATERIALS BEEN CHECKED FOR CONTRACT COMPLIANCE AGAINST SHOP APPROVED DRAWINGS?

YES _____ NO _____

ITEMS NOT ON HAND OR IN ACCORDANCE WITH TRANSMITTALS:

1. _____
2. _____

3.

E. TESTS REQUIRED IN ACCORDANCE WITH CONTRACT REQUIREMENTS:

TEST	NUMBER AND ITEM
1.	
2.	
3.	
4.	

**Attach additional sheets as necessary*

F. ACCIDENT PREVENTION PREPLANNING – HAZARD CONTROL MEASURES

APPLICABLE OUTLINES (attach completed copies):

- 1. _____
- 2. _____
- 3. _____
- 4. _____

OPERATIONAL EQUIPMENT CHECKLISTS

ATTACHED FOR:

- 1. _____
- 2. _____
- 3. _____
- 4. _____

ON FILE FOR:

- 1. _____
- 2. _____
- 3. _____
- 4. _____

G. HAVE PROCEDURES FOR ACCOPLISHING WORK BEEN REVIEWED WITH APPROPRIATE PEOPLE?

YES _____ NO _____

H. HAS ALL PRELIMINARY WORK BEEN ACCOMPLISHED IN ACCORD WITH CONTRACT REQUIREMENTS AND IS THIS SEGMENT OF WORK READY TO START?

YES _____ NO _____

IF NO, EXPLAIN ANY PROBLEMS ON ATTACHED SHEETS.

CQC SYSTEM MANAGER SIGNATURE & DATE

INITIAL PHASE CHECKLIST

PERMIT/LICENSE: FDEP File No. 45-0344374-001-EE, USACE Permit SAJ-2016-00719 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

SPECIFICATION SECTION & PARAGRAPH: _____ **TITLE:** _____
DESCRIPTION AND LOCATION OF WORK INSPECTED: _____

A. PERSONNEL PRESENT

NAME	POSITION	COMPANY
1.		
2.		
3.		
4.		
5.		

**Attach additional sheets as necessary*

B. MATERIAL BEING USED ARE IN STRICT COMPLIANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS?

YES _____ NO _____

IF NO, EXPLAIN: _____

C. PROCEDURES AND/OR WORK METHODS WITNESSED ARE IN STRICT COMPLIANCE WITH THE REQUIREMENT OF THE CONTRACT SPECIFICATIONS?

YES _____ NO _____

IF NO, EXPLAIN: _____

D. WORKMANSHIP IS ACCEPTABLE?

YES _____ NO _____

STATE AREAS WHERE IMPROVEMENT IS NEEDED: _____

E. SAFETY VIOLATIONS AND CORRECTIVE ACTIONS TAKEN? _____

CQC SYSTEM MANAGER SIGNATURE & DATE

AFFIDAVIT

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

STATE OF FLORIDA

COUNTY OF _____

Before me, the undersigned authority, authorized to administer oaths and take acknowledgements, personally appeared _____, who, after being first duly sworn, upon oath deposes and says that all lienors contracting directly with, or directly employed by (him, them, it) and that all taxes imposed by Chapter 212, Florida Statutes (Sales and Use Tax) as amended, have been paid and discharged, and that all bills, wages, fees, claims, and other charges incurred by _____ in connection with the construction of: _____

_____ have been paid in full.

SIGNED:

By: _____

WITNESSES:

By: _____

Sworn and subscribed to before me this day _____, 20__AD.

Notary Public
State of Florida-at-Large
My Commission Expires: _____

CERTIFICATION OF CONTRACTOR

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

According to the best of my knowledge and belief, I certify that all items and amounts shown on Application for Payment No. _____ are correct, and that all work has been performed and/or materials supplied in full accordance with the terms and conditions of this Contract, dated _____, 20_____, between _____ (Owner) and _____ (Contractor);

I further certify that all just and lawful bills against the undersigned and his subcontractors and suppliers for labor, materials and equipment employed in the performance of this Contract have been paid in full accordance with their terms and conditions; that all taxes imposed by Chapter 212, Florida Statutes (Sales and Use Tax Act), as amended, have been paid and discharged; and that there are no Vendor's, Mechanic's or other Liens or right to liens or conditional sales contracts which should be satisfied or discharged before such payment is made.

Date: _____ Contractor: _____

STATE OF FLORIDA

COUNTY OF _____

Personally appeared before me this _____ day of _____, 20_____
_____ known (or made known) to me as the _____
_____ (Owner) (Partner) (Corporate Officer) – Give Title of _____
_____ Contractor(s), who subscribed and swore to the above instrument in my presence.

Notary Public
State of Florida-at-Large
My Commission Expires: _____

The Contractor shall execute this Certificate and attach it to each Application for Payment.

FINAL RELEASE OF LIEN

PERMIT/LICENSE: FDEP Permit No. 18-0315383-003-EE, USACE Permit SAJ-2018-01865 (RGP-SCW)

PROJECT: INTRACOASTAL WATERWAY FLAGLER COUNTY REACH I MAINTENANCE DREDGING; FLAGLER COUNTY, FLORIDA

KNOW ALL MEN BY THESE PRESENT, that _____
_____ for and in consideration of the sum
of _____ Dollars (\$) paid
to _____ by the _____
_____ receipt of which is hereby acknowledged, do(es) hereby release and quitclaim to
the Owner, its successors or assigns, all liens, lien rights, claims or demands of any kind
whatsoever which _____ now has (have)
or might have against the property, building, and/or for any incidental expense for the
construction of: _____

thereon or in otherwise improving said property situated as above described.

IN WITNESS WHEREOF _____ have (has) hereunto set hand and seal this _____
day of _____, 20____, A.D.

WITNESS:

_____ (Seal)

Sworn and subscribed to before me this day _____, 20____AD.

Notary Public
State of Florida-at-Large
My Commission Expires: _____