

REQUEST FOR QUALIFICATIONS  
No. 22-TA003923RP  
CONSTRUCTION MANAGEMENT  
AT RISK SERVICES  
KINGFISH BOAT RAMP  
IMPROVEMENTS  
JANUARY 3, 2022

Manatee County BCC  
Procurement Division  
1112 Manatee Avenue West Ste 803  
Bradenton, FL 34205  
[purchasing@mymanatee.org](mailto:purchasing@mymanatee.org)



**ADVERTISEMENT  
REQUEST FOR QUALIFICATIONS NO. 22-TA003923RP  
CONSTRUCTION MANAGEMENT AT RISK SERVICES  
KINGFISH BOAT RAMP IMPROVEMENTS**

Manatee County, a political subdivision of the State of Florida (hereinafter referred to as County) will receive qualification proposal responses (Proposals) from individuals, corporations, partnerships, and other legal entities authorized to do business in the State of Florida (Proposers), to provide boat ramp improvements as specified in this Request for Qualifications.

**DATE, TIME AND PLACE DUE:**

The Due Date and Time for submission of Proposals in response to this RFQ is **February 11, 2022 by 3:00 P.M. ET**. Proposals must be delivered to the following location: Manatee County Administration Building, 1112 Manatee Ave. W., Suite 803, Bradenton, FL 34205 and time stamped by a Procurement representative by the Due Date and Time. Proposals will be opened immediately following the Due Date and Time at the Manatee County Administration Building, Suite 803.

**SOLICITATION INFORMATION CONFERENCE:**

A non-mandatory Information Conference will be held on January 19, 2022 at 10:00 A.M. ET at the Manatee County Administration Building, 1112 Manatee Ave West, Ste. 803, Bradenton, FL 34205.

**DEADLINE FOR QUESTIONS AND CLARIFICATION REQUESTS:**

The deadline to submit all questions, inquiries, or requests concerning interpretation, clarification or additional information pertaining to this Request for Qualifications to the Manatee County Procurement Division is January 28, 2022. Questions and inquiries should be submitted via email to the Designated Procurement Contact shown below.

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

**DESIGNATED PROCUREMENT CONTACT:** Rodrigo Pasion, Procurement Agent  
(941) 748-4501 Ext. 3045, Fax (941) 749-3034  
Email: [rodrigo.pasion@mymanatee.org](mailto:rodrigo.pasion@mymanatee.org)  
Manatee County Financial Management Department  
Procurement Division

AUTHORIZED FOR RELEASE:

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Form 1	Acknowledgement of Addenda
Form 2	Proposal Signature Form
Form 3	Public Contracting and Environmental Crimes Certification
Form 4	Conflict of Interest Disclosure Form
Form 5	Non-Collusion Affidavit
Form 6	Truth-in Negotiation Certificate
Form 7	Scrutinized Company Certification
Form 8	Insurance Statement
Form 9	Indemnity and Hold Harmless
Form 10	Florida Trench Safety Act
Forms 11-14	Federal Forms (See Exhibit 3)

### **Section E, Exhibits**

Exhibit 1	Scope of Services
Exhibit 2	Proposal Response
Exhibit 3	Special Provisions - Federal Grants (Forms 11-14)
Exhibit 4	Sample Agreement
Exhibit 5	Phase 1 Site Plan
Exhibit 6	Design Plan
Exhibit 7	Restrooms Plan

## **SECTION A, INSTRUCTIONS TO PROPOSERS**

In order to receive consideration, Proposers must meet the minimum qualification requirements, submit the required forms and information, and comply with the instructions as follows. Proposals will be accepted from a single business entity, joint venture, partnership or corporation. The County intends to award an agreement(s) for the provision of boat ramp improvement services as identified in this RFQ.

### **A.01 INFORMATION CONFERENCE**

A non-mandatory Information Conference will be held on January 19, 2022 at 10:00 A.M. ET at the Manatee County Administration Building, 1112 Manatee Ave West, Ste. 803, Bradenton, FL 34205. Attendance is not mandatory, but is strongly encouraged. Attendance is not mandatory, but is strongly encouraged.

### **A.02 DUE DATE AND TIME**

The Due Date and Time for submission of Proposals in response to this Request for Qualifications (RFQ) is **February 11, 2022 by 3:00 P.M. ET**. Proposals must be delivered to the following location: Manatee County Administration Building, 1112 Manatee Ave. W., Suite 803, Bradenton, FL 34205 prior to the Due Date and Time.

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

### **A.03 PUBLIC OPENING OF RESPONSES**

Sealed Proposals will be publicly opened at Manatee County Administration Procurement Division, 1112 Manatee Avenue West, 8<sup>th</sup> Floor, Suite 803, Bradenton, Florida 34205, in the presence of County officials immediately upon expiration of the Due Date and Time. Proposers or their representatives may attend the Proposal opening.

Manatee County will make public at the opening the names of the business entities which submitted a Proposal and city and state in which they reside. No review or analysis of the Proposals will be conducted at the Proposal opening.

### **A.04 SUBMISSION OF RESPONSES**

The contents of the Proposal sealed package must include:

- One (1) bound original clearly identifying Proposer and marked "ORIGINAL".
- Three (3) bound copy(s) clearly identifying Proposer and marked "COPY" with all required information and identical to the original.
- One (1) electronic format copy(s) clearly identifying Proposer.

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

Upon submission, all Proposals become the property of Manatee County which has the right to use any or all ideas presented in any Proposal submitted in response to this Request for Qualifications whether, or not, the Proposal is accepted.

Submit the Proposal package in a sealed container with the following information clearly marked on the outside of the package: RFQ No. 22-TA003923RP, Construction Management at Risk Services Kingfish Boat Ramp Improvements, Proposer's name, and Proposer's address. Proposals must be received by the Manatee County Procurement Division prior to the Due Date and Time at the following address:

Manatee County  
Procurement Division  
1112 Manatee Avenue West, Suite 803  
Bradenton, FL 34205

#### **A.05 ORGANIZATION OF RESPONSES**

Proposals must be organized and arranged with tabs in the same order as listed in the subsections within Exhibit 2, Proposal Response, identifying the response to each specific item.

Proposals must clearly indicate the legal name, address and telephone number of the Proposer. Proposal Signature Form must be signed by an official or other individual authorized to make representations for the Proposer.

#### **A.06 DISTRIBUTION OF SOLICITATION DOCUMENTS**

All documents issued pursuant to this RFQ are distributed electronically and available for download at no charge at [www.mymanatee.org](http://www.mymanatee.org) > *Business > Bids and Proposals*. Documents may be viewed and downloaded for printing using Adobe Reader® or Microsoft software, as applicable.

At its sole discretion, the County may utilize a third-party provider to distribute Proposals. For more information regarding this service visit the Procurement webpage of the County website. Utilization of this third-party service is not a requirement for doing business with Manatee County.

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

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

**A.07 ADDENDA**

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

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

**A.08 RESPONSE EXPENSES**

All costs incurred by Proposer in responding to this RFQ and to participate in any interviews/presentations/demonstrations, including travel, will be the sole responsibility of the Proposer.

**A.09 QUESTION AND CLARIFICATION PERIOD**

Each Proposer shall examine all RFQ documents and will judge all matters relating to the adequacy and accuracy of such documents. Any questions or requests concerning interpretation, clarification or additional information pertaining to this RFQ shall be made in writing via email to the Manatee County Procurement Division to the Designated Procurement Contact or to [purchasing@mymanatee.org](mailto:purchasing@mymanatee.org). All questions received and responses given will be provided to potential Proposers via an addendum to this RFQ

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

**A.10 FALSE OR MISLEADING STATEMENTS**

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

**A.11 WITHDRAWAL OR REVISION OF RESPONSES**

Proposers may withdraw Proposals under the following circumstances:

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

#### **A.12 JOINT VENTURES**

Proposers intending to submit a Proposal as a joint venture with another entity are required to have filed proper documents with the Florida Department of Business and Professional Regulation and all other State or local licensing agencies as required by Florida Statute Section 489.119, prior to the Due Date and Time.

#### **A.13 LOBBYING**

After the issuance of any solicitation, no prospective Proposer, or their agents, representatives or persons acting at the request of such Proposer, shall contact, communicate with or discuss any matter relating in any way to the solicitation with any County officers, agents or employees, other than the Procurement Official or designee, unless otherwise directed by the Procurement Official or designee. This prohibition includes copying such persons on written communications (including email correspondence) but does not apply to presentations made to evaluation committees or at a County Commission meeting where the Commission is considering approval of a proposed contract/purchase order. This requirement ends upon final execution of the contract/purchase order or at the time the solicitation is cancelled. Violators of this prohibition will be subject to sanctions as provided in the Manatee County Code of Ordinances Section 2-26-31 and 2-26-32. Sanctions may include (a) written warning; (b) termination of contracts; and (c) debarment or suspension.

#### **A.14 EXAMINATION OF RESPONSES**

The examination and evaluation of the Proposals submitted in response to this solicitation generally requires a period of not less than ninety (90) calendar days from the Due Date and Time.

#### **A.15 ERRORS OR OMISSIONS**

Once a Proposal is opened, the County will not accept any request by Proposer to correct errors or omissions in the Proposal other than as identified in paragraph A.11.

**A.16 DETERMINATION OF RESPONSIBLENESS AND RESPONSIVENESS**

The County will conduct a due diligence review of all Proposals received to determine if the Proposer is responsible and responsive.

To be responsive a Proposer must submit a Proposal that conforms in all material respects to the requirements of this RFQ and contains all the information, fully completed attachments and forms, and other documentation required. Proposals that are deemed non-responsive will not be considered or evaluated.

To be responsible, a Proposer must meet the minimum qualification requirements and have the capability to perform the Scope of Services contained in this RFQ. Proposals submitted by Proposers that are deemed non-responsible will not be considered or evaluated.

**A.17 RESERVED RIGHTS**

The County reserves the right to accept or reject any and all Proposals, to waive irregularities and technicalities, to request additional information and documentation, and to cancel this solicitation at any time prior to execution of the contract. In the event only one Proposal is received, the County reserves the right to negotiate with the Proposer. The County reserves the right to award the contract to a responsive and responsible Proposer which in its sole determination is the best value and in the best interests of the County.

The County reserves the right to conduct an investigation as it deems necessary to determine the ability of any Proposer to perform the work or service requested. Upon request by the County, Proposer shall provide all such information to the County. Additional information may include, but will not be limited to, current financial statements prepared in accordance with generally accepted accounting practices and certified by an independent CPA or official of Proposer; verification of availability of equipment and personnel; and past performance records.

**A.18 APPLICABLE LAWS**

Proposer must be authorized to transact business in the State of Florida. All applicable laws and regulations of the State of Florida and ordinances and regulations of Manatee County will apply to any resulting contract. This solicitation process will be conducted in accordance with Manatee County Code of Ordinances, Chapter 2-26.

**A.19 TAXES**

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

The Successful Proposer will be responsible for the payment of taxes of any kind, including but not limited to sales, consumer, use, and other similar taxes payable on

account of the work performed and/or materials furnished under the award in accordance with all applicable laws and regulations.

**A.20 SCRUTINIZED COMPANIES**

Pursuant to Florida Statute Section 287.135, as of July 1, 2012, a company that, at the time of submitting a response for a new contract or renewal of an existing contract, is on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to Florida Statute Section 215.473, is ineligible for, and may not submit a response for or enter into or renew a contract with an agency or local governmental entity for goods or services of \$1 million or more.

**A.21 COLLUSION**

Proposer certifies that its Proposal is made without prior understanding, agreement, or connection with any other corporation, firm or person submitting a Proposal for the same materials, services, supplies, or equipment and is in all respects fair and without collusion or fraud.

Any such violation may result in contract cancellation, return of materials or discontinuation of services and the possible removal of Proposer from participation in future County solicitations for a specified period.

The County reserves the right to disqualify a Proposer during any phase of the solicitation process and terminate for cause any resulting contract upon evidence of collusion with intent to defraud on the part of the Proposer.

**A.22 CODE OF ETHICS**

With respect to this Request for Qualifications, if any Proposer violates, directly or indirectly, the ethics provisions of the Manatee County Procurement Code and/or Florida criminal or civil laws related to public procurement, including but not limited to Florida Statutes Chapter 112, Part II, Code of Ethics for Public Officers and Employees, such Proposer will be disqualified from eligibility to perform the work described in this RFQ, and may also be disqualified from submitting any future bids or proposals to supply goods or services to Manatee County.

**A.23 PUBLIC ENTITY CRIMES**

In accordance with Section 287.133, Florida Statutes, 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 proposal on a contract to provide any goods or services to a public entity, may not submit a proposal on a contract with a public entity for the construction or repair of a public building or public work, may not submit proposals on leases or real property to a public entity, may not be awarded or perform work as a contractor, Successful Proposer, 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 Section 287.017 for Category Two for a period of 36 months from the date of being placed on the convicted vendor list.

In addition, Manatee County Code of Laws Chapter 2-26 Article V prohibits the award of County contracts to any person or entity who/which has, within the past 5 years, been convicted of, or admitted to in court or sworn to under oath, a public entity crime or of any environmental law that, in the reasonable opinion of the Purchasing Official, establishes reasonable grounds to believe the person or business entity will not conduct business in a reasonable manner.

To ensure compliance with the foregoing, Manatee County Code of Laws requires all persons or entities desiring to contract with Manatee County to execute and file with the Purchasing Official an affidavit, executed under the pain and penalties of perjury, confirming that person, entity, and any person(s) affiliated with the entity, does not have such a record and is therefore eligible to seek and be awarded business with Manatee County. Proposer is to complete Form 3 and submit with your Proposal.

#### **A.24 AMERICANS WITH DISABILITIES**

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

#### **A.25 EQUAL EMPLOYMENT OPPORTUNITY**

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

#### **A.26 MINORITY AND/OR DISADVANTAGED BUSINESS ENTERPRISE**

The State of Florida Office of Successful Proposer Diversity provides the certification process and maintains the database of certified MBE/DBE firms. Additional information may be obtained at <http://www.osd.dms.state.fl.us/iframe.htm> or by calling (850) 487-0915.

#### **A.27 DISCLOSURE**

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

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

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

Pursuant to Florida Statute 119.0701, to the extent Successful Proposer is performing services on behalf of County, Successful Proposer must:

- a. Keep and maintain public records required by public agency to perform the service. That information and data it manages as part of the services may be public record in accordance with Chapter 119, Florida Statutes and Manatee County public record policies. Proposer agrees, prior to providing goods/services, it will implement policies and procedures, which are subject to approval by County, to maintain, produce, secure, and retain public records in accordance with applicable laws, regulations, and County policies including but not limited to Section 119.0701, Florida Statutes.
- b. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Florida Statutes, Chapter 119, or as otherwise provided by law.
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Successful Proposer does not transfer the records to the public agency.
- d. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of contractor or keep and maintain public records required by the public agency to perform the service. If the Successful Proposer transfers all public records to County upon completion of the contract, the Successful Proposer shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Successful Proposer keeps and maintains public records upon completion of the contract, the Successful Proposer shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to County, upon request from County's custodian of public records, in a format that is compatible with the information technology systems of County.

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

**PHONE: (941) 742-5845**  
**EMAIL: [DEBBIE.SCACCIANOCE@MYMANATEE.ORG](mailto:DEBBIE.SCACCIANOCE@MYMANATEE.ORG)**  
**ATTN: RECORDS MANAGER**  
**1112 MANATEE AVENUE WEST**  
**BRADENTON, FL 34205**

**A.28 TRADE SECRETS**

Manatee County is subject to Chapter 119, Florida Statutes. Therefore, all documents, materials, and data submitted as part of a Proposal in response to a Request for Proposal are governed by the disclosure, exemption and confidentiality provisions relating to public records in Florida Statutes.

**Notwithstanding any other provision in this solicitation, designation of the entire proposal as ‘trade secret’, ‘proprietary’, or ‘confidential’ is not permitted and may result in a determination that the Proposal is non-responsive and therefore the proposal will not be evaluated or considered.**

Except for materials that are ‘trade secrets’ as defined by Chapter 812, Florida Statutes, ownership of all documents, materials and data submitted as part of a Proposal in response to the Request for Proposal shall belong exclusively to County.

To the extent that Proposer desires to maintain the confidentiality of materials that constitute trade secrets pursuant to Florida law, trade secret material submitted must be segregated from the portions of the Proposal that are not declared as trade secret. In addition, Proposer shall cite, for each trade secret claimed, the Florida Statute number which supports the designation. Further, Proposer shall offer a brief written explanation as to why the cited Statute is applicable to the information claimed as trade secret. Additionally, Proposer shall provide a hard copy of its Proposal that redacts all information designated as trade secret.

In conjunction with trade secret designation, Proposer acknowledges and agrees that:

- a. Trade secret requests made after the opening will not be considered. However, County reserves the right to clarify the Proposers request for trade secret at any time; and
- b. County and its officials, employees, agents, and representatives are hereby granted full rights to access, view, consider, and discuss the information designated as trade secret throughout the evaluation process and until final execution of any awarded purchase order or contract; and
- c. That after notice from County that a public records request has been made pursuant to Proposer’s proposal, the Proposer at its sole expense, shall be responsible for defending its determination that submitted material is a trade secret and is not subject to disclosure. Action by Proposer in response to notice from the County shall be taken immediately, but no later than 10 calendar days from the date of

notification or Proposer will be deemed to have waived the trade secret designation of the materials.

Proposer shall indemnify and hold County, and its officials, employees, agents and representatives harmless from any actions, damages (including attorney's fees and costs), or claims arising from or related to the designation of trade secrets by the Proposer, including actions or claims arising from County's non-disclosure of the trade secret materials.

#### **A.29 CONFIDENTIALITY OF SECURITY RELATED RECORDS**

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

#### **A.30 E-VERIFY**

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

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

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

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

### **A.31 LICENSES AND PERMITS**

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

### **A.32 MINIMUM WAGE REQUIREMENTS**

The successful Proposer shall comply with all minimum wage requirements, such as Living Wage requirements, minimum wages based on Federal Law, minimum wages based on the Davis-Bacon Act, and the provisions of any other employment laws, as may be applicable to the Agreement.

### **A.33 PROTEST**

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

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

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

### **A.34 BINDING OFFER**

Proposals will remain valid for a period of 120 days following the Due Date and Time and will be considered a binding offer to perform the required services and/or provide the

required goods. The submission of a Proposal will be taken as prima facie evidence that the Proposer has familiarized itself with the contents of this Solicitation

**A.35 ACCESSIBILITY**

The County is committed to making its documents and information technologies accessible to individuals with disabilities by meeting the requirements of Section 508 of the Rehabilitation Act and best practices (W3C WCAG 2). **For assistance with accessibility regarding this solicitation, contact the Manatee County Procurement Division via email at [purchasing@mymanatee.org](mailto:purchasing@mymanatee.org) or by phone at 941-748-4501, X3014.**

Successful Proposer shall ensure all its electronic information, documents, applications, reports, and deliverables required in the proposal are in a format that meets the requirements of Section 508 of the Rehabilitation Act and best practices (W3C WCAG 2).

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

**A.36 SOLICITATION SCHEDULE**

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

Scheduled Item	Scheduled Date
Non-Mandatory Solicitation Information Conference at Manatee County Admn. Building, Suite 803, 1112 Manatee Ave West, Bradenton, FL 34205	January 19, 2022 at 10:00 A.M. ET
Question and Clarification Deadline	January 28, 2022
Final Addendum Posted	February 4, 2022
Proposal Due Date and Time	February 11, 2022, by 3:00 P.M. ET
Technical Evaluation Meeting	March 4, 2022
Technical Evaluation Meeting	March 7, 2022
Interviews/Presentations/Demonstrations (if conducted)	March 16, 2022

Final Evaluation Meeting (if required)	March 23, 2022
Projected Award	April 2022

**END SECTION A**

## SECTION B, EVALUATION OF RESPONSES

### B.01 EVALUATION

A due diligence review will be conducted to determine if the Proposal is responsive to the submission requirements outlined in this Solicitation and to determine if the Proposer is a responsible Proposer.

A responsive Proposal is one that follows the requirements of this Solicitation, includes all documentation, is submitted in the format outlined in this Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may result in the Proposal being deemed non-responsive. A responsible Proposer is a Proposer which the County affirmatively determines has the ability, capability and skill to perform under the terms of the agreement; can provide the materials and/or service promptly within the time specified, without delay or interference; has a satisfactory record of integrity and business ethics; and meets the minimum qualification requirements in this RFQ.

Evaluation of Proposals will be conducted by an evaluation committee. Each evaluation committee member will evaluate and score the Proposals for each of the evaluation criteria. The committee will consider all information submitted by each responsible and responsive Proposer; clarification information provided by Proposer; information obtained during the interviews, presentations, or demonstrations; feedback received from Proposer's references; and any other relevant information received during any investigation of Proposer to ascertain the ability of the Proposer to perform the Scope of Services as stated in this RFQ.

### B.02 EVALUATION CRITERIA

The following evaluation criteria have been established for this RFQ.

<b>Evaluation Criteria</b>	<b>Maximum Points</b>
Proposer & Team's Experience	25
Approach to Project Management and Construction	35
Organizational Structure and Capacity	15
Similar Completed Projects	25

### B.03 CLARIFICATIONS, INTERVIEWS, PRESENTATIONS, DEMONSTRATIONS

As part of the evaluation process, the evaluation committee will determine a list of those responsive and responsible Proposals that are deemed by the committee as having a reasonable probability of being selected for award (Short List). At a minimum, the evaluation committee shall conduct discussions with the Short List Proposers and may request additional information or clarification from Proposers for the purpose of further evaluation of (a) conformance to the solicitation requirements, (b) the abilities of the

Proposer, and (c) understanding of the Proposal submitted. Additional information and clarification must be submitted by Proposer within the requested time-period.

Additionally, interviews, presentations or demonstrations may be conducted with Proposers as part of the evaluation process. If conducted, the Short List Proposers will be invited to meet with the committee. The information gained from these interviews, presentations, or demonstrations will be part of the committee's consideration in making a recommendation for award. Therefore, Proposers should make arrangements to attend, if invited.

The interviews, presentations and demonstrations are closed to the public to the extent permitted by law.

In the final evaluations, each evaluator will consider the information obtained from the proposals as well as the discussions and clarifications presented during the presentations. As part of the final evaluations, the initial technical evaluation scores for each short-listed firm, in each of the evaluation criterion, will be discussed by the evaluation committee and are subject to change.

#### **B.04 RECOMMENDATION FOR NEGOTIATION**

The evaluation committee will determine from the responses to this RFQ and subsequent investigations, the Proposer(s) who best meets the County's requirements. Upon completion of the technical evaluations, the evaluation committee will make a recommendation as to the Proposer(s) which the County should enter into negotiations, if any. The County will notice the Intent to Negotiate, in the same manner the original Request for Qualifications document was noticed prior to commencing negotiations.

Upon approval to commence negotiations, the recommended Proposer(s) shall submit one original hard copy and one electronic copy on a CD or USB flash drive of its pricing proposal. The pricing information should show a categorical breakout of the pricing, with any alternates or options clearly identified. The pricing information shall be clear and unambiguous to facilitate evaluation of the prices submitted.

The County will conduct negotiations with the highest scoring Proposer. If the County and the highest-scored Proposer cannot reach agreement on a contract, the County reserves the right to terminate negotiations and may, at its sole discretion, begin negotiations with the next highest-scored Proposer(s). This process may continue until a contract acceptable to the County has been negotiated or all Proposals are rejected.

#### **B.05 RECOMMENDATION FOR AWARD**

Upon successful completion of negotiations, a recommendation for award to the successful Proposer(s) will be presented for approval per County ordinances, policies and procedures.

### **END SECTION B**

## **SECTION C, AWARD OF THE AGREEMENT**

### **C.01 GENERAL**

By submitting a Proposal, Proposer understands and agrees:

- a. The Proposal and all subsequent information requested by the County during the procurement process will serve as a basis for the Agreement.
- b. All products and papers produced during the Agreement period become the property of Manatee County upon termination or completion of the engagement.

### **C.02 AGREEMENT**

The successful Proposer(s) will be required to execute the Agreement in a form and with provisions acceptable to the County (See Exhibit 4, Sample Agreement). The County (as Owner) will execute this Agreement with the successful Proposer (as Consultant).

The negotiated Agreement may or may not include all elements of this RFQ or the Proposal submitted by the successful Proposer(s) where alternatives provide best value, are desirable to the County, and the parties agree to such terms. Negotiations of the terms of the Agreement, may include specifications, scope of project, price, the Agreement period, renewal, or any other relevant provisions.

### **C.03 AWARD**

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

Award of the Agreement is subject to approval as provided for in the Manatee County Procurement Code.

**END SECTION C**

**SECTION D, FORMS**

**FORM 1 - ACKNOWLEDGMENT OF ADDENDA**

The undersigned acknowledges receipt of the following addenda:

Addendum No. _____	Date Received:

Print or type Proposer’s information below:

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

**FORM 2 - PROPOSAL SIGNATURE FORM**

The undersigned represents that by signing this Proposal Signature Form that:

- (1) He/she has the authority and approval of the legal entity purporting to submit the Proposal and any additional documentation which may be required such as the Joint Venture Agreement or Joint Venture Affidavit, if applicable; and
- (2) All facts and responses set forth in the Proposal are true and correct; and
- (3) If the Proposer is selected by County to negotiate an agreement, that Proposer’s negotiators will negotiate in good faith to establish an agreement to provide the services described in this RFQ; and
- (4) By submitting a Proposal and signing below, the Proposer agrees to the terms and conditions in this RFQ, which incorporates all addenda, appendices, exhibits, and attachments, in its entirety, and is prepared to sign the Agreement, of which a sample is incorporated into this RFQ as Exhibit 4. The Proposer understands that if it submits exceptions to the Sample Agreement in its Proposal, the Proposer may be determined non-responsive.

Print or type Proposer’s information below:

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

**FORM 3 - PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES  
CERTIFICATION**

SWORN STATEMENT PURSUANT TO MANATEE COUNTY PROCUREMENT CODE  
SECTION 2-26 ARTICLE V,

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

This sworn statement is submitted to Manatee County by

\_\_\_\_\_

[print individual's name and title]

for \_\_\_\_\_

[name of entity submitting sworn statement]

whose business address is: \_\_\_\_\_

and (if applicable) its Federal Employer Identification Number (FEIN) is \_\_\_\_\_

\_\_\_\_\_. If the entity has no FEIN, include the Social Security Number of the individual signing  
this sworn statement:

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

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

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

(3) been convicted of a violation of an environmental law that, as determined by the  
County, reflects negatively upon the ability of the person or entity to conduct business in  
a responsible manner; or

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

(5) where an officer, official, agent or employee of a business entity has been convicted of, or has admitted guilt to, any of the crimes set forth above on behalf of such and entity and pursuant to the direction or authorization of an official thereof (including the person committing the offense, if he/she is an official of the business entity), the business shall be chargeable with the conduct herein above set forth. A business entity shall be chargeable with the conduct of an affiliated entity, whether wholly owned, partially owned, or one which has common ownership or a common board of directors.

For purposes of this Form, business entities are affiliated if, directly or indirectly, one business entity controls or has the power to control another business entity, or if an individual or group of individuals controls or has the power to control both entities. Indicia of control shall include, without limitation, interlocking management or ownership, identity of interests amount family members, shared organization of a business entity following the ineligibility of a business entity under this Article, or using substantially the same management, ownership or principles as the ineligible entity.

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

**I UNDERSTAND THAT ANY CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE PROCUREMENT DIVISION OR THE COUNTY ADMINISTRATOR DETERMINES THAT SUCH PERSON OR ENTITY HAS MADE FALSE CERTIFICATION.**

\_\_\_\_\_  
Signature of Contractor Representative

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Sworn to and subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
by \_\_\_\_\_.  Personally known OR  Produced the  
following identification

\_\_\_\_\_  
[Type of identification]

\_\_\_\_\_  
Notary Public Signature

My commission expires \_\_\_\_\_

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

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

**FORM 4 - CONFLICT OF INTEREST DISCLOSURE FORM**

The award of an agreement resulting from this RFQ is subject to the provisions of Manatee County Code of Laws. Proposer must disclose within its Proposal: the name of any officer, director, or agent who is also an employee of Manatee County. Furthermore, Proposer must disclose the name of any County employee who owns, directly or indirectly, an interest of more than five percent (5%) in the Proposer’s firm or any of its branches, divisions, or affiliates.

By signing below, Proposer confirms that it is not currently engaged or will not become engaged in any obligations, undertakings or contracts that will require the firm to maintain an adversarial role against the County or that will impair or influence the advice or recommendations it provides to the County.

Please check one of the following statements and attach additional documentation if necessary:

\_\_\_\_\_ To the best of my knowledge, the undersigned firm has no potential conflict of interest for this RFQ.

\_\_\_\_\_ The undersigned firm, by execution of this form, submits information which may be a potential conflict of interest for this RFQ.

Acknowledged and attested to by:

\_\_\_\_\_  
Firm Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name and Title (Print or Type)

\_\_\_\_\_  
Date

**Return this fully executed form with your Proposal.**

**FORM 5 - NON-COLLUSION AFFIDAVIT**

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

Before me, the undersigned authority, personally appeared \_\_\_\_\_, who, after being by me first duly sworn, deposes and says of his/her personal knowledge that:

a. He/She is \_\_\_\_\_ of \_\_\_\_\_, the Proposer that has submitted a Proposal to perform work for the following:

RFQ No.: \_\_\_\_\_ Title: \_\_\_\_\_

b. He/She is fully informed respecting the preparation and contents of the attached Request for Qualifications, and of all pertinent circumstances respecting such Solicitation.

Such Proposal is genuine and is not a collusive or sham Proposal.

c. Neither the said Proposer nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the Solicitation and contract for which the attached Proposal has been submitted or to refrain from proposing in connection with such Solicitation and contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Proposer, firm, or person to fix the price or prices in the attached Proposal or any other Proposer, or to fix any overhead, profit, or cost element of the Proposal price or the Proposal price of any other Proposer, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the City or any person interested in the proposed contract.

d. The price or prices to be submitted shall be fair and proper and shall not be tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Proposer or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

Signature: \_\_\_\_\_

Subscribed and sworn to (or affirmed) before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_, by \_\_\_\_\_, who is personally known to me OR has produced \_\_\_\_\_ as identification.

Notary Signature \_\_\_\_\_

Notary Name: \_\_\_\_\_

Notary Public (State): \_\_\_\_\_

My Commission No: \_\_\_\_\_  
Expires on: \_\_\_\_\_  
SEAL

**FORM 6 - TRUTH – IN – NEGOTIATION CERTIFICATE**

The undersigned warrants (i) that it has not employed or retained any company or person, other than bona fide employees working solely for the undersigned, to solicit or secure the Agreement and (ii) that it has not paid or agreed to pay any person, company, corporation, individual, or firm other than its bona fide employees working solely for the undersigned or agreed to pay any fee, commission, percentage, gift, or any other consideration contingent upon or resulting from the award or making of the Agreement.

The undersigned certifies that the wage rates and other factual unit costs used to determine the compensation provided for in the Agreement are accurate, complete, and current as of the date of the Agreement.

(This document must be executed by an authorized official of Proposer (e.g., President, CEO, Partner, Managing Partner))

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

**FORM 7 – SCRUTINIZED COMPANY CERTIFICATION**

This certification is required pursuant to Florida State Statute Section 287.135 and must be executed and returned with Proposer’s Proposal.

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

Companies must complete and return this form with its response.

Company: \_\_\_\_\_

FEIN: \_\_\_\_\_

Address. \_\_\_\_\_

City/State/Zip. \_\_\_\_\_

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

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

## FORM 8, INSURANCE REQUIREMENTS

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

### **Automobile Liability Insurance Required Limits**

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

- \$2,000,000 Combined Single Limit; OR
- \$ 1,000,000 Bodily Injury and \$1,000,000 Property Damage
- \$10,000 Personal Injury Protection (No Fault)
- \$500,000 Hired, Non-Owned Liability
- \$10,000 Medical Payments

*This policy shall contain severability of interests’ provisions.*

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

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

- \$2,000,000 Single Limit Per Occurrence
- \$4,000,000 Aggregate
- \$4,000,000 Products/Completed Operations Aggregate
- \$1,000,000 Personal and Advertising Injury Liability
- \$100,000 Fire Damage Liability
- \$10,000 Medical Expense, and
- \$1,000,000, Third Party Property Damage
- \$        Project Specific Aggregate (Required on projects valued at over \$10,000,000)

*This policy shall contain severability of interests’ provisions.*

### **Employer’s Liability Insurance**

Coverage limits of not less than:

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

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

Coverage limits of not less than:

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

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

**Aircraft Liability Insurance Required Limits**

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

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

**Un-Manned Aircraft Liability Insurance (Drone)**

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

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

**Installation Floater Insurance**

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

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

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

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

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

**Builder's Risk Insurance**

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

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

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

**Cyber Liability Insurance**

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

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

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

**Hazardous Materials Insurance (As Noted Below)**

Hazardous materials include all materials and substances that are currently designated or defined as hazardous by the law or rules of regulation by the State of Florida or federal government. All coverage shall be afforded under either an occurrence policy form or a claims-made policy form, and the policy shall be endorsed and name 'Manatee County, a political subdivision of the State of Florida' as an Additional Insured. If the coverage form is on a claims-made basis, then coverage must be maintained for a minimum of three years from termination of date of the contract. Limits must not be less than:

***Pollution Liability***

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

***Asbestos Liability (If handling within scope of Contract)***

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

***Disposal***

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

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

**Hazardous Waste Transportation Insurance**

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

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

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

**Liquor Liability Insurance**

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

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

**Garage Keeper’s Liability Insurance**

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

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

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

**Bailee’s Customer Liability Insurance**

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

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

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

**Hull and Watercraft Liability Insurance**

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

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

**Other [Specify]**

**BOND REQUIREMENTS**

**Bid Bond**

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

**Payment and Performance Bond**

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

## **INSURANCE REQUIREMENTS**

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

#### **Commercial General Liability and Automobile Liability Coverages**

- a. **“Manatee County, a Political Subdivision of the State of Florida,” is to be named as an Additional Insured in respect to:** Liability arising out of activities performed by or on behalf of the Successful Proposer, his agents, representatives, and employees; products and completed operations of the Successful Proposer; or automobiles owned, leased, hired or borrowed by the Successful Proposer. The coverage shall contain no special limitation(s) on the scope of protection afforded to the COUNTY, its officials, employees or volunteers.  
In addition to furnishing a Certificate of Insurance, the Successful Proposer shall provide the endorsement that evidences Manatee COUNTY being listed as an Additional Insured. This can be done in one of two ways: (1) an endorsement can be issued that specifically lists “Manatee County, a Political Subdivision of the State of Florida,” as Additional Insured; or, (2) an endorsement can be issued that states that all Certificate Holders are Additional Insured with respect to the policy.
- b. The Successful Proposer'S insurance coverage shall be primary insurance with respect to the COUNTY, its officials, employees and volunteers. Any insurance or self-insurance maintained by the COUNTY, its officials, employees or volunteers shall be excess of Successful Proposer's insurance and shall be non-contributory.
- c. The insurance policies must be on an occurrence form.

#### **Workers' Compensation and Employers' Liability Coverages**

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

### **II. General Insurance Provisions Applicable to All Policies**

1. Prior to the execution of contract, or issuance of a Purchase Order, and then annually upon the anniversary date(s) of the insurance policy's renewal date(s) for as long as this contract remains in effect, Successful Proposer shall furnish the COUNTY with a Certificate(s) of Insurance (using an industry accepted certificate form, signed by the Issuer, with applicable endorsements, and containing the solicitation or contract number, and title or description) evidencing the coverage set forth above and naming “Manatee County, a Political Subdivision of the State of Florida” as an Additional Insured on the applicable coverage(s) set forth above.

2. If the policy contains an aggregate limit, confirmation is needed in writing (letter, email, etc.) that the aggregate limit has not been eroded to procurement representative when supplying Certificate of Insurance. In addition, when requested in writing from the COUNTY, Successful Proposer will provide the COUNTY with a certified copy of all applicable policies. The address where such certificates and certified policies shall be sent or delivered is as follows:

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

3. The project's solicitation number and title shall be listed on each certificate.
4. Successful Proposer shall provide thirty (30) days written notice to the Risk Manager of any cancellation, non-renewal, termination, material change, or reduction in coverage of any insurance policies to procurement representative including solicitation number and title with all notices.
5. Successful Proposer agrees that should at any time Successful Proposer fail to meet or maintain the required insurance coverage(s) as set forth herein, the COUNTY may terminate this contract.
6. The Successful Proposer waives all subrogation rights against COUNTY, a Political Subdivision of the State of Florida, for all losses or damages which occur during the contract and for any events occurring during the contract period, whether the suit is brought during the contract period or not.
7. The Successful Proposer has sole responsibility for all insurance premiums and policy deductibles.
8. It is the Successful Proposer'S responsibility to ensure that his agents, representatives and subcontractors comply with the insurance requirements set forth herein. Successful Proposer shall include his agents, representatives, and subcontractors working on the project or at the worksite as insured under its policies, or Successful Proposer shall furnish separate certificates and endorsements for each agent, representative, and subcontractor working on the project or at the worksite. All coverages for agents, representatives, and subcontractors shall be subject to all of the requirements set forth to the procurement representative.
9. All required insurance policies must be written with a carrier having a minimum A.M. Best rating of A- FSC VII or better. In addition, the COUNTY has the right to review the Successful Proposer's deductible or self-insured retention and to require that it be reduced or eliminated.
10. Successful Proposer understands and agrees that the stipulated limits of coverage listed herein in this insurance section shall not be construed as a limitation of any potential liability to the COUNTY, or to others, and the COUNTY'S failure to request evidence of this insurance coverage shall not be construed as a waiver of Successful Proposer'S obligation to provide and maintain the insurance coverage specified.
11. Successful Proposer understands and agrees that the COUNTY does not waive its immunity and nothing herein shall be interpreted as a waiver of the COUNTY'S

rights, including the limitation of waiver of immunity, as set forth in Florida Statutes 768.28, or any other statutes, and the COUNTY expressly reserves these rights to the full extent allowed by law.

12. No award shall be made until the Procurement Division has received the Certificate of Insurance in accordance with this section.

## **BONDING REQUIREMENTS**

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

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

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

Bonds shall be in an amount equal to 100% of the contract price issued by a duly authorized and nationally recognized surety company, authorized to do business in the State of Florida, satisfactory to COUNTY. Surety shall be rated as "A-" or better by Best's Key Guide, latest edition. The attorney-in-fact who signs the bonds must file with the bonds, a certificate and effective dated copy of power-of-attorney. Payment and Performance Bonds shall be issued to "Manatee County, a political subdivision of the State of Florida", **within ten (10) calendar days after issuance of notice of intent to award.**

In addition, pursuant to Florida Statutes § 255.05(1)(b), Florida Statutes, prior to commencing work, the Successful Proposer shall be responsible and bear all costs associated to record the Payment and Performance Bond with the Manatee County Clerk of the Circuit Court. A certified copy of said recording shall be furnished to the Procurement Division upon filing. Pursuant to Florida Statutes § 255.05(1)(b), Florida Statutes, COUNTY will make no payment to the Successful Proposer until the Successful Proposer has complied with this paragraph.

Furnishing Payment and Performance Bonds shall be requisite to execution of an Agreement with COUNTY. Said Payment and Performance Bonds will remain in force for the duration of this Agreement with the premiums paid by the Successful Proposer. Failure of the Successful Proposer to execute such Agreement and to supply the required bonds shall be just cause for cancellation of the award. COUNTY may then contract with the next lowest, responsive and responsible Successful Proposer or re-advertise this RFP.

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

**FORM 8, INSURANCE STATEMENT  
RFQ NO. 22-TA003923RP**

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

Proposer Name: \_\_\_\_\_ Date: \_\_\_\_\_

Signature  
(Authorized  
Official): \_\_\_\_\_

Printed Name/Title: \_\_\_\_\_

Insurance Agency: \_\_\_\_\_

Agent Name: \_\_\_\_\_ Agent Phone: \_\_\_\_\_

***Return this signed statement with your proposal.***

**FORM 9, INDEMNITY AND HOLD HARMLESS**

**MANATEE COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF FLORIDA**

The Successful Proposer shall indemnify and hold harmless County, its officers, and employees from liabilities, damages, losses, and costs, including but not limited to reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentionally wrongful conduct of the Successful Proposer, its personnel, design professionals and other persons employed or utilized by the Successful Proposer in the performance of the Agreement, including without limitation, defects in design, or errors or omissions that result in material cost increases to County. Such indemnification shall include the payment of all valid claims, losses, and judgments of any nature whatsoever in connection therewith and the payment of all related fees and costs. County reserves the right to defend itself with its own counsel or retained counsel at Successful Proposer's expense.

Signature of Authorized Official of Proposer: \_\_\_\_\_

Title: Date: \_\_\_\_\_

Project Number and /or Name: \_\_\_\_\_

Insurance Agent: \_\_\_\_\_

Acknowledgement:

STATE OF \_\_\_\_\_

COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_ by \_\_\_\_\_ [FULL LEGAL NAME], who is

Personally known to me

OR

has produced \_\_\_\_\_ as identification.

Notary Signature \_\_\_\_\_

Print Name \_\_\_\_\_

Seal

## **SECTION E, EXHIBITS**

**Exhibit 1, Scope of Services**

**Exhibit 2, Proposal Requirements**

**Exhibit 3, Special Provision - Federal Grants**

**Exhibit 4, Sample Agreement**

**Exhibit 5, Phase 1 Site Plan**

**Exhibit 6, Design Plan**

**Exhibit 7, Restrooms Plan**

PROJECT MANUAL

# KINGFISH BOAT RAMP

MANATEE COUNTY

CPH PROJECT NUMBER: M13112

60% SUBMITTAL (UPDATED)  
December 17, 2021



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

*Certificate of Authorization No. 00003215*

46 N Washington Blvd., Suite 2  
Sarasota, Florida 34236  
Ph. 941.365.4771  
Fx. 941.365.4779

## PROJECT MANUAL INDEX

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### **Appendices**

- A. Geotechnical Data
- B. Permits
- C. Manatee County Property Management Department – *Preferred Building and Grounds Equipment, Materials, and Design Criteria Catalog*

**SECTION 00015**

**LIST OF DRAWINGS**

<b>SHEET NO.</b>	<b>LATEST DATE</b>	<b>DESCRIPTION</b>
C0.1		COVER
1-5		BOUNDARY AND TOPOGRAPHIC SURVEY
C0.2		GENERAL NOTES
C0.3		GENERAL NOTES
C0.4		SUMMARY OF PAY ITEMS
D0.1		DEMOLITION PLAN
C1.1		STORMWATER POLLUTION PREVENTION PLAN
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C1.3		SITE DIMENSION PLAN
C1.4		GRADING AND STORM DRAINAGE PLAN
C1.5		COMPOSITE UTILITY PLAN
C5.0		CROSS SECTIONS
C5.1		CROSS SECTIONS
C5.2		CONSTRUCTION DETAILS
C5.3		AGENCY DETAILS
C5.4		LIFT STATION DETAILS
C5.5		LIFT STATION DETAILS
C6.1		FORCE MAIN LAYOUT
C7.1		FORCE MAIN PLAN AND PROFILE
C7.2		FORCE MAIN PLAN AND PROFILE
C7.3		FORCE MAIN PLAN AND PROFILE
C7.4		FORCE MAIN PLAN AND PROFILE
C7.5		FORCE MAIN PLAN AND PROFILE
C7.6		FORCE MAIN PLAN AND PROFILE
C7.7		FORCE MAIN PLAN AND PROFILE
C7.8		FORCE MAIN PLAN AND PROFILE
C7.9		FORCE MAIN PLAN AND PROFILE
C7.10		FORCE MAIN PLAN AND PROFILE
C7.11		FORCE MAIN PLAN AND PROFILE
TR1.1		TREE RETENTION PLAN
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E1		INDEX, SCOPE, GENERAL NOTES AND SYMBOL LEGEND
E2		ELECTRICAL SPECIFICATIONS AND ABBREVIATIONS

E3		ELECTRICAL PLAN
E4		ONE-LINE DIAGRAM AND PANEL SCHEDULE
E5a		PHOTOMETRICS AND LIGHTING DETAILS
E5b		LIGHTING PLAN
E6		DETAILS AND ELEVATIONS
E7		OVERALL ELECTRICAL SITE PLAN
S1.1		SHEET PILE SEA WALL WITH WOOD DOCK COMPOSITE PLAN
S1.2		SHEET PILE SEA WALL WITH WOOD DOCK SECTIONS AND DETAILS
S1.3		CONCRETE RAMP SECTION AND DETAILS

**END OF SECTION**

**SECTION 00320**  
**GEOTECHNICAL DATA**

**PART 1 GENERAL**

**1.01 Description**

- A. The following geotechnical report(s) were prepared for the Owner, copies of which are contained in the Appendix to these technical specifications:
  - 1. Subsurface Soil Exploration and Recommendations for Kingfish Boat Ramp and Parking Lot Improvements (File #11-7511) by Ardaman and Associates dated 6/03/2020.
  
- B. The Contractor shall examine the project area and make any site soils and subsurface investigations deemed necessary in order to achieve satisfactory completion and acceptance of this Contract.

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

## SECTION 01110

### SUMMARY OF WORK

#### PART 1 GENERAL

##### 1.01 Section Includes

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

##### 1.02 Summary of Work

This project consists of seawall, dock, boat ramp, utility, parking, landscaping, stormwater and restroom building improvements to the existing Kingfish Boat Ramp. The proposed boat ramp will include concrete stabilized ramp and shoreline armor/propwash protection at the end of the ramp. The ramp will include four (4) individual launch lanes with finger docks separating each lane. The existing seawall will be replaced with new sheet pile and concrete sea wall. Additional docking is proposed for fishing, viewing, and boat staging along the seawall frontage and extending into Anna Maria Sound on the east and west terminals. Existing seagrasses have been identified on the plans and must be protected during construction. Existing parking lot will be reconfigured and improved with concrete paving, catch basins, and a stormwater management system. Stormwater management will include the addition of swales and two main ponds on the east and west ends of the property. FDOT gravity wall will be required in some areas of the parking lot adjacent to Anna Maria Sound. The stormwater management system will discharge into Anna Maria Sound via two (2) broad crested weirs. Utility improvements will include electric service via connection to the existing FP&L system for parking lot lighting, restrooms, and grinder pump station. Water utility improvements will include service to two (2) fish cleaning stations, restroom, ice vending, and irrigation water service. Sanitary sewer improvements will include approximately 2,500 feet of 3" HDPE force main from the proposed pump station to an existing manhole located within the SW 5th Avenue right-of-way. Landscaping improvements will consist of tree preservation/removal (Australian Pine, etc.), mangrove/shoreline protection, and plantings throughout the project site.

- A. Furnish all materials, equipment, tools, and labor which is reasonably and properly inferable and necessary for the proper completion of the Work, whether specifically indicated in the Contract Documents or not.
- B. Reference Section 01410 - Regulatory Requirements and Permits concerning permits secured by the Owner and permits to be secured by the Contractor. Other licenses or permits for construction facilities of a temporary nature that are necessary for the prosecution of the work shall be secured and paid for by the Contractor.

- C. Repair, replace, or otherwise settle with the Owner, if damage to property or existing facilities occurs, including damage to pavements, utilities, lawns, structures, etc.
- D. Construct the Project under a single unit price contract.

**1.03 Work Under Other Contracts – N/A**

**1.04 Work Sequence**

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

**1.05 Operation of Existing Facilities**

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

**1.06 Contractor Use of Premises**

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

**1.07 Owner Furnished Products**

- A. Ice Vending Machines
- B. Informational Kiosk

**1.08 Coordination**

- A. The Contractor shall be fully responsible for the coordination of his work and the work of his employees, subcontractors, and suppliers and to assure compliance with schedules.
- B. It is the Contractor's responsibility to coordinate with all the utilities regarding locates, testing, or relocations.

### **1.09 Cutting and Patching**

- A. The Contractor shall, at no additional expense to the Owner, perform cutting and patching necessary to the completion of the Project. Perform cutting and patching in a manner to prevent damage to the structure or previously completed work.
- B. Refinish surfaces as necessary to provide an even finish.

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

## SECTION 01310

### ADMINISTRATIVE REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 Section Includes

Meetings, construction progress documentation, submittals.

##### 1.02 Related Sections

- A. Section 01770 - Contract Closeout
- B. Section 01780 - Record Drawings

##### 1.03 Preconstruction Meeting

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

##### 1.04 Definitions

- A. Shop Drawings - Shop drawings are original drawings, prepared by the Contractor, a subcontractor, supplier, or distributor, which illustrate some portion of the Work; showing fabrication, layout, setting, or erection details. Shop drawings shall be prepared by a qualified detailer and shall be identified by reference to sheet and detail numbers on the Contract Drawings
- B. Product Data - Product data are manufacturer's standard schematic drawings and manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Catalog sheets, brochures, etc., shall be clearly marked to identify pertinent materials, products, or models.
- C. Samples - Samples are physical examples to illustrate materials, equipment, or workmanship and to establish standards by which work is to be evaluated.

##### 1.05 Submittal Requirements

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

- B. Coordinate the submittals with the requirements for other related work.
- C. Notify the Engineer, in writing at the time of submission, of deviations in submittals from the requirements of the Contract Documents. The Contractor's responsibility for deviations in submittals from the requirements of the Contract Documents is not relieved by the Engineer's review of submittals, unless the Engineer gives written acceptance of specific deviations.
- D. Submit electronic copies (PDF format) of each shop drawing and product data.
- E. Where a specific product manufacturer and model number is listed in individual specification sections and is proposed by the Contractor to be used, full submittal of product data is not required. In this case, submit in letter format the name of the product, manufacturer, model number, specification section, and name of project. Certify the identified product is proposed to be used in the project.
- F. Shop drawings, product data, and samples shall be accompanied by a letter of transmittal referring to the name of the project and to the specification page number and/or Drawing number for identification of each item. Submittals for each type of work shall be numbered consecutively, and the numbering system shall be retained throughout all revisions.
- G. Submittals shall bear the Contractor's stamp of approval certifying that they have been checked and indicate appropriate specification section and/or drawing location. Submittals without the Contractor's initialed or signed certification stamp and submittals which, in the Engineer's opinion, are incomplete, contain numerous errors or have not been properly checked, will be returned unchecked by the Engineer for resubmission.
- H. Begin no work which requires submittals until return of submittals with Engineer stamp and printed name or signature indicating the submittal has been approved.

#### **1.06 Engineer Review of Submittals**

- A. Engineer's review and approval of submittals will not extend to means, methods, techniques, sequences, procedures of construction or to safety precautions.
- B. The review and approval of a separate item will not indicate approval of the assembly in which the item functions. Engineer's review and approval of submittals shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents.
- C. The Engineer will review submittals with reasonable promptness. The Engineer's review of submittals shall not be construed as a complete check and shall not relieve the Contractor from responsibility for complete compliance with the Contract requirements.

- D. No corrections, changes, or deviations indicated on submittals reviewed by the Engineer shall be considered as a change order.
- E. Where review of submittals is required by the Owner or other agencies, the Engineer will forward the appropriate submittal(s) to these parties after Engineer review. Once review of all parties is complete, the submittal(s) will be returned to the Contractor reflecting the review of all parties
- F. If the submittal is not satisfactory, one copy of the submitted item will be retained by the Engineer and all other copies returned to the Contractor for appropriate action.
- G. In the event a third submittal is required, due to previous submittals of incomplete or incorrect data or not in compliance with the Contract Documents, the Contractor will be charged one-half of the cost incurred by the Engineer for the review of the third submittal. The Contractor shall bear the total cost incurred by the Engineer for all subsequent reviews. The Engineer costs charged to the Contractor will be at the cost plus rate generally charged by the Engineer and will be deducted by the Owner from payments due to the Contractor.
- H. Distribution of copies of acceptable submittals will be as mutually determined by the Contractor, Owner, and Engineer during or following the preconstruction conference.

#### **1.07 Progress Meetings**

- A. The frequency of progress meetings shall be determined during the preconstruction meeting. As a minimum, progress meetings shall be held once per month during construction.
- B. The Contractor and Owner shall attend the progress meetings.

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

## SECTION 01315

### PRECONSTRUCTION VIDEO

#### PART 1 GENERAL

##### 1.01 Description

- A. Provide continuous color audio-DVD recording along the entire length of all proposed work areas prior to construction to serve as a record of pre-construction conditions.
- B. Supplement audio video recording with digital color photographs for areas which require details not ascertainable on the DVD.

##### 1.02 Definitions

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

##### 1.03 Qualifications

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

#### PART 2 PRODUCTS

##### 2.01 General

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

##### 2.02 Camera

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

##### 2.03 Recorder

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

#### **2.04 Video Disk**

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

#### **2.05 Video Playback Compatibility**

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

### **PART 3 EXECUTION**

#### **3.01 General**

- A. The recordings shall contain coverage of all surface features located within the construction area and extend outward a minimum of 30-ft outside the construction area plus all off road access routes used to reach the construction area. The recording shall include all surface conditions supported by appropriate audio description.
- B. The surface features documented in the recordings shall include, but not be limited to, all driveways, sidewalk, curb, gutter, buildings, walls, storage sheds, swales, culverts, headwalls, landscaping, trees, shrubbery, pull boxes, valve boxes, concrete pads, power poles, guy wires, mailboxes, and fences.
- C. The recordings shall also document the existence or nonexistence of any faults, fractures, or defects, and existing man made material such as debris, construction stockpiles, trash, and fuel containers.
- D. Each video recording of each DVD shall be a simultaneous recorded audio recording. This audio recording, exclusively containing the commentary of the camera operator, shall assist in viewer orientation and in any needed identification, differentiation, clarification, or objective description of the feature being shown in the video portion of the recording. The audio recording also shall be free from any conversations between the camera operator and any other production technicians.
- E. All DVDs shall be permanently labeled and shall be properly identified by video number, Project title, and date(s) of the recording.
- F. Each video shall have a log of that video's contents. The log shall describe the various segments of coverage contained on that video in terms of the names of

streets or easements, coverage beginning and end, directions of coverage, and video unit counter numbers.

### **3.02 Recording Schedule**

- A. The recording shall be performed prior to the placement of any construction materials or equipment on the proposed construction site. Coordinate the scheduling of the preconstruction video recording with the Owner.
- B. The Contractor shall coordinate the video recording with the construction schedule so that those portions of the construction that will be completed first will be recorded first.
- C. Off road access routes to and from the construction area shall be recorded prior to mobilizing to work areas.
- D. The Contractor shall deliver the video recordings to the Owner upon their completion. Upon delivery of the DVD's, transfer of ownership of those DVD's shall be made to the Owner.

### **3.03 Visibility**

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

### **3.04 Continuity of Coverage**

- A. In order to increase the continuity of the coverage, the coverage shall consist of a single, continuous, unedited recording which begins at one end of a particular construction area. However, where coverage is required in areas not accessible by conventional wheeled vehicles and smooth transport of the recording system is not possible, such coverage shall consist of an organized, interrelated sequence of recordings at various positions along that proposed construction area.
- B. The average rate of travel during a particular segment of coverage (e.g., coverage of one side of the street) shall be directly proportional to the number, size, and value of the surface features within that construction area's zone of influence.

### **3.05 Camera Height and Stability**

When conventional wheeled vehicles are used as conveyances for the recording system, the distance between the camera lens and the ground shall not be more than 10

feet. The camera shall be firmly mounted, such that transport of the camera during the recording process will not cause any unsteady picture.

### **3.06 Camera Control**

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

### **3.07 Viewer Orientation Techniques**

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

### **3.08 Areas to be Video Recorded**

- A. As a minimum, video record existing structures (those structures to be connected to or removed), all culvert removal and construction areas, the condition of the existing pavement at all proposed construction crossings), seawall, docks, and upland improvements.
- B. All video recording shall be done during regular business hours, unless otherwise specified by the property owner or the Owner. The Contractor shall enter and leave property in a professional and orderly, workmanlike manner.

**END OF SECTION**

## SECTION 01320

### PROJECT COMPLETION SCHEDULE

#### PART 1 GENERAL

##### 1.01 Section Includes

Project completion scheduling

##### 1.02 Submittals

- A. Prior to construction, prepare a schedule showing all major activities needed to complete project. Include major material and equipment order and delivery times. Submit to Owner no later than the date of the preconstruction conference.
- B. Schedule to utilize Critical Path Method formatted by establishing a precedence diagram which is time scaled. Include on schedule activity start dates, stop dates, and duration; critical path; float; delivery schedules. Include submittal dates and durations for components with extended lead times in schedule.
- C. Include on the schedule a minimum float of 1 day every 3 weeks during construction.
- D. Project substantial and final completion dates shown on schedule shall be same as or earlier than the contractual dates.

#### PART 2 PRODUCTS - Not Used

#### PART 3 EXECUTION

##### 3.01 Monitoring and Updating of Schedule

- A. Float shown on the schedule belongs to the project.
- B. Progress data shall be accumulated to update the schedule on a monthly basis, prior to submittal of the application for payment. Progress data shall include:
  - 1. Activities started
  - 2. Activities completed.
  - 3. Predicted activity starts
  - 4. Predicted activity completions
  - 5. Changes in original duration for specific activities
  - 6. Changes in activity sequences
  - 7. Percent complete on activities
- C. Update of schedule to include effect of the progress projected for the next two (2) reporting periods.

**END OF SECTION**

## SECTION 01410

### REGULATORY REQUIREMENTS AND PERMITS

#### PART 1 GENERAL

##### 1.01 Section Includes

Regulatory requirements, project permits

##### 1.02 Requirements of Regulatory Agencies

- A. All piping installed within the right-of-way of any city, county, state, or federal highway or railroad shall be in accordance with a permit to construct issued by the controlling agency and obtained by the Owner. In no case shall an open trench be constructed within a railroad right-of-way unless otherwise indicated.
- B. Whenever the Drawings and Specifications conflict with the requirements of the permit, then the requirements of the permit shall govern and the cost of abiding by the provisions of the permit shall be considered incidental to the Contract.
- C. All electrical apparatus and wiring pertaining to a piece of equipment or an appliance furnished and installed under this Contract shall comply with the National Electrical Code and shall be listed by Underwriters Laboratories or bear the approval of a recognized Testing Laboratory approved by the Engineer.
- D. All construction projects 1 or more acres in size that discharge to offsite areas are required to abide by the provisions of the National Pollution Discharge Elimination System (NPDES) General Permit.

##### 1.04 Project Permits

- A. The following permits have been obtained for the construction of the project, and are contained in the Appendix of the Project Manual:
  - 1. FDEP Environmental Resource Permit
  - 2. FDEP Notification/Application for Constructing a Domestic Wastewater Collection/Transmission System
  - 3. FDOT Drainage Permit
  - 4. FDOT Access Permit
  - 5. FDOT Utility Permit (R/W use)
  - 6. Manatee County Utility Permit
  - 7. City of Holmes Beach Site Development Permit
  - 8. City of Holmes Beach Building Permit
  - 9. Army Core of Engineers Permit

- B. Prior to construction, the Contractor shall apply for the following permits for the Project construction:

Permit Type	Permitting Agency	Permit Fee to be Paid By Contractor (Y/N)
Coverage Under the NPDES Generic Permit For Stormwater Discharge from Large and Small Construction Activities	FDEP	Yes
Dewatering	FDEP	Yes
Permits for all Subcontractor Work such as Electrical, structures, retaining walls, etc.	City of Holmes Beach	Yes

Signed and sealed construction plans will be provided to the Contractor for its use in applying for the above permits. The Contractor is to coordinate with each permitting agency in order to determine the number of sets of signed and sealed construction plans that are required and the required sheet size (full size 22"x34" or half size 11"x17").

- C. The Contractor shall review and become familiar with all permits for the Project, complete with all conditions, attachments, exhibits and permit modifications. A copy of all permits for the Project shall be maintained by the Contractor at the project site, and shall be available for review upon request.
- D. The Contractor shall be fully responsible to abide by all provisions of the permits. The Contractor is responsible for the selection, implementation and operation of all measures required by the permits, including the maintenance of said measures as necessary during construction. No additional compensation will be allowed for any work associated with permit requirements.

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

## SECTION 01415

### STORMWATER POLLUTION PREVENTION / NPDES REQUIREMENTS

#### PART 1 GENERAL

##### 1.01 Section Includes

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

##### 1.02 Purpose

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

##### 1.03 Related Sections

- A. Section 01410 - Regulatory Requirements and Permits
- B. Section 02370 - Erosion and Sediment Control

##### 1.04 Abbreviations

- A. NPDES - National Pollution Discharge Elimination System
- B. SWPPP - Stormwater Pollution Prevention Plan
- C. NOI - Notice of Intent
- D. NOT - Notice of Termination

##### 1.05 Definitions

The term "NPDES Generic Permit" means the State of Florida Department of Environmental Protection (FDEP) Generic Permit For Stormwater Discharge from Large and Small Construction Activities. The NPDES Generic Permit is also known as the NPDES) Construction Generic Permit (CGP).

##### 1.06 Construction Projects Requiring Compliance with NPDES Generic Permit

- A. All projects 1 or more acres in size that discharge to offsite areas.
- B. Smaller projects that are in the same construction corridor as larger construction projects where the larger project is 1 or more acre in size and is required to comply with the NPDES Generic Permit. In this case, even if the smaller project is less

than 1 acre in size, the smaller project must comply with the NPDES Generic Permit.

### **1.07 General Requirements**

- A. Construction of this project is required to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharge from Small and Large Construction Activities.
- B. In order to meet NPDES requirements, the Contractor is responsible for preparing a Stormwater Pollution Prevention Plan (SWPPP), implementing, inspecting, maintaining, and reporting on all elements of the SWPPP, completing and submitting the required Notice of Intent (NOI) and Notice of Termination (NOT) forms as the Operator, and paying all associated fees. Copies of the NPDES Generic Permit, NOI, and NOT forms, and permit application fee information are available for download at [dep.state.fl.us/water/stormwater/npdes/](http://dep.state.fl.us/water/stormwater/npdes/)
- C. The SWPPP shall list all the contractors or subcontractors who will be conducting construction activities at the site, and identify the areas of the site in which they will be working. All contractors and subcontractors identified in the SWPPP must sign a copy of the certification statement contained at the end of this specification section before conducting any construction activities at the site. The certifications must have the name and title of the person signing the certification; the name, address, and telephone number of the contracting firm; and the signature date. These statements must be maintained in the SWPPP file on site.
- D. The SWPPP shall describe and ensure the implementation of best management practices which will be used to reduce the pollutants in stormwater discharge associated with construction activity and to assure compliance with the terms and conditions of the NPDES Generic Permit. The erosion and sediment control measures shown on these Drawings are the minimum required and are to be installed prior to construction. The Contractor is responsible for complying with all applicable rules, regulations and water quality standards and may need to install additional controls to meet these requirements.

### **1.08 SWPPP Implementation and Submittal Requirements**

- A. The SWPPP shall be completed prior to submittal of the NOI and shall include the elements necessary to comply with the NPDES Generic Permit for construction activities administered by the FDEP and shall also include all local governing agency and Owner requirements. There may be more stringent local government or Owner requirements for Erosion and Sediment Control, which would be located in the Specifications or elsewhere on these Drawings.
- B. The Contractor must file the NOI with FDEP and the Owner at least two (2) business days prior to the start of construction. The Contractor shall also submit a copy of the NOI to the MS4 operator for all projects that discharge stormwater associated with construction activity to a municipal separate stormwater system

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

- C. The SWPPP must be implemented at the start of construction. A complete copy of the SWPPP, including copies of all inspection reports, plan revisions, etc., must be retained at the project site at all times during working hours and kept in the permanent project records for at least three years following submission of the NOT.
- D. Final Stabilization means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover (evenly distributed, without large bare areas) with a density of at least 70% for all unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as geotextiles) have been employed. Once construction is completed and final stabilization has been achieved, the Contractor must file the NOT to FDEP, the Owner, and the MS4 operator within 14 days.

### **1.09 Inspections**

- A. It is the responsibility of the Contractor to assure the adequacy of site pollutant discharge controls. Between the time the SWPPP is implemented and final site stabilization is achieved, all disturbed areas and pollutant controls must be inspected at least once every seven calendar days and within 24 hours following a rainfall of 0.5 inches or greater. The inspections are to be conducted by the Contractor's qualified designated representative.
- B. All inspections shall be documented in an inspection report that summarizes the scope of the inspection, the names and qualifications of personnel making the inspection; the date of the inspection; rainfall data; major observations relating to the implementation of the SWPPP, and actions taken in order to ensure compliance with NPDES requirements and the SWPPP. Such reports shall identify any incidents of non-compliance and actions taken to bring the project into compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the NPDES requirements and the SWPPP. Each inspection report shall be signed and certified by each qualified inspector.

### **1.10 Updating and Modifying the SWPPP**

- A. Based on inspection results, any modifications necessary to increase effectiveness of the SWPPP to an acceptable level must be made within seven calendar days of the inspection.
- B. The SWPPP must be updated each time there are significant modifications to the pollutant prevention system or a change of contractors working on the project who disturbs site soil. For construction activities where the operator changes, the new operator shall file an NOI for coverage under this permit at least two (2) days before assuming control of the project and the previous operator shall file an NOT to

terminate permit coverage in accordance with the NPDES Generic Permit. Amendments to the plan shall be prepared, signed, dated, and kept as attachments to the original SWPPP.

### 1.11 Minimum SWPPP Provisions

- A. The following list contains the items that must be included in the SWPPP. The SWPPP must clearly identify the contractor(s) or subcontractor(s) that will implement each item.
1. Stormwater Team: Identify the personnel (by name or position) that are part of the stormwater team responsible for implementing the SWPPP, including the qualified inspector. List their individual responsibilities in developing or implementing the SWPPP.
  2. Contractors /Subcontractors: List all the contractors or subcontractors who will be conducting construction activities at the site, and identify the areas of the site in which they will be working. All listed contractors and subcontractors must sign the certification contained at the end of this specification section.
  3. Site/Construction Activities Description:
    - a. Describe the nature of the construction activity.
    - b. Describe the intended sequence and time table of major activities that will disturb soils.
    - c. Include the scheduled starting and ending date for each major activity such as land clearing, grubbing, grading, cut and fill, dewatering operations, installation of erosion and sediment controls, installation of stormwater management systems, paving, final or temporary stabilization of exposed soil, and removal of construction equipment and vehicles.
    - d. Estimate the total area of the site and the total area that is expected to be disturbed by excavation, grading, or other construction activity.
    - e. Include existing data on soil types and the quality of any existing discharge from the site.
  4. For each proposed discharge point provide the following:
    - a. Latitude and Longitude
    - b. Drainage Area
    - c. Surface Waters or MS4
    - d. Estimate the amount of land that will be cleared during the construction activity for each drainage area.
  5. Include a site map showing all of the following:
    - a. Boundaries of the property.
    - b. Entrance/Exit Points
    - c. Locations where construction activities will occur.

- d. Locations where dewatering operation will occur.
  - e. Drainage patterns and approximate slopes and elevations anticipated after major grading activities.
  - f. Areas of soil disturbance.
  - g. Areas which will not be disturbed.
  - h. Location of major structural and nonstructural controls.
  - i. Location of areas where stabilization practices are expected to occur.
  - j. Location of surface waters and wetlands.
  - k. Location where stormwater is proposed to be discharged during construction to a surface water or MS4.
6. List all non-stormwater discharges covered under the CGP and the pollution prevention procedures that will be implemented. The following types of non-stormwater discharges, if they are listed in the SWPPP and the SWPPP includes appropriate pollution prevention procedures as to not cause or contribute to a violation of water quality standards are to be considered to be covered (allowed) by the CGP:
- a. Discharges from firefighting activities.
  - b. Fire hydrant flushings.
  - c. Waters without detergents used to spray off loose solids from vehicles.
  - d. Waters used to control dust.
  - e. Potable water sources such as waterline flushings.
  - f. Landscape irrigation water and drainage.
  - g. Routine external building washdown provided no detergents are used.
  - h. Pavement washwaters that do not contain detergents, leaks, spills of toxic or hazardous materials.
  - i. Air conditioning condensate.
  - j. Spring water.
  - k. Foundation or footing drain flows that are not contaminated with process material such as solvents.
  - l. Non-contaminated ground water associated with dewatering activities as described in Part 3.4 of the CGP.
7. The following non-stormwater discharges are prohibited by the CGP:
- a. Wastewater from concrete washout.
  - b. Wastewater from washout or cleanout of stucco, paint, form release oils, curing compounds, and other construction materials.
  - c. Fuels, oils, or other pollutants from vehicle and equipment operation and maintenance.
  - d. Soaps, detergents, solvents, or other cleaners.
  - e. Hazardous substances or oil resulting from an on-site spill.
  - f. Solid materials, including building materials.

- g. Any other non-stormwater discharge not specifically allowed by the CGP as identified above.
- 8. Dewatering Controls (If Applicable): Include a description of the BMPs that will be used to ensure that discharges of noncontaminated ground water from dewatering operations do not cause or contribute to violations of state water quality standards.
- 9. BMPs: Describe the BMPs that will be implemented for each major activity and the timing during the construction process that they will be implemented.
- 10. Permanent stormwater management controls: Describe the stormwater management controls or BMPs (e.g., stormwater detention or retention systems, vegetated swales, or velocity dissipation devices at discharge points) that will be installed during the construction process to control pollutants in stormwater discharges.
- 11. Inspections: Inspections must be at least once every seven calendar days and within 24- hours of the end of a storm event that is 0.50 inches or greater (even if it rains on the weekend or a holiday).
- 12. Maintenance: Describe the maintenance activities and schedules that will be followed to keep BMPs in good and effective operating condition.
- 13. Signed Certifications: Include all the signed contractors and subcontractors certifications in the SWPPP (Contained at the end of this specification is an example certification form).

**1.12 Site Data**

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

Total Site Area:	5.48 Acres
Total Area Impacted by Construction:	5.65 Acres
Existing Site Soils:	Canaveral Sand
Drainage Area Contributing to Each Discharge Point:	6.76 Acres total
Latitude and Longitude of Project Location:	27° 29' 52" N 82° 42' 16" W
MS4 Operator Name:	N/A
Receiving Waters:	Anna Maria Sound – Gulf of Mexico

### **1.13 Minimum Erosion and Sediment Control Construction Requirements**

- A. Stabilize all construction site exits with coarse aggregate or other approved materials, in accordance with details on the Drawings. Other minimum construction requirements that need to be implemented in order to comply with the NPDES Generic permit include installation of sediment barriers down slope from construction activities that disturb site soil; constructing rock surface temporary parking areas; installation of sediment barriers down slope prior to clearing and grubbing; installation of sediment barriers on the down slope side of utility construction and soil stockpiles; and the installation of sediment barriers on the down slope side of grading activities.
- B. Stabilization measures shall be initiated as soon as practicable, but in no case more than 7 days, in portions of the site where construction activities have temporarily or permanently ceased.
- C. The Owner has the authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, trenching, borrow and embankment operations. The Owner also has authority to direct Contractor to provide immediate permanent or temporary erosion and sediment control measures.
- D. The Contractor shall respond to erosion and sediment control maintenance requirements or implement additional measures to control erosion ordered by Owner or governing authorities within 48 hours or sooner if required at no additional cost to the Owner.
- E. The Contractor shall incorporate permanent erosion control features into project at earliest practical time to minimize need for temporary controls.
- F. For drainage basins with 10 or more disturbed acres at one time, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage basins with 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls is not attainable, a combination of smaller sediment basins and/or sediment traps and other BMPs should be used. At a minimum, silt fences, or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.
- G. Water trucks shall be used as needed during construction to reduce dust generated on the site. Dust control must be provided by the Contractor and shall be in compliance with applicable local and state dust control regulations.

## **1.14 Maintenance Requirements**

- A. Maintain all erosion and sediment control measures throughout construction. Repair or replace all damaged sediment barriers. Remove accumulated sediment along all silt fences where the height of the sediment exceeds one-third of the height of the silt fence. Inspect all temporary and permanent grassing areas and re-grass where there are bare spots, washouts, or unhealthy growth.
- B. At the completion of construction, once final stabilization has been achieved, clean all accumulated sediment from all storm structures, pipelines, and stormwater ponds. Remove all temporary sediment controls upon receipt of authorization to remove has been received from the Owner or Engineer. Note that this may not occur for some time after construction activities have been completed, in order to ensure their removal has not occurred until final stabilization has been achieved to the satisfaction of the Owner and Engineer.

## **1.15 Stormwater Discharge Provisions**

- A. Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the site. As an example, special care must be exercised during equipment fueling and servicing operations. If a spill occurs, it must be contained and disposed so that it will not flow from the site or enter groundwater, even if this requires removal, treatment, and disposal of soil in accordance with local and state regulations.
- B. All personnel involved with construction activities must comply with state and local sanitary or septic system regulations. Temporary sanitary facilities shall be provided at the site throughout the construction phase for use by all construction personnel and shall be serviced by a commercial operator at least once a week.
- C. Discharges resulting from groundwater dewatering activities at construction sites are permitted provided the groundwater is free of sediments, is not contaminated, and dewatering occurs in accordance with state and local governing agency regulations.
- D. Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the site, treated, and disposed at an approved solid waste or chemical disposal facility.
- E. The discharge of hazardous substances or oil in the stormwater discharge(s) from a facility or activity shall be prevented. This does not relieve the operator of the reporting requirements of 40 CFR part 117 and 40 CFR part 302. The operator shall submit within 14 calendar days of knowledge of the release a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading

to the release, and remedial steps to be taken. The SWPPP must be modified within 14 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the plan must be reviewed to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

**CONTRACTOR / SUBCONTRACTOR CERTIFICATION**

The SWPPP shall list all the contractors or subcontractors who will be conducting construction activities at the site, and identify the areas of the site in which they will be working.

All contractors and subcontractors identified in the SWPPP must sign a copy of the following certification statement before conducting any construction activities at the site. The certifications must have the name and title of the person signing the certification; the name, address, and telephone number of the contracting firm; and the signature date.

These statements must be maintained in the SWPPP file on site.

Name of Contractor / Subcontractor Conducting Construction at the site:

\_\_\_\_\_  
Business Name

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Business Telephone Number

**CERTIFICATION:**

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

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Printed Name Title

**CONTRACTOR  
CERTIFICATION**

The SWPPP has been prepared by:

---

Business Name

---

Business Address

---

---

---

Business Telephone Number

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

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

---

Signature

Date

---

Printed Name

**PART 2 PRODUCTS – Not Used**

**PART 3 EXECUTION – Not Used**

**END OF SECTION**

## SECTION 01420

### REFERENCES

#### PART 1 GENERAL

##### 1.01 Section Includes

Referenced standards and abbreviations

##### 1.02 Referenced Standards

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

##### 1.03 Abbreviations

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

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

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

## SECTION 01425

### FDOT STANDARDS REFERENCE

#### PART 1 GENERAL

##### 1.01 Section Includes

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

##### 1.02 Requirements

- A. The Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, latest non-metric edition ("Standard Specifications"), and Standard Plans for Road Construction, latest non-metric edition ("Standard Plans") are referenced herein as source documents for applicable technical specifications and construction details to be used in the construction of this project. The term "latest edition" refers to the latest edition implemented by FDOT and includes all FDOT implemented supplements.
- B. Method of Measurement and Basis of Payment is to be in accordance with these Contract Documents rather than the Florida Department of Transportation Standard Specifications. Any item which is detailed in the Plans and for which material types, sizes and quality are also called out, the "Standard Plans" shall take preference over the plan detail unless otherwise directed by the Engineer.
- C. Where the FDOT Standard Specifications use the reference "Department", replace "Department" with "Owner", except for when such reference is to Department Standards and evaluation criteria.
- D. The Standard Plans are referenced herein as a source document for applicable construction items and details called for in the plans for which a specific plan detail is not provided. The Contractor shall construct the items called for in the plans in accordance with the "Standard Plans" unless otherwise defined or detailed in the plans or as directed by the Owner, Engineer or authorized representative.
- E. The Standard Plans are available for download from the FDOT website at:  
  
[fdot.gov/design/standardplans](http://fdot.gov/design/standardplans)
- F. In case of conflict, the Project Manual takes precedence over FDOT specifications for a particular construction requirement.
- G. Copies of the latest implemented edition and implemented supplements of the Florida Department of Transportation Standard Specifications are available for download from the FDOT website at:

<http://www.fdot.gov/programmanagement/Implemented/SpecBooks/>

- H. The Contractor shall inform the Owner and Engineer in writing of any specification that the Contractor feels is ambiguous or conflicting with other plan notes and details prior to the construction of the associated item. The Engineer will determine which information is to be used for construction. The Contractor is responsible for the removal and replacement of any item improperly constructed resulting from a misinterpretation of the specifications at no additional cost to the Owner.

## **PART 2 PRODUCTS - Not Used**

## **PART 3 EXECUTION**

### **3.01 General**

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

**END OF SECTION**

## SECTION 01450

### QUALITY CONTROL

#### PART 1 GENERAL

##### 1.01 Section Includes

Quality control, quality assurance

##### 1.02 Quality Control

- A. It is the Contractor's responsibility to perform all work in conformance with the Plans and Specifications. In order to fulfill this responsibility, the Contractor is required to have an approved Quality Control Program, including testing, as part of its Contract work in accordance with the Contract Documents and to submit details of its Program to the Engineer for review and approval prior to commencing any construction operations. The submittal shall include detailed information on locations and number of all tests, etc., that will be necessary for the Contractor to make its own determination that the work is being performed in compliance with the Project requirements.
- B. As part of the Contractor's Quality Control Program included as part of its work, the Contractor shall employ and pay for an independent, approved soils testing laboratory to perform testing services outlined in these Contract Documents.
- C. The Contractor's Quality Control Program shall include, but not be limited to, the following in addition to the type and frequency of tests as required by the technical specifications:
  - 1. Piping and structural excavation, bedding and backfill materials and density quality control testing
  - 2. Determination of compactive effort needed for compliance with the density requirements.
  - 3. Portland cement concrete and asphalt paving quality control testing including design mix review, materials, field slump and air content, and field and lab cured strength samples and testing.
- D. In addition to Quality Control Testing, the Contractor shall be responsible for required testing or approvals for any work (or any part thereof) if laws or regulations of any public body having jurisdiction specifically require testing, inspections or approval. The Contractor shall pay all costs in connection therewith and shall furnish the Engineer the required certificates of inspection, testing or approval. The Contractor shall also be responsible for and shall pay all costs in connection with any inspection or testing required in connection with

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

- E. Any design or testing laboratory utilized by the Contractor shall be an independent laboratory acceptable to the Owner and the Engineer, approved in writing, and complying with the latest edition of the "Recommended Requirements for Independent Laboratory Qualification", published by the American Council of Independent Laboratories.
- F. Testing laboratories, whether provided by the Owner or the Contractor, shall promptly notify the Owner, Engineer and the Contractor of irregularities or deficiencies of work that are observed during performance of services. Laboratories shall submit two (2) copies of all reports directly to the Owner and Engineer and two (2) copies to the Contractor.

### **1.03 Quality Assurance**

- A. In addition to the services provided by the laboratory paid for by the Contractor as a part of its work, the Owner, at its sole discretion, may employ an additional independent soils laboratory as part of Owner's Quality Assurance Program to verify that the work meets the requirements of the Contract Documents. The Owner furnished Quality Assurance testing may include the type and frequency of tests as required by the technical specifications. The Owner reserves the right to have additional tests made beyond those specified in the Contract Documents. The Contractor shall cooperate with the Owner and make the work and samples available for Owner testing at no additional cost in case the Owner chooses to have additional Owner furnished testing performed. It is the sole responsibility of the Contractor to see that its work meets all provisions of the Contract Documents.
- B. The Contractor shall cooperate with the soils laboratory personnel and provide access to the work to be tested. The Contractor shall notify the Engineer and Owner's testing laboratory sufficiently in advance of operations to allow scheduling of tests. The Contractor shall furnish casual labor and facilities to obtain and handle samples at the site and to store and cure test samples as required.

### **1.04 Testing of Materials**

- A. Unless otherwise specified, all materials shall be sampled and tested in accordance with the latest published standard methods of ASTM in effect at the time bids are received.
- B. Test of materials shall be made by a representative of the Contractor, unless otherwise provided. Testing of equipment shall be the responsibility of the Contractor or an authorized manufacturer's representative. All test results shall be furnished to the Engineer in writing. The Contractor shall provide facilities required to collect and forward samples. The Contractor shall furnish the required samples without charge.

- C. The Contractor shall not make use of or incorporate in the work, the materials represented by the sample until tests have been made and the material found to be in accordance with the requirements of the Specifications.
- D. Materials to be tested and the applicable test procedure shall be as outlined in the individual sections of these Specifications.

#### **1.05 Source and Quality of Materials and Equipment**

- A. The source of materials to be used shall be in accordance with the Contract Documents and as approved by the Engineer before delivery. The approval of the source of any material shall continue as long as the material conforms to the Specifications.
- B. All material not conforming to the requirements of the Specifications shall be considered as defective and shall be removed from the work. If in place, faulty materials shall be removed by the Contractor at its expense and replaced with acceptable material unless permitted otherwise by the Owner. No defective materials that have been subsequently corrected shall be reused until approval has been given.
- C. Upon failure of the Contractor to comply immediately with any order of the Owner to remove and replace defective material, the Owner shall have authority to remove and replace defective materials, and to deduct the cost of removal and replacement from any monies due or to become due to the Contractor. Failure to reject any defective materials or work at the time of installation shall in no way prevent later rejection when such defects are discovered, nor obligate the Owner to final acceptance.

#### **1.06 Additional Testing**

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

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

## SECTION 01520

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 GENERAL

##### 1.01 Section Includes

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

##### 1.02 Related Sections

Section 01550 - Temporary Traffic Control

##### 1.03 Submittals

- A. Prior to installation of construction facilities and temporary controls, submit the following items for review and approval:
- B. Project identification sign - provide proposed text, layout, and sizing of all required signs

##### 1.04 Construction Facilities and Temporary Controls

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

##### 1.05 Removal of Temporary Construction

Remove the various temporary facilities, services, and controls and legally dispose of them as soon as the Owner deems permissible. Portions of the site and areas used for temporary facilities shall be restored to existing or better condition, including but not limited to fill replacement, regrading, compaction, and sodding.

##### 1.06 Transportation and Handling

- A. Manufactured materials and products shall be delivered to the project site as needed for installation, undamaged, in original packages, containers, or bundles, as packaged by the manufacturer with manufacturer's name, brand, seals, and labels intact.
- B. Materials other than those designated within the Specifications or approved by the Owner shall not be delivered to the project site.

##### 1.07 Storage and Protection

- A. The Contractor shall be responsible for protection and preservation of all materials until final acceptance of the Project. Any damage to work prior to acceptance shall be remedied by the Contractor at no additional cost to the Owner.
- B. Provide temporary weather-tight enclosures to protect work from damage by the elements, and protect finished surfaces to prevent any damage resulting from the work of any trade.

#### **1.08 Security**

- A. Contractor shall, at all times, be responsible for the security required in all project areas and shall provide all reasonable protection to prevent damage, injury or loss to employees on the Work and all other persons who may be affected thereby; all the work materials and equipment to be incorporated therein, whether in storage on or off the project site, under the care, custody or control of the Contractor or any subcontractors; and any other property under the care, custody or control of the Contractor or any subcontractors. Contractor shall be responsible for such security and safety until final acceptance of the Work.
- B. Full time watchmen will not be specifically required as a part of the Contract, but the Contractor shall provide inspection of work area daily and shall take whatever measures are necessary to protect the safety of the public, workmen, and materials, and provide for the security of the site, both day and night.

### **PART 2 PRODUCTS**

#### **2.01 Temporary Electric Service**

- A. Furnish and maintain temporary lighting and power required to perform the Work. Include in the Bid all costs for providing temporary electrical service.
- B. Temporary service shall include protective enclosures, branch wiring, outlets, lamps, and grounding as required by NEC and Local Electrical Codes.

#### **2.02 Temporary Heating**

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

#### **2.03 Temporary Ventilation**

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

#### **2.04 Temporary Water**

- A. Provide a temporary water distribution system for all construction purposes and pay for all water used. Obtain temporary meters from the local water utility as required and pay all associated fees.
- B. Furnish potable drinking water in suitable dispensers and with cups for use of all employees at the job.
- C. Provide all temporary piping, hoses, etc., required to transport water to the point of usage by all trades.

#### **2.05 Temporary Sanitary Facilities**

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

#### **2.06 Temporary Pumping and Site Drainage**

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

#### **2.07 Material Hoists and Cranes**

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

#### **2.08 Temporary Runways, Scaffolding, and Ladders**

- A. Provide temporary ladders, ramps, and runways as required for performance and inspection of the work. The above facilities shall be constructed and maintained in accordance with the applicable Federal, State, and Municipal regulations and codes.
- B. Furnish, erect, and maintain all scaffolding required for this work. Scaffolding shall be constructed and maintained in accordance with applicable State and

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

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

## **2.09 Temporary Chutes**

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

## **2.10 Project Identification Sign**

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

- B. The sign shall be 4'x8'x1" exterior grade plywood. All surfaces shall be painted with three coats of white exterior grade enamel paint, and all lettering shall be black. The sign shall contain text including the following:

Manatee County Parks and Natural Resources  
Kingfish Boat Ramp Improvements  
Project Cost: \$\_\_\_\_\_

Engineer: CPH, Inc.  
Contractor: \_\_\_\_\_

- C. Submit to the Owner for approval the proposed sign lettering (fonts, size) and text prior to fabricating the signs.
- D. No other signs will be permitted.

## **2.11 Contractor's Field Office and Storage Sheds**

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

# **PART 3 EXECUTION**

## **3.01 Access Roads and Parking Areas**

- A. Construct temporary roadways and parking areas within the site as required to provide proper access to the site for delivery of material and equipment of all trades. It is up to the Contractor to determine whether it needs to construct any

temporary roads or parking areas to accommodate its construction (including delivery of materials, equipment, and manpower to the site).

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

**END OF SECTION**

## SECTION 01550

### TEMPORARY TRAFFIC CONTROL

#### PART 1 GENERAL

##### 1.01 Section Includes

Traffic and dust control

##### 1.02 Related Sections

Section 01520 - Temporary Facilities and Controls

##### 1.03 Definitions

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

##### 1.04 References

- A. Florida Department of Transportation Standard Plans for Road Construction
- B. Manual on Uniform Traffic Control Devices

##### 1.05 Submittals

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

##### 1.06 Qualifications

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

#### PART 2 PRODUCTS - Not Used

#### PART 3 EXECUTION

##### 3.01 Site Preparation

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

- B. Remove existing pavement markings and remove or relocate existing signs as necessary to implement traffic control.
- C. Install signs, markings, barricades in accordance with approved traffic control plan.
- D. Implement lane closures in accordance with the parameters shown on the drawings and in the approved traffic control plan.
- E. Perform work in a manner that will cause minimum interruptions to traffic.
- F. Place excavated material outside roadway clear zones, and away from pedestrian facilities.
- G. All trenches shall be backfilled each day prior to the completion of construction activities.
- H. Where special hazards exist, install traffic control through the use of lighted concrete barriers, barricades, or other such traffic control facilities as needed to ensure public safety.

### **3.02 Maintenance**

- A. Inspect traffic control devices on a daily basis to ensure placement of barricades and function of lights is maintained throughout construction.
- B. Wet unstabilized areas as necessary to control dust.
- C. Adjust traffic control devices as required under emergency conditions.

**END OF SECTION**

## SECTION 01630

### PRODUCT SELECTION AND SUBSTITUTION PROCEDURES

#### PART 1 GENERAL

##### 1.01 Section Includes

Product selection and substitution procedures

##### 1.02 Product Selection

- A. Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, new at the time of installation.
- B. To the fullest extent possible, provide products of the same kind from a single source.
- C. Compatibility among product options is required. Where more than one choice is available as options during product selection, select an option which is compatible with other products and materials already selected.
- D. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
- E. Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- F. Where Contract Documents are at variance with specific manufacturer's details and installation procedures, contact Engineer for resolution prior to start of work.
- G. For products specified by naming a number of products and manufacturers and "or equal", select any of the products and manufacturers listed, or propose a substitution. If the Contractor wishes to propose a substitution, the Contractor must submit a request for product substitution for approval by the Engineer and Owner.
- H. For products specified naming only one product and manufacturer or a number of products and manufacturers without the "or equal" allowance, no substitutes are allowed.
- I. For products specified by reference standards only, the Contractor may provide any product complying with the specified standard.
- J. For products specified by performance and descriptive methods, without naming manufacturer's products, the Contractor may provide the products of any

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

### **1.03 Substitutions**

- A. The intent of these Specifications is to provide the OWNER with a quality facility without discouraging competitive bidding. Substitutions may be submitted and will be evaluated as specified herein.
- B. If the Contractor wishes to provide a product other than one named in the Specifications, he shall submit sufficient information to the Engineer for evaluation and determination of acceptability of the product prior to Bid Opening.
- C. The Contractor is responsible for obtaining information required by the Engineer for the evaluation of products. The Engineer is responsible for determination of the equality of products, and his decision shall be final, except as otherwise provided by law and funding agency regulations.
- D. Substitution requests can be made after Bid Opening when:
  - 1. A specified product is no longer available
  - 2. The product cannot be delivered by the manufacturer in a timely manner
  - 3. The product is found to be incompatible with other specified products
  - 4. Proposed substitutions will yield a cost savings to the Owner
- E. The Contractor shall be responsible for the constructability and performance of any substitute materials requested by the Contractor and approved by the Engineer or by the Owner. The Contractor shall ensure that any approved substitute materials will perform to the intent of the specified materials, at no additional cost or time to the Owner, including the costs of installation, testing, repair, or correction of the utility system due to the performance or lack thereof of the substitute material.

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

## SECTION 01770

### CONTRACT CLOSEOUT

#### PART 1 GENERAL

##### 1.01 Section Includes

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

##### 1.02 Clean-Up Operations

- A. The entire Project site shall be thoroughly cleaned at the completion of the Work.
- B. Clean all installed pipelines, structures, sidewalks, paved areas, accumulated silt in ponds, plus all adjacent areas affected by construction, as directed by the Owner or jurisdictional agency. Equipment to clean these surfaces shall be subject to approval by the Owner.
- C. Restore to original condition or better all property not designated for alteration by the Contract Documents, including all areas used for staging and storage. Restoration includes but is not limited to fill replacement, regrading, compaction, and sodding. Conduct inspections of the completed restoration with the Owner, and conduct additional restoration as directed.

##### 1.03 Substantial Completion Requirements

- A. Complete the following before requesting the inspection for certification of substantial completion.
  - 1. Submit record drawings in accordance with section 01780.
  - 2. Complete required cleaning and testing of the completed construction in accordance with the specifications and the Owner's operating and maintenance personnel.
- B. Work is not substantially complete until the following has occurred:
  - 1. The Owner has received clearance to place the completed construction into service from the regulatory agencies.
  - 2. Reference Appendix – Manatee County Property Management Department *Preferred Building and Grounds Equipment, Materials and Design Criteria Catalog*.

##### 1.04 Final Completion Requirements

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

1. All punchlist items identified during the substantial completion inspection.
2. Deliver tools, spare parts, extra stocks of material and similar physical items to the Owner.
3. Discontinue or change over and remove temporary facilities and services from the project site, along with construction tools and facilities, mock-ups, and similar elements.
4. Clean all marred surfaces including touch up painting, pressure washing, or other measures as needed as directed by the Owner.
5. Broom clean paved driveways and parking areas.
6. Hose clean sidewalks, loading areas, and others contiguous with principal structures.
7. Fully restore all property not designated for construction including all areas used for staging and storage.
8. Provide Final Record Drawings in accordance with Section 01780.

#### **1.05 Closeout Submittals**

- A. Upon completion of the project, or portions thereof, the Contractor shall transfer to the Owner all applicable items accumulated throughout construction. These include but are not limited to the following items:
1. Service manuals, installation instructions, maintenance and operating instructions, special tools, and specialties
  2. Spare parts ordered as part of this Contract
  3. Delivery of any salvaged or borrowed materials or equipment to the Owner
  4. All keys to all doors, gates, and equipment
  5. Checklist indicating satisfactory completion of all unfinished items from the final inspection
  6. Certificate of Substantial Completion
  7. Certificate of Final Completion
  8. Submittal of the Material and Workmanship Bond
  9. Submittal of manufacturers' guarantees, warranties, bonds, and letters of coverage extending beyond the time limitations of the Contractor's guarantee.
  10. Contractor's Final Release of Lien
  11. Final Waivers of lien from all Subcontractors and Suppliers
  12. Consent of Surety to Final Payment
  13. Final record documents of completed facilities

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

**SECTION 01780**  
**RECORD DRAWINGS**

**PART 1 GENERAL**

**1.01 Section Includes**

Record Drawing requirements including format requirements and submittal procedures.

**1.02 General Requirements**

- A. As the Work progresses, the Contractor shall be responsible for recording information on the approved Contract Documents concurrently with construction progress.
- B. Mark on the Contract Drawings all changes in direction and location of structure, piping, equipment, electrical, and mechanical work.
- C. If requested, mark on the Specifications the manufacturer, trade name, catalog, and supplier of each product actually installed, and mark changes made by Change Order or Field Order.
- D. Record Drawings shall depict surveyed as-built information including horizontal and vertical locations as required herein. All Record Drawings shall be prepared by the Contractor in ACAD format using construction plan sheets provided by the Engineer. As-built information shall be field verified, measured, added to the ACAD files of the construction plan sheets provided by the Engineer, and certified, signed and sealed by the Contractor's licensed Surveyor who will be responsible for the accuracy of all dimensions and elevations. Sheet sizes and the scale of the Record Drawings shall match sheet sizing and scale of the construction plans. Add blowup details if necessary.
- E. Record Drawings shall clearly show all field changes of dimension and detail including changes made by field order or by change order.
- F. The surveyed as-built information shall be vertically based on the North American Vertical Datum of 1988 (NAVD 88) and the coordinate system shall be based horizontally on the North American Datum 83 (NAD83) (1990 adjustment). The as-built survey shall be referenced to the project benchmarks and shall be referenced to the state plane coordinates. All valves (center of pipe) and valve boxes (grade), hydrants (grade), blow offs (grade), sample points (grade) and meter boxes (grade), etc. shall be clearly shown.
- G. The surveyed as-built location of the newly constructed facilities shall be in an ACAD overall base drawing which is in State Plane. Providing "paper space" views that are not in State Plane of the constructed facilities is not acceptable. Providing northing and easting point tables on separate new sheets added to the

construction plans is not acceptable. The as-built northing and easting data must be on the individual construction plan sheets to which the data applies.

- H. All water valves, hydrants, and blowoffs shall be horizontally referenced from at least two and preferably three permanent points.
- I. The as-built information shown on the Record Drawings is to include, but not be limited to, the following:
  - 1. Horizontal locations (state plane coordinates and stations and offsets) and vertical elevations for all utility and storm structures including but not limited to manholes, inlets and cleanouts, including structure top and invert elevations and invert elevations of all connecting pipes.
  - 2. Distance along pipelines between structures.
  - 3. Stormwater pond top of berm and pond bottom elevations and horizontal dimensions measured at a minimum of ten locations per pond, at locations designated by the engineer. Top of pond horizontal dimensions are also to be tied to property corners, easements, and rights-of-way.
  - 4. Stormwater control structure dimensions and elevations, including all weirs, slots, orifices, grates, and skimmers.
  - 5. Stormwater conveyance systems including dimensions, elevations, contours, and cross sections.
  - 6. Horizontal locations (state plane coordinates and stations and offsets) and vertical elevations of all utility valves, fittings, connection points, etc.
  - 7. Vertical elevations of all pipelines at crossings of potable water mains (whether the water main is existing or new) in order to document that the minimum required vertical separation has been met.
  - 8. Grade elevation above utility pipeline where vertical elevations are required at all utility valves, fittings, connection points, etc.
  - 9. Horizontal offsets from adjacent potable water mains (whether the water main is existing or new) in order to document that the minimum required horizontal separation has been met.
  - 10. Utility pipeline horizontal locations (state plane coordinates and stations and offsets) and tied horizontally to edge of pavement and right-of-way lines, located every 200-ft plus all changes in horizontal offset.
  - 11. Horizontal locations (state plane coordinates and stations and offsets) of each end of steel casing pipe (also provide distance from edge of pavement and adjacent right-of-way lines).
  - 12. Pipeline that is directional bored is to be horizontally and vertically located every 20' along the bore. Provide this information by submitting boring logs and by drawing the as-built vertical and horizontal locations of the bored pipeline on the record drawings based on the boring logs. Provide state plane coordinates at each end of the directional bored pipeline.
  - 13. Pavement width and elevations at the centerline and edge of pavement every 200 feet plus at all changes in longitudinal slope, cross slope, inlet locations, and at all driveway and street intersections. For parking lots, record centerline and edge of pavement elevations along all drive aisles and islands.

14. All parking areas and sidewalk ramps designated for handicap access shall contain horizontal and vertical measurements in order to verify required widths and slopes have been met.
15. The horizontal location (state plane coordinates and stations and offsets) of all new pull and splice boxes.
16. The new lift station wet well top and inside bottom elevations, plus inverts of all connecting pipelines.
17. Lift station surveyed layout (horizontal and vertical) of all structures, valves, panels, conduits, piping, corners of all concrete pads and slabs, and bollards.
18. Valve vault top elevation, inside bottom elevation, and top of pipe elevations.
19. The horizontal location (state plane coordinates) at the lift station wet well and valve vault.
20. Horizontal and vertical data for any construction that deviates from the construction drawings.
21. Where the plans contain specific horizontal location data, such as station and offset, the as-built drawings are to reflect the actual horizontal location.
22. Where the plans contain specific vertical elevation data, the as-built drawings are to reflect the actual measured vertical elevation.
23. The horizontal location, dimensions, and finished floor elevation of structures/buildings. The horizontal location of utility entrance points to buildings.

### **1.03 Submittal Requirements**

- A. Record Drawings are to be prepared by the Contractor, certified by the Contractor's licensed surveyor, and delivered to the Engineer for review. The Engineer will review the drawings for completeness in accordance with the requirements of this section within seven (7) full working days. For preliminary review, submittal in ACAD and PDF format is sufficient and signed and sealed copies are not necessary. Final submittal of complete Record Drawings shall consist of one set signed and sealed by the Contractor's licensed surveyor plus ACAD and PDF files of the Record Drawings delivered to the Engineer.
- B. If the drawings are found to be incomplete or inaccurate, the drawings will be returned to the Contractor for correction.
- C. In cases where the Owner determines partial clearances or final clearance from permitting agencies are beneficial to the Owner for completed portions of the project, provide preliminary record drawings (ACAD format) to the Engineer for its use in preparing the clearance applications for the Owner. These preliminary record drawings shall include the following:
  1. Horizontal locations and vertical elevations of all utility valves, and fittings.
  2. Temporary water main sample point locations (required for new water mains only)

3. Vertical elevations of all pipelines at crossings of potable water mains (whether the water main is existing or new) in order to document that the minimum required vertical separation has been met.
  4. Grade elevation above utility pipeline where vertical elevations are required at all utility valves, and fittings.
  5. Horizontal offsets from adjacent potable water mains (whether the water main is existing or new) in order to document that the minimum required horizontal separation has been met.
  6. Horizontal locations and vertical elevations for all utility and storm structures including but not limited to manholes, inlets and cleanouts, including structure top and invert elevations and invert elevations of all connecting pipes.
  7. Distance along pipelines between structures.
- D. Complete record drawings that are found to be satisfactory as a result of the Engineer's review will be used as the basis for the final project Record Drawings prepared by the Engineer using the Contractor provided record drawings plus Engineer added information.
- E. Complete signed and sealed Record Drawings are required to be delivered to the Owner prior to final inspection of the project. Final inspections will only be scheduled upon receipt of signed and sealed record drawings that have been reviewed by the Engineer and delivered by the Engineer to the Owner.

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

**SECTION 02220**  
**SITE DEMOLITION**

**PART 1 GENERAL**

**1.01 Section Includes**

- A. Demolition of designated site structures, retaining walls and foundations and removal of materials from project site.
- B. Demolition and removal of pavements, curbs and gutters, drainage structures, utilities, signage or landscaping.
- C. Disconnecting and capping or removal of identified utilities.
- D. Filling voids in subgrade created as a result of removals or demolition.
- E. Disposal of demolished materials.

**1.02 Related Sections**

- A. Section 02230 - Site Preparation
- B. Section 02310 - Finish Grading
- C. Section 02315 - Excavation and Fill

**1.03 Regulatory Requirements**

- A. Conform to applicable State and local codes for demolition of structures, safety of adjacent structures, dust control, and runoff control.
- B. Obtain required permits and licenses from appropriate authorities. Pay associated fees including disposal charges.
- C. Notify affected utility companies before starting work and comply with their requirements.
- D. Do not close or obstruct roadways, sidewalks, or fire hydrants without appropriate permits.
- E. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered.
- F. Test soils around buried tanks for contamination.

**1.04 Project Record Documents**

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

### **1.05 Project Conditions**

- A. Structures to be demolished will be discontinued in use and vacated prior to start of work.
- B. Owner assumes no responsibility for condition of structures to be demolished.
- C. Conditions existing at time of inspection for bidding purposes will be maintained by Owner as practicable. Variations within structures may occur by Owner's removal and salvage operations prior to start of demolition work.
- D. Unless otherwise indicated in Contract Documents or specified by the Owner, items of salvageable value to Contractor shall be removed from site and structures. Storage or sale of removed items on site will not be permitted and shall not interfere with other work specified in Contract Documents.
- E. Explosives shall not be brought to site or used to demolish structures.

## **PART 2 PRODUCTS - Not Used**

## **PART 3 EXECUTION**

### **3.01 Preparation**

- A. Provide, erect, and maintain erosion control devices, temporary barriers, and security devices at locations indicated on Construction Drawings.
- B. Protect existing landscaping materials, appurtenances, and structures which are not to be demolished. Repair damage caused by demolition operations at no cost to Owner.
- C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as needed.
- D. Mark location of utilities. Protect and maintain in safe and operable condition utilities that are to remain. Prevent interruption of existing utility service to occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide temporary services during interruptions to existing utilities as acceptable to governing authorities and Owner.

### **3.02 Salvage**

- A. Other than the materials to be removed and delivered to the Owner as indicated below, all material designated to be removed will become property of the Contractor and shall be removed from the site.

- B. The Owner will retain ownership of the following materials that are to be removed by the Contractor and delivered to the Owner:
  - 1. Picnic Tables
  - 2. Port-A-John
  - 3. Public Boat Ramp Signs
- C. The salvaged materials are to be delivered to the following location: Manatee County Property Management

### **3.03 Demolition Requirements**

- A. Conduct demolition to minimize interference with adjacent structures or pavements.
- B. Cease operations immediately if adjacent structures appear to be in danger and notify the Owner. Do not resume operations until directed by the Owner.
- C. Conduct operations with minimum of interference to public or private access. Maintain ingress and egress at all times.
- D. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon, or limit access to their property.
- E. Sprinkle work with water to minimize dust. Provide hoses and water connections for this purpose.
- F. Comply with governing regulations pertaining to environmental protection.
- G. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to condition existing prior to start of work.
- H. Demolition plan identifies major structures and items to be demolished. Include incidental demolition to completely demolish structures whether indicated on plan or not.

### **3.04 Demolition**

- A. Demolish buildings completely and remove from site using methods as required to complete work within limitations of governing regulations. Small structures may be removed intact when acceptable to the Owner.
- B. Locate demolition equipment and remove materials so as to prevent excessive loading to supporting walls, floors, or framing.
- C. Demolish concrete and masonry in small sections. Break up concrete slabs-on-grade that are 2-feet or more below proposed subgrade. Remove slabs-on-grade and below grade construction within 2-feet of proposed subgrade.

### **3.05 Filling Voids**

- A. Completely fill below grade areas and voids resulting from demolition or removal of structures, underground fuel storage tanks, wells, cisterns, etc., using approved select fill materials consisting of stone, gravel, and sand free from debris, trash, frozen materials, roots, and other organic matter.
- B. Ensure that areas to be filled are free of standing water, frost, or unsuitable material, trash, and debris prior to fill placement.
- C. Place fill materials in accordance with Sections 02315 or 02320 as applicable unless subsequent excavation for new work is required.
- D. Grade surface to match adjacent grades and to provide flow of surface drainage after fill placement and compaction.

### **3.06 Disposal of Demolished Materials**

- A. Remove from site debris, rubbish, and other materials resulting from demolition operations.
- B. No burning of any material, debris, or trash on-site or off-site will be allowed.
- C. Transport materials removed from demolished structures with appropriate vehicles and dispose off-site to areas that are approved for disposal by governing authorities and appropriate property owners.

### **3.07 Cleanup**

- A. Clean the Project site to a condition satisfactory to the Engineer, free from demolished materials, rubbish or debris. Grade the site to meet adjacent contours and provide a positive flow for surface drainage.
- B. Restore items intended to remain that have been damaged by demolition work at no cost to, and to the satisfaction of the Owner.
- C. Return all interrupted utility services to their pre-demolition state and disconnect temporary services, unless otherwise specified.

**END OF SECTION**

**SECTION 02230**  
**SITE PREPARATION**

**PART 1 GENERAL**

**1.01 Section Includes**

- A. Layout of work and protection of bench marks.
- B. Protection of structures, trees, or vegetation to remain.
- C. Clearing and grubbing.
- D. Stripping and storing topsoil.

**1.02 Related Sections**

- A. Section 02220 - Site Demolition
- B. Section 02370 - Erosion and Sedimentation Control

**1.03 Coordination**

- A. Notify the following utility owners which may have utilities in the project area and coordinate with them to avoid service interruptions and/or safety hazards:
  - 1. Florida Power & Light
  - 2. AT&T
  - 3. CenturyLink
  - 4. Teco Peoples Gas
  - 5. Charter Communications
  - 6. Frontier Communications
  - 7. City of Holmes Beach
  - 8. Manatee County
- B. Contact "Sunshine State, One-Call" by dialing "811", to determine if there are other utilities in the area, and their location. For additional information: [www.callsunshine.com](http://www.callsunshine.com).

**PART 2 PRODUCTS - Not Used**

**PART 3 EXECUTION**

**3.01 Bench Marks and Monuments**

Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or

relocations without the prior written approval of the Owner. All benchmarks, property corners, and other survey monuments that are lost, damaged, or destroyed shall be replaced by a Licensed Surveyor at the Contractor's expense.

### **3.02 Laying Out Work**

- A. Base lines, property lines, and easement lines, are shown on the Drawings. Benchmarks utilized are also shown on the drawings.
- B. Stake out the construction, establish lines and levels, temporary bench marks, batter boards, centerlines and reference points for the work, and verify all dimensions relating to interconnection with existing features.
- C. Report any inconsistencies in the proposed grades, lines and levels, dimensions and locations to the Engineer before commencing work.
- D. Contain all construction activities within the right-of-way, easements, and property secured by the Owner, as shown on the drawings. Do not disturb surrounding properties or travel on surrounding properties without written consent from the property owner. Repair or reconstruct damaged areas on an immediate basis. All costs for repairs shall be the responsibility of the Contractor.

### **3.03 Burning**

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

### **3.04 Protection of Trees and Shrubs**

- A. Protect all trees and shrubs located outside the right-of-way, easements, and Owner secured property, particularly those trees and shrubs located adjacent to work areas.
- B. Within the right-of-way, easements, and Owner secured property, the intent is to allow trees and shrubs to remain in accordance with the following schedule:
  - 1. New roadway construction – trees and shrubs to remain where located more than 15 feet from the back of curb, or outside the limits of excavation or fill areas, whichever is further.
  - 2. Utility pipeline construction – trees and shrubs to remain outside a 15 foot wide path, centered on the pipeline.
- C. Protect branches, trunks, and roots of trees and shrubs that are to remain. Trees to remain in the construction area shall be boxed, fenced or otherwise protected before any work is started; remove boxing when directed by the Engineer. Do not permit heavy equipment or stockpiles within branch spread. Remove interfering branches without injury to trunks and cover scars with tree paint.

### **3.05 Relocation of Utilities**

- A. Active utilities which do not interfere with the work shall be supported and protected from damage. After obtaining the Engineer's approval, relocate or remove active utilities which will interfere with work as indicated. Pay for all damage to active utilities and for relocation or removal of all interfering utilities which are ascertainable from Drawings, surveys, site inspection or encountered during construction.
- B. Coordinate with each utility and pay all costs associated with the protection of existing facilities during construction. Also coordinate necessary relocations or other construction related matters with each utility.
- C. Inactive or abandoned utilities and appurtenant structures encountered shall be removed to avoid interference as directed by the Engineer. Exposed ends of abandoned lines shall be plugged or capped in a water-tight manner.

### **3.06 Clearing and Grubbing**

- A. Areas to receive clearing and grubbing shall include all areas to be occupied by the proposed improvements, areas for fill and site grading, and borrow sites. Remove trees outside of these areas only as indicated on the Drawings or as approved in writing by the Engineer.
- B. Clearing shall consist of removing trees and brush and disposal of other materials that encroach upon or otherwise obstruct the work.
- C. Exercise extreme care during the clearing and grubbing operations. Do not damage existing structures, pipes or utilities.
- D. Grubbing shall consist of removing and disposing of stumps, roots larger than 2" in diameter, and matted roots. Remove to a depth of not less than 18" below the original surface level of the ground.
- E. All combustible debris and refuse from site preparation operations shall be removed to legal offsite disposal areas.

### **3.07 Topsoil Removal**

- A. All areas to be occupied by proposed improvements, and borrow sites shall be stripped of all brush, weeds, grass, roots and other material.
- B. Remove all loamy, organic topsoil suitable for seeding and planting to whatever depth encountered and store separately from other excavated material. Stockpile in designated areas and provide for proper drainage. Cover storage piles as required to prevent windblown dust.
- C. All removed topsoil shall be stockpiled within the project work area. Topsoil can be incorporated into the project in all areas that are to be grassed.

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

**3.08 Disposal of Debris**

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

**END OF SECTION**

## **SECTION 02240**

### **DEWATERING**

#### **PART 1 GENERAL**

##### **1.01 Section Includes**

Dewatering design and operation requirements

##### **1.02 Related Sections**

Section 02370 - Erosion and Sedimentation Control

##### **1.03 General Requirements**

- A. Obtain the services of a qualified dewatering specialist to provide dewatering plan as may be necessary to complete the Work. Contractor shall be solely responsible for the design, installation, operation, maintenance, and any failure of any component of the system.
- B. Dewatering discharge from the site shall comply with all NPDES general permit requirements and state water quality standards. Provide all testing and permitting required and comply with all treatment or disposal methods required to meet all local, state and federal requirements.
- C. Design and provide dewatering system using accepted and professional methods consistent with current industry practice to eliminate water entering the excavation under hydrostatic head from the bottom and/or sides. Design system to prevent differential hydrostatic head which would result in floating out soil particles in a manner termed as a "quick" or "boiling" condition. System shall not be dependent solely upon sumps and/or pumping water from within the excavation where differential head would result in a quick condition, which would continue to worsen the integrity of the excavation's stability.
- D. Provide dewatering system of sufficient size and capacity to prevent ground and surface water flow into the excavation and to allow all Work to be installed in a dry condition.
- E. No additional payment will be made for any supplemental measures to control seepage, groundwater, or artesian head.
- F. If dewatering equipment needed exceeds any of the following: 1) 6" pump volute; 2) 100,000 GPD total 24 hour (1 day) dewatering, and; 3) 1,000,000 GPD pump capacity, the Contractor shall be required to permit the dewatering system with the water management district.

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

## **PART 2 PRODUCTS - Not Used**

## **PART 3 EXECUTION**

### **3.01 General Requirements**

- A. Control, by acceptable means, all water regardless of source and be fully responsible for disposal of the water.
- B. Confine discharge piping and/or ditches to available easement or to additional easement obtained by Contractor.
- C. Control groundwater in a manner that preserves strength of foundation soils, does not cause instability or raveling of excavation slopes, and does not result in damage to existing structures. Where necessary to these purposes, lower water level in advance of excavation, utilizing wells, wellpoints, jet educators, or similar positive methods. Maintain the groundwater level to a minimum of 2 feet below excavations. Provide piezometers if directed by the Engineer to document the groundwater level is being maintained.
- D. Commence dewatering prior to any appearance of water in excavation and continue until Work is complete to the extent that no damage results from hydrostatic pressure, flotation, or other causes.
- E. Open pumping with sumps and ditches shall be allowed, provided it does not result in boils, loss of fines, softening of the ground, or instability of slopes.
- F. Install wells and/or wellpoints, if required, with suitable screens and filters, so that continuous pumping of fines does not occur. During normal pumping, and upon development of well(s), levels of fine sand or silt in the discharge water shall not exceed 5 ppm. Install sand tester on discharge of each pump during testing to verify that levels are not exceeded.
- G. Control grading around excavations to prevent surface water from flowing into excavation areas.
- H. Remove subgrade materials rendered unsuitable by excessive wetting and replace with approved backfill material at no additional cost to the Owner.

- I. Walls shall not be exposed to water pressure before structural work at the next higher level has properly cured and the cantilever action of walls is eliminated.
- J. Any dewatering pumps within 1500-ft of private residences shall be equipped with satisfactory sound suppression.
- K. Water from dewatering activities shall be disposed in a manner that does not cause flooding, erosion, or the transfer of sediments.

### **3.02 Maintaining Excavation in Dewatering Condition**

- A. Dewatering shall be a continuous operation. Interruptions due to power outages, or any other reason will not be permitted.
- B. Continuously maintain excavation in a dry condition with positive dewatering methods during preparation of subgrade, installation of pipe, and construction of structures until the critical period of construction and/or backfill is completed to prevent damage of subgrade support, piping, structure, side slopes, or adjacent facilities from flotation or other hydrostatic pressure imbalance.
- C. Provide standby equipment on site, installed, wired, and available for immediate operation if required to maintain dewatering on a continuous basis in the event any part of the system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, perform such work as may be required to restore damaged structures and foundation soils at no additional cost to Owner.
- D. System maintenance shall include but not be limited to 24-hour supervision by personnel skilled in the operation, maintenance, and replacement of system components, and any other work required to maintain excavation in dewatered condition.

### **3.03 System Removal**

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

**END OF SECTION**

## SECTION 02310

### FINISH GRADING

#### PART 1 GENERAL

##### 1.01 Section Includes

Topsoil placement, grading of site

##### 1.02 Related Sections

- A. Section 02230 - Site Preparation
- B. Section 02315 - Excavation and Fill
- C. Section 02320 - Trenching, Bedding, and Backfilling

##### 1.03 References

- A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:
  - 1. AASHTO T267 – Determination of Organic Matter in Soils by Loss on Ignition

#### PART 2 PRODUCTS

##### 2.01 Topsoil

- A. Topsoil shall be fertile, friable, natural topsoil typical of the area, free from subsoil, stones, plants, roots or other extraneous material and shall not be used while muddy or frozen.
- B. Topsoil shall contain not less than 8% organic matter (AASHTO T267). The topsoil shall consist of either natural topsoils typical of the locality and free from coarse stone aggregate or surface soils stripped from the site and enriched with humus at a rate of 8% by volume. The soil mixture prepared by mixing surface soils and humus shall be free of oil, cinders, coarse stone, and woody root material.

#### PART 3 EXECUTION

##### 3.01 General

Provide all topsoil placement and finish grading and filling to achieve the lines and grades indicated on the Drawings. All earthwork shall be done in a manner that provides drainage.

### **3.02 Topsoil Placement**

Place topsoil in all areas of new grading. The compacted subgrade to receive topsoil shall be scarified to a depth of 3 inches. Topsoil shall be spread evenly and compacted to a thickness of not less than 6 inches, to the proposed elevations and grades. Grade flush with walks, curbs, and paving.

### **3.03 Finish Grading**

- A. All areas of the project including all previously grassed areas that have been disturbed, borrow sites, excavated and filled sections and adjacent transition areas shall be uniformly smooth-graded. Depressions from settlement shall be filled and compacted. Tops of embankments and breaks in grade shall be rounded. All surfaces shall be finished to provide adequate drainage. Finished surfaces shall be reasonably smooth, compacted, free from irregular surface changes and comparable to the smoothness obtained by blade-grader operations.
- B. Slope grades to drain away from structures at a minimum of ¼-inch per foot for 10 feet.
- C. Finished surfaces adjacent to paved or surfaced areas and within 10 feet of structures shall be within 1 inch of the proposed grade. All other areas shall be within 3 inches of the proposed grade.
- D. Newly graded areas shall be protected from traffic and erosion. All settlement or washing away that may occur from any cause prior to seeding or acceptance shall be repaired and grades re-established to the required elevations and slopes at no additional cost to the Owner.
- E. Unless otherwise indicated, dispose of all surplus material.

**END OF SECTION**

**SECTION 02315**  
**EXCAVATION AND FILL**

**PART 1 GENERAL**

**1.01 Section Includes**

- A. Excavation and fill for roads, ponds, general site work
- B. Sheeting, shoring and bracing
- C. Compaction

**1.02 Related Sections**

- A. Section 02230 - Site Preparation
- B. Section 02240 - Dewatering
- C. Section 02310 - Finish Grading
- D. Section 02320 - Trenching, Bedding, and Backfilling
- E. Section 02370 - Erosion and Sedimentation Control

**1.03 References**

- A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:
  - 1. AASHTO M145 - Classification of Soils and Soil Aggregate Mixtures
  - 2. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb Rammer and 18-in Drop
- B. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort
  - 2. ASTM D2487 - Classification of Soils for Engineering Purposes
- C. Occupational Safety and Health Administration (OSHA) Regulations, including:
  - 1. Part 1926 Subpart P – Excavations

**1.04 Definitions**

- A. Backfill = material placed in newly excavated areas to the topsoil, paving sub-grade, or foundation level.
- B. Influence Area = the area within lines sloped downward at 45 degrees from the outer edges of paving, foundations, and utility lines. As a minimum, the influence area shall extend 5 feet beyond the edge of pavement (where there is no curb) or 5 feet beyond the back of curb.

### **1.05 Quality Assurance**

- A. Field density testing frequencies:
  - 1. One test for each 5,000 square feet or fraction thereof per lift of general backfilling, minimum 2 tests each layer.
  - 2. One test per each lift of backfill around and under structures.
  - 3. One test per lift per each change in type of fill.
  - 4. One test per 1000 square feet of pavement subgrade, minimum of 2 tests.
- B. Pond construction shall result in the finished pond having side slopes and dimensions that are in accordance with the construction drawings. It is the Contractor's sole responsibility to ensure that these requirements have been met. If the constructed side slopes are steeper than the required side slopes, or the pond volume is not within three (3) percent of the design volume, the Contractor may be required to make corrections to the pond at no additional cost to the Owner.
- C. Sheeting, shoring, and bracing used for the support of excavations over 20 feet deep shall be designed by a professional engineer licensed by the State of Florida.

### **1.06 Preconstruction Requirements**

Precondition surveys and vibration monitoring are required for those areas where residential structures are within 100 feet of the proposed construction.

## **PART 2 PRODUCTS**

### **2.01 General**

It is intended that previously excavated materials conforming to the following requirements be utilized wherever possible.

### **2.02 Materials**

- A. Acceptable materials (suitable material): AASHTO M145 classification A-1, A-3, A-2-4, A-2-6; ASTM D2487 classification GW, GP, GM, SM, SW, SP; unless otherwise disapproved within the Soil and Subsurface investigation reports. No more than 12% of acceptable materials shall pass the number 200 sieve.

- B. Unacceptable materials (unsuitable material): AASHTO M145 classification A-2-5, A-2-7, A-4, A-5, A-6, A-7, A-8; ASTM D2487 classification GC, SC, ML, MH, CL, CH, OL, OH, PT; unless otherwise approved within the Soil and Subsurface investigation reports.
- C. Flowable fill shall be "Excavatable" and shall meet the requirements of FDOT specification section 121, with a maximum 28-day compressive strength of 100 psi and a minimum 28-day compressive strength of 80 psi.

### **2.03 Sheeting, Shoring, and Bracing**

- A. The structural strength and safety of all sheeting, shoring and bracing shall be the sole responsibility of the Contractor. Repair any damage resulting from failure to provide adequate supports.
- B. Provide timber work, shoring, bracing, sheeting, and sheet piling where necessary to retain banks of excavations, prevent cave-in of adjacent ground, prevent displacement of utilities and structures, and to protect public safety.
- C. Contractor is solely responsible for the design, installation, and operation of dewatering systems and their safety and conformity with local codes and regulations.

## **PART 3 EXECUTION**

### **3.01 General Construction Requirements**

- A. Provide suitable temporary drainage channels for any water that may flow along or across the work as specified hereafter.
- B. Provide barriers, warning lights and other protective devices at all excavations.
- C. Sidewalks, roads, streets, and pavements shall not be blocked or obstructed by excavated materials, except as authorized by the Engineer, in which case adequate temporary provisions must be made for satisfactory temporary passage of pedestrians, and vehicles. Minimize inconvenience to public travel or to tenants occupying adjoining property.
- D. Where necessary to place excavated material adjacent to buildings, erect barriers to keep earth at least 4 feet from such buildings. Earth deposited on lawns shall be promptly and carefully removed to preserve the turf. All trees, shrubs, and landscaping shall be protected. Boring and jacking shall be used, if necessary, except where written permission is granted to remove trees and shrubs.
- E. If open excavations cross existing rigid surfacing, the surfacing shall be removed for a width one foot beyond the anticipated edge of the excavation. The pavement break shall be sawed to insure a straight joint. Surface replacement

shall match existing surfacing except as otherwise indicated on the Drawings. Where open excavation is allowed along or across public roadways, excavation, backfill, and surface replacement shall conform to the requirements of all permits applicable thereto. In no case shall surface replacement edges bear on less than 12" of undisturbed soil.

### **3.02 Preparation**

- A. Identify required lines, levels, contours, and datum.
- B. Locate and identify existing utilities that are to remain and protect from damage.
- C. Notify utility companies to remove or relocate utilities that are in conflict with proposed improvements.
- D. Protect plant life, lawns, fences, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Protect benchmarks, property corners, and other survey monuments from damage or displacement. If marker needs to be removed it shall be referenced by licensed land surveyor and replaced, as necessary, by same.
- F. Prior to placing fill in low areas, such as previously existing ditches, ponds, or lakes, perform following procedures:
  - 1. Drain water out by gravity with ditch having flow line lower than lowest elevation in low area. If drainage cannot be performed by gravity ditch, use adequate pump to obtain the same results.
  - 2. After drainage of low area is complete, remove mulch, mud, debris, and other unsuitable material by using acceptable equipment and methods that will keep natural soils underlying low area dry and undisturbed.
  - 3. If proposed for fill, muck, mud, and other materials removed from low areas shall be dried on-site by spreading in thin layers for observation by Engineer. Material shall be inspected and, if found to be suitable for use as fill material, shall be incorporated into lowest elevation of site filling operation, but not under building or pavement subgrade or within 10'-0" of perimeter of building subgrade or paving subgrade. If, after observation by Engineer, material is found to be unsuitable, unsuitable material shall be removed from site.

### **3.03 Sheeting, Shoring, and Bracing**

- A. Furnish, install, and maintain, without additional compensation, sheeting, bracing, and shoring support required to keep excavations within the easement provided, to support the sides of the excavation, and to prevent any movement which may damage adjacent pavements or structures, damage or delay the work, or endanger life and health. Voids outside the supports shall be immediately filled and compacted.

- B. Sheeting, where required, shall be driven below the bottom of excavation so the lowest set of wales and struts are above the bottom of the excavation to allow necessary working room.
- C. The Engineer may direct in writing that supports in trenches be cut off at any specified elevation, in which case Contractor shall be paid for the supports left in place.
- D. Contractor may leave in place, to be embedded in the backfill of the excavation, any or all supports for the purpose of preventing injury to persons or property, whether public or private. However, no supports which are within 4' of the ground or pavement surface may be left in place without written permission of the Engineer. No extra payment will be made for supports left in place at the Contractor's option.
- E. All supports not left in place shall be removed in such manner as to avoid endangering the piping, structures, utilities or property, whether public or private. All voids left by the withdrawal of sheeting shall be immediately filled and compacted.
- F. The right of the Engineer to order supports left in place shall not be construed as creating an obligation on his part to issue such orders. Failure by the Engineer to exercise this right shall not relieve the Contractor from total liability for damages to persons or property resulting from the failure of the Contractor to leave in place sufficient supports to prevent any caving or moving of the ground adjacent to the excavation.

### **3.04 Excavation**

- A. Do not excavate for any structure until that structure is scheduled for construction. Excavate only to the depth and dimensions necessary for the construction. Slope sides of excavations in accordance with OSHA requirements and the recommendations contained within the project geotechnical report.
- B. The bottom of all excavations shall be undisturbed earth unless otherwise indicated, and shall be approved by the Engineer before any subsequent work is started. Over excavate a minimum of 2 feet where excavations occur within unsuitable soils, and replace over excavated material with suitable soils.
- C. Excavations carried below depths indicated on the Drawings without the previous approval of the Engineer shall be filled with 2500 psi concrete or flowable fill to the correct level at the expense of the Contractor.
- D. Maintain excavations in good order. If the bearing capacity of the foundation soils is reduced because the excavation is allowed to remain open prior to commencing work, the weathered soil shall be removed and replaced with 2500 psi concrete or flowable fill at the Owner's discretion at the expense of the Contractor.

- E. All suitable materials removed from excavation areas shall be used for the project. Excess excavated suitable material shall be stockpiled on site at a location of the Owner's choosing, and shall become the property of the Owner, unless otherwise indicated on the Drawings.
- F. Suitable onsite excavated materials containing silty or slightly clayey to clayey fine sands shall be sufficiently dried by surface spreading and discing if necessary, or by mixing with cleaner fine sands prior to placement in fill areas.
- G. Unsuitable materials within the influence area of construction shall be excavated, removed from the site, and disposed, unless otherwise indicated on the Drawings.
- H. Excavations shall be kept dry, compacted, and stable to a depth two feet below the bottom of the excavation.
- I. If portions of the bottom of excavations consist of material unstable to such a degree that, in the opinion of the Engineer, it cannot adequately support the construction, the bottom shall be over excavated and stabilized with approved coarse granular stabilization material. Depth of stabilization shall be as directed by the Engineer. The initial 50 tons of stabilization shall be incidental to the Contract. Compensation will be allowed only for such additional quantities as the Engineer shall direct in writing to be placed.

### **3.05 Filling**

- A. All fill material shall be suitable soils or flowable fill. Fill placed within 1 foot of structures shall not contain rock or stone larger than 2 inch diameter. If a sufficient quantity of suitable material is not available from other excavations within the site, provide additional suitable material or flowable fill.
- B. Fill within the influence area of roadways, structures, foundations, or slabs, shall be placed in layers of 8 inch loose depth. In all other areas, place fill in layers of 12 inch loose depth.
- C. Take necessary precautions not to cause settlement or damage to adjacent slabs, walls, structures, or foundations. Place fill materials evenly adjacent to structures, without wedging against structures.
- D. Where filling is required on both sides of structures, fill and compact simultaneously on opposite sides in even layers.

### **3.06 Compaction**

- A. Unless otherwise indicated, the type of equipment and number of passes required to obtain the specified degree of compaction shall be determined at the site, subject to the approval of the Engineer.

- B. Provide mechanical compaction for cohesive material and vibratory compaction for granular materials, unless otherwise approved by the Engineer. Vibratory compaction is not allowed within 100 feet of existing structures. In these areas, compaction shall be accomplished by static means only. If compaction difficulties arise, the Engineer shall be consulted to review and possibly modify compaction procedures.
- C. Noncohesive soils shall be compacted with vibrating roller or equivalent; cohesive soils shall be compacted with sheeps-foot roller, pneumatic tamping, or approved equivalent, unless otherwise indicated.
- D. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

### **3.07 Testing and Cleanup**

- A. Provide for testing and cleanup as soon as practicable, so these operations do not lag far behind pipe installation. Perform preliminary cleanup and grading operations immediately after backfilling.
- B. All surplus excavated material shall be disposed of by the Contractor.

### **3.08 Field Quality Control**

- A. Minimum Density Requirement (ASTM D1557 or AASHTO T180):
  - 1. Fill placed under and within the influence area of roadways, structures, slabs, foundations = 98 percent
  - 2. Fill placed within pond and road embankment = 95 percent
  - 3. Fill placed within public road right-of-way and utility easements outside the road influence area = 95 percent
  - 4. Fill placed within landscape areas = 85 percent
  - 5. Fill placed within all other areas = 90 percent

Where fill is placed and differing density requirements are defined, the more stringent density requirement governs.

**END OF SECTION**

## SECTION 02320

### TRENCHING, BEDDING, AND BACKFILLING

#### PART 1 GENERAL

##### 1.01 Section Includes

- A. Trenching for piping and electrical work.
- B. Excavation for manholes, junction boxes, meter vaults, and appurtenances.
- C. Sheeting, shoring and bracing
- D. Bedding, backfilling, and compaction.

##### 1.02 Related Sections

- A. Section 02230 - Site Preparation
- B. Section 02240 - Dewatering
- C. Section 02310 - Finish Grading
- D. Section 02315 - Excavation and Fill
- E. Section 02370 - Erosion and Sedimentation Control

##### 1.03 References

- A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:
  - 1. AASHTO M145 - Classification of Soils and Soil Aggregate Mixtures
  - 2. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb Rammer and 18-in Drop
- B. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort
  - 2. ASTM D2487 - Classification of Soils for Engineering Purposes
- C. Occupational Safety and Health Administration (OSHA) Regulations, including:
  - 1. Part 1926 Subpart P – Excavations

##### 1.04 Definitions

- A. Bedding = Area from bottom of trench to centerline of pipe
- B. Backfill = material above the top of pipe to the topsoil, paving sub-grade, or foundation level.
- C. Influence Area = the area within lines sloped downward at 45 degrees from the outer edges of paving, foundations, and utility lines. As a minimum, the influence area shall extend 5 feet beyond the edge of pavement (where there is no curb) or 5 feet beyond the back of curb.

### **1.05 Quality Assurance**

- A. Field density testing frequencies:
  - 1. One test for each 300 linear feet of pipeline or fraction thereof per lift of general backfilling in the pipeline trench. Where less than 300 linear feet of pipeline is installed, one test per lift of backfill is required, staggered along the pipeline at locations determined by the Engineer
  - 2. One test for each 100 square feet or fraction thereof of backfill around and under structures, with a minimum of two tests per lift.
  - 3. One test per lift per each change in type of fill.
- B. Sheeting, shoring, and bracing used for the support of excavations over 20 feet deep shall be designed by a professional engineer licensed by the State of Florida.

### **1.06 Preconstruction Requirements**

Precondition surveys and vibration monitoring are required for those areas where residential structures are within 100 feet of the proposed construction.

## **PART 2 PRODUCTS**

### **2.01 General**

It is intended that previously excavated materials conforming to the following requirements be utilized wherever possible.

### **2.02 Materials**

- A. Acceptable materials (suitable material): AASHTO M145 classification A-1, A-3, A-2-4, A-2-6; ASTM D2487 classification GW, GP, GM, SM, SW, SP; unless otherwise disapproved within the Soil and Subsurface investigation reports. No more than 12 percent of acceptable materials shall pass the number 200 sieve.
- B. Unacceptable materials (unsuitable material): AASHTO M145 classification A-2-5, A-2-7, A-4, A-5, A-6, A-7, A-8; ASTM D2487 classification GC, SC, ML, MH,

CL, CH, OL, OH, PT; unless otherwise approved within the Soil and Subsurface investigation reports.

- C. Flowable fill shall be "Excavatable" and shall meet the requirements of FDOT specification section 121, with a maximum 28-day compressive strength of 100 psi and a minimum 28-day compressive strength of 80 psi.

### **2.03 Sheeting, Shoring, and Bracing**

- A. The structural strength and safety of all sheeting, shoring and bracing shall be the sole responsibility of the Contractor. Repair any damage resulting from failure to provide adequate supports.
- B. Provide timber-work, shoring, bracing, sheeting, and sheet piling where necessary to retain banks of excavations, prevent cave-in of adjacent ground, prevent displacement of utilities and structures, and to protect public safety.
- C. Contractor is solely responsible for the design, installation, and operation of dewatering systems and their safety and conformity with local codes and regulations.

## **PART 3 EXECUTION**

### **3.01 General Construction Requirements**

- A. Provide suitable temporary drainage channels for any water that may flow along or across the work as specified hereafter.
- B. Provide barriers, warning lights and other protective devices at all excavations.
- C. Sidewalks, roads, streets, and pavements shall not be blocked or obstructed by excavated materials, except as authorized by the Engineer, in which case adequate temporary provisions must be made for satisfactory temporary passage of pedestrians, and vehicles. Minimize inconvenience to public travel or to tenants occupying adjoining property.
- D. Where necessary to place excavated material adjacent to buildings, erect barriers to keep earth at least 4 feet from such buildings. Earth deposited on lawns shall be promptly and carefully removed to preserve the turf. All trees, shrubs, and landscaping shall be protected. Boring and jacking shall be used, if necessary, except where written permission is granted to remove trees and shrubs.
- E. If open excavations cross existing rigid surfacing, the surfacing shall be removed for a width one foot beyond the anticipated edge of the excavation. The pavement break shall be sawed to insure a straight joint. Surface replacement shall match existing surfacing except as otherwise indicated on the Drawings. Where open excavation is allowed along or across public roadways, excavation, backfill, and surface replacement shall conform to the requirements of all permits

applicable thereto. In no case shall surface replacement edges bear on less than 12 inches of undisturbed soil.

### **3.02 Preparation**

- A. Identify required lines, levels, contours, and datum.
- B. Locate and identify existing utilities that are to remain and protect from damage.
- C. Notify utility companies to remove or relocate utilities that are in conflict with proposed improvements.
- D. Protect plant life, lawns, fences, existing structures, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- E. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of the Owner. All benchmarks, property corners, and other survey monuments that are lost, damaged, or destroyed shall be replaced by a Licensed Surveyor at the Contractor's expense.

### **3.03 Sheeting, Shoring, and Bracing**

- A. Furnish, install, and maintain, without additional compensation, sheeting, bracing, and shoring support required to keep excavations within the easement provided, to support the sides of the excavation, and to prevent any movement which may damage adjacent pavements or structures, damage or delay the work, or endanger life and health. Voids outside the supports shall be immediately filled and compacted.
- B. Sheeting, where required, shall be driven below the bottom of excavation so the lowest set of wales and struts are above the bottom of the excavation to allow necessary working room.
- C. The Engineer may direct in writing that supports in trenches be cut off at any specified elevation, in which case Contractor shall be paid for the supports left in place.
- D. Contractor may leave in place, to be embedded in the backfill of the excavation, any or all supports for the purpose of preventing injury to persons or property, whether public or private. However, no supports which are within 4 feet of the ground or pavement surface may be left in place without written permission of the Engineer. No extra payment will be made for supports left in place at the Contractor's option.
- E. All supports not left in place shall be removed in such manner as to avoid endangering the piping, structures, utilities or property, whether public or private.

All voids left by the withdrawal of sheeting shall be immediately filled and compacted.

- F. The right of the Engineer to order supports left in place shall not be construed as creating an obligation on his part to issue such orders. Failure by the Engineer to exercise this right shall not relieve the Contractor from total liability for damages to persons or property resulting from the failure of the Contractor to leave in place sufficient supports to prevent any caving or moving of the ground adjacent to the excavation.

### **3.04 Trenching**

- A. All excavations shall be made by open cut unless otherwise indicated. Sides of trenches shall be kept as nearly vertical as possible from the trench bottom to a level of one foot above the top of the pipe. Slope sides of trenches in accordance with OSHA requirements and the recommendations contained within the project geotechnical report.
- B. Excavation of trenches shall not advance more than 50 feet ahead of completed pipe installation except as approved by the Engineer.
- C. Excavate trenches to depth indicated or required for indicated flow lines and invert elevations. Over excavate trenches a minimum of 2 feet where excavations occur within unsuitable soils, and replace over excavated material with suitable soils.
- D. Where rock is encountered, carry excavation 6 inches below scheduled elevation and backfill with a 6 inch layer of crushed stone or gravel prior to installation of pipe.
- E. For pipes or conduit 5 inches or less, excavate to indicated depths. Hand excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.
- F. For pipes or conduit 6 inches or larger, and other work indicated to receive subbase, excavate to subbase depth indicated, or, if not otherwise indicated, to 6 inches below bottom of work to be supported.
- G. Except as otherwise indicated, excavate for pressure piping so top of piping is minimum 3 feet below finished grade.
- H. Unsuitable excavated materials shall be removed from the site and disposed, unless otherwise indicated on the Drawings.
- I. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
- J. Trench bottoms shall be kept dry, compacted, and stable to a depth two feet below the bottom of the trench.

- K. Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide 9 -12 inch clearance on each side of pipe or conduit.
- L. If more than one pipe is to be installed in a trench, the pipes shall be spaced a minimum of one foot apart for pipes 4 inches and larger.
- M. If portions of the bottom of trenches consist of material unstable to such a degree that, in the opinion of the Engineer, it cannot adequately support the pipe or structure, the bottom shall be over excavated and stabilized with approved coarse granular stabilization material. Depth of stabilization shall be as directed by the Engineer. The initial 50 tons of stabilization shall be incidental to the Contract. Compensation will be allowed only for such additional quantities as the Engineer shall direct in writing to be placed.
- N. Do not backfill trenches until tests and inspections have been made.

### **3.05 Trench Backfilling**

- A. Following placement of pipe and inspection of joints, install tamped bedding material. Place bedding fill materials in layers of 6 inch loose depth.
- B. All bedding and backfill material shall be suitable soils or flowable fill. Backfill material within 1 foot of pipe and appurtenances shall not contain rock or stone larger than 2 inch diameter. If a sufficient quantity of suitable material is not available from the trench or other excavations within the site, provide additional suitable material or flowable fill.
- C. After completion of bedding and preliminary approval of piping and testing, the pipe shall be covered to a point one foot above the top of the pipe for the full trench width, placed in layers of 8 inch loose depth.
- D. Place backfill over pipe. Where trench is within the influence area of roadways, structures, foundations, or slabs, place backfill in layers of 8 inch loose depth. In all other areas, place backfill in layers of 12 inch loose depth.
- E. Take necessary precautions not to cause settlement or damage to adjacent slabs, walls, structures, or foundations. Place backfill and fill materials evenly adjacent to structures, without wedging against structures or displacement of piping or conduit.

### **3.06 Minor Structural Excavation and Backfilling**

- A. Minor structures are defined as manholes, junction boxes, inlets, valve vaults, and meter vaults. Do not excavate for any structure until that structure is scheduled for construction. Excavate only to the depth and dimensions necessary for the construction.

- B. The bottom of all excavations shall be undisturbed earth unless otherwise indicated, and shall be approved by the Engineer before any subsequent work is started. Over excavate a minimum of 2 feet where excavations occur within unsuitable soils, and replace over excavated material with suitable soils.
- C. Excavations carried below depths indicated on the Drawings without the previous approval of the Engineer shall be filled with 2500 psi concrete or flowable fill at the Owner's discretion to the correct level at the expense of the Contractor.
- D. Maintain excavations in good order. If the bearing capacity of the foundation soils is reduced because the excavation is allowed to remain open prior to commencing work, the weathered soil shall be removed and replaced with 2500 psi concrete or flowable fill at the Owner's discretion at the expense of the Contractor.
- E. Do not backfill until new concrete has properly cured, coatings have been approved, and any required tests have been accepted.
- F. Fill within the influence area of roadways, structures, foundations, or slabs, shall be placed in layers of 8 inch loose depth. In all other areas, place fill in layers of 12 inch loose depth.
- G. Exercise care during backfilling operations to avoid any puncture, break or other damage to waterproofing systems, if any. Backfill adjacent to waterproofing in the presence of the Engineer.
- H. Where backfilling is required on both sides of structures, backfill and compact simultaneously on opposite sides in even layers. Other backfilling sequences shall be as specifically noted.

### **3.07 Compaction**

- A. Unless otherwise indicated, the type of equipment and number of passes required to obtain the specified degree of compaction shall be determined at the site, subject to the approval of the Engineer.
- B. Provide mechanical compaction for cohesive material and vibratory compaction for granular materials, unless otherwise approved by the Engineer. Vibratory compaction is not allowed within 100 feet of existing structures. In these areas, compaction shall be accomplished by static means only. If compaction difficulties arise, the Engineer shall be consulted to review and possibly modify compaction procedures.
- C. Noncohesive soils shall be compacted with vibrating roller or equivalent; cohesive soils shall be compacted with sheeps-foot roller, pneumatic tamping, or approved equivalent, unless otherwise indicated.

- D. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

### **3.08 Testing and Cleanup**

- A. Provide for testing and cleanup as soon as practicable, so these operations do not lag far behind pipe installation. Perform preliminary cleanup and grading operations immediately after backfilling.
- B. All surplus excavated material shall be disposed of by the Contractor.

### **3.09 Field Quality Control**

- A. Minimum Density Requirement (ASTM D1557 or AASHTO T180):
  - 1. Backfill placed under and within the influence area of roadways, structures, slabs, foundations = 98 percent
  - 2. Backfill placed within pond and road embankment = 95 percent
  - 3. Backfill placed within public road right-of-way and utility easements outside the road influence area = 95 percent
  - 4. Backfill placed within landscape areas = 85 percent
  - 5. Backfill placed within all other areas = 90 percent

Where backfill is placed and differing density requirements are defined, the more stringent density requirement governs.

**END OF SECTION**

## SECTION 02370

### EROSION AND SEDIMENTATION CONTROL

#### PART 1 GENERAL

##### 1.01 Section Includes

Designing, providing, maintaining, removing temporary erosion and sedimentation controls.

##### 1.02 Related Sections

- A. Section 01415 - Stormwater Pollution Prevention / NPDES Requirements
- B. Section 02230 - Site Preparation
- C. Section 02240 - Dewatering
- D. Section 02315 - Excavation and Fill
- E. Section 02320 - Trenching, Bedding, and Backfilling

##### 1.03 References

- A. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, latest edition:
  - 1. Specification 300 - Prime and Tack Coats for Base Courses
  - 2. Specification 985 - Geotextile Fabrics
- B. State of Florida Erosion and Sediment Control Manual, latest edition.

##### 1.04 Owner's Instructions / Sequencing

- A. Owner has authority to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, trenching, borrow and embankment operations. Owner also has authority to direct Contractor to provide immediate permanent or temporary erosion and sediment control measures.
- B. Contractor shall respond to erosion and sediment control maintenance requirements or implement additional measures to control erosion ordered by Owner or governing authorities within 48 hours or sooner if required at no additional cost to the Owner.
- C. Contractor will be required to incorporate permanent erosion control features into project at earliest practical time to minimize need for temporary controls.

## **PART 2 PRODUCTS**

### **2.01 Erosion Control**

- A. Seeding and Mulching
- B. Sodding
- C. Hydro-seeding
- D. Coarse Aggregate
- E. Prime Coat - Per FDOT Specification 300

### **2.02 Sedimentation Control**

- A. Silt Fence - Per Details on the Drawings
- B. Floating Turbidity Barriers - Per Details on the Drawings

## **PART 3 EXECUTION**

### **3.01 Erosion Control**

- A. Maintain temporary erosion control systems as directed by Owner or governing authorities to control erosion and siltation during life of contract.
- B. The erosion and sediment control measures shown on the plans represent a minimum requirement. The Contractor is responsible for determining additional erosion and sediment control measures needed in order to prevent the transfer of sediment from the project area and prevent the erosion of surfaces during construction, as needed to protect adjacent properties and water bodies.
- C. Permanently grass cut slopes as excavation proceeds to extent considered desirable and practical as determined by the Owner.
- D. Grass all disturbed areas within 7 days of initial disturbance. Type of grassing shall be as follows: temporary grassing to be sodding at all drainage structures, retention areas, swales and ditches, and where slopes are steeper than 5:1. Temporary grassing can be seed and mulch at all other locations unless otherwise indicated in the drawings or specifications.
- E. Erosion control of areas to be paved shall meet the following:
  - 1. Install subgrade and base course materials within 48 hours of the removal/open cutting of existing pavement consisting of streets, driveways, or sidewalk. Install final surface courses within 14 days after removal of existing pavement.

2. Areas to receive asphalt shall receive erosion control measures no later than 48 hours after installation of base course. Temporary erosion control consists of placement of a bituminous prime coat and sanding the surface. Permanent erosion control consists of placement of the structural course.
  3. Areas to receive concrete paving shall be either protected with a layer of FDOT coarse aggregate material or shall be paved within 48 hours of installation of the subgrade.
- F. Dirt roads are to be stabilized and compacted within 7 days of the completion of trenching and grading activities.

### **3.02 Sedimentation Control**

- A. Install prior to construction.
- B. Inspect every two weeks during construction.
- C. Remove any sediment build-up.
- D. Repair and reinstall any damaged or missing sediment control measures. Install additional measures if inspection reveals additional sedimentation control is necessary.
- E. Rough excavate and grade any proposed stormwater ponds at the start of site grading activities. Direct site runoff to the ponds to minimize runoff to offsite areas.

**END OF SECTION**

## SECTION 02405

### HORIZONTAL DIRECTIONAL DRILLING

#### PART 1 GENERAL

##### 1.01 Section Includes

- A. Pipeline Materials and Fittings
- B. Directional Drilling

##### 1.02 Related Sections

- A. Section 01550 - Temporary Traffic Control
- B. Section 02240 - Dewatering
- C. Section 02955 - Cleaning and Flushing of Underground Piping

##### 1.03 References

- A. American Water Works Association (AWWA) latest edition:
  - 1. AWWA C153 - Ductile Iron Compact Fittings for Water Service
  - 2. AWWA C901 - Polyethylene Pressure Pipe and Tubing, ½ Inch Through 3 Inch for Water Service
  - 3. AWWA C906 - Polyethylene Pressure Pipe and Fittings, 4 Inch Through 63 Inch for Water Distribution and Transmission
- B. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM D3261 - Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
  - 2. ASTM F2164 - Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure
- C. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, latest implemented edition:
  - 1. Section 555 - Directional Bore

##### 1.04 Submittals

- A. Upon request, provide technical data for the equipment, method of installation, and proposed sequence of construction. Provide information on how the bore is to be steered and the information recorded.

- B. Provide information showing staging and pipe stringing areas and site access during pipe joining.
- C. Submit a temporary traffic control (maintenance of traffic) plan.
- D. Submit pipe catalog information confirming that pipe, fittings, joints, and other materials conform to the requirements of this Section.
- E. Submit pipe manufacturer's most current calculations regarding tensile load limitations for trenchless installations
- F. Submit bore logs that clearly indicate the pipe diameter, location (by station), and depth below grade of the installed pipeline, recorded every 20 feet maximum along the pipeline. Submit within 7 days of the completion of each bore.
- G. Provide record drawings. Include on the drawings pipeline horizontal and vertical data recorded every 20 feet along the pipeline.

### **1.05 Quality Assurance**

- A. Provide reference documenting successful similar horizontal directional drilling installations by Contractor or, if directional drilling is to be done by a subcontractor, provide references of subcontractor. Provide at least 3 references showing location of project, diameter of pipeline directional drilled, and length of bore. Provide contact names and phone numbers for each reference. Conventional trenching experience or jack and bore experience will not be considered applicable.
- B. Submit certificates of qualifications for persons fusing polyethylene pipe and fittings, and provide documentation showing that the persons making heat fusion joints have received training in the manufacturer's recommended procedure. Persons fusing polyethylene pipe and fittings shall have a minimum of 2 years experience fusing pipe and shall have received training on the equipment to be utilized.
- C. If requested, provide training from manufacturer's certified trainers on the manufacturer's recommended butt fusion and saddle fusion procedures to the installation personnel, and to inspectors representing the Owner.

## **PART 2 PRODUCTS**

### **2.01 Boring Equipment**

The size of the horizontal directional drill rig used shall be the industry standard size needed based on drilling distance, pipe diameter, and soil conditions.

### **2.02 Polyethylene Pipe, Fittings and Accessories**

- A. Polyethylene pipe and fittings for potable water mains shall be in accordance with AWWA C906, standard code designation standard code designation PE 3408. Pipe 4-30 inch diameter shall be DR11, PC 160 and shall be National Sanitation Federation (NSF) approved. The manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements. The pipe sizing shall be in accordance with Ductile Iron Sizing System (DIOD). Pipe using the newer ASTM designations for the material is acceptable, provided it is stamped "PE3408/PE4710 - AWWA C906" or "PE3408/PE3608/PE4710 - AWWA C906".
- B. Polyethylene pipe and fittings for reclaimed water, sewer force main, or storm sewer shall be in accordance with AWWA C906, standard code designation PE 4710, DR 11, 200 psi. The manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements. The pipe sizing shall be in accordance with Ductile Iron Pipe Sizing System (DIPS).
- C. Polyethylene pipe and tubing used for service lines ½-3 inch diameter shall be polyethylene in accordance with AWWA C901, standard code designation PE 4710, SDR 11 (outside diameter based dimension ratio), 200 psi. Pipe and fittings shall be NSF approved for the usage to which they are to be applied. Pipe and tubing shall be color coded blue for potable water, purple for reclaimed water, and green for sanitary sewer.
- D. Polyethylene mechanical joint adapters and flange adapters shall be manufactured in accordance with AWWA C906. Mechanical joint adapters shall be fitted with gland rings pressure rated equal to or greater than the mating pipe, and shall be made with sufficient through-bore length to be clamped in a heat fusion joining machine without the use of sub-end holder. The sealing surface of the flange adapter shall be machined with a series of small v-shaped grooves to provide gasketless sealing, or to restrain the gasket against blow-out.
- E. Below grade HDPE pipe terminations shall be fitted with a mechanical joint adapter kit that will enable the HDPE pipe to be joined with mechanical joint fittings. The adapter shall be AWWA compliant, and the pressure rating for the adapter shall match the pressure rating for the HDPE pipe. Mechanical Joint adapter kits shall be manufactured in standard DIPS sizes for connecting DIPS sized polyethylene pipe to mechanical joint fittings and shall contain a HDPE anchor fitting, stainless steel reinforcing collar, AWWA C110 ductile iron gland ring, gasket and extra length T-bolts.
- F. Glands, bolts, and gaskets shall be manufactured in accordance with AWWA C153. Bolts and nuts shall be grade 2 or higher.

### **2.03 Pipeline Identification**

- A. All polyethylene pipe shall be black, and shall contain a continuous colored stripe, 2 inches wide, located at no greater than 90 degree intervals around the pipe. Stripes shall be impregnated or molded into the pipe by the manufacturer. Application of the stripes after manufacture is not acceptable. Stripe color shall be:

1. Potable Water Mains - blue stripes
2. Reclaimed Water Mains - purple stripes
3. Force Mains - green stripes
4. Raw Water Mains - green stripes
5. Sanitary Sewer - green stripes
6. Storm Sewer - no stripes required

#### **2.04 Tracer Wire**

Tracer wire shall be color-coded 10 gauge continuous insulated wire, with HDPE jacket (min. thickness of 45 mils) specifically manufactured for use in horizontal directional drill installations. The color of the wire jacket shall be similar to pipeline identification colors.

### **PART 3 EXECUTION**

#### **3.01 General**

- A. Locate positions of entry and exit pits, establish elevation and horizontal datum for bore head control, and lay out pipe assembly area. Lay out and assemble pipe in a manner that does not obstruct adjacent roads, and commercial or residential activities adjacent to construction areas.
- B. Proposed deviations from the bore path due to underground obstructions shall be approved by the Owner prior to construction.
- C. Changes to the proposed entry and exit points (including the length of the directional drilled pipeline) must be approved by the Owner prior to construction.
- D. As-built variance from the design borepath shall be within 2 feet in the horizontal plane. Vertically, install at road crossings at the minimum depth specified herein, and install at a maximum depth of no more than 3 feet deeper than the specified minimum depth.
- E. Final acceptance including final payment of directional bored pipelines will not be made until directional bore logs have been submitted and the information on the bore logs documents the depth of the installed pipeline is in accordance with these specifications.

#### **3.02 Directional Drilling**

- A. The installation of pipeline by directional drilling shall be within the limits indicated on the drawings.
- B. Install erosion control measures and dewater as required.
- C. Steering of the bore must be performed with a method approved by the boring equipment manufacturer. Such methods include walkover, wire line, wire line with surface grid and other accepted methods. Use a locating and tracking system

capable of ensuring that the proposed installation is installed as intended. The locating and tracking system must provide information on:

1. Clock and pitch information
  2. Depth
  3. Transmitter temperature
  4. Battery status
  5. Position (x,y)
  6. Azimuth, where direct overhead readings (walkover) are not possible (i.e. subaqueous or limited access transportation facility)
- D. Ensure proper calibration of all equipment before commencing drilling operation. Take and record alignment readings or plot points such that elevations on top of and offset dimensions from the center of the product to a permanent fixed feature are provided. Such permanent fixed feature must have prior approval of the Engineer/Owner. Provide elevations and dimensions at all bore alignment corrections (vertical and horizontal) with a minimum distance between points of 20 feet. Provide a sufficient number of elevations and offset distances to accurately plot the vertical and horizontal alignment of the installed product. A minimum of three elevation and plot points are required.
- E. At road crossings within FDOT right-of-way, the minimum cover shall be 10 times the reamer size in inches under the paved surface. Any proposed changes to the depth and length of the directional bore from what is shown on the Drawings must be approved by the Engineer in writing, prior to commencement of drilling.
- F. At road crossings within public or private right-of-way that is not FDOT right-of-way, the minimum cover shall be as indicated in the Drawings. In no case shall mains 4" and larger have less than 4 feet cover at road crossings. Any proposed changes to the depth and length of the directional bore from what is shown on the Drawings must be approved by the Engineer in writing, prior to commencement of drilling.
- G. In road right-of-way in non-paved areas, the minimum directional bore depth shall be 4 feet minimum and 8 feet maximum (typical depth of 4-6 feet), as indicated on the Drawings.
- H. Borings shall be conducted using a mechanical boring head, assisted by and cooled by drilling fluid of low pressure and volume. Material Safety Data Sheets must be provided and approved by the Engineer for all drilling slurry compounds.
- I. Minimize potential damage from soil displacement or settlement by limiting the ratio of the bore hole to the product size. The size of the back reamer bit or pilot bit, if no back reaming is required, shall be limited relative to the product diameter to be installed as follows:

<b>Maximum Pilot or Back-Reamer Bit Diameter When Rotated 360 Degrees</b>	
Outside Pipe Diameter Inches	Maximum Bit Diameter Inches

	(Based on the Outside Pipe Diameter)
<8	Outside Diameter + 4
8 to 24	1.5 x Outside Diameter
>24	Outside Diameter + 12

- J. Drilling fluids are to use a mixture of bentonite clay or other approved stabilizing agent mixed with potable water with a minimum pH of 6.0 to create the drilling fluid for lubrication and soil stabilization. Vary the fluid viscosity to best fit the soil conditions encountered. Do not use any other chemicals or polymer surfactants in the drilling fluid without written consent from the Engineer. Certify to the Engineer in writing that any chemicals to be added are environmentally safe and not harmful or corrosive to the facility. Water for mixing the drilling fluid shall be potable water, procured by the Contractor.
- K. Ensure adequate removal of soil cuttings and stability of the bore hole by monitoring the drilling fluids such as the pumping rate, pressures, viscosity and density during the pilot bore, back reaming and pipe installation. Obtain the Engineer's approval of the location and all conditions necessary to construct relief holes to relieve excess pressure and ensure the proper disposition of drilling fluids is maintained.
- L. Minimize heaving during pull back. The pull back rate used shall maximize the removal of soil cuttings without building excess down hole pressure. Contain excess drilling fluids at entry and exit points until they are recycled or removed from the site or vacuumed during drilling operations. Entry and exit pits are to be of sufficient size to contain the expected return of drilling fluids and soil cuttings.
- M. Ensure that all drilling fluids are disposed of or recycled in a manner acceptable to the appropriate local, state, or federal regulatory agencies. If in the drilling process it becomes evident that the soil is contaminated, contact the Engineer immediately. Do not continue drilling without the Engineer's approval.
- N. Install the carrier in the bore hole within the same day that the pre-bore is completed to ensure stability.

### 3.03 Pipe Joining

- A. High density polyethylene pipe shall be heat fused and pressure tested as per manufacturer's guidelines before installation in the bore hole. During assembly and prior to pullback, pipe must be laid out in such a way as to minimize interference to pedestrian and vehicular traffic.
- B. Branch connections to the main shall be made with polyethylene saddle fittings or mechanical joint ductile iron tees.
- C. Joints between plain end polyethylene pipes and polyethylene fittings shall be made by butt fusion, and joints between the polyethylene main and saddle branch polyethylene fittings shall be made using saddle fusion using only procedures that

are recommended by the pipe and fitting manufacturer. External and internal beads shall not be removed.

- D. Connect polyethylene pipe to hydrants, valves, and ductile iron fittings using a mechanical joint adapter with a gland ring. Place gland ring behind adapter prior to fusing. Fuse using an electrofusion coupling in accordance with manufacturer's recommendations. After fusing, connect to mechanical joint. Restrain all non-polyethylene pipe and pressure test connections as required in individual pipeline specification sections.
- E. Connect polyethylene pipe to above grade valves and fittings using mechanical flange adapters. The flange adapters are to be self-restrained.
- F. Install all mechanical joints and flange connections in accordance with the manufacturer's recommended procedure. At least 1 hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and torque step recommendations of the manufacturer. The final tightening torque shall be 100 ft-lbs or less as recommended by the manufacturer.
- G. Install two separate strands of the required tracer wire along polyethylene pipe prior to pulling through bore hole. Tape wires to pipe every 5 feet minimum along the pipeline.
- H. After pulling pipe, clean exposed ends for installation of fittings, test locator wire for continuity.

### **3.04 Boring Failure**

- A. If an obstruction is encountered during boring which prevents completion of the installation in accordance with the drawings and specifications, either remove the pipe or abandon the pipe in place at the discretion of the Engineer.
- B. If pipe cannot be withdrawn and Engineer approves abandoning the pipe in place, cut pipe off at least 3 feet below ground surface, fill annular space and pipe with excavatable flowable fill and cap ends of pipe with blind flange.
- C. In the event of failure to install pipe, retain possession of pipe and remove it from the site.
- D. Upon approval of the Engineer, fill the abandoned bore hole with excavatable flowable fill.
- E. Submit a new installation procedure and revised plans to the Engineer for approval before resuming work at another location.
- F. If, during construction, damage is observed to the facility, cease all work until resolution to minimize further damage and a plan of action for restoration is obtained and approved by the Engineer.

- G. If the submitted boring logs indicate the installed alignment does not meet vertical or horizontal alignment requirements, the boring is considered a failure, and the directional bored pipeline shall be either re-bored or otherwise remedied at the discretion of the Owner.

### **3.05 Disposal of Surplus Fluids**

- A. All drill fluid excess shall be contained in entry and/or exit pits and pumped as needed into additional on-site storage tanks, tanker trucks, vacuum trucks, etc. Dispose of excess drill fluid offsite as allowed by local rules and regulations.
- B. Dispose of all material not needed or not suitable for backfilling over or around the entry and receiving pits. The disposal shall be subject to local codes and regulations.

### **3.06 Restoration**

After extraction, drill fluids, pits, work areas, staging and storage areas are to be restored to equal or better condition than pre-construction condition.

### **3.07 Sequence of Testing and Disinfection**

- A. The sequence of testing and disinfection shall be as follows:
  - 1. Conduct pressure and leakage testing.
  - 2. Perform flushing in accordance with Section 02955.
  - 3. Where the directional bored pipeline is potable water main, disinfect the water main, including valves and fittings in accordance with section 02510.
  - 4. Flush after disinfection.

### **3.08 Testing and Disinfection**

- A. After pulling pipe into position, but before attachment of adjacent sections of pipe, pressure test the pipeline.
- B. Test the locate wire for continuity and submit report documenting the continuity testing. Repair or replace locate wire at failed test locations as directed by the Owner.

### **3.09 Pressure and Leakage Testing (Polyethylene Mains)**

- A. Conduct hydrostatic pressure testing of installed polyethylene pipe in accordance with ASTM F2164 and as indicated herein. The ASTM F2164 defined one hour test and passing test criteria (no visible leaks and the pressure is maintained within 5% of the test pressure) does not apply to this Project. The below identified testing and acceptance criteria in subparagraphs E-H below apply to this Project.
- B. Test procedures and method of disposal of water shall be approved by the Engineer. All tests shall be made in the presence of the Engineer and utility.

Preliminary tests made by the Contractor without being observed by the Engineer will not be accepted. Notify the Engineer and the utility companies at least 48 hours before any work is to be inspected or tested.

- C. Provide all necessary test pumping equipment, water, and other equipment, material and facilities required for all pressure testing. All material used for testing including pumps and hoses shall be in good working order with no noticeable leaks.
- D. Piping shall be slowly filled with water and all air expelled. Care shall be taken that all air valves are installed and open in the section being filled, and that the rate of filling does not exceed the venting capacity of the air valves.
- E. Subject pipeline to be tested to a 4 hour expansion phase prior to commencing leakage testing. Pipeline expansion shall be accomplished by applying hydrostatic test pressure of 150 psi. In order to compensate for the initial expansion of the pipeline, add sufficient make-up water at hourly intervals to return to the required test pressure. At the end of the fourth hour, the test phase is to commence.
- F. At the conclusion of the fourth hour of the expansion phase, fill the pipeline again with makeup water to return to the test pressure. The test phase shall consist of a two hour or three hour pressure test, as required by the Owner. At the end of the test phase, measure the amount of makeup water required to return to the test pressure. The pipeline passes the pressure test if the makeup water required does not exceed the following:

Nominal Pipe Size (In)	Allowable Makeup Water (Gallons / 100 Ft Of Pipeline)	
	Two Hour Test	Three Hour Test
4	0.25	0.40
6	0.60	0.90
8	1.0	1.5
10	1.3	2.1
12	2.3	3.4
16	3.3	5.0
18	4.3	6.5
20	5.5	8.0
24	8.9	13.3
28	11.1	16.8

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

**END OF SECTION**

## SECTION 02510

### WATER DISTRIBUTION SYSTEMS

#### PART 1 GENERAL

##### 1.01 Section Includes

- A. Piping, fittings, valves, and hydrants for public drinking water distribution systems
- B. Testing and disinfection

##### 1.02 Related Sections

- A. Section 02320 - Trenching, Bedding and Backfilling
- B. Section 02955 - Cleaning and Flushing Of Underground Piping

##### 1.03 References

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

16. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances
17. AWWA C605 - Underground Installation of PVC Pipe and Fittings for Water
18. AWWA C651 - Disinfecting Water Mains
19. AWWA C800 - Underground Service Line Valves and Fittings
20. AWWA C900 - PVC Pressure Pipe and Fabricated Fittings, 4 Inch Through 60 Inch
21. AWWA C901 - Polyethylene Pressure Pipe and Tubing, ½ Inch Through 3 Inch for Water Service
22. AWWA C906 - Polyethylene Pressure Pipe and Fittings, 4 Inch Through 63 Inch for Water Distribution and Transmission
23. AWWA M23 - PVC Pipe Design and Installation Manual

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

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

#### 1.04 Submittals

- A. Product data for gaskets, pipe, joints, joint restraint, fittings, valves, coatings.
- B. Product data for all locate wire, tape, markers, warning tape
- C. Submit certification documenting that all pipe and fittings used to convey potable water shall conform to one of the following standards:
  1. NSF International Standard 61 (Drinking Water System Components);
  2. Section 6 of NSF International Standard 14 (Plastics Piping System Components and Related Materials); or
  3. Food and Drug Administration's Regulations for indirect food additives as contained in 21 CFR Parts 174 through 189.
- D. Piping specialties and installation details.
- E. Product data and painting schedule for field applied paint and coatings.
- F. Final coat paint colors.

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

#### **1.05 Quality Assurance**

- A. Chlorination and de chlorination shall be performed by competent individuals knowledgeable and experienced in the operation of the necessary application and safety equipment in accordance with applicable Federal, State and Local laws and regulations.
- B. Collection of water samples shall be by a State Certified Testing Laboratory or by an individual holding a current Florida Dept. of Environmental Protection certification that allows collection of water samples to be used for testing.
- C. Samples of water shall be tested by a State Certified Testing Laboratory.
- D. The contractor installing the underground fire protection piping shall hold a class I, II, or V level certification as issued by the State of Florida, as required by FS 633.021(15).

#### **1.06 Product Delivery, Storage, and Handling**

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

#### **1.07 Notification Requirements**

- A. All testing required to be witnessed by the Owner requires a minimum seventy-two (72) hours advance notice to the Owner.
- B. All proposed connections to existing mains (such as wet taps and line stops) require a minimum seventy-two (72) hours advance notice to the Owner.
- C. Installation of fire hydrants, thrust collars and restraints, valve pads, hydrant shear pads, and meter boxes and services, are to be witnessed by the Owner and require a minimum twenty-four (24) hours advance notice to the Owner.

### **PART 2 PRODUCTS**

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

- A. Polyethylene pipe and tubing used for service lines ½-3 inch diameter shall be blue polyethylene in accordance with AWWA C901, standard code designation

PE 4710, SDR 9 (outside diameter based dimension ratio), 250 psi. Pipe and fittings shall be NSF approved for the usage to which they are to be applied.

- B. Joints in SDR-PR PE pipe shall be butt heat fusion or socket heat fusion type.
- C. Fittings shall be manufactured of the same material as the pipe and shall be of the same DR.
- D. Provide adapters as required to join PE pipe-to-pipe, fittings and equipment of other materials.

## **2.11 Service Saddles**

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

## **2.12 Tapping Sleeves**

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

## **2.13 Polyethylene Encasement**

- A. Provide virgin polyethylene encasement in conformance with AWWA C105/A21.5. Polyethylene to be Type I, Grade E-1, 0.4 maximum flow rate, 1200 psi minimum tensile strength, 300 percent minimum elongation, 800 volt/mil thickness minimum dielectric strength.
- B. Polyethylene material shall have a minimum nominal thickness of .008 inch (8 mils). The minus tolerance on thickness shall not exceed 10 percent of the nominal thickness.

## **2.14 General Valve Requirements**

- A. Unless otherwise indicated or specified, all valves two inches and smaller shall be all brass or bronze; valves over two inches shall be iron body, fully bronze or bronze mounted.
- B. Where required for satisfactory operation of valves, provide valve operators, extension stems, stem guides, cast iron valve boxes, floor boxes, handwheels, operator stands, position indicators, and other valve appurtenances. Extension stems shall be complete with guide bearings, wrench nut, and tee handle wrench. All machinery stuffing boxes shall be packed with material selected for the service intended. Maintain all packing until final acceptance by the Owner.

- C. Manufacturer's name, service, and pressure marking shall be cast into the body.
- D. Valve operators shall be sized for operation at the pressure and flow conditions required for proper operation.
- E. Extension stems shall be provided for all valves in buried locations and in other locations where indicated on the Drawings.
- F. Extension stems shall be fabricated from solid steel shafting not smaller in diameter than the stem of the valve or from galvanized steel pipe having an internal diameter not smaller than the diameter of the valve stem. Stem couplings shall be both threaded and keyed to the coupled stems and shall be of standard design and construction. Pipe couplings will not be acceptable.
- G. Stems for buried valves shall extend to within 6 inches of the surface of the ground. Each extension stem shall be connected to the valve operator with a suitable universal joint type coupling. All connections shall be pinned. Each extension stem shall be provided with spacers which will center the stem in a valve box having an inside diameter of approximately 5 inches, and shall be equipped with a standard AWWA wrench nut as described in AWWA C500, except where handwheels are indicated.

#### **2.15 Linings and Coatings for Valves**

- A. Exterior coating on buried valves shall be rust inhibiting epoxy primer, followed by a coal tar epoxy, total minimum dry film thickness of 16 mils, applied at the factory. Exterior coating of exposed valves shall be factory applied rust inhibiting epoxy primer, minimum 3 mils dry film thickness.
- B. After installation, exterior surfaces shall be painted with a two coat system. The first coat (intermediate coat) shall be 4.0-10.0 mil DFT Tnemec Color Hi-Build Epoxoline II Series N69 or approved equal, and the final coat shall be 2.0-3.0 mil DFT Tnemec EnduraShield Series 73 or approved equal. The final coat paint color shall be as selected by the local utility.
- C. The interior of valves with a cast iron or ductile iron body shall be coated with an epoxy protective coating meeting NSF International Standard 61 and AWWA C550.

#### **2.16 Gate Valves**

- A. Gate valves 3 inches and larger shall be resilient wedge gate valves, conforming to AWWA C509 or AWWA C515 (valves 16"-48"). The valves shall be iron body, cast iron fully encapsulated molded rubber wedge complying with ASTM D2000, non-rising stem with O-ring seals. Valves shall open counterclockwise. Resilient wedge to be US Food and Drug Administration approved for potable water and have an EPDM visible marking.

- B. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.
- C. All valves will have 250 psig working pressure and a 500 psi static test pressure. The valves shall be non-rising stems and the stem material shall be 18-8 stainless steel, Type 304, ANSI 420/ASTM A276 with no measurable level of lead content. Valves shall have two upper o-ring seals on the stem above the thrust collar and at least one o-ring seal below the collar so designed to allow for replacement of the upper o-rings with the valve under full operating pressure. Valves shall have thrust washers located above and below the thrust collar to insure a smooth frictionless operation.
- D. All valves shall have a 2 inch ductile iron wrench nut with direction of valve operation clearly visible when looking down on the nut. Hold down nut or bolt shall be Type 316 stainless steel. All exterior bonnet and thrust collar fasteners, whether recessed or exposed, are to be Type 316 Stainless Steel and marked by type.
- E. The waterway seat area will be smooth without ridges or cavities and valves will have full size bore throughout the flow-way. All valves will be hydrostatically pressure tested prior to shipment in accordance with AWWA C509 and are to be covered by the manufacturers Ten Year Limited Warranty from date of purchase by the end user.
- F. The resilient sealing mechanism shall provide zero leakage at test and normal working pressure when installed with the line flow from either direction.
- G. Gate valves larger than 12 inches shall be resilient seated and shall include either spur gear actuators (for valves to be installed in a vertical position) or bevel gear and side actuators (for valves to be installed in a horizontal position).
- H. The height of the valve and its supporting foundation shall conform to the height of the connecting pipe. All valves 20 inches and smaller shall be set in a vertical position. Deflect main as needed to accommodate large gate valves (16" and 20" size) installed in the vertical position.
- I. Valves 24 inches and larger are to be installed in the horizontal position with a bevel gear actuator and cleanout ports. Provide temporary piping and fittings from cleanout port to above grade to facilitate cleaning of valve guides after installation via flushing.
- J. Exposed valves shall be installed in a vertical position wherever possible. Unless otherwise indicated or directed by the utility, valve stems shall never be below a horizontal position.
- K. Open and close each valve observing full operation prior to installing successive lengths of pipe.

- L. Standard gate valves 2½ inches and smaller shall be C class 150 bronze gate valves by Powell Valves or approved equal.
- M. Gate valves 3"-12" shall be American Flow Control Series 2500, Clow Series F-6100, or Mueller Series A-2360.
- N. Gate Valves larger than 12 inches shall be American Flow Control Series 2500 or Mueller Series A-2361.

## **2.21 Corporation Stops**

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

## **2.22 Curb Stops**

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

## **2.23 Valve Boxes**

- A. All buried valves shall be provided with adjustable valve boxes approximately 5 inches in diameter and shall be heavy duty traffic rated.
- B. Valve boxes shall be cast iron. Valve box lids shall be cast iron H-20 load rated.
- C. Valve boxes shall be of sufficient length to operate all valves buried in the ground. Valve boxes shall consist of base, center section, and top section with cover. All valve box extensions shall be cast iron.
- D. Valve box lids in paved areas shall be lockable.
- E. Valve boxes located in unpaved areas shall be Slip Type design to permit movement of the top section without transmitting forces onto the valve body.
- F. Valve boxes shall have valve box covers with the inscription "WATER" cast thereon.
- G. All valve box covers shall be painted with a three coat system. The first coat shall be primer, 2.5-3.5 mil Dry Film Thickness (DFT) Tnemec Series 135 ChemBuild or approved equal; the intermediate coat shall be 4.0-10.0 mil DFT Tnemec Color Hi-Build Epoxoline II Series N69 or approved equal, and the final coat shall be 2.0-3.0 mil DFT Tnemec EnduraShield Series 73 or approved equal. The final coat paint color shall be Ultra Blue No. 124A or as approved by the local utility.

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

## **2.24 Curb Boxes**

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

## **2.27 Line Stops**

- A. Line stops shall consist of a line stop fitting, stopping plug/valve, blind flange for installation after stop is completed, and 1-inch equalization/purge fitting.
- B. The line stop fitting shall be 18-8 type 304 stainless steel.
- C. Fitting gaskets shall comply with ANSI/AWWA C111/A21.11. Rubber gaskets shall be made of vulcanized styrene butadiene rubber (SBR).
- D. All hardware and accessories shall be 304 stainless steel.
- E. The blind flange shall be type 304 stainless steel.
- F. Provide additional pipe restraining in the vicinity of the line stop for preventing pipe movement due to any unbalanced forces created by the line stop and subsequent cutting and removal of existing pipe adjacent to any line stop.

## **2.28 Electronic Marker Balls**

- A. Marker balls shall consist of a passive device capable of reflecting a specifically designated repulse frequency tuned to the utility being installed.
- B. Balls shall be four inches in diameter with a high density polyethylene shell and shall be color coded blue (potable water).
- C. Balls shall be as manufactured by 3M or Omni.

## **2.29 Pipeline Identification Tape**

- A. Identification tape shall be an inert plastic film specifically formulated for prolonged underground use. Minimum thickness of the vinyl core shall be 4 mils, width 6 inches, letter size 1 inch. Lettering shall be continuous.
- B. Tape shall be the standard product of a manufacturer regularly engaged in the supply of this tape. Provide tape with adhesive backing for attachment to pipe.
- C. Identification tape shall be color coded blue with black lettering "POTABLE WATER MAIN".

### **2.30 Pipeline Warning Tape**

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

### **2.31 Locating Wire and Tracer Wire**

- A. Locating wire shall be color-coded 10 gage continuous insulated wire. Color coding shall be blue.
- B. Tracer wire shall be color-coded 10 gauge continuous insulated wire, with HDPE jacket (min. thickness of 45 mils) specifically manufactured for use in horizontal directional drill installations. The color of the wire jacket shall be blue.

### **2.32 Disinfection and Dechlorination System**

- A. Sizing and selection of disinfection system, disinfection equipment, disinfection system piping, and appurtenances is the responsibility of the Contractor.
- B. All equipment used in disinfection work shall be in proper working condition, and shall be adequate for the specified work.
- C. Provide equipment and feed system for chlorinating agent that is appropriate to the chlorinating agent and the piping to be disinfected. Also provide equipment and feed system for dechlorinating agent that is appropriate to the dechlorinating agent and the piping to be dechlorinated.
- D. Disconnect and remove equipment, piping, and appurtenances after the water mains have been successfully disinfected and dechlorinated, bacteriological testing has been completed, and water mains have been approved for connection to the existing water distribution system.

## **PART 3 EXECUTION**

### **3.01 General Installation Requirements**

- A. All lengths of pipe shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.
- B. Cut all pipe and drill all holes that may be necessary. Cut sections of pipe shall be reamed or filed to remove all burrs. The pipe interior and joints shall be thoroughly cleaned before being installed and kept clean during construction.
- C. All changes in direction shall be made with fittings or approved joint deflection. Bending of pipe, except copper and polyethylene, is prohibited. Joint deflection shall not exceed 75 percent of the manufacturer's recommended maximum deflection.

- D. Any transition from one pipe size to another shall be made with a reducing fitting. Reducing bushings are prohibited except where specifically indicated on the Drawings or approved by the Engineer.
- E. Make adequate provision for expansion and contraction of piping.
- F. Trenching, bedding and backfilling shall be in accordance with Section 02320.
- G. Valves shall be installed in all pipe ahead of appliances and equipment not furnished with stops, and elsewhere as required for proper control and isolation of sections of systems for maintenance purposes.
- H. Minimum cover over pipe shall be 36 inches.

### **3.02 Concrete Cradles and Encasement**

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

### **3.03 Separation of Non-Potable and Potable Water Lines**

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

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

2. Wherever possible, water mains shall cross over existing or proposed reclaimed water mains, wastewater force mains and stormwater force mains. Whether the water main crosses over or under these types of pipeline systems, the outside of the water main shall be at least 12 inches from the outside of the existing or proposed reclaimed water main, wastewater force main and stormwater force main. At the crossing, the proposed pipe joints shall be arranged so that all water main joints are at least three feet from reclaimed water main joints and stormwater force main joints, and at least six feet from the joints of wastewater force mains.
- C. No water main shall pass through or come in contact with any part of a sanitary sewer manhole.
- D. The following are acceptable alternative construction features to be considered for cost evaluation with no guarantee they will be approved for implementation where it is not possible to meet the separation requirements. Exceptions from meeting the pipe separation requirements, without mitigation, shall be allowed only by FDEP if technical or economic justifications for each exception provided by the Engineer are acceptable to FDEP and are only to be implemented upon receipt of expressed written consent from the Engineer and approval from FDEP on a case by case basis. All possible measures to achieve compliance with the pipe separation requirements shall be considered first along with design changes to meet the requirements before the Engineer submits a justification of an exception to FDEP for approval. Implementation of these measures without the expressed written consent of the Engineer and approval by FDEP could result in the requirement that the installed unapproved measures be removed and replaced at no cost to the Owner.
1. Where a water main is less than the required minimum horizontal distance from another pipeline or where a water main crosses another pipeline and joints in the water main are less than the minimum required distance between the joints in the other pipeline:
    - a. Use of pressure rated pipe conforming to AWWA standards for a gravity or vacuum type pipeline.
    - b. Use of welded, fused, or otherwise restrained joints for either pipeline.
    - c. Use of watertight casing pipe or concrete encasement at least four inches thick for either pipe.

2. Where a water main is less than three feet horizontally from another pipeline or where a water main crosses another pipeline less than the required minimum separation:
  - a. Use of pipe or casing pipe, having high impact strength (at least equal to 0.25 inch thick ductile iron pipe), or concrete encasement at least four inches thick for the water main and for the other pipeline if the other pipeline conveys wastewater or reclaimed water.

### **3.04 Plugs**

- A. Installed piping systems shall be temporarily plugged at the end of each day's work, or other interruption to progress on a given line. Plugging shall be adequate to prevent entry of small animals or persons into the pipe or the entrance or insertion of deleterious materials.
- B. Standard plugs shall be inserted into all dead-end pipes, tees, or crosses; spigot ends shall be capped; flanged and mechanical joint ends shall have blind flanges of metal.
- C. Plugs installed for pressure testing shall be blind flanges fully secured and blocked to withstand the test pressure.
- D. Where plugging is required because of contract division or phasing for later connection, the ends of such lines shall be equipped with a permanent type plug or blind flange. Installation or removal of such plugging shall be considered incidental to the work.

### **3.07 Butt Heat Fusion Joints for PE (Polyethylene) Pipe**

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

### **3.08 Socket Heat Fusion for PE (Polyethylene) Pipe**

- A. Equipment for socket heat fusion shall be as recommended by the pipe manufacturer.
- B. Bevel the pipe end and remove burrs before making joint. Clean heating tool thoroughly and, if tool is not Teflon coated, spray with a silicone release solution.

Heat tool to the temperature recommended by the pipe manufacturer. Place both pipe and fitting on the tool until the correct degree of melt is achieved. Remove pipe and fitting from the tool simultaneously and insert the pipe squarely into the fitting; do not turn pipe or fitting during insertion. Avoid any movement of the joint for 10 to 15 seconds. Handle pipe carefully until the joint has returned to ambient temperature.

### **3.10 Polyethylene Encasement Installation**

- A. Install polyethylene encasement in accordance with ANSI/AWWA C105/A21.5.
- B. Polyethylene encasement is to be installed on all ductile iron pipe and fittings within 10 feet of gas mains.
- C. Cut polyethylene to a length approximately two feet longer than the length of the pipe section. Slip around the pipe, centering it to provide a one-foot overlap and 1 foot overlay on each adjacent pipe section, bunching it accordion fashion lengthwise until it clears the pipe ends. Place a six-inch length of pressure sensitive waterproof tape at approximately three-foot intervals along the pipe length, securing the cut edge of polyethylene sheet.
- D. After assembling the pipe joint, make the overlap of the polyethylene tube. Pull the bunched polyethylene from the preceding length of pipe, slip it over the end of the new length of pipe and secure in place. Then slip the end of the polyethylene from the new pipe section over the end of the first wrap until it overlaps the joint at the end of the preceding length of pipe. Secure the overlap in place. Take up the slack width to make a snug, but not tight, fit along the barrel of the pipe, securing a fold at quarter points.
- E. Repair any rips, punctures, or other damage to the polyethylene with pressure sensitive waterproof tape or with a short length of polyethylene tube cut open, wrapped around the pipe, and secured in place. Proceed with installation of the next section of pipe in the same manner.
- F. Where polyethylene wrapped pipe joins a pipe that is not wrapped, extend the polyethylene tube to cover the unwrapped pipe a distance of at least two feet. Secure the end with circumferential turns of tape.

### **3.11 Buried and Exposed Valves**

- A. Buried valves 6 inch diameter and larger shall be set on a foundation of solid concrete or stone not less than 8 inches thick nor less than one cubic foot in volume. Foundations shall be set on firmly compacted ground. Valves are to be restrained on each side of the valve at the connection to adjoining pipe.
- B. The height of the valve and its supporting foundation shall conform to the height of the connecting pipe. Valves shall be set in a vertical position, except where indicated herein or as determined in the field to require a horizontal installation as

determined by the utility. Where valves are required to be installed in a horizontal position, provide with a bevel gear side actuator.

- C. Exposed valves shall be installed in a vertical position wherever possible. Unless otherwise indicated or directed by the utility, valve stems shall never be below a horizontal position.
- D. Open and close each valve observing full operation prior to installing successive lengths of pipe.

### **3.14 Valve Boxes and Curb Boxes**

- A. Boxes shall rest on the valve and shall be adjusted so that the cover may be set flush with paving; in areas without paving, set the cover as directed by the Engineer. Boxes shall be set to allow equal movement above and below finish grade.
- B. The base of the box shall be centered over the valve, and the top of the base section shall be approximately on line with the nut on top of the valve stem. The entire assembly shall be plumb.
  - 1. Three feet from any existing or proposed storm sewer, stormwater force main, reclaimed water main, or vacuum type sanitary sewer.
  - 2. Six feet from any existing or proposed gravity sanitary sewer and wastewater force main.
  - 3. Ten feet from any onsite sewage treatment and disposal system such as septic tanks, drainfields, and grease traps. Onsite sewage treatment and disposal systems do not include package sewage treatment facilities and public wastewater treatment facilities.

### **3.16 Line Stops**

- A. All line stops and shut downs of existing water lines are to be coordinated with the utility.
- B. Line stops shall be completed while the water system is pressurized.
- C. A concrete encasement shall be poured for pipe support at the point of line stop.
- D. Provide additional pipe restraining in the vicinity of the line stop for preventing pipe movement due to any unbalanced forces created by the line stop.

### **3.17 Electronic Marker Balls**

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

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

### **3.18 Installation of Identification and Warning Tape**

- A. Install identification tape on all pipelines. Place tape as follows:
  - 1. 2 inch through 8 inch diameter pipe - center along top half of pipe
  - 2. 10 inch through 18 inch diameter pipe - place along both sides of the top half of pipe
  - 3. 20 inch diameter and larger pipe - place on both sides of top half of pipe with a third strip centered along top half of pipe
- B. Place tape from joint to joint on every section of pipe.
- C. Install warning tape along all pipelines. Install 2 feet above pipe, minimum of 1 foot below grade.

### **3.19 Locator Wire and Tracer Wire**

- A. Install locator wire along all pressurized pipelines 2 inch diameter and larger.
- B. Terminate locator wires at top of the valve box with 12 inches of extra wire.
- C. Test the locate wire for continuity and submit report documenting the continuity testing. Repair or replace locate wire at failed test locations as directed by Owner.
- D. Install two tracer wires along polyethylene pipe prior to pulling through bore hole. Tape wire to pipe every 5 feet minimum along the pipeline.
- E. After pulling pipe, clean exposed ends for installation of fittings, test tracer wire for continuity.

### **3.20 Testing General Requirements**

- A. Hydrostatic testing shall be in accordance with AWWA C600 (Ductile iron water mains), AWWA C605 (PVC water mains) and ASTM F2164 (polyethylene water mains).
- B. Test procedures and method of disposal of water shall be approved by the Engineer. All tests shall be made in the presence of the Engineer and utility. Preliminary tests made by the Contractor without being observed by the Engineer will not be accepted. Notify the Engineer and the utility companies at least 72 hours before any work is to be inspected or tested.

- C. All defects in piping systems shall be repaired and/or replaced and retested until acceptable. Repairs shall be made to the standard of quality specified for the entire system.
- D. Sections of the system may be tested separately, but any defect which may develop in a section previously tested and accepted shall be promptly corrected and retested. Pressure tests shall be made between valves to demonstrate ability of valves to sustain pressure.
- E. Provide all necessary test pumping equipment, water, water meters, pressure gauges, and other equipment, material and facilities required for all hydrostatic, leakage, and pressure testing. Increments on gages used for pressure pipe testing shall be of scaled to the nearest 1 psi. Gages, pumps, and hoses shall be in good working order with no noticeable leaks.
- F. Tests for any exposed piping shall be made before covering and insulation is placed.
- G. The pressure and leakage test for buried piping shall be made after all jointing operations are completed and restraints have been in place at least seven days. Lines tested before backfill is in place shall be retested after compacted backfill is placed.
- H. All service connections to water mains shall be completed prior to testing.
- I. Sections of piping between valves and other short sections of line may be isolated for testing. If shorter sections are tested, test plugs or bulkheads required at the ends of the test section shall be furnished and installed by Contractor, together with all anchors, braces, and other devices required to withstand the hydrostatic pressure without imposing any thrust on the pipe line. Contractor shall be solely responsible for any damage that results from the failure of test plugs or supports.
- J. All items including valves and controls shall be given a thorough test. The entire system shall be operated for two days to prove compatibility of equipment and to achieve proper adjustment for operation. Valves, pipes, tanks, and other items that are non-operating or occasional-operating shall be tested for ability to meet design criteria.

### **3.21 Sequence of Testing and Disinfection**

- A. The sequence of testing and disinfection shall be as follows:
  - 1. Conduct pressure and leakage testing.
  - 2. Perform flushing in accordance with Section 02955.
  - 3. Disinfect the water main, including valves and fittings
  - 4. Dechlorinate and flush after disinfection.

### **3.23 Pressure and Leakage Testing (Polyethylene Mains)**

- A. Conduct hydrostatic pressure testing of installed polyethylene pipe in accordance with ASTM F2164 and as indicated herein. The ASTM F2164 defined one hour test and passing test criteria (no visible leaks and the pressure is maintained within 5% of the test pressure) does not apply to this Project. The below identified testing and acceptance criteria in subparagraphs C-F below apply to this Project.
- B. Piping shall be slowly filled with water and all air expelled. Care shall be taken that all air valves are installed and open in the section being filled, and that the rate of filling does not exceed the venting capacity of the air valves.
- C. Subject pipeline to be tested to a 4 hour expansion phase prior to commencing leakage testing. Pipeline expansion shall be accomplished by applying hydrostatic test pressure of 150 psi (water mains), or 200 psi (fire mains). In order to compensate for the initial expansion of the pipeline, add sufficient make-up water at hourly intervals to return to the required test pressure. At the end of the fourth hour, the test phase is to commence.
- D. At the conclusion of the fourth hour of the expansion phase, fill the pipeline again with makeup water to return to the test pressure. The test phase shall consist of a two hour or three hour pressure test, as required by the Engineer. At the end of the test phase, measure the amount of makeup water required to return to the test pressure. The pipeline passes the pressure test if the makeup water required does not exceed the following:

Nominal Pipe Size (In)	Allowable Makeup Water (Gallons / 100 Ft Of Pipeline)	
	Two Hour Test	Three Hour Test
2	0.11	0.19
4	0.25	0.4
6	0.6	0.9
8	1.0	1.5
10	1.3	2.1
12	2.3	3.4
16	3.3	5.0
18	4.3	6.5
20	5.5	8.0
24	8.9	13.3
28	11.1	16.8

- E. If any defects or leaks are revealed, they should be corrected and the pipeline retested after a minimum 24 hour recuperation period between tests. Total testing conducted on a section of pipeline shall not exceed 8 hours within a 24 hour period.
- F. All apparent leaks discovered within one year from the date of final acceptance of the work by the Owner shall be located and repaired by Contractor, regardless of the total line leakage rate.

### **3.25 Disinfection General Requirements**

- A. Disinfect all water mains, including all valves and fittings.
- B. All disinfection work shall be acceptable to FDEP and the State Department of Health. If any requirements of this Section are in conflict with requirements of the authority for disinfection, those of the authority shall govern. The water main disinfection and bacteriological sampling and methods of disinfection for all water containment devices and piping systems shall conform to AWWA C651.
- C. All valves and appurtenances shall be operated while the line or unit is being disinfected to insure that all surfaces of the valves are disinfected. Valves shall be manipulated to keep the strong chlorine solution and/or contaminated water from flowing into units that have been previously chlorinated and/or flushed.

### **3.26 Disinfection**

- A. Direct chlorine feed is preferred for disinfection. Use of high-test calcium hypochlorite or the tablet method of disinfection must be approved by the Engineer and must be in accordance with AWWA procedures.
- B. Granular calcium hypochlorite shall be prepared as a water mixture before introduction into the unit. The dry powder shall first be made into a paste and then thinned to approximately a one percent chlorine solution. To prepare a one percent chlorine solution, add one pound of calcium hypochlorite (65-70 percent available  $\text{Cl}_2$ ) to  $7\frac{1}{2}$  gallons of water.
- C. Chlorinating agent shall be applied at the supply end of the unit being disinfected. For pipes, disinfectant shall be applied through a corporation cock installed in the top of the pipe.
- D. Water shall be introduced at a controlled rate in order to regulate the chlorine dosage. The rate of chlorine mixture flow shall be proportioned to the rate of water entering the unit so the chlorine dose applied shall produce at least 25 mg/L chlorine residual after a period of 24 hours. If the total residual has decreased below 25 mg/L, the system may be required to be rechlorinated if required by the Engineer.
- E. Operate valves and other appurtenances during disinfection to assure sterilizing mixture is dispersed into all parts of system being disinfected.
- F. Upon approval by the Engineer and Owner, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its lengths shows upon test, a free chlorine residual of no more than 4 mg/L. The flushing activity shall be conducted in such a manner as to avoid any soil erosion or localized flooding.

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

### **3.27 Bacteriological Sampling and Testing**

- A. Samples of water shall be collected by a representative of a State Certified Testing Laboratory or by an individual holding a current Florida Dept. of Environmental Protection certification that allows collection of water samples to be used for testing. All water sample collection shall take place with a representative of the Owner present.
- B. Sample locations shall be along every 1200 feet of new main, plus one from each end of the line and at least one from each branch. The sample points must have a brass non-threaded smooth-nosed downward spouted hose bibb mounted on a rigid stand pipe at least three feet above the finish grade. No hose or fire hydrant shall be used in the collection of samples. Warning tags shall be attached to each sample point.
- C. After flushing, water samples collected on two successive days from the treated piping system at the approved sample points shall show acceptable bacteriological results. All bacteriological testing shall be performed by a State Certified Laboratory contracted by the Contractor. Proper chain of custody procedures must be followed and samples shall only be collected by certified laboratory personnel.
- D. Should the initial treatment result in an unsatisfactory bacterial test, the original chlorination and dechlorination procedure and bacteriological testing shall be repeated by the Contractor until satisfactory results are obtained.
- E. Copies of all testing results and all related correspondence from the testing lab shall be submitted to the Engineer and Owner.

### **3.28 Placing the New Water Main In To Service**

- A. In order for the Owner to request clearance from regulatory agencies to place the water main in to service, the following items need to be completed:
  - 1. All required testing of the water main must be complete and shall have satisfactory test results.
  - 2. Preliminary Record Drawings that contain as-built information on the constructed water main need to be provided to the Owner and Engineer in accordance with Section 01780.
- B. The water main can only be placed in to service once clearance is received from FDEP, followed by approval by the Utility and Owner. Remove temporary sampling points following the Owner's approval to place the water main in service. Provide a permanent cap or plug at each temporary bacteriological sampling point location.

**END OF SECTION**

## SECTION 02530

### SANITARY SEWER SYSTEMS

#### PART 1 GENERAL

##### 1.01 Section Includes

- A. Piping (non-pressurized sewer systems)
- B. Leakage and Deflection Testing

##### 1.02 Related Sections

- A. Section 02320 - Trenching, Bedding and Backfilling
- B. Section 02605 - Precast Structures and Appurtenances

##### 1.03 References

- A. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM D3034 - Type PSM Polyvinyl Chloride Sewer Pipe and Fittings
  - 2. ASTM D3212 - Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
  - 3. ASTM F477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe
  - 4. ASTM F679 - Polyvinyl Chloride Large Diameter Plastic Gravity Sewer Pipe and Fittings
  - 5. ASTM F1417 - Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
- B. American Water Works Association (AWWA) and American National Standards Institute (ANSI) latest edition:
  - 1. AWWA C600 - Installation of Ductile Iron Water Mains and Their Appurtenances
  - 2. AWWA C605 - Underground Installation of PVC Pipe and Fittings for Water
  - 3. AWWA C900 - PVC Pressure Pipe, and Fabricated Fittings, 4 Inch Through 12 Inch, for Water Distribution
  - 4. AWWA C905 - PVC Pressure Pipe and Fabricated Fittings, 14 Inch Through 48 Inch

##### 1.04 Submittals

- A. Details of joints for all piping 6 inches and larger
- B. Product data for gaskets for all piping

- C. Product data for all pipe 6 inches in diameter and larger
- D. Piping specialties and installation details.

### **1.05 Product Delivery, Storage, and Handling**

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

### **1.06 Notification Requirements**

- A. All testing required to be witnessed by the Owner requires a minimum seventy-two (72) hours advance notice to the Owner.
- B. All proposed connections to existing sewer (such as wet taps and line stops) require a minimum seventy-two (72) hours advance notice to the Owner.

## **PART 2 PRODUCTS**

### **2.01 PVC (Polyvinyl Chloride) Sewer Pipe, Joints, and Fittings**

- A. PVC gravity pipe (6-inch to 15-inch), shall conform to ASTM D3034, maximum SDR 35. Uniform minimum "pipe stiffness" at five percent deflection shall be 46 psi. The joints shall be integral bell elastomeric gasket joints manufactured in accordance with ASTM D3212 and ASTM F477.
- B. PVC gravity pipe (18-inch to 30-inch), shall conform to ASTM F679, maximum SDR 35. Uniform minimum "pipe stiffness" at five percent deflection shall be 46 psi. The joints shall be integral bell elastomeric gasket joints manufactured in accordance with ASTM D3212 and ASTM F477.
- C. Unless otherwise specified, wye branches shall be provided in the gravity main for service lateral connections. Wyes shall be six inches inside diameter. All fittings shall be of the same material as the pipe.
- D. Service laterals and fittings shall be a minimum of 6 inches in diameter and shall be less than 100 feet in length. Service laterals shall have a minimum slope of 1%.
- E. PVC pipe shall be color-coded green, stenciled "Sewer Pipe" (0.75-inch lettering on the pipe in at least three areas per pipe section).

### **2.02 Pipeline Identification Tape**

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

- B. Tape shall be the standard product of a manufacturer regularly engaged in the supply of this tape. Provide tape with adhesive backing for attachment to pipe.
- C. Identification tape shall be color coded green with black lettering "SEWER PIPE".

### **2.03 Pipeline Warning Tape**

Warning tape shall be 6 inch wide vinyl continuous tape, for identification and warning purposes. It shall be color coded GREEN with black lettering "CAUTION: SEWER BURIED BELOW".

## **PART 3 EXECUTION**

### **3.01 General Installation Requirements**

- A. All lengths of pipe shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.
- B. Cut all pipe as necessary. Cut sections of pipe shall be reamed or filed to remove all burrs. The pipe interior and joints shall be thoroughly cleaned before being installed and kept clean during construction.
- C. Trenching, bedding and backfilling shall be in accordance with Section 02320.
- D. Establish survey control. Line and grade of pipe shall be checked continuously on a joint by joint basis.
- E. Pipe shall be laid progressively up grade, with bell upstream, in a manner to form close, concentric joints with smooth bottom inverts.
- F. Installed piping systems shall be temporarily plugged at the end of each day's work, or other interruption to progress on a given line. Plugging shall be adequate to prevent entry of small animals or persons into the pipe or the entrance or insertion of deleterious materials.
- G. Connections to existing sewer shall be conducted in such a manner that the existing sewer remains in operation. Provide by pass pumping of existing flows or collect and legally dispose of existing sewer flow as needed to accommodate construction while keeping existing sewer in service.
- H. Minimum cover over the pipe shall be 36 inches.

### **3.02 O-Ring Type Push-On Joints for PVC Pipe**

- A. Before making joint, clean the pipe end and the bell thoroughly. Insert the O-Ring gasket, making certain it is properly oriented. Lubricate the spigot well with an approved lubricant; do not lubricate the bell or O-ring. Insert the spigot end of the

pipe carefully into the bell until the reference mark on the spigot is flush with the bell.

- B. Field cut pipe shall be beveled, have all burrs removed, and shall have a reference mark applied the correct distance from the end.
- C. On field cut pipe, provide homing mark in accordance with manufacturer's recommendations.
- D. All pipe laid shall be retained in position to maintain alignment and joint closure until backfill has been placed.

### **3.03 Separation of Sanitary Sewer Lines and Potable Water Mains**

- A. The outside of gravity type sanitary sewer lines shall be separated horizontally a minimum of six feet from the outside of any existing or proposed water main. The minimum horizontal separation distance between the outside of gravity sanitary sewer and the outside of water mains can be reduced to three feet where the bottom of the water main is at least six inches above the top of the sewer.
- B. Wherever possible, gravity sanitary sewer shall cross under existing or proposed water mains, so the outside of the sewer is at least six inches below the outside of the water main. Where it is not possible for the sewer to cross under existing or proposed water mains, then the sewer can cross over the water main provided the outside of the sewer is at least 12 inches above the outside of the water main. At the crossing, the proposed pipe joints shall be arranged so that all water main joints are at least six feet from gravity sanitary sewer joints.
- C. No water main shall pass through or come in contact with any part of a sanitary sewer manhole.
- D. The following are acceptable alternative construction features to be considered for cost evaluation with no guarantee they will be approved for implementation where it is not possible to meet the separation requirements. Exceptions from meeting the pipe separation requirements, without mitigation, shall be allowed only by FDEP if technical or economic justifications for each exception provided by the Engineer are acceptable to FDEP and are only to be implemented upon receipt of expressed written consent from the Engineer and approval from FDEP on a case by case basis. All possible measures to achieve compliance with the pipe separation requirements shall be considered first along with design changes to meet the requirements before the Engineer submits a justification of an exception to FDEP for approval. Implementation of these measures without the expressed written consent of the Engineer and approval by FDEP could result in the requirement that the installed unapproved measures be removed and replaced at no cost.
  - 1. Where sewer is less than the required minimum horizontal distance from a water main and or where the sewer crosses a water main and joints in the

sewer are less than the minimum required distance between the joints in the water main:

- a. Use of pressure rated pipe conforming to AWWA standards for a gravity or vacuum type pipeline.
  - b. Use of welded, fused, or otherwise restrained joints for either pipeline.
  - c. Use of watertight casing pipe or concrete encasement at least four inches thick for either pipe.
2. Where sewer is less than three feet horizontally from a water main and or where a sewer crosses a water main at less than the required minimum separation:
- a. Use of pipe or casing pipe, having high impact strength (at least equal to 0.25 inch thick ductile iron pipe), or concrete encasement at least four inches thick for both the sewer and the water main.

### **3.04 Installation of Identification and Warning Tape**

- A. Install identification tape on all pipelines. Place tape as follows:
  1. 2 inch through 8 inch diameter pipe - center along top half of pipe
  2. 10 inch through 18 inch diameter pipe - place along both sides of the top half of pipe
  3. 20 inch diameter and larger pipe - place on both sides of top half of pipe with a third strip centered along top half of pipe
- B. Place tape from joint to joint on every section of pipe.
- C. Install warning tape along all pipelines. Install 2 feet above pipe, minimum of 1 foot below grade.

### **3.05 Testing General Requirements**

- A. Test procedures shall be approved by the Engineer. All tests shall be made in the presence of the Engineer and utility. Preliminary tests made by the Contractor without being observed by the Engineer will not be accepted. Notify the Engineer and the utility companies at least 72 hours before any work is to be inspected or tested.
- B. All defects in piping systems shall be repaired and/or replaced and retested until acceptable. Repairs shall be made to the standard of quality specified for the entire system.
- C. Sections of the system may be tested separately, but any defect which may develop in a section previously tested and accepted shall be promptly corrected and retested.

- D. Provide all equipment for testing. Increments on gages used for low pressure air testing shall be of scaled to the nearest 0.1 psi. Gages, pumps, and hoses shall be in good working order with no noticeable leaks.
- E. Tests for any exposed piping shall be made before covering and insulation is placed.
- F. Lines tested before backfill is in place shall be retested after compacted backfill is placed.
- G. All service laterals shall be completed prior to testing, and are subject to the same testing requirements as the main line.
- H. Sections of piping may be isolated for testing. If shorter sections are tested, test plugs or bulkheads required at the ends of the test section shall be furnished and installed by Contractor, together with all anchors, braces, and other devices required to withstand the pressure without imposing any thrust on the pipe line. Contractor shall be solely responsible for any damage which may result from the failure of test plugs or supports.

### 3.06 Visual Inspections and Leakage Testing

- A. Prior to inspections and testing, clean all installed lines and manholes.
- B. After backfill has been placed, the Engineer will visually inspect all gravity flow lines to check alignment and grade. All obstructions shall be removed.
- C. Provide light source and mirrors for lamping of sewer. Any sewer in which the direct light of a lamp cannot be viewed in either direction, full circle, between adjacent manholes shall be considered unsatisfactory, unless the line is designed with horizontal deflections, and shall be repaired by the Contractor without additional compensation.
- D. Conduct low pressure air testing (4.0 psi initial pressure) of installed sewer piping in accordance with ASTM F1417. Maximum allowable leakage is 0.0015 cubic feet per minute per square foot internal surface area being tested. Allowable air pressure drop during the test is 0.5 psig. Minimum required test time (duration) is:

Pipe Diameter (In)	Minimum Required Test Duration
4	1 min 53 sec
6	2 min 50 sec, or 0.427 x length of pipe tested, whichever is greater
8	3 min 47 sec, or 0.760 x length of pipe tested, whichever is greater
10	4 min 43 sec, or 1.187 x length of pipe tested, whichever is greater
12	5 min 40 sec, or 1.709 x length of pipe tested, whichever is greater
15	7 min 05 sec, or 2.671 x length of pipe tested, whichever is greater
18	8 min 30 sec, or 3.846 x length of pipe tested, whichever is greater
24	11 min 20 sec, or 6.837 x length of pipe tested, whichever is greater
27	12 min 45 sec, or 8.653 x length of pipe tested, whichever is greater

Pipe Diameter (In)	Minimum Required Test Duration
30	14 min 10 sec, or 10.683 x length of pipe tested, whichever is greater

- E. Conduct leakage testing of manholes. Plug inverts and fill manhole with water. Allowable water drop in manhole to be field determined by utility and engineer. Minimum test duration is 1 hour.

### 3.07 Deflection Testing

- A. Conduct pipeline deflection testing after the final backfill has been in place at least 30 days.
- B. Maximum allowable pipe deflection is 5%. Measure deflection by manually pulling a mandrel through the pipe. The minimum mandrel diameter shall be in accordance with the following:

Sewer Pipe Nominal Size (In)	Base Inside Diameter (In) (ASTM D3034 SDR 35 for Pipe 6" to 15", ASTM F679 T-1 for Pipe 18" to 27")	Minimum Mandrel Outer Diameter (In) for 5% Deflection Test
6	5.742	5.45
8	7.665	7.28
10	9.563	9.08
12	11.361	10.79
15	13.898	13.20
18	16.976	16.13
21	20.004	19.00
24	22.480	21.36

- C. Deflection testing is considered satisfactory if the mandrel can be pulled by hand through the pipe being tested. If the mandrel cannot be pulled through the pipe, replace or correct the pipe and retest until testing is satisfactory. Any pipe removed or corrected due to failing deflection testing shall also be re-tested for leakage.

### 3.08 Placing the Sanitary Sewer In To Service

- A. In order for the Owner to request clearance from regulatory agencies to place the sanitary sewer in to service, the following items need to be completed:
1. All required testing of the sanitary sewer must be complete and shall have satisfactory test results.
  2. Preliminary Record Drawings that contain as-built information on the constructed sanitary sewer need to be provided to the Owner and Engineer in accordance with Section 01780.
- B. The sanitary sewer can only be placed in to service once clearance is received from FDEP, followed by approval by the Utility and Owner.

**END OF SECTION**

## SECTION 02537

### LOW PRESSURE FORCE MAIN SYSTEMS

#### PART 1 GENERAL

##### 1.01 Section Includes

- A. Piping and fittings
- B. Valves and appurtenances
- C. Testing

##### 1.02 Related Sections

Section 02320 - Trenching, Bedding and Backfilling

##### 1.03 References

- A. American Water Works Association (AWWA) and American National Standards Institute (ANSI) latest edition:
  - 1. AWWA C906 - Polyethylene Pressure Pipe and Fittings, 4 Inch Through 63 Inch for Water Distribution and Transmission
- B. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM A307 - Carbon Steel Bolts and Studs
  - 2. ASTM D1248 - Polyethylene Plastics Extrusion Materials for Wire and Cable

##### 1.04 Submittals

- A. Product data for gaskets, pipe, joints, joint restraint, fittings, valves, coatings.
- B. Product data for all locate wire, tape, markers, warning tape
- C. Piping specialties and installation details.
- D. Details of joints for all piping.
- E. Product data and installation procedures for joint and pipe restraint (Where applicable).

##### 1.05 Product Delivery, Storage, and Handling

Exercise care in transporting and handling pipe and fittings in order to avoid damage to materials or coatings. Lifting shall be by hoist or on skids when hand lifting is not feasible.

Dropping shall not be permitted. Store pipe as recommended by the manufacturer. Damaged pipe and fittings shall be replaced.

## **PART 2 PRODUCTS**

### **2.01 High Density Polyethylene Pipe (HDPE) and Fittings**

Polyethylene pipe and fittings for reclaimed water, sewer force main, or storm sewer shall be in accordance with AWWA C906, standard code designation PE 4710, DR 11, 200 psi. The manufacturer shall certify that the materials used to manufacture pipe and fittings meet these requirements. The pipe sizing shall be in accordance with Ductile Iron Pipe Sizing System (DIPS).

### **2.02 HDPE Pipeline Identification**

All polyethylene pipe shall be black, and shall contain a continuous colored stripe, 2 inches wide, at three separate locations along the length of the pipe. Striping of smaller diameter pipe shall be in accordance with the manufacturer's standard. Stripe color shall be green.

### **2.03 HDPE Lateral Kit (For LPFM) – Not Used**

### **2.04 Flushing Connection (For LPFM)**

- A. The manufacturer shall furnish complete flushing connections (exclusive of piping), each consisting of stainless steel hose fittings, ball type curb stop, access box and valve box.
- B. Hose fitting flushing connection assembly shall be equipped with a 2-inch male Cam & Groove fitting and non-pressure capable dust cap. Male Cam & Groove fittings will be mechanically attached to the 2-inch HDPE in an accessible vault. Fittings may be aluminum, HDPE, or SS.
- C. HDPE Pipe and Fittings shall be 2-inch HDPE SDR 11 IPS and provided as an assembly.
- D. Ball type curb stops shall be injection molded from non-corroding HDPE and specifically designed for wastewater applications. Valves shall be quarter-turn type ball valves. The valves shall provide positive stops at the full-open and full-closed positions. Valves shall be of "open bore" construction. Elastomeric sealing members of valves shall be made of chloramines resistant EPDM rubber material. No part of the valve closure member shall remain within the flow area when the valve is in the open position. Stub ends shall be compatible for butt fusion or electrofusion to 2 inch IPS HDPE Pipe.
- E. Valves shall be provided with a stem head designed to fit a standard curb box key for below ground operation. Valves stem heads shall be green indicating suitability for low pressure sewer force main applications.

- F. Valves shall be such that they exhibit both short-term and long-term pressure containing capabilities of 160 psi at 74°F (23°C).
- G. Valves shall be suitable for use at temperatures of up to 140°F (60°C) for wastewater applications.

## **2.05 Valve Boxes**

- A. All buried valves shall be provided with adjustable valve boxes approximately 5 inches in diameter and shall be heavy duty traffic rated.
- B. Valve boxes shall be cast iron. Valve box lids shall be cast iron H-20 load rated.
- C. Valve boxes shall be of sufficient length to operate all valves buried in the ground. Valve boxes shall consist of base, center section, and top section with cover. All valve box extensions shall be cast iron.
- D. Valve box lids in paved areas shall be lockable.
- E. Valve boxes located in unpaved areas shall be Slip Type design to permit movement of the top section without transmitting forces onto the valve body.
- F. Valve boxes shall have valve box covers with the inscription "SEWER" cast thereon.
- G. All valve box covers shall be painted with a three coat system. The first coat shall be primer, 2.5-3.5 mil Dry Film Thickness (DFT) Tnemec Series 135 ChemBuild or approved equal; the intermediate coat shall be 4.0-10.0 mil DFT Tnemec Color Hi-Build Epoxoline II Series N69 or approved equal, and the final coat shall be 2.0-3.0 mil DFT Tnemec EnduraShield Series 73 or approved equal. The final coat paint color shall be green as approved by the local utility.
- H. Acceptable manufacturers: Tyler Union, Sigma Corporation, Star Pipe Products.

## **2.06 LPFM Isolation Valves (For All Valves 3 Inches and Smaller)**

Valves shall be manually operated, quarter turn ball valves, injection molded from non-corroding HDPE and specifically designed for wastewater applications. Valves shall be quarter-turn type ball valves. The valves shall provide positive stops at the full-open and full-closed positions. Valves shall be of "open bore" construction. Elastomeric sealing members of valves shall be made of chloramines resistant EPDM rubber material. No part of the valve closure member shall remain within the flow area when the valve is in the open position. Stub ends shall be compatible for butt fusion or electrofusion to the force main size and dimensions as shown on the plans. Valves shall be provided with a stem head designed to fit a standard 2 inch wrench handle for below ground operation. Valve stem heads shall be green indicating suitability for low pressure sewer force main applications.

## **2.07 Pipeline Warning Tape**

Warning tape shall be 6 inch wide vinyl continuous tape, for identification and warning purposes. It shall be color coded brown or green with black lettering "CAUTION: FORCE MAIN BURIED BELOW".

## **PART 3 EXECUTION**

### **3.01 General Installation Requirements**

- A. All lengths of pipe shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.
- B. Cut all pipe and drill all holes that may be necessary. Cut sections of pipe shall be reamed or filed to remove all burrs. The pipe interior and joints shall be thoroughly cleaned before being installed and kept clean during construction.
- C. All changes in direction shall be made with fittings or approved joint deflection. Bending of pipe, except copper and polyethylene, is prohibited. Joint deflection shall not exceed the manufacturer's recommended maximum deflection.
- D. Any transition from one pipe size to another shall be made with a reducing fitting. Reducing bushings are prohibited except where specifically indicated on the Drawings or approved by the Engineer.
- E. Make adequate provision for expansion and contraction of piping.
- F. Trenching, bedding and backfilling shall be in accordance with Section 02320.

### **3.02 Concrete Cradles and Encasement**

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

### **3.03 Separation of Force Mains and Potable Water Lines**

- A. The outside of wastewater force mains shall be separated horizontally a minimum of six feet from the outside of any existing or proposed water main.
- B. Wherever possible, wastewater force mains shall cross under existing or proposed water mains. Whether the wastewater force main crosses over or under the water main, the outside of the force main shall be at least 12 inches from the outside of the water main. At the crossing, the proposed pipe joints shall be arranged so that all water main joints are a minimum of six feet from the joints of wastewater force mains.
- C. The following are acceptable alternative construction features to be considered for cost evaluation with no guarantee they will be approved for implementation where it is not possible to meet the separation requirements. Exceptions from meeting

the pipe separation requirements, without mitigation, shall be allowed only by FDEP if technical or economic justifications for each exception provided by the Engineer are acceptable to FDEP and are only to be implemented upon receipt of expressed written consent from the Engineer and approval from FDEP on a case by case basis. All possible measures to achieve compliance with the pipe separation requirements shall be considered first along with design changes to meet the requirements before the Engineer submits a justification of an exception to FDEP for approval. Implementation of these measures without the expressed written consent of the Engineer and approval by FDEP could result in the requirement that the installed unapproved measures be removed and replaced at no cost to the Owner.

1. Where a sewer force main is less than the required minimum horizontal distance from a water main or where a force main crosses a water main and joints in the force main are less than the minimum required distance between the joints in the water main:
  - a. Use of welded, fused, or otherwise restrained joints for either pipeline.
  - b. Use of watertight casing pipe or concrete encasement at least four inches thick for either pipe.
2. Where a force main is less than three feet horizontally a water main and or where a force main crosses a water main at less than the required minimum separation:
  - a. Use of pipe or casing pipe, having high impact strength (at least equal to 0.25 inch thick ductile iron pipe), or concrete encasement at least four inches thick for both the water main and the force main.

### **3.04 Plugs**

- A. Installed piping systems shall be temporarily plugged at the end of each day's work, or other interruption to progress on a given line. Plugging shall be adequate to prevent entry of small animals or persons into the pipe or the entrance or insertion of deleterious materials.
- B. Where plugging is required because of contract division or phasing for later connection, the ends of such lines shall be equipped with a permanent type plug or blind flange. Installation or removal of such plugging shall be considered incidental to the work.

### **3.05 High Density Polyethylene (HDPE) Pipe Joining**

- A. Joints between plain end pipes and fittings shall be made by butt fusion, and joints between the main and saddle branch fittings shall be made using saddle fusion using only procedures that are recommended by the pipe and fitting manufacturer. The Contractor shall ensure that persons making heat fusion joints have received training in the manufacturer's recommended procedure. The Contractor shall

maintain records of trained personnel, and shall certify that training was received not more than 12 months before commencing construction. External and internal beads shall not be removed.

- B. Upon request, the manufacturer shall provide training in the manufacturer's recommended butt fusion and saddle fusion procedures to the Contractor's installation personnel, and to inspectors representing the Owner.
- C. Mechanical joints are only allowed where joining polyethylene pipe to another material. Mechanical couplings shall be fully pressure rated and fully thrust restrained such that when installed in accordance with manufacturer's recommendations, a longitudinal load applied to the mechanical coupling will cause the pipe to yield before the mechanical coupling disjoins. External joint restraints shall not be used in lieu of fully restrained mechanical couplings. Mechanical joints and flange connections shall be installed in accordance with the manufacturer's recommended procedure. Flange faces shall be centered and aligned to each other before assembling and tightening bolts. In no case shall the flange bolts be used to draw the flanges into alignment. Bolt threads shall be lubricated, and flat washers shall be fitted under the flange nuts. Bolts shall be evenly tightened according to the tightening pattern and torque step recommendations of the manufacturer. At least 1 hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and torque step recommendations of the manufacturer. The final tightening torque shall be 100 ft-lbs or less as recommended by the manufacturer.
- D. Branch connections to the main shall be made with saddle fittings or tees. Polyethylene saddle fittings shall be saddled fused to the main pipe per Heat Fusion Joining.

### **3.06 Installation of Warning Tape**

Install warning tape along all pipelines. Install above pipe, minimum of 1 foot and a maximum of 18 inches below grade.

### **3.07 Testing General Requirements**

- A. Test procedures and method of disposal of water shall be approved by the Engineer. All tests shall be made in the presence of the Engineer and utility. Preliminary tests made by the Contractor without being observed by the Engineer will not be accepted. Notify the Engineer and the utility companies at least 48 hours before any work is to be inspected or tested.
- B. All defects in piping systems shall be repaired and/or replaced and retested until acceptable. Repairs shall be made to the standard of quality specified for the entire system.
- C. Sections of the system may be tested separately, but any defect which may develop in a section previously tested and accepted shall be promptly corrected

and retested. Pressure tests shall be made between valves to demonstrate ability of valves to sustain pressure.

- D. Provide all necessary test equipment. Increments on gages used for pressure pipe testing shall be of scaled to the nearest 1 psi. Gages, pumps, and hoses shall be in good working order with no noticeable leaks.
- E. Tests for any exposed piping shall be made before covering and insulation is placed.
- F. The pressure and leakage test for buried piping shall be made after all jointing operations are completed and restraints have been in place at least seven days. Lines tested before backfill is in place shall be retested after compacted backfill is placed.
- G. Sections of piping between valves and other short sections of line may be isolated for testing. If shorter sections are tested, test plugs or bulkheads required at the ends of the test section shall be furnished and installed by Contractor, together with all anchors, braces, and other devices required to withstand the hydrostatic pressure without imposing any thrust on the pipe line. Contractor shall be solely responsible for any damage that results from the failure of test plugs or supports.
- H. All items including valves and controls shall be given a thorough test. The entire system shall be operated for two days to prove compatibility of equipment and to achieve proper adjustment for operation. Valves, pipes, tanks, and other items that are non-operating or occasional-operating shall be tested for ability to meet design criteria.

### **3.08 Pressure and Leakage Testing (Polyethylene Mains)**

- A. Conduct hydrostatic pressure testing of installed polyethylene pipe in accordance with ASTM F2164 and as indicated herein.
- B. Piping shall be slowly filled with water and all air expelled. Care shall be taken that all air valves are installed and open in the section being filled, and that the rate of filling does not exceed the venting capacity of the air valves.
- C. Subject pipeline to be tested to a 4 hour expansion phase prior to commencing leakage testing. Pipeline expansion shall be accomplished by applying hydrostatic test pressure of 50 psi. In order to compensate for the initial expansion of the pipeline, add sufficient make-up water at hourly intervals to return to the required test pressure. At the end of the fourth hour, the test phase is to commence.
- D. At the conclusion of the fourth hour of the expansion phase, fill the pipeline again with makeup water to return to the test pressure. The test phase shall consist of a two hour or three hour pressure test, as required by the Engineer. At the end of the test phase, measure the amount of makeup water required to return to the test pressure. The pipeline passes the pressure test if the makeup water required does not exceed the following:

Nominal Pipe Size (In)	Allowable Makeup Water (Gallons / 100 Ft Of Pipeline)	
	Two Hour Test	Three Hour Test
1-4	0.25	0.4
6	0.6	0.9
8	1.0	1.5
10	1.3	2.1
12	2.3	3.4
16	3.3	5.0
18	4.3	6.5
20	5.5	8.0
24	8.9	13.3

- D. If any defects or leaks are revealed, they should be corrected and the pipeline retested after a minimum 24 hour recuperation period between tests. Total testing conducted on a section of pipeline shall not exceed 8 hours within a 24 hour period.
- E. All apparent leaks discovered within one year from the date of final acceptance of the work by the Owner shall be located and repaired by Contractor, regardless of the total line leakage rate.

### 3.19 Placing the Force Main Into Service

The force main can only be placed into service once clearance is received from FDEP, followed by approval by the Utility and Owner.

**END OF SECTION**

## SECTION 02605

### PRECAST STRUCTURES AND ACCESSORIES

#### PART 1 GENERAL

##### 1.01 Section Includes

- A. Precast sanitary and storm structures
- B. Lift Station Wet Well and Vaults
- C. Precast structure grates, access covers, and accessories
- D. Precast structure linings and coatings

##### 1.02 Related Sections

Section 02320 - Trenching, Bedding, and Backfilling

##### 1.03 References

- A. American Society for Testing and Materials (ASTM) latest edition:
  - 1. A48 - Gray Iron Castings
  - 2. A185 - Steel Welded Wire Reinforcement, Plain, for Concrete
  - 3. C216 - Facing Brick
  - 4. C270 - Mortar for Unit Masonry
  - 5. C443 - Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
  - 6. C478 - Precast Reinforced Concrete Manhole Sections
  - 7. C923 - Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals
  - 8. C990 - Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
  - 9. C1244 - Test method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test
  - 10. D3753 - Glass Fiber Reinforced Polyester Manholes and Wetwells

##### 1.04 Submittals

- A. All gratings and castings
- B. Precast structures
- C. Coatings and Linings for precast structures
- D. Connections to precast structures

- E. Submit the name of the subcontractor that will be installing the interior coatings (spray on liner) and a list of references of past experience documenting successful application of the spray on coating. Provide a minimum of three (3) references with project name, description of work, contact name and phone number for each reference.

## **PART 2 PRODUCTS**

### **2.01 General**

- A. Concrete shall have minimum 4000 psi compressive strength.
- B. Welded wire fabric shall conform to ASTM A185. Use 4 x 4 - W4 x W4 welded wire fabric unless otherwise indicated.
- C. Integrally cast steps within precast structures are not allowed.
- D. The date of manufacture and the name or trademark of manufacturer shall be clearly marked on each precast section.

### **2.02 Sewer Manholes**

- A. All new sanitary sewer manholes shall be precast, and shall conform to ASTM C478. Concrete shall be Class II and have a minimum compressive strength of 4,000 psi at 28 days. The minimum wall thickness shall be five inches. Precast manholes shall be constructed with a precast monolithic base structure and the minimum base thickness shall be eight inches as shown on the Standard Construction Detail. The top section shall be an eccentric riser. The barrel, top and base sections shall have tongue and groove joints. All jointing material shall be a cold adhesive preformed plastic gasket, conforming to ASTM C 443. All manholes shall be leak-free.
- B. For sewer pipe sizes 24 inches in diameter and smaller, the minimum inside diameter of the manhole shall be 48 inches. For sewer pipe sizes between 24 and 36 inches, the minimum inside diameter of the manhole shall be 60 inches. For sewer pipe sizes larger than 36 inches in diameter, a 72 inch inside diameter manhole shall be provided.
- C. The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on each precast section after coating of the exterior surface. Lift rings or non-penetrating lift holes shall be provided for handling precast manhole sections.

### **2.03 Flow Channel**

The flow channel shall be Portland Cement Type II concrete, minimum compressive strength of 2,500 psi. Fillers of any other material will not be accepted. Brick shall not be used to construct channels or benching. Flow channels shall be formed in the invert of the manhole and shall extend to the spring line of all connecting pipes (gravity sewer and

force mains), conforming to the dimension of the adjacent pipe and providing changes in size, grade and alignment evenly.

#### **2.04 Manhole Drop Connections**

In general, manhole drop connections are not allowed unless specifically shown on the Construction Plans. If allowed, an outside drop pipe shall be provided for a sewer entering a manhole where its invert elevation is 24 inches or more above the manhole invert. Where the difference in elevation between the incoming sewer invert and the manhole invert is less than 24 inches, the manhole invert shall be filleted to prevent solids deposition.

#### **2.05 Manhole Force Main Connections**

Force mains shall be oriented to facilitate flow, and shall enter the manhole such that the force main invert is no more than 12 inches above the invert of the effluent sanitary sewer line.

#### **2.06 Manhole External Seal**

The top of manholes, cone, riser rings, iron frame, cover and all joints shall be encapsulated with a heat shrink-wrap with a minimum thickness of 98 mils (2.5mm). The wrap shall have a cross-linked polyolefin backing coated with a protective heat activated adhesive. The wrap should effectively bond to the substrate via primer provided by the manufacturer, providing corrosion and moisture protection. The wrap shall be applied with a high intensity propane torch. Heat Shrink wrap for all barrel section joints of manholes shall be a minimum 9-inch width wrap and a minimum of 12-inch width wrap shall be applied to the top section, riser rings, and manhole ring and cover. Adhesive tape materials are not be allowed.

#### **2.07 Manhole Linings and Coatings**

- A. New sewer manholes shall be coated inside and out with two (2) coats of water based polyamine epoxy coating, installed at a minimum thickness of 8 mils per coat. Coatings shall be applied by the manhole manufacturer in strict accordance with the paint manufacturer's recommendations.
- B. Manholes that receive force main discharge shall be lined. For new manholes, the interior liner shall be HDPE, minimum thickness of 2 mm, as manufactured by Agru America (Sure Grip liner) or approved equal. For existing manholes, the interior shall be coated with Raven 155 primer (min. 8 mils) and Raven 405 Liner (min. of 125 mils), or equal.

#### **2.08 Lift Station Wet Well**

- A. Base, riser, and top shall be in accordance with details on the Drawings.
- B. All precast construction shall be in accordance with ASTM C-478, minimum wall thickness of 6 inches.

- C. New wet wells shall be lined with HDPE, minimum thickness of 5 mm, as manufactured by Agru America (Sure Grip liner) or approved equal.
- D. Existing wet wells that are required to be re-lined shall be coated with Raven 155 primer (min. 8 mils) and Raven 405 Liner (min. of 125 mils), or equal.
- E. The exterior of new wet wells shall be coated with two (2) coats of water based polyamine epoxy coating, installed at a minimum thickness of 8 mils per coat. Coatings shall be applied by the manufacturer in strict accordance with the paint manufacturer's recommendations.

#### **2.09 Lift Station Valve Vault**

- A. Valve vaults shall be precast with concrete and reinforcement conforming to ASTM C478.
- B. Exterior coatings coated with two (2) coats of water based polyamine epoxy coating, installed at a minimum thickness of 8 mils per coat. Coatings shall be applied by the manufacturer in strict accordance with the paint manufacturer's recommendations.
- C. The interior coating shall be Raven 155 primer (min. 8 mils) and Raven 405 Liner (min. of 125 mils), or equal.

#### **2.10 Manhole Frames and Lids**

- A. Frames and covers shall be gray iron per ASTM A48, Class 30B and shall be US Foundry Type 227AS, traffic bearing (AASHTO H-20 loading), unless otherwise noted in the Drawings. Raised lettering on covers shall be "STORM", "SEWER", or as detailed on the drawings.
- B. Castings shall be smooth, clean, free from blisters, blowholes, shrinkage.
- C. Sanitary sewer manhole covers shall have non-penetrating pick holes.

#### **2.11 Catch Basin Inlets, Frames, and Grates**

- A. Provide cast iron inlets, frames, and grates in accordance with details on the Drawings.
- B. All frames and inlet grates shall be products of U.S. Foundry & Manufacturing Corporation, or equal.
- C. All inlet grates shall be secured by chain and eyebolt to the top of the structure.

#### **2.12 Wet Well and Valve Vault Access Covers**

- A. The access covers shall be traffic bearing (AASHTO H-20 loading), hinged on the long side, with 0.25 inch thick diamond plate, with a flush lifting handle, and T-316 stainless steel hold open arms and heavy duty hinges, T-316 tamper proof attaching hardware, automatic T-316 hold open arm with aluminum latch. All bolts, locknuts, and accessories shall be stainless steel.
- B. Doors shall open to 90 degrees and automatically lock with a T-316 stainless steel hold open arms with release handles. The doors shall be equipped with stainless steel compression springs, a locking bar for a padlock (padlock to be supplied by the Owner), and fixed inside handle. Doors shall close flush with the frame.
- C. Castings shall be smooth, clean, free from blisters, blowholes, shrinkage.
- D. All access covers shall be watertight.

## **PART 3 EXECUTION**

### **3.01 Confined Space**

Provide all necessary safety equipment and training required for work done in structures such as, but not limited to, Wet Wells, Valve Vaults, and Manholes. The equipment will include, but not be limited to, ventilation systems, gas detection devices, and safety harnesses. It is the Contractor's responsibility to determine if a structure is a confined space and supply the required safety equipment and training.

### **3.02 Manhole, Inlet and Wet Well Installation**

- A. Install required bedding.
- B. Install base to proper elevation and alignment. Handle precast sections by lift rings only. Remove lift rings and fill all holes with non-shrink grout after erection.
- C. Pour invert immediately after setting first section of barrel.
- D. Prior to setting subsequent barrel sections, apply primer to tongue and groove ends and allow to set in accordance with manufacturer's recommendations. Add additional material on exterior joint if necessary for watertight joint.
- E. Apply coatings and liners as required.
- F. Backfill in accordance with Section 02320.
- G. Completed sewer manholes, wet wells, and valve vaults shall be watertight.

### **3.03 Installation of Castings**

- A. Manhole castings to be fully embedded in mortar with adjustment brick courses placed between the frame and manhole, minimum of 2 courses, maximum of 4

courses. Mortar shall conform to ASTM C270, type M, brick to conform to ASTM C216, grade SW.

- B. Top of manhole castings in paved areas, including driveways and sidewalks to be flush with grade. Top of manhole castings outside paved areas to be 2 inches above grade, unless otherwise noted on the Drawings.

### **3.04 Pipe Connections**

- A. Connection of ductile iron or PVC pipe to the manhole shall provide a watertight connection per ASTM C923. The use of adhesives or lubricants for installation of rubber connectors is prohibited.
- B. Connection of concrete pipe to the manhole shall be made with non-shrink metallic grout.

### **3.05 Manhole and Wet Well Testing**

- A. There shall be no visible leakage through the structure walls or connections.
- B. All manholes are to be tested in accordance with ASTM C1244 and are required to pass this test.

**END OF SECTION**

## SECTION 02630

### STORM DRAINAGE PIPE SYSTEMS

#### PART 1 GENERAL

##### 1.01 Section Includes

Storm sewer pipe, culverts, box culverts, underdrains, accessories

##### 1.02 Related Sections

- A. Section 02320 - Trenching, Bedding, and Backfilling
- B. Section 02605 - Precast Structures and Accessories

##### 1.03 References

- A. American Association of State Highway and Transportation Officials (AASHTO) latest edition:
  - 1. AASHTO M196 - Corrugated Aluminum Pipe for Sewers and Drains
  - 2. AASHTO M252 - Corrugated Polyethylene Drainage Pipe
  - 3. AASHTO M294 - Corrugated Polyethylene Pipe, 12 to 48-inch diameter
- B. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM C76 - Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
  - 2. ASTM C443 - Joints for Circular Concrete Pipe and Manholes, Using Rubber Gaskets
  - 3. ASTM C507 - Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
  - 4. ASTM C1433 - Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers
  - 5. ASTM D2321 - Underground Installation of Flexible Thermoplastic Pipe for Sewers and Other Gravity Flow Applications
  - 6. ASTM D3212 - Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
  - 7. ASTM D3350 - Polyethylene Plastics Pipe and Fittings Material
  - 8. ASTM F477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe
  - 9. ASTM F758 - Smooth Wall PVC Plastic Underdrain Systems for Highway, Airport, and Similar Drainage
  - 10. ASTM F2306 - 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications
  - 11. ASTM F2487 - Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene Pipelines

C. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction and Standard Plans for Road Construction, latest implemented editions:

1. Index No. 430-001 - Geotextile Criteria
2. Index No. 430-001 - Miscellaneous Drainage Details
3. Index No. 400-291 - Supplemental Details for Precast Concrete Box Culverts
4. Index No. 400-292 - Standard Precast Concrete Box Culverts
5. Specification Section 400 - Concrete Structures
6. Specification Section 410 - Precast Concrete Box Culvert
7. Specification Section 430 - Pipe Culverts and Storm Sewer
8. Specification Section 440 - Underdrains
9. Specification Section 449 - Precast Concrete Drainage Products
10. Specification Section 945 - Corrugated Aluminum Pipe and Pipe Arch
11. Specification Section 948 - Corrugated Polyethylene Pipe

#### **1.04 Submittals**

- A. Provide shop drawings and product data for all pipes and joints.
- B. Provide manufacturer's certificate of compliance or certified analysis in accordance with applicable standards for each shipment of materials.

#### **1.05 Product Delivery, Storage and Handling**

- A. Exercise care in transporting and handling pipe and fittings in order to avoid damage to pipe materials, coatings or joints.
- B. Lifting of materials shall be by hoist or on skids.
- C. Dropping pipe and fittings while unloading or handling is not permitted.
- D. Pipe shall be stored as recommended by the manufacturer.
- E. Damaged pipe shall be replaced at Contractor's expense.

### **PART 2 PRODUCTS**

#### **2.01 Concrete Pipe and Joints**

- A. Round concrete pipe shall comply with ASTM C76 and FDOT specification section 449, and shall be Class III pipe, unless otherwise noted on the Drawings.
- B. Elliptical concrete pipe shall comply with ASTM C507.
- C. Pipe joints shall comply with ASTM C443 and FDOT specification section 430, and rubber gaskets shall comply with FDOT specification section 942.

- D. Pipe shall not be shipped from manufacturer until the compressive strength of the pipe has reached 4000 psi and a minimum of 5 days have passed since the manufacturing or repair of the pipe has been completed.

## **2.02 High Density Corrugated Polyethylene Pipe and Joints**

- A. Pipe 4 inch through 10 inch diameter shall comply with AASHTO M252, Type S.
- B. Pipe 12 inch through 48 inch diameter shall comply with AASHTO M294, Type S, and ASTM F2306.
- C. Pipe 54 inch through 60 inch diameter shall comply with FDOT specification section 948 (Class II pipe) and shall comply with AASHTO M294
- D. Virgin material for the production of pipe and fittings shall be high density polyethylene conforming to the minimum requirements of cell classification 424420C for 4-inch through 10-inch diameters and 435400C for 12-inch through 60-inch diameters per ASTM D3350. The 12-inch through 60-inch virgin pipe material shall comply with the notched constant ligament-stress (NCLS) test as specified in ASTM F2306.
- E. Bell joints for 4 inch through 10 inch diameter pipe shall be push-on sleeve.
- F. Bell joints for 12 inch through 60 inch diameter pipe shall be integrally formed on pipe.
- G. Pipe joints shall be watertight per ASTM D3212. Gaskets shall be installed by pipe manufacturer and shall comply with ASTM F477.
- H. Fittings shall comply with AASHTO M294.

## **2.03 Filter Fabric**

Install in accordance with FDOT index No. 430-001. Provide minimum 12 inches overlap.

## **2.04 Underdrain Systems**

- A. Underdrain pipe shall be perforated polyvinyl chloride pipe in accordance with ASTM F758.
- B. Filter fabric underdrain sock shall be type D-3 in accordance with FDOT specification section 985.

## **2.05 Aluminum Coated Corrugated Steel Pipe and Pipe Arch**

- A. Pipe shall comply with AASHTO M196 and FDOT specification section 945.
- B. Corrugations and pipe gage shall be as indicated on the Drawings.

- C. Two rolled annular corrugations shall be provided on each end of pipe to facilitate connections. Connecting bands shall be a minimum thickness of 16 gage.

## **2.06 Concrete Box Culvert**

- A. Precast concrete box culvert shall comply with ASTM C1433, FDOT specification section no. 410, and FDOT Index No. 400-292. Where there is conflict between these standards, the more stringent requirement applies.
- B. Cast in place concrete box culvert shall comply with FDOT specification section no. 400.

## **PART 3 EXECUTION**

### **3.01 General Installation Requirements**

- A. Perform work in accordance with plans and standard guidelines in a neat and accurate manner.
- B. All lengths of pipe and culvert shall be dimensioned accurately to measurements established at the site, and shall be worked into place without springing or forcing.
- C. Cut all pipe and culvert as necessary. The pipe and culvert interior and joints shall be thoroughly cleaned before being installed and kept clean during construction.
- D. Trenching, bedding and backfilling for all piping shall be in accordance with Section 02320.
- E. Establish survey control. Line and grade of pipe and culvert shall be checked continuously on a joint by joint basis.
- F. Pipe and culvert shall be laid progressively up grade, with bell upstream, in a manner to form close, concentric joints with smooth bottom inverts.
- G. All pipe and culvert joints shall be wrapped with filter fabric.
- H. Installed piping and culvert systems shall be temporarily plugged at the end of each day's work, or other interruption to progress on a given line. Plugging shall be adequate to prevent entry of small animals or persons into the pipe or the entrance or insertion of deleterious materials.

### **3.02 Separation of Storm Sewer Lines and Potable Water Mains**

- A. The outside of non-pressurized storm sewer lines shall be separated horizontally a minimum of three feet from the outside of any existing or proposed water main.

- B. Wherever possible, storm sewer shall cross under existing or proposed water mains, so the outside of the storm sewer is at least six inches below the outside of the water main. Where it is not possible for the sewer to cross under existing or proposed water mains, then the sewer can cross over the water main provided the outside of the sewer is at least 12 inches above the outside of the water main. At the crossing, the proposed pipe joints shall be arranged so that all water main joints are at least three feet from storm sewer joints.
- C. The following are acceptable alternative construction features to be considered for cost evaluation with no guarantee they will be approved for implementation where it is not possible to meet the separation requirements. Exceptions from meeting the pipe separation requirements, without mitigation, shall be allowed only by FDEP if technical or economic justifications for each exception provided by the Engineer are acceptable to FDEP and are only to be implemented upon receipt of expressed written consent from the Engineer and approval from FDEP on a case by case basis. All possible measures to achieve compliance with the pipe separation requirements shall be considered first along with design changes to meet the requirements before the Engineer submits a justification of an exception to FDEP for approval. Implementation of these measures without the expressed written consent of the Engineer and approval by FDEP could result in the requirement that the installed unapproved measures be removed and replaced at no cost.
  - 1. Where sewer is less than the required minimum horizontal distance from a water main and or where the sewer crosses a water main and joints in the sewer are less than the minimum required distance between the joints in the water main:
    - a. Use of pressure rated pipe conforming to AWWA standards for a gravity or vacuum type pipeline.
    - b. Use of welded, fused, or otherwise restrained joints for either pipeline.
    - c. Use of watertight casing pipe or concrete encasement at least four inches thick for either pipe.
  - 2. Where sewer is less than three feet horizontally from a water main and or where a sewer crosses a water main at less than the required minimum separation:
    - a. Use of pipe or casing pipe, having high impact strength (at least equal to 0.25 inch thick ductile iron pipe), or concrete encasement at least four inches thick for both the sewer and the water main.

### **3.03 Concrete Pipe and Culvert**

- A. Before making joint, clean the pipe end and the bell thoroughly. Insert the O-Ring gasket, making certain it is properly oriented. Lubricate the spigot well with an approved lubricant; do not lubricate the bell or o-ring. Insert the spigot end of

the pipe carefully into the bell until the reference mark on the spigot is flush with the bell.

- B. Field cut pipe shall have a reference mark applied the correct distance from the end.
- C. On field cut pipe, provide homing mark in accordance with manufacturer's recommendations.
- D. All pipe laid shall be retained in position to maintain alignment and joint closure until backfill has been placed.
- E. Multi-celled box culverts shall be installed with a 4-inch gap between culverts. Fill gap with non-shrink grout upon completion of installation.
- F. Minimum cover over the pipe (outside top to finish grade), including cover over the bell of the pipe where applicable, shall be 24 inches.

### **3.04 High Density Corrugated Polyethylene Pipe**

- A. Install in accordance with ASTM D2321.
- B. Backfill and compact evenly on each side to prevent displacement, meeting the requirements of ASTM D2321 and Section 02320.
- C. Minimum cover over the pipe (outside top to finish grade) shall be 30 inches.

### **3.05 Filter Fabric**

Install in accordance with FDOT index No. 430-001. Provide minimum 12 inches overlap.

### **3.06 Underdrain Systems**

Install in accordance with FDOT specification section 440. Install cleanouts as shown on the Drawings.

### **3.07 Aluminum Coated Corrugated Steel Pipe and Pipe Arch**

- A. Pipe gasket and coupling band shall be centered over joint with coupling band bolts securely tightened without cutting gasket.
- B. Minimum cover over the pipe shall be 36 inches.

### **3.08 Visual Inspection and Testing**

- A. Prior to inspection and testing, clean all installed lines and structures.

- B. After backfill has been placed, the Engineer will visually inspect all storm lines to check joints, alignment and grade. All obstructions shall be removed.
- C. Provide light source and mirrors for lamping of storm sewer. Any sewer in which the direct light of a lamp cannot be viewed in either direction, full circle, between adjacent structures shall be considered unsatisfactory, and shall be repaired by the Contractor without additional compensation.
- D. For pipe 48 inches or less in diameter, conduct a video inspection in accordance with FDOT Standard Specification Section 430. Provide a video DVD and report using low barrel distortion video equipment with laser profile technology, non-contact video micrometer and associated software that provides the following: actual recorded length and width measurements of all cracks within the pipe; actual recorded separation measurement of all pipe joints; pipe ovality report; deflection measurements and graphical diameter analysis report in terms of x and y axis; flat analysis report; representative diameter of pipe; pipe deformation measurements, leaks, debris, or other damage or defects; deviation in pipe line and grade, joint gaps, and joint misalignment; a video record of the actual speed at which the camera is traveling; through the pipe, ensuring that the rate of travel does not exceed the limit defined in FDOT specification section 430.

**END OF SECTION**

**SECTION 02710**  
**STABILIZED SUBGRADE**

**PART 1 GENERAL**

**1.01 Section Includes**

Stabilized subgrade for asphalt pavement

**1.02 References**

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

1. AASHTO T180 - Moisture-Density Relations of Soils Using a 10-lb Rammer and 18-in Drop

B. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition:

1. Section 914 - Materials for Subgrade Stabilization

**1.03 Quality Assurance**

Field compaction density, stability, and thickness testing frequencies of the subgrade shall be tested once every 300 linear feet of paving per 24-ft wide strip, staggered left, center and right of centerline. Where less than 300 linear feet of asphalt is placed in one day, provide minimum of one test for each per day's construction at a location designated by the Engineer.

**1.04 System Description**

- A. Stabilize the roadbed below the proposed base to provide a firm and unyielding subgrade.
- B. Provide a finished roadbed section that meets the bearing value requirements, regardless of the quantity of stabilizing materials necessary to be added.

**PART 2 PRODUCTS**

**2.01 General**

- A. The Contractor may choose the type of stabilizing material, Commercial or Local.
- B. Materials may be either limerock, shell rock, cemented coquina or shell base sources approved by FDOT.

## **2.02 Limerock**

For limerock, carbonates of calcium and magnesium shall be at least 70%. Materials having a plasticity index of more than ten or a liquid limit greater than 40 shall not be used as a stabilizer. The gradation of limerock shall be such that 97% of these materials will pass a 3½ -inch (90 mm) sieve.

## **2.03 Crushed Shell**

- A. Crushed shell for this use shall be mollusk shell (i.e., oysters, mussels, clams, cemented coquina). Steamed shell will not be permitted.
- B. Material having a plasticity index of more than ten or a liquid limit greater than 40 shall not be used as a stabilizer.
- C. At least 97% by weight of the total material shall pass a 3½ -inch (90 mm) sieve and at least 50% by weight of the total material shall be retained on the No. 4 [4.75 µm] sieve.
- D. Not more than 20% by weight of the total material shall pass the No. 200 [75 µm] sieve. The determination of the percentage passing the No. 200 [75 µm] sieve shall be by washing only.

## **2.04 Local Materials**

- A. Local materials used for this stabilizing may be soils or recyclable materials such as crushed concrete, roof tiles and asphalt coated base or reclaimed pavement. However, no materials that deteriorate over time, cause excessive deformations, contain hazardous substances, contaminates, or do not improve the bearing capacity of the stabilized material may be used in accordance with FDOT Specification Section 914.
- B. At least 97% by weight of the total material shall pass a 3½ -inch (90 mm) sieve. Material having a plasticity index greater than ten or a liquid limit greater than 40 shall not be used as a stabilizer.

## **PART 3 EXECUTION**

### **3.01 General**

- A. Prior to the beginning of stabilizing operations, construct the area to be stabilized to an elevation such that, upon completion of stabilizing operations, the completed stabilized subgrade will conform to the lines, grades, and cross-section shown in the plans. Prior to spreading any additive stabilizing material, bring the surface of the roadbed to a plane approximately parallel to the plane of the proposed finished surface.

- B. Process the subgrade to be stabilized in one course, unless the equipment and methods being used do not provide the required uniformity, particle size limitation, compaction, and other desired results, in which case, the Engineer will direct that the processing be done in more than one course.
- C. Vibratory compaction is not allowed within 100 feet of existing structures. In these areas, compaction shall be accomplished by static means only. If compaction difficulties arise, the Engineer shall be consulted to review and possibly modify compaction procedures.

### **3.02 Application of Stabilizing Material**

- A. When additive stabilizing materials are required, spread the designated quantity uniformly over the area to be stabilized.
- B. When materials from an existing base are to be used in the stabilizing at a particular location, place and spread all of such materials prior to the addition of other stabilizing additives.
- C. Spread commercial stabilizing material by the use of mechanical material spreaders, except that where use of such equipment is not practicable, use other means of spreading, but only upon written approval of the proposed alternate method.

### **3.03 Mixing**

- A. Perform mixing using rotary tillers or other equipment meeting the approval of the Engineer. The Contractor may mix the materials in a plant of an approved type suitable for this work. Thoroughly mix the area to be stabilized throughout the entire depth and width of the stabilizing limits.
- B. Perform the mixing operations, as specified, (either in place or in a plant) regardless of whether the existing soil, or any select soils placed within the limits of the stabilized sections, have the required bearing value without the addition of stabilizing materials.

### **3.04 Maximum Particle Size of Mixed Materials**

At the completion of the mixing, ensure that the gradation of the material within the limits of the area being stabilized is such that 97% will pass a 3½-inch sieve and that the material does not have a plasticity index greater than eight or liquid limit greater than 30. Note that clay balls or lumps of clay size particles (2 microns or less) cannot be considered as individual particle sizes. Remove any materials not meeting the plasticity requirements from the stabilized area. The Contractor may break down or remove from the stabilized area materials not meeting the gradation requirements.

### **3.05 Compaction**

Compact the materials at a moisture content permitting the specified compaction. If the moisture content of the material is improper for attaining the specified density, either add water or allow the material to dry until reaching the proper moisture content for the specified compaction.

### **3.06 Finish Grading**

Shape the completed stabilized subgrade to conform with the finished lines, grades, and cross-section indicated in the plans. Check the subgrade using elevation stakes or other means approved by the Engineer.

### **3.07 Condition of Completed Subgrade**

- A. After completing the stabilizing and compacting operations, ensure that the subgrade is firm and substantially unyielding to the extent that it will support construction equipment and will have the bearing value required by the plans.
- B. Remove all soft and yielding material, and any other portions of the subgrade which will not compact readily, and replace it with suitable material so that the whole subgrade is brought to line and grade, with proper allowance for subsequent compaction.

### **3.08 Maintenance of Completed Subgrade**

After completing the subgrade, maintain it free from ruts, depressions, and any damage resulting from the hauling or handling of materials, equipment, tools, etc. The Contractor is responsible for maintaining the required density until the subsequent base or pavement is in place including any repairs, replacement, etc., of curb and gutter, sidewalk, etc., which might become necessary in order to recompact the subgrade in the event of underwash or other damage occurring to the previously compacted subgrade. Perform any such recompaction at no expense to the Owner. Construct and maintain ditches and drains along the completed subgrade section.

### **3.09 Field Quality Control**

When proper moisture conditions are attained, compact the material to not less than 98% of maximum density determined by AASHTO T180, and a minimum Limerock Bearing Ratio of 40.

**END OF SECTION**

SECTION 32842  
IRRIGATION SYSTEM

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope of Work:

The work consists of installing a complete underground irrigation system as shown on the Drawings and as hereinafter specified, including the furnishing of all labor, equipment, materials and supervision in performing all operations in connection with construction of the irrigation system.

B. General Description:

1. The irrigation system shall be constructed using the sprinkler heads, valves, piping, fittings, controllers, wiring, etc., of sizes and types as shown on the Drawings and as called for in these specifications. The system shall be constructed to grades and conform to areas and locations as shown on the Drawings.
2. Sprinkler lines shown on the Drawings are essentially diagrammatic. Locations of all sprinkler heads, valves, piping, wiring, etc., shall be established by the Contractor, in coordination with the landscaping, at the time of construction. Spacing of the sprinkler heads, valves, etc., are shown on the Drawings and shall be exceeded only with written permission of the Owner's authorized representative.
3. Unless otherwise specified or indicated on the Drawings, the construction of the sprinkler system shall include the furnishing, installing and testing of all mains, laterals, risers, fittings, sprinkler heads, gate valves, control valves, controllers, electric wire and all necessary accessories, the removal and/or restoration of existing improvements, excavation and backfill, and all other work in accordance with the plans and specifications as required for a complete system.

C. Relationship of the documents:

1. The Drawings for this project and these written Specifications are to be considered totally integral, with neither considered complete without the other. The Bidders shall thoroughly examine and familiarize themselves with all the information contained in the Documents, and by submitting a bid for this work, agree to accept and be bound by all the provisions made in the Documents.
2. Should a conflict arise between the information contained in the Drawings and these Specifications, the Drawings shall control, unless the item in question is part of an Addendum, dated later than the Drawings. The Owner or his chosen Representative shall be notified immediately of any such discrepancies and shall take any corrective action deemed necessary.
3. All work shall conform to the most recent issue of the Documents.

D. Alternate Products and Methods

1. Specific equipment, performances, installation methods, and other such criteria have been selected for use in the design of this project, and these shall be considered the basis for the Base Bid. The use of alternate equipment and/or methods shall not be acceptable without prior approval. Consideration shall be given only for those materials and methods whose performance most closely matches that which is contained in the original Documents, and most reasonably serves the intent of this design.

2. Any modifications or other impact to this design which may be necessitated by the submission of alternate equipment and/or methods shall be clearly noted within the submittal, and subsequently acted upon by the Owner. The Bidders shall warrant that any bid submitted for any equipment shall include all materials and work necessary for the proper and fully warranted installation of that equipment, including, but not limited to, increased pipe or wire size, fittings, concrete, gravel, or any other associated materials and/or labor.
3. It may be requested that the Bidders provide recommendations and alternate pricing for value engineering items. A request for such alternatives does not constitute approval by the Owner or Architect for implementation of these items. All changes will require written approval.

E. **Related Work Specified Elsewhere:** Consult the Owner for documents pertaining to other trades relative to this work.

## 1.2 SUBMITTALS

### A. Requirements:

1. Prior to commencement of work under this Contract, the Contractor shall submit six sets of submittal data on all proposed materials and equipment, including, but not limited to, sprinklers, valves, pipe, valve boxes, controllers, PVC cement and cleaner, wire and connectors, fittings, swing joints, and P.O.C. equipment. The data shall include copies of all manufacturers' warranty information, including documentation of any extended warranties, if applicable to this project.
2. Submittals shall be in bound sets, with various sections tabbed and properly indexed. Each item shall be marked as acceptable to the General Contractor before it shall be considered for approval by the Engineer, Landscape Architect-or Engineer, or the Consultant.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. **General:** The Contractor shall supply all Material and equipment. No substitutions shall be allowed without the prior written approval of the Owner/Landscape Architect or Engineer. The Contractor shall inspect all materials and equipment prior to installation; any defective materials and equipment shall be replaced with the proper materials and equipment. Those items used in the installation found to be defective, improperly installed or not as specified shall be removed and the proper materials and equipment installed in the proper manner, as interpreted by the Owner/Landscape Architect or Engineer.
- B. **Pipe:** shall be delivered to the site in full 20-foot lengths and clearly marked with the manufacturer's name and classification.
  1. Main: Pipe situated hydraulically between the water supply and the sprinkler control valves is classified as MAIN LINE PIPE and is herein specified to be Polyvinyl Chloride (PVC) Class 200. Pipe shall be equipped with factory-attached couplings or integrally formed bells for solvent weld connections. MAIN LINE pipe is to be lavender to indicate the use of reclaimed water
  2. Lateral: Pipe situated hydraulically on the discharge side of the sprinkler control valves is classified as LATERAL LINE PIPE and is herein specified to be Polyvinyl Chloride (PVC) Class 200. Pipe shall be equipped with factory-attached couplings or integrally formed bells for solvent weld connection. Lateral pipe is to be lavender to indicate the use of reclaimed water.

C. Fittings:

1. Main line and Lateral pipe fittings shall be of the proper type and class for use with the above specified pipe and shall have either solvent weld or IPS threaded connections according to the requirements of the connection being made for pipe sizes 3-inches and smaller. Fittings shall be Sch. 40 PVC, of domestic manufacture for pipe sizes 3-inches and smaller.
2. Both the fittings and the solvent cement and cleaner used in their installation shall be approved by the manufacturer of the pipe on which they are to be used. Both the pipe manufacturer and the Contractor shall guarantee the pipe, fittings, cement, and cleaner utilized in this work are all-compatible with one another and are proper and suitable for and in this work.

D. Mechanical Joint Restraints:

1. Mechanical Joint restraints shall be used at all connections along the mainline according to the requirements of the connection being made for pipe sizes 4-inches and larger.
2. Fitting to Pipe Restraints shall meet the requirements of UNI-B-13-94. Grip ring serrations shall be machined. As cast serrations are not permitted. Restraint rods, bolts and nuts shall be of ductile iron to ASTM A563 or low alloy steel to AWWA/ANSI C111/A21.11.
3. Fitting to Valve to Pipe restraint shall consist of ductile iron (ASTM A536) grip rings with machined serrations and ductile iron restraint rods. The ring that grips the pipe shall meet the requirements of Uni-B-13-94. The restraint rods / nuts shall be made from low alloy steel to AWWA/ANSI C111/A21.1 or ductile iron to ASTM A536.
4. Joint Restraint shall be knuckle type. The grip ring shall be one piece residing within a ductile iron housing having machined serrations and shall be activated by one bolt. Housing and grip ring shall be of ductile iron to ASTM A536. Bolt and nut shall be Type 304 stainless steel.
5. Pipe to Pipe Restraints shall meet the requirements of UNI-B-13-94. Grip ring serrations shall be machined, as cast serrations are not permitted. Restraint rods, bolts and nuts shall be of low alloy steel to AWWA/ANSI C111/A21.11.

E. Threaded Pipe Connections

Threaded Pipe Connections between main pipe and sprinkler control valve shall be made using threaded pipe and fittings. PVC Schedule 80 threaded pipe and fittings are herein specified for this use.

F. Gate Valves:

1. Gate Valves shall be all bronze, double disc wedge type with integral taper seats, and shall be of domestic manufacture.
2. Gate Valves shall include these features and benefits:
  - a. Full Port
  - b. Non-Rising Stem
  - c. 300 WOG - 150SWP
  - d. Screwed Bonnet
  - e. Integral Seat
  - f. Threaded Ends Conform to ANSI Standards B2.1
  - g. Valves Are Tested in Accordance with MSS-SP-82
  - h. Sizes 1/2" - 4"

G. Sprinkler Heads:

1. Pop-Up Spray Sprinklers with Matched Precipitation Rate Nozzle:
  - a. The sprinkler shall be a 6" fixed spray type designed for in-ground installation. The nozzle shall elevate 6 inches when in operation. The body of the sprinkler shall be constructed of non-corrosive material. A filter screen shall be in the nozzle piston. All sprinkler parts shall be removable through the top of the unit by removal of a threaded cap. The sprinkler cap shall be marked lavender indicating the use of reclaimed water
2. Tree Bubblers:
  - a. The sprinkler shall be an adjustable full-circle bubbler head with a distribution rate of .25--2.0 gpm
3. Heads shall be as indicated on the Drawings. It shall be the responsibility of the Contractor to provide these heads complete with any options or special features specified on the Drawings, which may include pressure regulation, anti-drain mechanisms, rubber covers, side inlets, etc. Sprinkler performance shall be equal to, or greater than, the design performance indicated on the Drawings. Refer to the Drawings for additional information.
4. Any spray head located in such a manner that a standard nozzle pattern is not appropriate shall be installed with an adjustable arc nozzle of appropriate type for the location. This shall be done whether or not the adjustable arc nozzle is specifically called for on the Drawings.

H. Drip Tubing

1. The flexible polyethylene tubing shall have factory installed pressure-compensating, inline emitters installed every 12-24 inches. The flow rate from each installed inline emitter shall be 0.4, 0.6 or 0.9 gallons per hour when inlet pressure is between 8.5 and 60 psi.
2. The inline emitter diaphragm shall have a pressure-regulating diaphragm with a spring action allowing it to self-rinse if there is a plug at the outlet hole. The bend radius shall be 3 inches whether bending the tubing with the natural bend of the coil or against it. The inline emitter inlet shall be raised off the inside tube wall to minimize dirt intrusion.
3. Drip tubing is to be marked for reclaimed water use
4. For on-surface or under mulch installations, 6" metal wire staples shall be installed 3' - 5' on center, (depending on soil type) and two staples shall be installed over every change-of-direction fitting.
5. Drip Valve Control Kit  
Operating Range  
Flow: 15.0 to 40.0 gpm  
Inlet Pressure: 20 to 150 psi  
Regulating Pressure: 40 psi  
Filtration: 200 mesh (75 micron) stainless steel  
Temperature: Up to 150° F
6. Dripline Insert Fittings  
Insert fittings are to be 17mm  
Operating Range

Pressure: 0 to 50 psi (1.0 to 3.5 bar); if using 60 psi (4.1 bar) clamps will be required

I. Automatic Control Valves:

1. The automatic control valves shall be electric solenoid operated valves. The Solenoid shall be 24 volt, 60-cycle operation. The valve body and bonnet shall be constructed from high strength glass filled nylon with fabric-reinforced rubber diaphragm rated at 200 psi with flow control and self-cleaning bleed screw. All valves shall be sized as shown on plans. Valve shall have a five-year trade warranty. Valve shall be marked for the use of reclaimed water.

J. Wire:

1. All splices in control wire shall be made at valve locations or marked with valve access box and made with direct bury silicone filled connectors.
2. Low-voltage control wiring shall be Type UF single conductor solid copper cable, with PVC insulation. Valve "hot" wires and spares shall be UF#14-1, and Valve common wires shall be UF#12-1. Wire shall be colored red for "hot" wires, blue for spare wires, and white for valve common wires. "Irrigation" type wire with PE jacket or multi-conductor type wire for station control shall be UNACCEPTABLE. Provide colored striping for valve common wires which shall be used to distinguish between corresponding field controllers.
3. All wire used in this work shall bear permanent markings showing size and ratings.

K. Rain Sensor

1. The rain sensor shall employ an electro-mechanical actuating device designed to cause a circuit interrupt that temporarily disables the irrigation controller during periods of significant rainfall. The device shall automatically restore the controller to a normal operating condition after a period of time subsequent to the rainfall. The device shall be suitable to be wired to a normally closed (N.C.) controller sensor port or in series with the valve common.
2. The device shall be of rugged construction to withstand the elements, including exposure to sunlight.
3. The device shall include a U.L. listed, 3A @ 125/250VAC rated electrical switch. The device shall be of sufficient capacity to be used with a maximum of three 24 VAC, 7 VA solenoid valves per station, plus one master valve.
4. The rain sensor shall incorporate a provision that allows the installer to select from several rainfall settings. The setting increments shall be displayed in both English and metric units. The device shall include a vent ring to help control drying time of the mechanical components.

L. Sprinkler Control System(s):

1. The automatic sprinkler controller locations shall be as indicated on the Plans. The irrigation system controller shall be located within a metal cabinet on a stainless steel metal pedestal. shall be of a hybrid type that combines electro-mechanical and microelectronic circuitry capable of fully automatic or manual operation. The controller shall be modular easily expandable from 8-12 stations to 48 stations with 4-, 8-, and 12-stations.
2. The controller shall operate on a minimum of 120 volts A.C. power input and be capable of operating 26-volt A.C. electric remote control valves. The controller shall have a reset circuit breaker to protect it from power overload. The controller shall have power back up using

lithium coin-cell battery to maintain time and date while nonvolatile memory maintains the programming.

3. Each controller station shall have a time setting knob capable of being set for incrementally variable timing from 0 minutes to 12 hours, or set to omit station from the irrigation cycle.
4. The controller shall have a flow smart module with learn flow utility and flow usage totalizer.
5. The controller shall be so constructed that all internal parts are accessible through the controller door without disturbing the cabinet installation.
6. The controller shall have normally open or closed master valve programmable by station.
7. The controller shall have programmable seasonal adjust.
8. The controller shall have four independent programs (ABCD).
9. The controller shall have 8 start times per program.
10. The controllers must be installed on a concrete base

M. Valve Box:

1. Valve access boxes for sprinkler remote control valves shall have a 12 inch diameter and an 18-inch depth.
2. Valve boxes housing wire splices shall be in an 12"x 18" rectangular glass-filled plastic, with snap-lock cover. Lids shall be permanently marked "Irrigation Wire Splice".
3. Valve boxes housing controller ground rods shall be 7" round plastic type.
4. Valve boxes are to have lavender lids and marked for the use of reclaimed water

N. Tools and Spare Parts

1. Prior to final acceptance, the Contractor shall provide for the Owner's use the following items:
  - a. Twenty of each type of spray sprinkler, and a representative
  - b. Assortment of replacement nozzles.
  - c. Four full sets of service tools for use with the sprinkler heads.
  - d. Four each valve operator wrenches for each type of gate valve.
2. Two complete sets of parts list, operations and maintenance manuals for all equipment, including sprinkler heads, valves, control equipment and any other maintainable items used in construction of the system.
3. Three copies of an owner's/operator's manual shall be provided. Manufacturer's model and part numbers, along with a breakdown of all sprinkler heads, remote control valves, control timers, and master controller, shall be submitted along with instructions for their operation and repair.

## PART 3 - EXECUTION

### 3.1 SUBSTITUTIONS

- A. The substituted product or method shall be equal or superior in all respects to the specified product or method and shall provide the same or exceed the warranty of the specified product or method and must be compatible with all other components of the project.
- B. In the event that a less, costly type of equipment is accepted for use on the project, or any equipment is omitted from the work, the Contractor shall fully refund the difference to the Owner, regardless of whether the action was initiated by the Owner or the Contractor.
- C. The Contractor shall submit, with the bid, a request for substitution. Such request must include complete data substantiating compliance of the proposed substitutions with the contract documents. The Contractor shall also supply the following:
  - a. Product identification, including manufacturer's name and address.
  - b. Manufacturer's literature, including product description, performance, test data and reference standards.
  - c. Samples where appropriate.
  - d. Names and addresses of similar projects on which product was used and date of installation.
  - e. Manufacturer's service policy including replacement policy and repair policy.
  - f. Itemized comparison of the proposed substitutions with the specified product.
  - g. Cost difference per item whether it be an add or deduct and the exact amount.

### 3.2 INSTALLATION

- A. General:
  - 1. The Contractor shall install the irrigation system to provide a fully operational automatic system. The Contractor shall install all materials specified and implied by the Drawings and specifications.
  - 2. The Contractor shall obtain all the necessary permits and inspections for this work and shall be responsible for penalties or damages which may result from his failure to do so.
  - 3. The content and enforcement of codes and regulations may vary from job to job. Information contained in these documents is for reference purposes ONLY and shall not be considered an absolute interpretation of prevailing requirements. The responsibility for researching code requirements, and for conformance thereto, shall remain solely that of the Contractor.
  - 4. The Contractor shall review any associated land use or environmental permits and shall adhere to any special conditions therein.
- B. Design Considerations:
  - 1. All spray heads adjacent to walkways, patios or other paved areas shall be 12" pop-ups. In any area where raising the head above grade is unavoidable, the heads shall be inset directly into the closest shrub, and complete concealment and protection shall be provided. All spray heads in turf areas shall be 12" pop-ups.
  - 2. Although due diligence has been given to the design of the system, it shall be understood that the Drawings are entirely diagrammatic in nature, and conflicts may appear due to field variables or other factors. It shall be the responsibility of the Contractor to field-coordinate the entire installation, including rock work, tree locations, bed lines, etc., and make the appropriate adjustments so that all plant material receives the proper coverage, and in the manner set forth in the Documents.
- C. Trenching and Backfilling:

1. The Contractor shall be responsible for flagging or staking out the head locations on the project. When grading has been established in a particular area, the Contractor shall, prior to beginning any excavation in the area, cause staking to be performed, and shall secure the approval of the Owner or Landscape Architect or Engineer of the finished staking.
  2. Excavation shall be open vertical construction sufficiently wide to allow free working space around the work installed and allow ample space for backfilling and tamping. Trenches for piping shall be cut to required grade lines and compacted to provide accurate grade and uniform bearing for the full length of the piping. Bottoms of trenches shall be free of rocks and other sharp objects. Minimum depth of cover shall be 18" on mainline piping, and 12" on lateral piping. Minimum depth of cover on low-voltage wiring shall be as provided by the electrical codes in effect. Intersecting pipes and those sharing a common ditch shall have a minimum of three inches clearance from each other, and from other utilities.
  3. Initial backfill shall be pulverized native soil, free of foreign matter. Within four inches of the pipe shall be clean soil or sand. Remaining backfill shall be compacted to dry density equal to that of adjacent undisturbed soil, and shall conform to adjacent grades without depressions, lumps, or other irregularities.
- D. Existing Conditions:
1. Drawings show conditions as they are believed to exist, but it is not intended or to be inferred that the conditions as shown constitute a representation by or on behalf of the Owner that such conditions actually exist. The Contractor shall inspect the job site prior to the bid submittal and shall accept full responsibility for any loss sustained as a result of any differences between the conditions shown on the Drawings and any actual condition revealed during the completion of the work. (EXCEPTION: Rock Clause; See Section 3.02.E)
  2. The Contractor shall, prior to excavation, verify the location of any and all existing underground improvements, and shall take any action necessary to protect said improvements during his work, and eliminate service outages. This may include, but not be limited to, existing irrigation within, or adjacent to, the work area. It shall be solely the responsibility of the Contractor to obtain the necessary locates and dig permits for the work area.
  3. If the site contains areas of protected wetland or other environmentally sensitive areas, the Contractor shall fully acquaint himself with the actual limits of these areas and any corresponding buffer zones and shall make sure that the progress and/or result of his work shall not impact these areas. Generally, these areas shall not be excavated, drained, thrown into by sprinklers, used for equipment access or storage, or otherwise disturbed in any way whatsoever. The Contractor shall confirm any restrictions and react accordingly. The Contractor will pay any fees or penalties assessed upon the Owner as a result of violations by the Contractor.
- E. Rock Clause: Should the ground be such that large rocks, debris, buried garbage, building materials, or other obstructions cannot be dug through with a trencher, the Owner should be immediately notified and a cost for excavation and backfill with selected materials shall be negotiated.
- F. Pipes:
1. Pipe shall have solvent weld joints. Pipe shall be installed in a manner so as to provide for expansion and contraction as recommended by the manufacturer.
  2. PVC pipe shall be cut with a hand saw or hack saw with the assistance of a square in-sawing vice, or in a manner so as to ensure a square cut. Burrs at cut ends shall be removed prior to installation so that a smooth unobstructed flow will be obtained.

3. Only the solvent recommended by the pipe manufacturer shall be used. All PVC pipe and fittings shall be installed as outlined and instructed by the pipe manufacturer, and it shall be the Contractor's full responsibility to make arrangements with the pipe manufacturer for any field assistance that may be necessary. The Contractor shall assume full responsibility for the correct installation. Connections to flex PVC shall be made with cement specifically rated for this use.
4. Pipe and associated fittings shall be solvent-weld type. Pipe shall be installed in such a manner so as to provide for expansion and contraction in accordance with the manufacturers published recommendations. Spigot ends of the pipe shall be firmly and completely seated in the fittings. Angular deflections in the joints shall not exceed manufacturer's recommendations. Debris shall be removed from the pipe prior to installation, and lines shall be flushed before installation of heads. Heating and bending the pipe is not permitted. Thrust Blocks: If solvent-weld piping is used, thrust blocks will only be required at directional fittings where the surrounding soil density will not restrain the joint. If gasketed pipe and/or fittings are used, poured-in-place concrete thrust blocks will be used on all push-on fittings. Thrust blocks will be of the size and configuration conforming to the recommendations made by the fitting manufacturer for that size and type of fitting. Thrust blocks may be formed by excavation in UNDISTURBED surrounding soil, or by forms constructed from suitable material. Fittings shall be wrapped with visqueen prior to pouring, and wires shall not be entrapped in the thrust blocks. In no case shall precast blocks, cinder blocks, wood blocking, or similar unapproved methods be utilized.
5. All PVC to metal joints shall be made with PVC male adapters. The solvent weld joints shall be made in the following manner:
  - a. Thoroughly clean the mating pipe and fitting with a clean dry cloth.
  - b. Apply a uniform coat of solvent to the outside of the pipe with an approved applicator.
  - c. Apply solvent to the fitting in a similar manner.
  - d. Re-apply a light coat of solvent to the pipe and quickly insert it into the fitting.
  - e. Give the pipe or fitting a quarter turn to ensure even distribution of solvent and make sure the pipe is inserted to the full depth of the fitting socket.
  - f. Hold in position for 15 seconds.
  - g. Wipe off excess solvent that appears at the outer shoulder of the fitting.
  - h. Care should be taken not to use an excess amount of solvent, thereby causing an obstruction to form on the inside of the pipe.
  - i. The joints shall be allowed to set at least 24 hours before pressure is applied to the system on PVC pipe.
  - j. As pipe is laid, installed pieces shall be restrained, so that slippage does not occur in previous joints. The Contractor shall monitor previous joints for slippage, until joints are set.

G. Sprinkler Heads:

1. Pop-up spray sprinkler heads shall be set flush with finish grade. Heads installed at curb or edge of walk shall have 4 inches between perimeter of head and concrete. Pop-up spray

heads shall be connected to rigid PVC using barbed fittings with 12-18 inches of 1/2-inch flexible tubing.

2. The Contractor shall be responsible for the proper adjustment of all sprinkler heads and shall immediately inform the Owner of any head whose location or performance may interfere with the intent of the design.
3. Sprinkler heads are to be located in a fashion similar to that shown on the Drawings. However, the Contractor shall be expected in the course of the work to exercise the necessary judgment to make location and type adjustments based on actual site conditions and coordination with tree locations, bed lines, or other landscape variables. No additional compensation will be given to the Contractor for changing head types, raising or lowering heads, or other work necessary due to failure to properly and completely coordinate with the landscaping work.
4. Unless noted otherwise, coverage will be provided for all new planting indicated on the Landscape Drawings.
5. Riser-mounted shrub heads shall be installed plumb, and at the proper height with respect to the landscaping. All heads shall be inset a minimum of 36" into the plant material and coordinated with the plant locations so that each head is concealed and protected within the planting. Risers shall be staked with steel angle and rustproof/sunlight resistant clamps. Both the risers and the stakes shall be painted with a durable flat black paint.
6. Tree spray heads shall be installed within the mulch ring of the tree, at a level close to the top of the mulch, so that the head does not pose a trip hazard and will not be damaged during mowing or other maintenance operations. Piping feeding the tree spray shall be installed in such a manner that no damage to the tree roots will occur.

#### H. Automatic Remote-Control Valves:

1. Control valves shall be installed in specified valve boxes. The valve shall have 6 inches of pea gravel installed below the bottom of the valve. If valve box does not extend to base of valve a valve box extension shall be installed.
2. Electrical connections to remote control valves shall be made with direct bury silicone wire connectors. Slack shall be left in wire so that the connection will extend 2 feet above finish grade.
3. Irrigation valves and valve boxes must be located in landscape beds or groundcover areas whenever possible
4. Label remote boxes with one-inch alpha numeric notation corresponding to the applicable alpha controller and numeric station.
5. Zone control valves and gate valves shall be installed in valve boxes as described in Section 2.01.H and in the Details.
6. All valves and valve boxes shall be installed plumb and at the proper height with respect to grade, having a minimum clearance from handle to shut valve box lid of no less than 3".
7. Valve boxes shall be lined at the bottom with a 3" layer of pea gravel.
8. All assembly bolts and stem packings shall be checked for proper tightness, and the valves shall be visually checked for leakage.

#### I. Electrical Wiring:

1. Control wire installed by this Contractor shall be installed with the main pipe line. The wire shall be color coded as specified, bundle and taped every 10 feet. The wire shall be laid in the trench prior to installing the pipe being careful to install wire beneath, and 6 inches to the side of, the main pipe line.
2. Any wire splices, which cannot be practically made in a valve box or controller cabinet, shall be housed in a splice box, and appropriately labeled.
3. All electrical work shall be performed in such a manner so as to conform to any and all prevailing building codes and regulations, and by persons whose qualifications and licensure are consistent with it.
4. Wire shall be buried in the ground at depths and clearances as prescribed by prevalent codes and shall be snaked in the trench to allow for expansion and contraction. All wiring shall be color-coded as prescribed in Section 2.01-F.2. and on the Drawings, bundled at ten-foot intervals, and identified at 150' intervals.
5. Low voltage wiring shall be installed with adequate slack and surge/ expansion loops. Use Direct Bury Silicone filled connectors and sealant. A minimum of one spare wire shall be run from the last valve in each direction to the controller location(s).
6. Unless otherwise noted, it shall be assumed that the Electrical Contractor shall furnish power feeds to the controller locations, but that connection to the equipment shall be the responsibility of the Irrigation Contractor

J. Lightning Protection:

1. The Contractor shall furnish and properly install all applicable lightning protection devices for the control system and shall see that the system is prepared for operation in a lightning-intensive environment. This equipment shall include (for each controller), but not be limited to, an approved 3-wire type 120-VAC primary arrestor, such as the Intermatic #AG2401, and controller valve output protection on the individual zone circuits, if not already included internally in the controller circuit.
2. In addition to the bonded ground wire installed with the power wiring, the Contractor shall provide at each field controller location an earth ground, having a measured resistance to earth of ten ohms or less. Ground resistance shall be measured and approved by a representative of the controller manufacturer, or by an independent tester mutually agreed upon by the parties and paid by the Contractor. The use of grounds shared with other equipment, power supply grounds, building structure grounds or cold-water piping shall not be acceptable for the discharge from the arrestor equipment.
3. Each grounding unit shall consist of a minimum of two 8'x 5/8" copper-clad iron electrodes, installed coupled and stacked one on top of the other. If this does not result in an acceptable ground resistance level, the Contractor shall negotiate with the Owner to improve the grounds by further stacking or a grid of additional rods, or by running a minimum of 150' bare copper wire into the irrigated area and staking a rod at the end. The latter method should be done by trenching, or by plowing in a snaked pattern and pulling tight, to imbed the wire in the earth on either side of the puller hole.
4. Wire for grounding electrodes shall be solid bare copper, of the same size or larger than the largest power or neutral wire feeding the location. Minimum size for ground wire shall be #8AWG. Grounding wire shall be connected to the rods with suitable copper-clad or brass grounding clamps, and separate clamps shall be used for each wire being connected.

K. Automatic Controllers:

1. Controller(s) shall be installed as specified on accompanying detail drawing. It shall be equipped with valve output and primary input lightning protection and grounded to a standard 5/8-inch copper clad steel ground rod or rods driven a minimum of 8 feet into the ground and clamped. Ground rod earth resistance shall not exceed fifteen (15) ohms.
2. All stations should run in sequence from the closest to the clock and in order around the site.
3. Provide separate earth ground lug based on regional requirements for additional surge and lightning protection and the irrigation specifications. Grounding requirements must meet the American Society of Irrigation Consultants, ASCI, grounding specifications for irrigation control products.
4. Controller locations shall be determined using the Drawings as a guide, but shall be coordinated and confirmed in the field with the Landscape Architect or Engineer.
5. The Contractor shall make sure that controller cabinets are properly sealed to keep out weather and pests.
6. No modifications shall be made to the controller equipment, which may adversely affect the product warranties.
7. The Contractor, based on recommendations provided by the Landscape Architect or Engineer shall perform initial programming of the controllers.
8. Each controller shall be furnished with a legible laminated diagram, showing a sketch of the area covered by the controller, and the locations of the various zones. This diagram shall be affixed to the inside of the controller door.
9. The installation of the wiring inside the controllers shall be clean and neat, with slack left coiled and tied. Extra wires shall be wire-nutted and moved aside. The wiring shall be arranged in such a manner that the controller panel remounts easily without being "stuffed" back into the cabinet. The Owner reserves the right to correct unsafe or unserviceable wiring and back charge the Contractor.
10. Wire nuts used for connections within the cabinet shall have metallic threads. Those with plastic threads are unacceptable.
11. All unused accessories, hardware and paperwork furnished with the controller(s) shall be turned over to the Owner, and a minimum of two cabinet keys shall be furnished.

L. Road Crossings:

1. Exact locations of road crossings shall be pre-determined on-site. As long as resulting depth will be in accordance with applicable codes, the road crossings shall be buried to a depth equal to the mainline piping, so no offsets will be required in the main. Absolutely NO cutting of pavement or soil cement will be permitted without the prior approval of the Owner.
2. Sleeves shall be sealed at each end after all utilities are run through.
3. If road crossings have been installed by others, the contractor shall verify the existence and location of same at his earliest involvement in the project and shall advise the Owner's

Representative IMMEDIATELY if a required sleeve cannot be located or is undersized, damaged, too short, obstructed or otherwise unusable.

4. The locations of all sleeves used by the Contractor shall be marked on the curbs in a permanent but unobtrusive manner to be agreed upon by the parties and shall be shown with accurate measurements on the "As-Built" Drawings. This shall be done even if someone installed the sleeves other than the Contractor.

### 3.3 RECORD DRAWINGS

#### A. Required Daily Information:

1. On site "as built" shall be kept up to date daily and be accessible upon demand by Owner/Landscape Architect or Engineer. All piping shall be dimensioned and drawn to scale. Remote control valves and isolation valves shall have two measurements from fixed objects.
2. The Contractor shall at the time of final inspection furnish to the Owner/Landscape Architect or Engineer one mylar and three blue line copies of finished "as built." Such drawings shall include all approved field changes, dimensions legends, pipe sizes, valve numbers (corresponding to controller program), and Installer's name and phone number.

#### B. Location and Accessibility

1. The above information shall be kept on the job site in the possession of the Contractor and shall be kept available for inspection by the Owner's Representative.

#### C. Drawing Production:

1. The Contractor shall be responsible for preparing, or causing to be prepared, reproducible "As-Built" Drawings from the record data, printed on archival quality media. These Drawings shall be surrendered to the Owner prior to final acceptance and payment for the work. Failure to do so may result in forfeiture of bonds or retainage held, and/or other reparations available to the Owner under the law.

### 3.4 TESTING AND INSPECTION

#### A. On-Site Inspection:

1. At any time during the installation of the irrigation system by the Contractor, the Owner/Landscape Architect or Engineer will visit the site to make official inspections.
2. Upon request, the Contractor will be required to uncover specified work as directed by the inspector without compensation.
3. Should the material, workmanship or method of installation not meet the standards specified herein, the Contractor shall replace the work at his own expense.

#### B. Testing:

1. Pipeline testing shall be done as work progresses. Hydrostatic tests will be performed in the mainlines and witnessed by the Owner's Representative. The Contractor may elect to perform the test prior to installation of the zone valves, and the system mainline network may be tested in sections or as a whole. The test pressure shall be 100 PSI, which shall be maintained for a period of not less than one hour.
2. All other piping will be inspected visually for leaks. The Contractor shall repair any leaks found, and any subsequent damage, at no cost to the Owner.

C. Adjustment of System:

1. The Contractor shall balance and adjust all components of the system so that they are operating at optimum levels of performance and efficiency.
2. At such time as designated by the Owner, the Contractor shall return to the job and readjust the heights of sprinkler heads to conform to the finished sod and planting.

D. Final Inspection and Acceptance:

1. Within ten days of completion of the work under this contract, the Contractor shall notify the Owner's Representative, who shall schedule a meeting on-site of all interested parties, for the purpose of making a final inspection of the system.
2. The Contractor shall demonstrate the system, and his conformance to the Drawings, Specifications, and all subsequent addenda.
3. If any work proves incomplete or unacceptable, a punch list shall be prepared, and all work required shall be performed by the Contractor to the satisfaction of the Owner before the work can be considered acceptable.
4. The Contractor is expected to know his responsibilities under this Contract and shall see that all work is complete before requesting the inspection. Repeated or otherwise useless inspections resulting in extra cost to the Owner and brought about due to by the failure of the Contractor to complete the work or react to punch lists in a timely fashion may result in chargebacks to the Contractor.

**3.5 MAINTENANCE**

- A. Maintenance shall commence after each zone is completed and the maintenance period shall continue until 1 year after final acceptance accepted by the Owner. Extreme care shall be taken to instruct the Owner or his representatives in general maintenance and operation procedures.

**3.6 WARRANTY**

- A. Submit a guarantee, for one year from final inspection and acceptance, against defects and malfunctions in equipment, and against faulty workmanship. The guarantee shall state the name of the Owner, provide full guarantee terms, effective and termination dates, name of contractor providing guarantee, and his address and telephone number. It shall be signed by the chief executive of the company and notarized.

END OF SECTION

**SECTION 02840**  
**GUARDRAIL AND HANDRAIL**

**PART 1 GENERAL**

**1.01 Section Includes**

- A. FDOT Guardrail
- B. FDOT Aluminum Pipe Handrail

**1.02 Related Sections**

- A. Guardrail Products and Installation - FDOT Index No. 400, FDOT Specification Section 536
- B. Aluminum Handrail Products and Installation - FDOT Index No. 520

**1.03 Scope of Work**

Furnish all materials, equipment, transportation, tools and labor, unless otherwise specified, to construct guardrail, handrail, and other appurtenances, and all items called for or that could reasonably be inferred from the drawings, including posts, anchors, base plates, concrete pads, all accessories for a complete job ready to operate. If any items for a complete job are omitted or not shown, the Contractor shall furnish and install the same without cost to the Owner.

**1.04 References**

- A. Requirements defined in this section are supplemental to FDOT specifications. Products identified herein relate to FDOT options.
- B. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
- C. Florida Department of Transportation Roadway and Traffic Design Standards, latest edition.

**1.05 Submittals**

- A. Provide shop drawings which indicate the following:
  - 1. Guardrail layout including post locations and anchorage
  - 2. Handrail layout including anchor and base details

**PART 2 PRODUCTS**

**2.01 Guardrail Posts**

Provide timber posts

**2.02 Guardrail End Anchorage**

Provide end anchorage type IV.

**2.03 Aluminum Pipe Handrail**

Provide bicycle facility type.

**PART 3 EXECUTION - Not Used**

**END OF SECTION**

SECTION 32922  
TURF AND GRASSES

PART 1 GENERAL

1.1 Section Includes

- A. Soil preparation, sodding, fertilizing, watering, and maintenance of grassed areas.

1.2 References

- A. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest implemented edition.

1.3 Warranty

- A. All seeding and sod shall be warranted by the General Contractor to be true to name and in a vigorous growing condition through one growing cycle including one summer and one winter season.

1.4 Maintenance During Construction

- A. Begin maintenance immediately after sodding or seeding. Sod and/or seed shall be watered, sprayed, fertilized, cultivated, mowing and otherwise maintained and protected until acceptance by Owner. Correct defective work as soon as possible after it becomes apparent and weather and season permit. Continue to maintain lawns for 1 year after Owner acceptance and close out of the construction period. Make weekly inspections to determine moisture content of soil and adjust watering schedule established by irrigation system installer to fit conditions. After grass growth has started, areas that fail to show uniform stand of grass for any reason whatsoever shall be re-sodded in accordance with Construction Drawings and as specified herein. Such areas shall be re-sodded repeatedly until areas are covered with satisfactory growth of grass at no additional cost to Owner. Topsoil conditioning or removal and replacement shall be performed if required to facilitate establishment of grass at no cost to Owner. Watering shall be done in such manner and as frequently as is deemed necessary by Owner to assure continued growth of vigorous, healthy grass. Water areas of site in such a manner as to prevent erosion due to excessive quantities applied over small areas and to avoid damage to finished surface due to watering equipment. Water for execution and maintenance will be provided by Contractor at no expense to Owner. Contractor shall furnish portable tanks, pumps, hose, pipe, connections, nozzles, and any other equipment required to transport water from available outlets and apply it to sodded areas in approved manner. Initiate mowing of sodded areas when grass has attained height of 4 inches. Maintain grass height to 3" for Bahia. Not more than 1/3 of grass leaf shall be removed at any cutting and cutting shall not occur less than 10 days apart. Heavy cuttings shall be removed to prevent destruction of underlying turf. If weeds or other undesirable vegetation threatened to smother planted species, such vegetation shall be mowed, or in case of rank growths, shall be uprooted, raked and removed from area by methods approved by Owner. Contractor shall repair damage resulting from trespass, erosion, washout settlement, or other causes at their expense.

## PART 2 PRODUCTS

### 2.1 Lime

- A. Lime shall be agricultural grade dolomitic limestone, ground sufficiently fine so that at least 80 percent will pass through a No. 8 sieve, and it shall contain not less than 80 percent calcium carbonate equivalent. Moisture content at time of delivery shall not exceed 8 percent.

### 2.2 Fertilizer

- A. Refer to Section 32930 Part 2 Paragraph J.

### 2.3 Water

- A. Water shall be free from oil, acid, alkali, salts, and other harmful substances.

### 2.4 Topsoil

- A. In-situ natural, friable, fertile, fine sandy-loamy soil possessing characteristics of representative topsoil in the vicinity that produces heavy growth. Topsoil shall have a pH range of 5.5 to 7.4 percent, free from subsoil, objectionable weeds, litter, sods, stiff clay, stones larger than 1-inch in diameter, stumps, roots, trash, herbicides, toxic substances, or any other material which may be harmful to plant growth or hinder planting operations. Top soil shall contain a minimum of three percent organic material and maximum of twenty percent.
- B. Topsoil shall be tested for ph, nutrients, and percent organics.
- C. Salvaged or Existing Topsoil: Reuse suitable topsoil stockpiled on-site or existing topsoil undisturbed by grading or excavation operations. Clean topsoil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.
- D. Imported Topsoil: Supplement salvaged topsoil with imported topsoil from off-site sources when existing quantities are insufficient. Imported topsoil shall match the requirements of the in-situe topsoil described above. Additionally:
  - 1. Obtain topsoil displaced from naturally well-drained sites where topsoil occurs at least 6 inches deep; do not obtain from agricultural land, bogs, or marshes.
  - 2. Verify borrow and disposal sites are permitted as required by state and local regulations. Obtain written confirmation that permits are current and active.
  - 3. Obtain permits required by state and local regulations for transporting topsoil. Permits shall be current and active.
- F. Amend existing and imported topsoil as directed by testing company.

### 2.5 Organic Soil Amendments

- A. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.
- B. Back to Nature Cotton Burr Compost or approved equivalent.
- C. Compost: Decomposed organic material including leaf litter, manure, sawdust, plant trimmings and/or hay, mixed with soil.
- D. Pecan Hulls: Composted pecan hulls for local source.
- E. Biosolids: Use Grade 1 containing lower pathogen levels.
- F. Worm Castings: Earthworms.

## 2.6 For Inorganic Soil Amendments

- A. Lime: ASTM C602, Class O agricultural limestone containing a minimum of 80 percent calcium carbonate equivalent with a minimum of 95 percent passing No. 8 sieve and minimum of 55 percent passing No. 60 sieve.
- B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing No. 6 sieve and a maximum of 10 percent passing No. 40 sieve.
- C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.
- D. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.

## 2.7 Sod

- A. Sod shall be either field or nursery grown sod true to the species specified on the drawings. The Contractor shall obtain Landscape Architect's approval of the source of the sod prior to cutting the sod.
- B. Sod grown on soil high in organic matter, such as peat, will not be acceptable. The consistency of sod shall be such that it will not break, crumble or tear during handling and placing. Sod shall be reasonably free of stones, crab grass, noxious weeds, and other objectionable plants or substances injurious to plant growth.
- C. Sod shall have at least 1 inch of soil adhering firmly to the roots and cut in rectangular pieces with the shortest side not less than 12 inches. At the time of cutting sod the grass shall be mowed to a height not less than 2 inches nor more than 4 inches.
- D. Sod cut for more than 48 hours shall not be used without the approval of the Landscape Architect.

## PART 3 EXECUTION

### 3.1 Regrading of Topsoil

- A. Topsoil shall be graded reasonably smooth and level after final settlement. All humps shall be removed and depressions or eroded areas filled in with additional topsoil before proceeding with seeding or sodding.

### 3.2 Sod

#### 1. Newly Graded Subgrades:

- a. Do not place topsoil until subgrade has been approved by the Landscape Architect or Engineer.
- b. Before placing topsoil, rake subsoil surface clear of stones, debris, and roots. Disk, drag, harrow, or hand rake subgrade to depth of 4 inches and remove stones larger than 1 -1/2 inches to provide bond for topsoil.
- c. Spread topsoil to a depth of 6 inches but not less than required to meet finish grades after light rolling and natural settlement. Adjust depth of topsoil in areas adjacent to paved surfaces or curbs to allow for the placement of sod.

#### 2. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface as follows:

- a. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
- b. Disk, drag, or harrow surface soil to a depth of at least 6 inches.
- c. Remove stones larger than 1 -1/2 inch in any dimension and sticks, roots, trash, and other extraneous matter.

- d. Legally dispose of waste material, including grass, vegetation, and turf.
  - e. Adjust depth of topsoil in areas adjacent to paved surfaces or curbs to allow for the placement of sod.
- 3. Incorporate soil amendments and commercial fertilizer into the top 6 inches of topsoil to achieve the specified topsoil requirements. Till soil to a homogenous mixture of fine texture.
- 4. Grade areas to finish grades, filling as needed or removing surplus topsoil. Float areas to smooth, uniform grade as indicated on the Drawings. Lawn areas shall slope to drain.
- 5. Where no grades are shown, areas shall have a smooth and continual grade between existing or fixed controls, such as walks, curbs, catch basin, steps, or buildings. Roll, scarify, rake, and level as necessary to obtain true, even lawn surfaces. Finish grades shall meet approval of Owner.
- 6. Sod beds shall be firmed by rolling before seeding begins.

### 3.3 Sodding

- A. Provide sod in areas indicated on the Drawings and in all disturbed areas from irrigation trenching, and/or construction operations. Sodding shall also be used in un-stabilized ditches and drainage swales and on all un-stabilized embankment slopes steeper than 3 to 1.
- B. Place sod with the edges in close contact and alternate courses staggered. Lightly tamp or roll to eliminate air pockets. On slopes 2 to 1 or steeper, stake sod with not less than 4 stakes per square yard and with at least one stake for each piece of sod. Stakes shall be driven with the flat side parallel to the slope. Do not place sod when the ground surface is frozen or when air temperature may exceed 90 degrees F. Water the sod thoroughly within 8 hours after placement and as often as necessary to become well established.
- C. In ditches, the sod shall be placed with the longer dimension perpendicular to the flow of water in the ditch. On slopes, starting at the bottom of the slope, the sod shall be placed with the longer dimension parallel to the contours of the ground.
- D. All exposed edges of sod shall be buried flush with the adjacent turf.

### 3.4 Watering

- A. Immediately begin watering and continually keep moist until the sod has firmly knit itself to the topsoil.

### 3.5 Protection of Work

- A. Protect newly seeded and sodded areas from all traffic by erecting temporary fences and signs. Protect slopes from erosion. Properly and promptly repair all damaged work when required.

### 3.6 Application of Fertilizer

- A. Apply fertilizer to grass or sodded areas in 2 applications with thorough watering immediately following. First application shall be 1 week before sodding at rate of 35 pounds per 1,000 square feet harrowed into top 2 inches of soil. Second application shall be done at rate of 25 pounds per 1,000 square feet, immediately following second mowing. Peg sodded slopes greater than 3:1 to hold in place.

### 3.7 Clean-Up

- A. At the time of final inspection of work, but before final acceptance, remove from seeded and sodded areas all debris, rubbish, excess materials, tools, and equipment.
- B. Refer to section 32930.

3.8 Lawn Replacement

- A. Lawns not showing a close uniform stand of healthy specified grasses at the end of the guaranty period shall be replaced and maintained until acceptance. Scattered bare spots, none of which is larger than one square foot, will be allowed up to a maximum of 3% of the total area.

END OF SECTION

SECTION 31111  
TREE PROTECTION AND TRIMMING

PART 1 - GENERAL

1.1 SECTION INCLUDES:

- A. Furnish all labor, materials, equipment, related services and supervision necessary for or incidental to the protection and trimming of existing trees that interfere with or are affected by execution of the Work as shown or indicated on the Drawings and/or as specified.

1.2 RELATED DOCUMENTS:

- A. Drawings and General provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this Section.
- B. All other Divisions of the Contract Documents. Refer to each Division's specifications and drawings for all requirements, including but not limited to the following:
  - 1. Site Drainage – Section 310100.
  - 2. Earth Moving – Section 337201.

1.3 SUBMITTALS:

- A. Product Data: For each type of product indicated.
- B. Tree Pruning Schedule: Written schedule from tree service detailing scope and extent of pruning of trees.
- C. Qualification Data: For tree service firm and arborist.
- D. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

1.4 DEFINITIONS:

- A. Tree Protection Zone: Area surrounding individual trees or groups of trees to remain during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.
- B. Arborist Qualifications: An arborist certified by ISA or licensed in the jurisdiction where Project is located.
- C. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance – Standard Practices (Pruning)."
- D. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination".
  - 1. Before tree protection and trimming operations begin, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, and other concerned entities to review tree protection and trimming procedures and responsibilities.

1.5 QUALITY ASSURANCE:

- A. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed tree protection and trimming work similar to that required for this Project and that will assign and experienced qualified arborist to Project site during execution of tree protection and trimming.

## PART 2 - PRODUCTS

### 2.1 MATERIALS:

- A. Drainage Fill: Selected crushed stone, or crushed or uncrushed gravel, washed ASTM D448, Size 24, with 90 to 100 percent passing a 2-1/2 inch sieve and not more than 10 percent passing a 3/4 inch sieve.
- B. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles: friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch in diameter; and free of weeds, roots, and toxic and other non-soil materials.
  - 1. Obtain topsoil only from well-drained sites where topsoil is 4 inches deep or more; do not obtain from bogs or marshes.
- C. Filter Fabric: Manufacturer's standard, non-woven, pervious, geotextile fabric of polypropylene, nylon or polyester fibers.
- D. Chain-Link Fence: Metallic-coated steel chain-link fence fabric or 0.120 inch diameter wire; a minimum of 48 inches high; with 1.9 inch diameter line posts; 2-3/8 inch diameter terminal and corner posts; 1-5/8 inch diameter top rail; and 0.177 inch diameter bottom tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system.
- E. Organic Mulch: Shredded hardwood free of deleterious materials.

## PART 3 - EXECUTION

### 3.1 PREPARATION:

- A. Temporary Fencing: Install temporary fencing around tree protection zones to protect remaining trees and vegetation from construction damage. Maintain temporary fence and remove when construction is complete.
  - 1. Install chain-link fence according to ASTM F 567 and manufacturer's written instructions.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Mulch areas inside tree protection zones and other areas indicated on drawings.
  - 1. Apply 3 inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.
- D. Do not store construction materials, debris, or excavated material inside tree protection zones. Do not permit vehicles or foot traffic within tree protection zones; prevent soil compaction over root systems.
- E. Maintain tree protection zones free of weeds and trash.
- F. Do not allow fires within tree protection zones.

### 3.2 EXCAVATION:

- A. Install shoring or other protection support systems to minimize sloping or benching of excavations.
- B. Do not excavate within tree protection zones, unless otherwise indicated.
- C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks and comp soil to expose roots.
  - 1. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection are not practical, cut roots approximately 3 inches back from new construction.

2. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
- D. Where utility trenches are required within tree protection zones, tunnel under or around roots by drilling, auger boring, pipe jacking, or digging by hand.

### 3.3 RE-GRADING:

- A. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade beyond tree protection zones. Maintain existing grades within tree protection zones.
- B. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist, unless otherwise indicated.
1. Root Pruning: Prune tree roots exposed during grade lowering. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots with sharp pruning instruments: do not break or chop.
- C. Minor Fill: Where existing grade is 6 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single un-compacted layer and hand grade to required finish elevations.
- D. Moderate Fill: Where existing grade is more than 6 inches but less than 12 inches below elevation of finish grade, place drainage fill, filter fabric, and topsoil on existing grade as follows:
1. Carefully place drainage fill against tree trunk approximately 2 inches above elevation of finish grade and extend not less than 18 inches from tree trunk on all sides. For balance of area within drip-line perimeter, place drainage fill up to 6 inches below elevation of grade.
  2. Place filter fabric with edges overlapping 6 inches minimum.
  3. Place fill layer of topsoil to finish grade. Do not compact drainage fill or topsoil. Hand grade to required finish elevations.

### 3.4 TREE PRUNING:

- A. Prune trees to remain that are affected by temporary and permanent construction.
- B. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by arborist.
- C. Pruning Standards: Prune trees according to ANSI A300 Part 1 as follows:
1. Type of Pruning: Cleaning and thinning.
- D. Cut branches with sharp pruning instruments; do not break or chop.
- E. Chip removed tree branches and dispose of off-site.

### 3.5 TREE REPAIR AND REPLACEMENT:

- A. Promptly repair trees damaged by construction operations within 24 hours. Treat damaged trunks, limbs, and roots according to arborist's written instructions.
- B. Remove and replace trees indicated to remain that die or are damaged during construction operations that Architect determines are incapable of restoring to normal growth pattern.
1. Provide new trees of same size and species as those being replaced; plant and maintain as specified in Section 329300 – Plants.
  2. Provide new trees of 3 to 6 inch caliper size and of a species selected by Architect when damaged trees more than 6 inches in caliper size, measured 12 inches above grade, are required to be replaced. Plant and maintain new trees as specified in Section 329300 – Plants.
- C. Aerate surface soil, compacted during construction, 10 feet beyond drip line and no

closer than 36 inches to tree trunk. Drill 2 inch diameter holes a minimum of 12 inches deep at 24 inches O.C. Backfill holes with an equal mix of augured soil and sand.

3.6 DISPOSAL OF WASTE MATERIALS:

- A. Burning is not permitted.
- B. Disposal: Remove excess excavated material and displaced trees from Owner's property.

END OF SECTION

SECTION 32930  
PLANTS

PART 1 - GENERAL

1.1 Section Includes

- A. Materials, installation, maintenance of trees, ground cover, and shrubs

1.2 Related Sections

- A. Section 32922 - Turf and Grasses
- B. Section 32842 – Irrigation System
- C. Section 31111 – Tree Protection and Trimming
- D. FDOT 580 – Landscape Specification

1.3 General Requirements

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

The landscaping shall be performed by a contractor who is fully experienced in projects of this scope within project limits of construction, is an approved service provider and whose main business is landscaping. The subcontractor shall be subject to the approval of the Landscape Architect.

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

1.4 Submittals

- A. Submit to the Landscape Architect for approval, complete written maintenance instructions for each type of plant furnished under the Contract.
- B. Submit soil test from within each median section and on both sides of the roads where there are planting beds. Test soil to insure compliance with ASTM D5268 for topsoil. Soil samples shall be taken a minimum of 6" deep in turf areas and 12" deep in planting beds.
- C. Submit representative samples or photographs of all of the required plant materials specified by the Landscape Architect. Photographs must include a readable measuring stick to confirm plant sizes.

1.5 Warranty

- A. All plant materials shall be guaranteed for one (1) year from the time of final inspection and interim acceptance shall be alive, established and in thriving condition for each specific kind of plant at the end of the guaranteed period.
- B. At the end of the guarantee period, any plant required under this contract that is dead or not in satisfactory growth, as determined by the Landscape Architect, shall be removed and replaced. Replacement plants shall have an extended guarantee, as noted above, from time of replacement.

## 1.6 Maintenance

- A. Maintenance shall commence after each plant is planted and the maintenance period shall continue until 1 year after final acceptance accepted by the Owner. Extreme care shall be taken to instruct the Owner or his representatives in general maintenance procedures.

## PART 2 - PRODUCTS

### 2.1 Materials

- A. Plant species and size shall conform to those indicated in the Plant List and in plant locations shown on the Drawings. All plants shall be Florida Grade No. 1, or better in accordance with Florida Grades and Standards for Nursery Stock, 2015 edition.
- B. Plants shall be sound, healthy, vigorous, free from plant diseases, insects, pest, or their eggs, and shall have healthy normal root systems. Plants shall be nursery grown stock, freshly dug or container grown. No heeled in, cold storage or collected stock will be acceptable.
- C. Shape and Form:
  - 1. Plant material shall be symmetrical, typical for the variety and species, and shall conform to the measurements specified in the Plant List.
  - 2. Plants used where symmetry is required shall be matched as nearly as possible.
  - 3. Plants shall not be pruned prior to delivery except as authorized.
  - 4. All trees shall have been transplanted or root pruned at least once in the past 3 years.
  - 5. Shrubs shall have been twice transplanted, have fully developed root systems, be heavily canned with foliage to base, fulfill dimensions required, and be typical of the species.
  - 6. Ground covers shall have sturdy fibrous root systems and shall be heavily leafed.
- D. Measurement: The height and/or width of trees shall be measured from the ground or across the normal spread of branches with the plants in their normal position. The measurement shall not include the immediate terminal growth.
- E. Substitutions in plant species or size shall be made only with the written approval of the Landscape Architect.
- F. Ground cover plants shall be planted in beds which receive 12 inches of approved topsoil, thoroughly disced into the soil. The finished surface, compacted and settled, shall conform generally with and at all points to the required grade. Plants shall be spaced as shown, and in accordance with the best practices of the trade.
- G. Planting Soil/Topsoil:
  - 1. If in place soil is unsuitable for planting (not meeting ASTM D5268 standards) as determined by laboratory soil testing. Supply topsoil as needed from naturally well-drained sites conforming to ASTM D5268. Remove the unsuitable soil and replace with approved topsoil at least 12 inches deep in planting beds and 6 inches deep in turf areas. Do not obtain topsoil from bogs or marshes. Recommended soil amendments to the insitu soil from the testing laboratory may be considered as an alternate to replacement
  - 2. Soil for backfilling around plants and planting beds shall be a good grade of garden loam as approved. Soil shall be free of heavy clay, coarse sand, stones, lumps, sticks or other foreign material. The soil shall not be delivered or used in a muddy condition.

3. There shall be a slight acid reaction to the soil with no excess of calcium or carbonate. The soil shall be free from excess weeds or other objectionable material.
4. Soil for trees and shrubs shall be delivered in a loose, friable condition. All trees should average approximately 1 cubic yard per tree. There will be 12-inches of planting soil in ground cover areas and 1/8 cubic yard per shrub or vine.
5. No marl shall be used in ground cover planting beds.

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

I. Soil mixture should be the following mixture:

1. 25% Perlite or Course Sand
2. 25% Vamiculite
3. 25% Canadian peat Moss
4. 25% Organic Compost
5. Incorporate Terra Sorb at the rate of 1 lb. per 100 sq. ft. per mandatory instructions.

J. Fertilizer:

1. Deliver fertilizer, mixed as specified, in original unopened standard size bags showing weight, analysis and name of manufacturer. Containers shall bear manufacturer's guaranteed statement of analysis, or manufacturer's certificate of compliance covering analysis shall be furnished to Owner. Store fertilizer in such manner that it shall be kept dry.
2. Base percentages of nitrogen, phosphorus, and potash on laboratory test recommendations as approved by Owner. For bidding assume 10 percent nitrogen, 6 percent phosphorus, and 4 percent potash by weight. At least 50 percent of total nitrogen shall contain no less than 3 percent water-insoluble nitrogen. At least 60 percent of nitrogen content shall be derived from super-phosphate containing not less than 18 percent phosphoric acid or bone meal containing 25 - 30 percent phosphoric acid and 2 - 3 percent nitrogen. Potash shall be derived from muriate of potash containing 55 - 60 percent potash.

K. Peat Moss:

1. Peat moss shall be Michigan peat moss or approved equal in color and consistency.
2. Peat moss shall be moss peat, finely shredded to pass 1/2-inch mesh and shall be no less than 90 percent organic material by weight, with ash content by ignition of no more than 10 percent.
3. Material shall contain 35 - 66 percent moisture by weight, but shall have water-holding capacity of 150 - 200 percent.
4. Material shall have pH value of 4 to 5.
5. Material may be imported supplied in bales or domestic furnished in bulk. If furnished in bulk, material and its source shall be acceptable to Owner.

L. Mulch:

1. Shredded hardwood mulch shall be used as mulching material. Cypress Wood shall not be used.

## PART 3 EXECUTION

### 3.1 Planting Bed Preparation

- A. Prior to preparing planting beds, the area shall conform to the lines and grades shown on the plans and the condition of the subsoil shall be approved by the Owner.
- B. Contractor shall verify the location of any underground utilities on site.
- C. Planting beds where existing subsoil is determined by Owner to be unsuitable for plant growth in accordance paragraph Unsuitable Subsoil herein shall be excavated to a depth of 12 inches or as needed to provide adequate drainage. Replace excavated soil with approved topsoil.
- D. Planting beds where existing subsoil is acceptable by Owner, the beds shall be prepared as follows:
  - 1. Seven days prior to commencing establishment of the planting areas, apply non selective herbicide. Remove dead vegetation.
  - 2. Loosen subsoil to a depth of 12 inches. Remove stones larger than 1 inch in any dimension, sticks, roots, rubbish, and other extraneous matter and legally dispose of them off site.
  - 3. Spread 3 inches of soil conditioner over the surface of the planting area and incorporate into the top 12 inches of the soil. Prior to spreading soil conditioner, add or remove topsoil as needed to accommodate addition of soil conditioner and to achieve finish grade.
  - 4. Till planting soil mix to a homogenous mixture of fine texture.
  - 5. Float areas to smooth, uniform grade providing positive drainage out of planting beds and away from structures or as indicated on the Drawings.

### 3.2 Planting Procedures

- A. **Plant Locations:** All plants shall be located as shown on the Drawings, to dimensions if shown, to scale if not dimensioned. Large areas or beds shall be scaled and the plants spaced evenly as specified on the plant list. Layout of the trees and shrub beds shall be approved by the Landscape Architect or Engineer is required before any plants may be installed. Field adjustments may be recommended prior to planting for utility or aesthetic purposes by the Landscape Architect without additional costs as long as plant quantities and or species do not change. If the contractor does not call the Landscape Architect to approve the layout of the plant material prior to planting, the cost to relocate plant material for utilities or aesthetic purposes shall be bared by the contractor.
- B. **Tree Staking:** All tree staking and bracing shall be included herein in accordance with sound nursery practice and shall generally be in accordance with the details shown. Furnish all materials required for staking and bracing as approved.
- C. **Tree Pits:** Pits for trees shall be at least 2 feet greater in diameter than the specified diameter of the root ball. Other specifications for tree pits shall be as shown on the tree planting detail.
- D. **Digging and Handling:**
  - 1. Plants shall be handled at all times so that roots or balls are adequately protected from sun or drying winds. Tops or roots of plants allowed to dry out will be rejected.
  - 2. Balled or burlapped plants shall be moved with firm, natural balls of soil, in sizes specified by Florida Grading and Standard for Nursery Stock, 2015 edition. No plant shall be accepted when the ball of earth surrounding its roots has been cracked or broken. All trees, except palm and seedling pines, shall be dug with

ball and burlapped. Root pruning shall have been done a minimum of four weeks before planting at the job.

3. Plants too large for 2 persons to lift in and out of holes shall be placed with sling. Do not rock trees in holes to rise.
- E. When balled and burlapped plants are set, planting soil shall be carefully tamped under and around the base of the balls to prevent voids. All burlap, rope, wires, etc., shall be removed from the sides and tops of balls, but no burlap shall be pulled from underneath. Roots of bare rooted plants shall be properly spread out and planting soil carefully worked in among them.
- F. Before plants are backfilled with planting soil, fertilizer tables, Agriform 20-10-5 or equal, shall be placed in each pit. Provide three tablets for each tree and one for each shrub or vine.
- G. All plants shall be set straight or plumb, in locations shown on the Drawings. Except as otherwise specified, plants shall be planted in pits and shall be set at such level that, after settlement, they bear the same relation of the finished grade or surrounding ground as they bore to the grade of the soil from which they are taken, unless otherwise indicated in the planting details.
- H. Pruning shall be carefully done by experienced horticulturalist or arborist. Prune immediately upon acceptance by the Landscape Architect, including any broken branches, thinning all small branches and tipping back main branches (except main leaders).
- I. Excess soil and debris shall be disposed of off the project site unless ordered stockpiled by the Landscape Architect.

### 3.3 Obstructions Below Ground

- A. If underground construction utilities or obstructions are encountered in excavation of the planting areas, or pits, other locations for the plant material may be selected by the Landscape Architect.
- B. Such changes shall be done without additional compensation.

### 3.4 Tree and Plant Protection

- A. The Contractor shall remove only those trees selected for removal by the Landscape Architect. Prior to removal of said trees, the Contractor shall obtain a tree removal permit, if required. All other trees in the vicinity of the work shall be protected against damage by the Contractor until all work under the Contract has been completed. Removal of any unapproved trees shall result in a fine to the Contractor of \$500/inch trunk diameter of that tree that is removed.
- B. Consult with the Landscape Architect, and remove agreed-on roots and branches which interfere with construction. Employ qualified tree surgeon to remove, and to treat cuts.
- C. Provide temporary barriers in accordance with the provided detail, around each, or around each group of trees and plants.
- D. Protect root zones of trees and plants:
  1. Do not allow vehicular traffic or parking.
  2. Do not store materials or products.
  3. Prevent dumping of refuse or chemically injurious materials or liquids.
  4. Prevent puddling or continuous running water.
- E. Carefully supervise excavating, grading and filling, and subsequent construction operations, to prevent damage.
- F. In case of inadvertent damage to any tree, by the Contractor or any of his subcontractors or employees, the Contractor shall provide replacement of each size tree with a new tree of acceptable type, size and quality, subject in each case to the approval of the Owner.

- G. Completely remove barricades, including foundations, when construction has progressed to the point that they are no longer needed, and when approved by the Landscape Architect.
- H. Clean and repair damage caused by installation, fill and grade the areas of the site to required elevations and slopes, and clean the area, in accordance with the tree protection notes.
- I. Cover plants transported to project in open vehicles with tarpaulins or other suitable covers securely fastened to body of vehicle to prevent injury to plants. Closed vehicles shall be adequately ventilated to prevent overheating of plants. Evidence of inadequate protection following digging, carelessness while in transit, or improper handling or storage shall be cause for rejection. Plants shall be kept moist, fresh, and protected. Such protection shall encompass entire period during which plants are in transit, being handled, or are in temporary storage.

### 3.5 Clean Up

During landscape work, store materials and equipment where directed. Keep pavements clean and work area in an orderly condition.

Protect plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged planting.

Keep all planted areas free of debris, weeds, and insects. Cultivate, weed, and water until final substantial completion of the work.

Upon completion, remove all excess subsoil, cordage, wrappings, and other extraneous materials from the site.

Remove all tools, equipment, and other materials, except those necessary for maintenance work. Remove litter or other debris occurring from maintenance operations.

### 3.6 Acceptance

Inspection of the entire project or designated portions thereof shall be made upon written request of the Contractor.

A substantial completion inspection shall be conducted with all deficiencies noted and given to the Contractor as a list of items to be corrected. Substantial completion acceptance will not be issued until all punch list items have been completed and a re-inspection by the Owner finished.

For the purpose of establishing an "Acceptance" standard, all plant material shall be healthy, thriving, well rooted, evenly colored, variable, and free of weeds and disease.

Perform other operations necessary to complete maintenance and ensure that plants are healthy, vigorous, visually pleasing and undamaged.

Perform all maintenance tasks as specified in this Section.

Once the re-inspection for compliance with the punch list requirements has been conducted and barring any new deficiencies being noted during the re-inspection, written acceptance will be given for all work of this Section, exclusive of possible replacement of plant material subject to warranty.

If any deficiencies of requirements exist, they will be noted in writing.

Upon written notice of final completion, the Contractor will assume all responsibilities for maintenance of landscape work for a period of one year. The Contractor is responsible for all maintenance as specified in this Section from the day of installation until one year after final acceptance by the Owner.

At the conclusion of the warranty period, an inspection will be made to determine the condition of warranted plant material.

Remove all plant material noted as not being in a healthy growing condition.

At no additional cost, replace plant material during the following season with material of like kind and size, in accordance with specification for original plant materials.

Warranty period also applies to replaced material.  
Remove all tree staking and guys and dispose of the material off-site.

### 3.7 Replacement

- A. At the end of the 1 year warranty period, any plant required under this Contract that is dead or not in satisfactory growth as determined by the Landscape Architect shall be removed. Plants replaced shall be guaranteed for 90 days after date of replacement.
- B. Replacement of plants necessary during the guarantee period shall be the responsibility of the Contractor, except for possible replacements of plants resulting from removal, vandalism, acts of neglect on the part of others, or acts of nature.
- C. All replacements shall be plants of the same kind and size as specified in the landscape drawings. They shall be furnished and planted as herein specified. The cost shall be the responsibility of the Contractor.

END OF SECTION

**SECTION 03100**  
**CONCRETE FORMS**

**PART 1 GENERAL**

**1.01 Section Includes**

General formwork, forms, form liners, and coatings, form ties.

**1.02 Related Sections**

Section 03150 - Concrete Accessories

**1.03 References**

- A. American Concrete Institute (ACI) latest edition:
1. ACI 301 - Structural Concrete for Buildings
  2. ACI 318 - Building Code Requirements for Reinforced Concrete
  3. ACI 347 - Guide to Formwork for Concrete
  4. ACI SP-4 - Formwork for Concrete

**1.04 System Description**

Provide formwork to produce members of the size, shape, and exterior finish required, for the structural adequacy of the forms to carry construction loads without excessive deflection, and for the safe use of forms in connection with completion of the concrete work. The Contractor shall be responsible for any injury or damage arising from inadequate forms or from premature removal of formwork.

**1.05 Submittals**

Submit samples of patterned concrete form liner panels and form ties.

**PART 2 PRODUCTS**

**2.01 Formwork**

- A. Form ties shall be a watersealing snap-in type. For patterned concrete, use stainless steel snap ties.
- B. Plywood forms and liners shall be minimum grade B-B High Density Overlay Concrete Form Panels, Class I.
- C. Formwork lumber shall be straight and clean. All nails shall be withdrawn and surfaces in contact with concrete shall be thoroughly cleaned before reuse

- D. Metal forms shall be in accordance with ACI SP-4.

## **2.02 Patterned Concrete Form Liners**

- A. The special liners shall be configured in such a manner as to produce patterned finish concrete that will duplicate the surface appearance of the cut limestone building panels. The location, extent, and configuration of the surface treatment shall be as indicated on the Drawings. In addition to form release agents, rustication may be slightly beveled, approximately 1 to 8 maximum, to facilitate form release.
- B. Produce the patterned concrete with a smooth finish by using either plywood and/or tempered hardboard, complying with requirements for Grade A Forms, in conjunction with finished lumber, or approved fiberglass liners; or an approved equal liner. Liner joint marks shall not be apparent.

## **PART 3 EXECUTION**

### **3.01 General**

- A. Coordinate with other trades and properly place and locate in position all necessary dowels, bolts, anchors, anchor slots, inserts, sleeves, openings, hangers, metal ties and other fastening devices required for attachment and support of adjacent work. Securely anchor all embedded items.
- B. Formwork shall comply with ACI 347 and to shape, lines and dimensions of the members as indicated on the Drawings. Joints in forms shall be horizontal or vertical. Forms shall be properly braced or tied to maintain position and shape under all dead and live loads and to prevent leakage. Forms shall be assembled so their removal will not damage the concrete. Tolerances for formed surfaces shall be in compliance with ACI 301.
- C. Lumber formwork may be used for surfaces which will not be exposed to view. Use plywood or metal forms for exposed surfaces.
- D. Provide temporary openings at the base of forms greater than 4 feet high, if necessary, to facilitate cleaning and inspection immediately before depositing concrete.
- E. All external corners of concrete exposed to view shall be chamfered by using 3/4 inch by 3/4 inch by 45 degree wood stripping, except as otherwise indicated on the Drawings.

### **3.02 Grade A Forms**

- A. Unless otherwise indicated, Grade A forms shall be used for all exposed concrete.

- B. Grade A forms shall consist of steel forms lined with 3/16 inch thick tempered hardboard or 1/4 inch thick plywood, or by using plywood forms.
- C. Full sized sheets shall be used wherever possible. The edges of all sheets shall be straightened to insure tight, close fitting joints. Bulges or depressions more than 1/8 inch in 4 feet will not be permitted. Open joints which would permit leakage shall be sufficient cause for rejection of forms. Other tolerances shall be as allowed by ACI 347.

### **3.03 Grade B Forms**

- A. Use lumber, plywood or metal forms. All joints shall be solidly backed, aligned and made leakproof.
- B. Unless otherwise indicated, Grade B Forms are intended for use where concrete will not be exposed to view, such as below grade, below normal liquid levels in water-retaining structures, or inside manholes, boxes, vaults, etc.

### **3.04 Surface Treatment of Formwork**

The inside surface of lumber forms shall be soaked with clean water prior to placing concrete. All other forms shall be treated with an approved form oil or lacquer. If oil is used, all excess oil shall be wiped off.

### **3.05 Inspection of Formwork**

Concrete shall not be placed until the forms have been inspected by the E/A to assure surfaces in conformance with the Drawings and Specifications. The inspection of formwork by the E/A does not relate to the structural adequacy or the safety of the formwork.

### **3.06 Removal of Forms**

Forms shall be removed in accordance with requirements of ACI 318, without damaging the concrete. Leave shoring in place until concrete will safely support its own weight plus any live loads that may be placed upon it.

**END OF SECTION**

**SECTION 03150**  
**CONCRETE ACCESSORIES**

**PART 1 GENERAL**

**1.01 Section Includes**

Construction joints, anchors and inserts, waterstops

**1.02 Related Sections**

- A. Section 03100 - Concrete Forms
- B. Section 07900 - Joint Sealants

**1.03 References**

- A. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
  - 2. ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction

**1.04 Submittals**

Provide samples and certifications of all proposed materials.

**PART 2 PRODUCTS**

**2.01 Joint Fillers**

- A. Joint fillers shall be products of the following manufacturers, or equal
  - 1. W. R. Meadows, Inc., Elgin, Illinois
  - 2. W. R. Grace and Co., Cambridge, Massachusetts
- B. Preformed sponge rubber joint filler shall conform to ASTM D1752, Type I.
- C. Preformed cork joint filler shall conform to ASTM D1752, Type II.
- D. Preformed bituminous fiber joint filler shall be non\_extruding type conforming to ASTM D1751.
- E. Control joint strips shall have a minimum depth of 25 percent of slab thickness and a minimum thickness of 1/8 inch.

## **2.02 Joint Sealants**

Sealants for joints shall be in accordance with Section 07900.

## **2.03 Waterstop**

- A. Waterstop shall be either rubber (SBR or Neoprene) or PVC and shall be dense, homogeneous and uniform. PVC is preferred. Holes and imperfections shall be cause for rejection
- B. Waterstops for construction joints shall be 4 inch by 3/16 inch minimum split waterstop or 6 inch by 3/8 inch minimum with hollow center bulb. Waterstops for expansion joints shall be 9 inch by 3/8 inch with 3/4 inch hollow center bulb. Multiple rib type of waterstop is preferred, if available. Where size and type of waterstop are not indicated, 6 inch by 3/8 inch minimum with hollow center bulb shall be used.
- C. Provide prefabricated tees, crosses, and other configurations as required for all intersections of waterstop.

## **PART 3 EXECUTION**

### **3.01 Preparation**

Remove existing concrete and provide openings for installation of new work as indicated on Drawings. Repair all damage to existing work caused by concrete removal.

### **3.02 General**

- A. Arrange construction joint bulkheads to allow concrete to be placed between construction joints in one continuous operation.
- B. Provide construction joints with shear transfer keyways and waterstops as indicated. Unless otherwise indicated on the Drawings, spacing of construction joints for walls shall not exceed 75 feet.
- C. Erect bulkheads where shown on the Drawings or where approved by the E/A. Bulkheads shall be at right angles to the main reinforcement and shall produce a tongue and grooved joint of the configuration indicated on the Drawings. Install waterstop as indicated.
- D. Obtain the E/A's approval if it becomes necessary to eliminate or relocate construction joints shown on the Drawings.
- E. Tops of edge forms, bulkheads and screeds shall be set to the finished elevations and to provide uniform pitch to drains as indicated on Drawings.

### **3.03 Horizontal Joints**

Provide methods of achieving a leakproof joint. No horizontal construction joints will be permitted in slabs, beams, or girders

### **3.04 Vertical Joints**

Joints in reinforced slabs, beams, and girders shall be perpendicular to the axis or plane of the members joined.

### **3.05 Expansion Joints**

- A. Provide expansion joints and waterstops where indicated. Joint fillers shall be placed on each side of waterstops.
- B. Unless otherwise indicated, provide preformed sponge rubber or preformed cork filler. Allow for installation of two component traffic grade polyurethane sealant in compliance with Section 07900.
- C. For drives, pavements, parking areas, walks and slabs on grade, provide preformed non-extruding asphalt strip or bituminous fiber joint filler set 1/8\_inch below finished surface unless otherwise indicated. Tool concrete edges on each side of joint. No sealant is required.
- D. Unless otherwise indicated, provide preformed sponge rubber or cork filler with allowance for installation of two-component polysulfide sealant in compliance with Section 07900.
- E. Unless otherwise indicated, provide preformed sponge rubber or cork filler with allowance for installation of two component polysulfide sealant in compliance with Section 07900.

### **3.06 Waterstops**

- A. Provide continuous waterstops where so indicated on the Drawings
- B. Embed approximately half of the waterstop on each side of the joint. Field splice and joint PVC waterstop by heat sealing butt joints. Rubber waterstop shall be spliced or jointed with solid web rubber unions and the manufacturer's approved cold applied cement.
- C. All splices and joints shall be in accordance with the manufacturer's recommendations to produce a water-tight joint. Lap splices will not be permitted. Support and protect the waterstop during construction. Repair or replace all damaged waterstop.

**END OF SECTION**

**SECTION 03200**  
**CONCRETE REINFORCEMENT**

**PART 1 GENERAL**

**1.01 Section Includes**

Reinforcement for concrete, not including reinforcement for masonry.

**1.02 References**

- A. American Concrete Institute (ACI) latest edition:
  - 1. ACI 315 - Standard Practice for Detailing Reinforced Concrete Structures
  - 2. ACI 318 - Building Code Requirements for Reinforced Concrete
  
- B. American Society for Testing and Materials (ASTM) latest edition:
  - 1. ASTM A36 - Carbon Structural Steel
  - 2. ASTM A185 - Steel Welded Wire Reinforcement, Plain, for Concrete
  - 3. ASTM A615- Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
  
- C. Concrete Reinforcing Steel Institute (CRSI) latest edition:
  - 1. Manual of Standard Practice for Reinforced Concrete Construction

**1.03 Submittals**

- A. Certifications for reinforcement
  
- B. Reinforcement steel shop drawings prepared in accordance with ACI 315. Drawings shall indicate bending diagrams, shapes, dimensions, clearances, splicing and laps, accessories, and installation notes.

**PART 2 PRODUCTS**

**2.01 General**

- A. Reinforcement bars shall be ASTM A615, Grade 60 deformed bars, except as otherwise indicated.
  
- B. Smooth dowels shall be ASTM A615, Grade 60 plain bars
  
- C. Threaded dowels shall be ASTM A36.

- D. Welded wire fabric shall conform to ASTM A185. Where welded wire fabric is shown but not sized on Drawings, use 6" x 6" x W2.9 x W2.9 WWF.
- E. Accessories for proper installation of reinforcement shall conform to CRSI "Manual of Standard Practice for Reinforced Concrete Construction". Bar supports at exposed surfaces shall be Class C Plastic Protected.
- F. Reinforcement fabrication shall conform to ACI 315 and ACI 318, and approved shop drawings.

## **PART 3 EXECUTION**

### **3.01 Preparation**

- A. On porous subgrade or beddings, provide vapor barrier.
- B. Coordinate with other trades and properly place and locate in position all necessary reinforcement, dowels, bolts, anchors, anchor slots, inserts, hangers, metal ties, and other fastening devices required for attachment and support to adjacent work. Securely anchor all fixtures and embedded items.

### **3.02 General**

- A. The placement of reinforcing steel shall conform to "Placing Reinforcing Bars", as published by the Concrete Reinforcing Steel Institute except as noted.
- B. Reinforcement shall be inspected and approved by the E/A before enclosing forms are erected and shall be rechecked immediately prior to depositing concrete.

### **3.03 Splices, Laps, and Dowels**

- A. Provide continuous reinforcement or dowels through construction joints. The use of inserts in lieu of dowels shall be subject to the E/A's approval. One half of reinforcement shall be discontinued across control joints unless otherwise indicated. All reinforcement shall be discontinued across expansion joints, except for sleeved or greased dowels, if indicated.
- B. Splice laps shall be as indicated on the Drawings. Dowels shall be of the same size as the largest bar to which they lap, unless otherwise indicated.
- C. Splices for horizontal wall reinforcement of circular tanks shall be staggered so that no more than each fifth bar in each face is spliced within any two feet of wall perimeter. Slab reinforcement splices for circular tanks shall be staggered as indicated on the Drawings. The minimum length of staggered lap splices in circular structures shall be as indicated on the Drawings.

### **3.04 Fabric Reinforcement for Slabs**

- A. Fabric reinforcement for slabs shall be overlapped at splices not less than the spacing of the cross wires plus 2 inches. Fabric shall extend to within 4 inches of concrete edges.
- B. Unless otherwise shown, place reinforcement 2 to 3 inches below the top of the finished slab. Mesh shall either be sandwiched between two layers of fresh concrete or supported on mesh supports. Supports that may puncture the vapor barrier, if any, shall not be used.

### **3.05 Reinforcement for Formed Concrete**

Secure steel reinforcement to maintain proper position during concrete placement. Concrete protection for reinforcement shall conform to ACI 318, except as otherwise indicated on the Drawings. The distance from the center of reinforcing bars to the opposite face of all structural slabs, walls, columns, or beams shall conform to ACI 318. The distance may be increased provided the required cover is maintained.

**END OF SECTION**

## SECTION 03300

### CAST-IN-PLACE CONCRETE

#### PART 1 GENERAL

##### 1.01 Section Includes

General requirements for formwork, reinforcement, accessories and cast-in-place concrete.

##### 1.02 References

- A. American Concrete Institute (ACI) latest edition:
1. ACI 301 - Structural Concrete for Buildings
  2. ACI 305 - Hot Weather Concreting
  3. ACI 306 - Cold Weather Concreting
  4. ACI 315 - Detailing Manual
  5. ACI 318 - Building Code Requirements for Structural Concrete
  6. ACI 347 - Formwork for Concrete
- B. American Association of State Highway and Transportation Officials (AASHTO) latest edition:
1. AASHTO T152 - Air Content of Freshly Mixed Concrete by the Pressure Method
- C. American Society for Testing and Materials (ASTM) latest edition:
1. ASTM A185 - Steel Welded Wire Reinforcement, Plain, for Concrete
  2. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
  3. ASTM C31 - Making and Curing Concrete Test Specimens in the Field
  4. ASTM C33 - Concrete Aggregates
  5. ASTM C39 - Test Method for Compressive Strength of Cylindrical Concrete Specimens
  6. ASTM C94 - Ready-Mixed Concrete
  7. ASTM C138 - Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
  8. ASTM C143 - Test Method for Slump of Hydraulic Cement Concrete
  9. ASTM C150 - Portland Cement
  10. ASTM C173 - Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method
  11. ASTM C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

12. ASTM C260 - Air-Entraining Admixtures for Concrete
13. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete
14. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Bituminous Types)

### **1.03 Submittals**

- A. Submit reinforcement steel shop drawings prepared in accordance with ACI 315, Manual of Standard Practice for Detailing Reinforced Concrete Structures. Drawings shall indicate bending diagrams, shapes, dimensions, clearances, splicing and laps, accessories, and installation notes.
- B. Submit manufacturer's literature for all admixtures proposed for the work.
- C. Submit delivery tickets in accordance with ASTM C94 for each batch of ready-mixed concrete. Information on the ticket shall include class of concrete, water content, time of loading, truck number, admixtures, and quantity.
- D. At least 35 days prior to placing of concrete, the Contractor shall submit proposed mix proportions and samples of proposed materials.

### **1.04 Quality Control**

- A. Materials and methods of mixing and placing concrete shall conform to ACI 318, Building Code Requirements for Reinforced Concrete.
- B. Tests for slump shall be made when directed by the Engineer in accordance with ASTM C143.
- C. Air content tests shall be made, when directed by the Engineer, in accordance with ASTM C138, C173, C231, or AASHTO T-152.

## **PART 2 PRODUCTS**

### **2.01 Formwork**

Formwork lumber shall be straight and clean. All nails shall be withdrawn and surfaces in contact with concrete shall be thoroughly cleaned before reuse.

### **2.02 Reinforcement**

- A. Reinforcement bars shall be ASTM A615, Grade 60 deformed bars, except as otherwise indicated.
- B. Welded wire fabric shall conform to ASTM A185. Where welded wire fabric is shown but not sized on Drawings, use 6" x 6" x W2.9 x W2.9 WWF.

- C. Accessories for proper installation of reinforcement shall conform to CRSI "Manual of Standard Practice for Reinforced Concrete Construction". Bar supports at exposed surfaces shall be Class C-Plastic Protected.
- D. Reinforcement fabrication shall conform to ACI 315 and ACI 318, and approved shop drawings.
- E. Where the Drawings require Fibermesh concrete, the reinforcement shall be polypropylene fibers engineered and designed for secondary reinforcement of concrete slabs, complying with ASTM C 1116 Type III, as manufactured by Fibermesh Co., or approved equal.

### **2.03 Joint Fillers**

- A. Joint fillers shall be products of the following manufacturers, or equal:
  - 1. W. R. Meadows, Inc., Elgin, Illinois
  - 2. W. R. Grace and Co., Cambridge, Massachusetts.
- B. Preformed bituminous fiber joint filler shall be non-extruding type conforming to ASTM D1751.
- C. Control joint strips shall have a minimum depth of 25 percent of slab thickness and a minimum thickness of 1/8 inch.

### **2.04 Concrete Materials**

- A. Water shall be clean and potable
- B. Portland cement shall be ASTM C150 Type I, II or III.
- C. Fine and coarse aggregate shall be clean, hard, natural, or manufactured material conforming to ASTM C33.
- D. The nominal maximum size of the aggregate shall not be larger than three-fourths of the minimum clear spacing between individual reinforcing bars. Coordinate with maximum aggregate sizes specified hereafter for classes of concrete.
- E. Admixtures shall conform to ASTM C260 (air entrainment) or C494 (water reduction) and shall be products of one of the following manufacturers, or equal.
  - 1. Dewey and Almy Chemical Div., W. R. Grace and Co.
  - 2. Euclid Chemical Co.
  - 3. Master Builders Co.
  - 4. Sika Chemical Corp.

## 2.05 Miscellaneous Materials

- A. Vapor barrier shall be polyethylene film 0.006 inches thick and shall conform to Product Standard PS-17.
- B. Liquid membrane curing compound shall conform to ASTM C309, Type 1 or Type 2. Type 2 compound shall be used for P.C.C. pavement only. All permanently exposed exterior slabs shall receive clear acrylic curing and sealing compound. Moisture loss shall not be more than 0.055 gr./sq. cm when applied to 200 sq. ft./gal.
- C. Liquid membrane curing compound shall be products of one of the following manufacturers, or equal:
  - 1. W.R. Meadows "Curettard"
  - 2. Sonneborn-Contech "Sonsil"
  - 3. Burke Co. "Res-Xnu"
  - 4. Lambert Corp. "Gardseal"
- D. Chemical hardener shall be colorless aqueous solution containing a blend of magnesium fluosilicate and zinc fluosilicate combined with a wetting agent, conforming to Federal Specifications TT-C-800A and Corps of Engineers Specification CE 204.
- E. Chemical hardener shall be products of one of the following manufacturers, or equal:
  - 1. Euclid Chemical Co. "Surfhard"
  - 2. Sonneborn-Contech "Lapidolith"
  - 3. Master Builders "Saniseal"
  - 4. Lambert Corp. "Solidus"

## 2.06 Concrete Mixtures

- A. Concrete not indicated otherwise shall be Class A concrete.
- B. The proportions of cement, aggregate, and water shall be selected by the Contractor in accordance with ACI 318 to provide a plastic and workable mix. Coarse aggregate shall be limited to prevent harshness and honeycombing. Coarse aggregate size shall not be greater than the maximum listed for the various classes of concrete and as previously specified under aggregate.
- C. Class A structural concrete shall have a 28 day strength of 4000 psi, shall contain not less than 540 pounds (5-3/4 bags) of cement per cubic yard of concrete, shall have a water-cement ratio of not more than 0.47 (5-1/4 gallons per bag of cement), and shall contain 4 percent to 6 percent entrained air, by

volume, except interior slabs subject to abrasion shall not contain more than 3 percent entrained air. In addition, Class A concrete shall contain a water-reducing, densifying admixture and have a maximum slump of 4 inches. The maximum aggregate size for slabs shall be 1 inch.

- D. Class B lean concrete shall have a 28 day strength of 3000 psi, it shall contain not less than 420 pounds (4-1/2 bags) of cement per cubic yard of concrete, shall have a water-cement ratio of not more than 0.71 (8 gallons per bag of cement), and shall have a 5 inch maximum slump. The maximum aggregate size shall be 2 inches.
- E. Water-reducing densifying admixture added to Class A concrete shall reduce the water-cement ratio while maintaining slump and compressive strength. Use as manufacturer recommends.
- F. Other admixtures may be proposed by the Contractor or requested by the Engineer and shall be provided at no additional cost to the Owner. Subject to approval, admixtures may be used for the following:
  - 1. To increase slump up to 50 percent while maintaining compressive strength and water-cement ratio.
  - 2. To retard set during hot weather
- G. Calcium chloride, admixtures containing calcium chloride, or admixtures not approved, in writing by the Engineer, are prohibited.

## **PART 3 EXECUTION**

### **3.01 General**

- A. Comply with ACI 305 or 306 for hot or cold weather concreting.
- B. Do not mix salt, chemicals, or other foreign materials with the concrete to prevent freezing without approval of the Engineer. Maintain the temperature of concrete above 50 degrees F for 5 days after placement. When high early strength Portland cement concrete is used, the temperature shall not be less than 70 degrees F for 2 days or 50 degrees F for 3 days.
- C. In no case shall the temperature of concrete exceed 90 degrees F at the time of placement.

### **3.02 Preparation**

- A. Remove existing concrete and provide openings for installation of new work as indicated on Drawings. Repair all damage to existing work caused by concrete removal.

- B. Coordinate with other trades and properly place and locate in position all necessary dowels, bolts, anchors, anchor slots, inserts, sleeves, openings, hangers, metal ties and other fastening devices required for attachment and support of adjacent work. Securely anchor all embedded items.
- C. The subgrade and/or bedding shall be compacted and free of frost. If placement is allowed at temperatures below freezing, provide temporary heat and protection as required to remove all frost. Saturate the subgrade approximately 8 hours before placement and sprinkle ahead of the placement of concrete in areas where vapor barrier is not used. Remove all standing water, ice, mud, and foreign matter before concrete is deposited.
- D. On porous subgrade or beddings, or where indicated on the Drawings, provide vapor barrier. Lay vapor barrier sheets with 6 inch edge laps and tape or seal with mastic. Stretch and weight edges and laps to maintain their positions until concrete is placed. Coordinate with placement of reinforcement.

### **3.03 Formwork Requirements**

- A. Formwork shall comply with ACI 347 and to shape, lines and dimensions as indicated on the Drawings. Forms shall be properly braced or tied to maintain position and shape under all dead and live loads and to prevent leakage. Forms shall be assembled so their removal will not damage the concrete. Tolerances for formed surfaces shall be in compliance with ACI 301.
- B. Lumber formwork may be used for surfaces which will not be exposed to view. Use plywood or metal forms for exposed surfaces.
- C. The inside surface of lumber forms shall be soaked with clean water prior to placing concrete. All other forms shall be treated with an approved form oil or lacquer. If oil is used, all excess oil shall be wiped off.

### **3.04 Reinforcement**

- A. The placement of reinforcing steel shall conform to "Placing Reinforcing Bars", as published by the Concrete Reinforcing Steel Institute except as noted.
- B. Provide continuous reinforcement or dowels through construction joints. One half of reinforcement shall be discontinued across control joints unless otherwise indicated. All reinforcement shall be discontinued across expansion joints.
- C. Splice laps shall be as indicated on the Drawings.
- D. Fabric reinforcement for slabs shall be overlapped at splices not less than the spacing of the cross wires plus 2 inches. Fabric shall extend to within 4 inches of concrete edges.

- E. Unless otherwise shown, place reinforcement 2 to 3 inches below the top of the finished slab. Mesh shall either be sandwiched between two layers of fresh concrete or supported on mesh supports. Supports that may puncture the vapor barrier, if any, shall not be used.
- F. Where reinforcing is fibermesh, incorporate polypropylene fibers fully into the concrete prior to placement.

### **3.05 Joints**

- A. Provide construction joints with shear transfer keyways as indicated.
- B. Tops of edge forms and screeds shall be set to the finished elevations and to provide uniform pitch to drains as indicated on Drawings.
- C. For drives, pavements, parking areas, walks and slabs on grade, provide preformed non-extruding asphalt strip or bituminous fiber joint filler set 1/8 inch below finished surface unless otherwise indicated. Tool concrete edges on each side of joint. No sealant is required.

### **3.06 Batching**

- A. Materials for concrete shall be proportioned and batched according to the approved design mix.
- B. Water shall be measured to within 1 pint of the total amount required per batch. Admixtures shall be measured by weight or volume to an accuracy of 3 percent.

### **3.07 Mixing and Transporting Concrete**

- A. Concrete shall be ready-mixed or job-mixed at the Contractor's option. Ready-mixed concrete shall be mixed and delivered to the project in accordance with ASTM C94. Job-mixed concrete shall be in accordance with the requirements of ACI 318.
- B. Concrete shall be in its final position within one hour after the water and aggregate have been added to the cement, except in cool weather (50 degrees F or less).
- C. Concrete shall be transported from the mixer to place of final deposit in such manner to prevent separation or loss of ingredients.

### **3.08 General Concrete Placement Schedule**

- A. All structural concrete shall be Class A Concrete.
- B. Sidewalks, curbing, and driveways shall be Class B Concrete.

### 3.09 Depositing Concrete

- A. Concrete shall be placed in accordance with the requirements of ACI 318 and within 10 feet of its final position. Place concrete only during normal working hours unless the Engineer is notified at least 24 hours in advance. Concrete shall not be placed until the Engineer has approved the formwork, reinforcement, and embedded items and debris has been removed.
- B. Whenever new concrete is to be placed against existing surfaces, roughen and clean the surface to improve bond.
- C. Provide runways and chutes to discharge concrete close to final position to minimize spreading and segregation.
- D. Place slabs-on-grade using formed construction joints. Maximum size of pour shall be 40 feet each way for slabs with wire mesh reinforcement and 75 feet each way for slabs with bar reinforcement. Allow 24 hours between pours of adjacent slabs. Provide joints as specified or shown. Set continuous joint strips between slabs and abutting vertical surfaces as indicated on the Drawings.

### 3.10 Finishing Slabs and Flatwork

- A. Unless otherwise indicated, provide the following slab finishes:

Description	Concrete Finish
Class B concrete surfaces	Float
Submerged slabs	1 Troweling
Exposed slabs	3 Trowelings
Ramps and walks	Float and broom finish

- B. Concrete shall be within  $\frac{1}{4}$  inch of a 10 foot straightedge in all directions except where slabs are dished for drains. Deviations from the elevation indicated shall not exceed  $\frac{1}{4}$  inch.
- C. Slabs sloped for drainage shall not have depressions that retain water.
- D. Immediately after placement, screed concrete with straightedges or power strikeoffs. Do not use roller screeds or vibrating screeds.
- E. Stakes for wet screeds shall be driven down flush with subgrade or pulled out as work progresses to avoid disturbing screeded concrete.
- F. For drains in level slabs, form a 5 foot diameter depression approximately  $\frac{1}{2}$  inch below the adjacent slab surface.

- G. Unless otherwise indicated on the Drawings, slabs sloped for drainage shall be uniformly pitched toward the drains at 1/8 inch per foot. Form a dished depression at drains unless otherwise indicated.
- H. Immediately after screeding, darby surface with wood or magnesium darby to eliminate ridges and to fill in voids left by screeding.

### **3.11 Float Finish**

- A. Float concrete using magnesium or aluminum hand floats or power floats after the concrete has stiffened to a point where only a ¼ inch indentation can be imparted by normal foot pressure.
- B. Float finish shall result in a uniform, smooth, granular texture. After floating, check slab tolerances with 10-foot straightedge. Fill low spots with fresh concrete; do not sprinkle with dry cement.

### **3.12 Trowel Finish**

- A. Where scheduled, or indicated, trowel with steel trowels after floating.
- B. Initial troweling shall be done either by power or by hand with the trowel blade kept as flat as possible against concrete surface to prevent washboard or chatter effect.
- C. Second troweling may be done by power if three trowelings are scheduled. If two trowelings are specified, second troweling shall be done by hand.
- D. Third troweling shall be done by hand and shall continue until the concrete is consolidated to a uniform, smooth, dense surface free of trowel marks and irregularities.
- E. Allow sufficient time between successive trowelings to allow the concrete to become harder. Each successive troweling shall be done with trowels that are progressively smaller and are tipped more to increase compaction of the concrete surface.

### **3.13 Brooming**

Broom at right angles to direction of traffic to give a non-skid finish. Use a fine, soft-bristled broom for pedestrian ramps and walks, and a coarse, hard-bristled broom for vehicular pavement.

### **3.14 Control Joints**

- A. Control joints for non-structural slabs shall consist of partial depth plastic strips set flush with finished surface or 1/8 inch wide joints cut with a diamond saw.

Control joints shall be one- quarter to one-third the depth of the slab unless otherwise indicated.

- B. Saw joints as soon as concrete has hardened sufficiently so aggregate will not be dislodged but before shrinkage stresses develop cracks. Sawn joints shall be filled with approved joint sealant.
- C. Unless otherwise indicated on the Drawings, spacing of control joints shall not exceed 25 feet in each direction.

### **3.15 Protection and Curing**

- A. Comply with ACI 305 and 306 for protecting and curing concrete in hot and cold weather. Fresh concrete shall be protected from rain, premature drying and excessively hot or cold temperatures, and shall be maintained with minimal moisture loss for the period of time necessary for the hydration of the cement and proper hardening of the concrete. Cure all concrete for a minimum period of 7 days (3 days for high early strength concrete) after placing.
- B. Immediately after finishing, begin curing by covering with constantly saturated moisture retaining fabrics, impervious sheeting, or membrane curing compounds. Surfaces shall be thoroughly wetted with a fine spray before they are covered with sheeting.
- C. Sheeting shall provide complete surface coverage with all joints lapped at least 4 inches and shall be placed and secured in a manner that will not mar or damage the concrete surface.
- D. Apply membrane-curing compound in accordance with manufacturer's recommendations. Apply by spraying in a two coat continuous operation. Apply the coats at right angles to each other with a coverage of 200 square feet per gallon per coat. Begin application not later than 4 hours after finishing of the surface. The application shall result in an uninterrupted adherent film free of defects.
- E. On surfaces scheduled to receive sealants, paint, seamless flooring, or other adhesive bonded finishes, either the membrane curing compound shall be compatible with the bonding agent or the curing compound shall be removed with sandblasting, acid etching or grinding, to the satisfaction of the installer of the finish surfacing. Bonded surfaces that fail to adhere to the concrete shall be removed and replaced at no additional cost to the Owner.
- F. Apply hardener to floors of mechanical and electrical rooms and in other areas as required. Application shall be in strict accordance with the manufacturer's recommendations and as follows:

1. Hardener shall be applied at original container consistency without dilution to dry, clean surfaces no sooner than 30 days following completion of curing. NOTE: Hardener shall not be applied over surfaces covered with membrane curing agent.
2. Application shall generally be a three-coat process adjusted to accommodate extreme concrete densities only if prior review has been obtained from the Engineer. Application coverage shall be made at the approximate rate of one gallon to 100 square feet.
3. Apply first and second coats generously to surface, mop or squeegee standing water to leave a uniformly wet surface, allow to dry. Apply third coat in a manner similar to first two, except that surplus must be scrubbed with stiff bristled broom and flushed from floor surface with clear water. Scrubbing and flushing shall remove all traces of effervescence. Remove excess water and allow to dry.

### **3.16 Defective Concrete**

- A. All concrete not formed as indicated on the Drawings within tolerances specified in ACI 347 shall be removed and replaced.
- B. Temperature and shrinkage cracks which develop prior to final acceptance of the work shall be repaired.

### **3.17 Miscellaneous Concrete Work**

Provide concrete equipment pads and supports as indicated and conforming to approved shop drawings. Fastening devices and accessories shall be located by templates or setting diagrams furnished by the manufacturer.

### **3.18 Clean-Up**

- A. All concrete floor construction shall have the surfaces thoroughly scrubbed and cleaned with clear water. After cleaning, the floors shall be protected until they are accepted.
- B. Clean all surfaces affected by the Concrete Work. No extraneous concrete or discoloration shall be left on any construction.

### **3.19 Concrete Testing**

- A. Compressive Strength Tests: Conform to ASTM C31 and ASTM C39. One set of four cylinders for each 50 cubic yards or fraction thereof, of each strength concrete placed in any one day. Test one specimens at seven days; test two specimens at 28 days. One specimen shall be retained for 56 days and tested only at the direction of the Engineer.

- B. Slump Tests: Conform to ASTM C143. Perform one test for each load point of discharge and one for each set of compressive strength test specimens.

**END OF SECTION**

**SECTION 16130**  
**CONDUIT AND PULL BOXES**

**PART 1 GENERAL**

**1.01 Section Includes**

Conduit, pull boxes for fiber optic cable.

**1.02 Related Sections**

Section 02320 - Trenching, Bedding, and Backfilling

**1.03 References**

- A. National Electrical Manufacturers Association (NEMA) latest edition:
  - 1. NEMA TC 2 – Electrical PVC Tubing and Conduit
  - 2. NEMA TC 3 – PVC Fittings for Use With Rigid PVC Tubing and Conduit

**1.04 Submittals**

Product data for conduit, fittings, pull boxes, pull string.

**PART 2 PRODUCTS**

**2.01 Conduit**

- A. Conduit and fittings shall be S schedule 40 polyvinyl chloride manufactured in accordance with NEMA Standard TC 2 and TC 3. PVC conduit shall be U.L. listed.
- B. Provide PVC elbows, bends, fittings and adaptors as required for a complete installation. Provide solvent cement as recommended by the conduit manufacturer.
- C. Where conduit is directional bored or installed through steel casing, conduit shall be solid wall high density polyethylene, SDR 11.

**2.02 Pull Tape**

Pull tape shall be a flat woven pre-lubricated polyester tape specifically manufactured for placement in underground conduit for use in pulling fiber optic, coaxial, and copper cable. The tape shall have a minimum tensile strength of 1000 pounds.

**2.03 Pull Boxes**

- A. Pull boxes in unpaved areas or areas that receive infrequent traffic shall be 17" x 30" x 30" composite fiberglass polymer concrete, Tier 22 rated, with bolt down top. Boxes shall be as manufactured by Quazite or approved equal.
- B. Pull boxes in streets or driveways shall be 17" x 30" x 30" precast concrete, H-20 load rating, as manufactured by Oldcastle Precast or approved equal.

#### **2.04 Electronic Marker Balls**

Electronic marker balls shall be four inches (4") in diameter with a high density polyethylene shell and shall be colored red (model 160). Balls shall be as manufactured by 3M or Omni

### **PART 3 EXECUTION**

#### **3.01 Conduit**

- A. Minimum cover over the conduit shall be 30 inches in unpaved areas and 36 inches under pavement. Installation at greater depth is allowed to coincide with the installation of the pipeline and its appurtenances. Install at minimum of 6 inches horizontal clearance from outside of pipeline.
- B. Make joints in conduit in compliance with the manufacturer's instructions. Conduit field joints shall be cut square and reamed smooth.
- C. Plug conduit ends to prevent the entrance of foreign materials.
- D. Install two pull tapes and securely tie off at each end for future cable installation.

#### **3.02 Pull Boxes**

- A. Adjust location of pull boxes as necessary to ensure the total length of conduit run between boxes does not exceed 400 feet.
- B. Locate all pull boxes outside existing and proposed pavement.
- C. Install boxes so tops are flush with existing grade.
- D. Install pull boxes on 12 inch thick pea rock or crushed stone bed.
- E. Clear boxes of all plaster, dirt, trash, etc. after installation.

#### **3.02 Electronic Marker Balls**

- A. Install at one hundred foot (100') intervals along the conduit and at all pull boxes.
- B. Marker balls shall be placed in a position directly above the conduit and hand back filled one foot (1') above the ball to prevent damage or movement during subsequent backfilling.

- C. Depth of burial shall not be less than one and one half feet (1.5') nor more than two feet (2').

**END OF SECTION**

**APPENDIX A**  
**Geotechnical Data**

**SUBSURFACE SOIL EXPLORATION AND  
RECOMMENDATIONS FOR KINGFISH BOAT RAMP  
AND PARKING LOT IMPROVEMENTS  
MANATEE AVENUE WEST,  
HOLMES BEACH,  
MANATEE COUNTY, FLORIDA**



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**MEMBERS:**

ASTM International  
American Concrete Institute  
Geoprofessional Business Association  
Society of American Military Engineers  
American Council of Engineering Companies



**Ardaman & Associates, Inc.**

Geotechnical, Environmental and  
Materials Consultants

June 3, 2020  
File No. 11-7511

TO: CPH Engineers, Inc.  
501 Mariner Street, Suite 5  
Tampa, FL 33609

Attention: Jeffrey Satfield  
Email: [jsatfield@cphengineers.com](mailto:jsatfield@cphengineers.com)

SUBJECT: Subsurface Soil Exploration and Recommendations for  
Kingfish Boat Ramp and Parking Lot Improvements  
Manatee Avenue West, Holmes Beach, Manatee County, Florida

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Dear Mr. Satfield:

As requested, our firm has completed a subsurface soil exploration program at the above-referenced site. Our services were provided in general accordance with those outlined in our proposal dated March 11, 2020. We understand the project involves a sheet pile seawall, stormwater retention/infiltration ponds, and parking lot improvements. The purpose of this program was to determine the nature and condition of the subsurface soils at the site, estimate the seasonal high groundwater table, provide soil parameters for use (by others) in the design of the proposed seawall, and provide soil and pavement subgrade preparation recommendations.

This report documents our findings and conclusions. It has been prepared for the exclusive use of CPH Engineers, Inc. and their consultants for specific application to the subject project, in accordance with generally-accepted geotechnical engineering practices.

### **SITE LOCATION AND CONDITIONS**

The subject site is located in Holmes Beach, Manatee County, Florida. More specifically, the site is located on the north side of Manatee Avenue (SR-64), approximately 500 to 2,500 feet east of its intersection with East Bay Drive.

The USGS topographic survey map for the site vicinity (Bradenton Beach, Florida Quadrangle, with 5-foot contour interval, dated 1964, photo-revised 1987) was reviewed for ground surface features at the proposed project location (see attached Figure 1A). Based on this review, the natural ground surface elevation is in the range of +0 to +5 feet National Geodetic Vertical Datum of 1929 (NGVD). The map does not indicate any significant topographic features at the site, other than it is bordered by Anna Maria Sound.

### **REVIEW OF SOIL SURVEY MAPS**

Based on the U.S. Department of Agriculture, Soil Conservation Service (now the Natural Resources Conservation Service) "Soil Survey of Manatee County, Florida," the site is located in an area mapped primarily as the "Canaveral sand, filled" soil series, with a small area of the "Canaveral sand, organic substratum" soil series near the west end of the site. The approximate site location on the soils map from the NRCS "Web Soil Survey" is included as Figure 2A of this report.

The "Canaveral sand, filled" soil series consists of a nearly level, moderately well drained to somewhat poorly drained soil that consists of sand and shell that have been dredged or excavated from water areas and then leveled and smoothed, mainly for urban use. The fill material varies but generally ranges from about 20 inches to more than 80 inches in thickness, and consists primarily of sand and shell. In some places there may be balls of clayey or loamy soils in the fill. The underlying material is mostly mineral, but in some areas may be organic. According to the Soil Survey, in the wet season the water table is at a depth of about 40 to 60 inches, but varies depending upon the thickness of the fill material.

The "Canaveral sand, organic substratum" soil series consists of a nearly level, moderately well drained to somewhat poorly drained soil consisting of sand and shell fill overlying organic material. The sand and shell have been dredged or excavated and deposited on tidal swamps or marshes. The thickness of the deposited fill varies within short distances, but generally ranges from approximately 40 to 70 inches and is usually about 45 inches. According to the Soil Survey, the wet season water table is within 30 to 60 inches of the ground surface.



Selected other properties are included in the following table.

Map Symbol	Hydrologic Group	High Water Table (feet)	Depth (inch)	Unified Soil Classification	Percent Passing No. 200 Sieve	Percent Clay	Permeability (feet/day)
9	C	1.0 - 3.0	0 - 80	SP	1 - 4	<2	>40
10	C	2.5 - 5	0 - 45	SP	1 - 4	2 - 8	>40
			45 - 70	PT	---	---	4 - 12
			70 - 80	SP	1 - 3	1 - 8	12 - 40
<b>MAP SYMBOL LEGEND</b>				<b>UNIFIED SOIL CLASSIFICATION LEGEND</b>			
9 - Canaveral sand, filled				SP - Poorly graded sand			
10 - Canaveral sand, organic substratum				PT - Peat (muck)			
* More than one soil designated to this map symbol.							
Source: Natural Resources Conservation Service (1983)							

### FIELD EXPLORATION PROGRAM

Our field exploration program consisted of conducting two (2) Standard Penetration Test (SPT) borings, four (4) pavement cores, four (4) double-ring infiltrometer (DRI) tests, with a hand auger boring at each of the DRI test locations. The approximate locations are shown on the attached Figure 3A. The equipment and procedures used in the borings are described in Appendix I of this report.

Test borings were located in the field utilizing an aerial photograph of the site and visual reckoning to available landmarks. The locations should be considered accurate only to the degree implied by the method used. Should more accurate locations be required, a registered land surveyor should be retained.

### Standard Penetration Tests

The SPT borings are identified as SPT-1 to SPT-2 and were performed to determine the nature and condition of the subsurface soils to a depth of 40 feet below the existing ground surface. The SPT soil borings were initially drilled to a depth of 4½ feet with a hand auger in order to avoid damaging possible underground utilities. The soil conditions encountered at these borings are shown on the graphic soil profiles (boring logs) on Figure 3A of this report.



### **Pavement Cores**

The pavement cores are identified as C-1 to C-4 and were performed to determine the nature and condition of the pavement and subsurface soils to a depth of approximately 5 feet below the existing ground surface. The soil conditions encountered at these borings are shown on the graphic soil profiles (boring logs) on Figure 4A of this report.

The pavement “cores” were performed with a hand auger, rather than with an asphalt/concrete core barrel, since a “shell” pavement was present at these locations, instead of an asphalt or concrete pavement.

### **Double-Ring Infiltrometer Test (DRI)**

The double-ring infiltrometer tests are identified as DRI-1 to DRI-4. The test results are summarized on Plates 1 to 4 of Appendix II of this report. The test results indicate a vertical infiltration rate between 0.45 to 7.0 inch/hour (0.9 to 14 feet/day).

The depth (below existing ground) at which the test was performed was based upon the soil conditions and existing groundwater table depth encountered at each location. The test depths varied from 3 inches to 24 inches below the ground surface.

The test procedure is based upon the procedures of ASTM D-3385. Additional information on the test procedure and interpretation of the test results are included in Appendix I of this report. Estimated hydraulic conductivity (k) values based upon the test results will be presented later in this report.

## **GENERAL SUBSURFACE CONDITIONS**

The general subsurface conditions encountered during the field exploration program are shown on the soil boring logs on Figures 3A to 4A of this report. Soil stratification is based on examination of recovered soil samples and interpretation of field boring logs. The stratification lines represent the approximate boundaries between the soil types, while the actual transitions may be gradual.



A generalization of the subsurface soil conditions encountered in the borings is described below:

DEPTH (feet)		SOIL DESCRIPTION
From	To	
0	4½	Fine sand (SP), fine sand with silt (SP-SM) and sandy shell (SW). Varying amount of shell.
4½	27	Loose to medium dense fine sand (SP), fine sand with silt (SP-SM) and silty fine sand (SM). Varying amount of shell.
27	40	Dense to very dense fine sand (SP) and fine sand with silt (SP-SM). Varying amount of shell.

On the dates of our field exploration program the water table was encountered at a depth of approximately 2.3 to 3.9 feet below existing grade, except that groundwater was not encountered within the boring depth of 6 feet at boring DRI-4. The water table level is anticipated to fluctuate due to seasonal rainfall variations, the tides and other factors.

### LABORATORY TESTING PROGRAM

Representative soil samples obtained from the SPT and hand auger borings were packaged and transferred to our office and, thereafter, examined by a geotechnical engineer. The soil descriptions shown on the soil boring log are based on a visual classification procedure in general accordance with the Unified Soil Classification System (ASTM D-2488-84) and standard practice.

### ENGINEERING EVALUATION AND RECOMMENDATIONS

#### Soil Parameters for Seawall Design

This section includes recommended soil parameters for use by others in design of a seawall. The design should consider that layers of dense to very dense sands were encountered below a depth of approximately 27 feet.

Based upon the soil classifications and SPT "N" values, the internal friction angle, cohesion, unit weights and lateral earth pressure coefficients have been estimated for the soils encountered at borings SP-1 and SP-2. These are listed in the following tables.



**Boring SP-1**

Depth (feet)	Unified Soil Classification	Saturated Weight (pcf)	Moist Unit Weight (pcf)	Internal Friction Angle (degrees)	Cohesion (ksf)	Active Earth Pressure Coef.	Passive Earth Pressure Coef.	At-Rest Earth Pressure Coef.
BP - 4.5	SP-SM	125	110	32	0	0.31	3.3	0.47
4.5 - 27	SP/SM/SP-SM	116	---	29	0	0.35	2.9	0.52
27 - 40	SP/SP-SM	126	---	37	0	0.25	4.0	0.40

**Boring SP-2**

Depth (feet)	Unified Soil Classification	Saturated Weight (pcf)	Moist Unit Weight (pcf)	Internal Friction Angle (degrees)	Cohesion (ksf)	Active Earth Pressure Coef.	Passive Earth Pressure Coef.	At-Rest Earth Pressure Coef.
BP - 4.5	SP-SM/SP	125	110	32	0	0.31	3.3	0.47
4.5 - 20	SP	115	---	28	0	0.36	2.8	0.53
20 - 40	SP-SM/SP	124	---	37	0	0.25	4.0	0.40

**NOTES**

- (1) These values in this table are intended for design (stability) analysis, only, and should not be used to determine constructability.
- (2) Bouyant unit weight = (saturated unit weight) - (unit weight of water)
- (3) Moist unit weight applies only above the groundwater table.

The values listed in the table are for the soils in their in-situ condition. If backfill is to be placed next to the seawall, these values may not be relevant. For a clean, well compacted, granular (sand) backfill, we recommend an internal friction angle of 32°, a moist unit weight of 110 pcf and a saturated unit weight of 125 pcf. The active (0.31), passive (3.3) and at rest (0.47) earth pressure coefficients corresponding to this friction angle should, therefore, also be used for this backfill.

The values in the above table are for geotechnical design (lateral and rotational stability) analysis of the seawall, only. They should not be used to determine the constructability.

The seawall may be designed using active, passive, and/or at rest pressure distributions, supplemented with the lateral pressures induced by groundwater (hydrostatic forces) and by compaction of the backfill. Compaction induced stresses vary with the type and weight of the compactor used during construction, as well as how near the compactor is permitted to the structure.

In general, a drain should be used on the landward side of the seawall structure, to minimize hydrostatic pressures acting on the structure.

### **Seasonal High Groundwater Table**

The groundwater table in the surficial aquifer generally occurs within a few to several feet below the ground surface. Seasonal variations in rainfall and evapotranspiration cause the groundwater table to fluctuate. The seasonal high groundwater table is the highest level that is reached during the year, but it varies from year to year, primarily due to rainfall variations.

For a typical year in Manatee County, over 60% of the annual rainfall occurs during the four months of June through September. During this period, the groundwater table rises to its highest level, which typically occurs in August to September. During the relatively dry portion of the year (from October to May), the groundwater table recedes to lower levels.

The ground surface elevation at each of the hand auger boring locations was estimated by plotting the approximate boring locations onto a topographic survey of the site provided by CPH Engineering (CPH Job No. M13112, Sheets 1 to 4 of 4, dated 5/6/20). The groundwater table elevations were then referenced to the estimated ground surface elevation. These elevations should be considered accurate only to the degree implied.

The seasonal high groundwater table was estimated at each of our hand auger boring locations, based upon our review of the NRCS Soil Survey and our field explorations. The depth (below the existing ground surface) of the groundwater table at the time of our field explorations and our estimate of the seasonal high groundwater table for each location are summarized in the following table.



Boring Number	Existing Ground Surface Elevation (feet, NAVD88)	Existing Groundwater Table			Seasonal High Groundwater Table	
		Depth (feet)	Elevation (feet, NAVD88)	Date (Day-Mo-Yr)	Depth (feet)	Elevation (feet, NAVD88)
C-1	4.2	3.0	1.2	18-May-20	2.4	1.8
C-2	3.4	2.9	0.5	18-May-20	1.6	1.8
C-3	5.2	4.0	1.2	18-May-20	3.4	1.8
C-4	2.8	2.1	0.7	18-May-20	1.5	1.3
DRI-1	2.8	1.2	1.6	18-May-20	0.8	2.0
DRI-2	2.7	1.2	1.5	18-May-20	0.7	2.0
DRI-3	3.0	2.8	0.3	18-May-20	1.0	2.0
DRI-4	6.0	>6.0	---	18-May-20	4.0	2.0

### Soil Hydraulic Conductivity

The double-ring infiltrometer (DRI) test measures the vertical infiltration rate under the test conditions (test depth, size of the infiltration surface, etc.). This may not represent the infiltration rate from a full-size infiltration basin and is not a direct measurement of the vertical hydraulic conductivity ( $k_v$ ) of soils. In general, however, the infiltration rate near the end of the test is no greater than the unsaturated vertical hydraulic conductivity ( $k_{vu}$ ), since a saturated condition is generally not achieved by tests of this type and the hydraulic gradient near the end of the test is generally equal to or less than 1.0. Therefore, the infiltration rate near the end of the test can generally be used as a reasonable, and probably somewhat conservative estimate of  $k_{vu}$ .

In the generally horizontally stratified sandy soil deposits typical of southwest Florida, the saturated horizontal hydraulic conductivity ( $k_{HS}$ ) is greater than  $k_{vu}$ , usually by a factor of approximately 2.25. Considering that the shallow soils at the site are probably fill materials instead of naturally stratified sediments, multiplying the  $k_{vu}$  by a factor of 2.25 may yield a non-conservatively high estimate of  $k_{HS}$ . We, therefore, recommend the assumption that  $k_{HS} = 1.5 \times k_{vu}$ .

Based upon the above, we recommend the following values for the shallow sandy soils at the site, based upon the DRI test results.



<b>Location</b>	<b>Test Infiltration Rate (feet/day)</b>	<b><math>k_{VU}</math> (feet/day)</b>	<b><math>k_{HS}</math> (feet/day)</b>
DRI-1	8.8	8.8	13
DRI-2	0.9	0.9	---
DRI-3	12	12	18
DRI-4	14	14	21

The relatively low infiltration rate at DRI-2 is considered to be primarily representative of the surficial layers of dark brown to brown fine sands encountered at this location. The underlying layers of “gray fine sand” and “gray fine sand & shell” likely have a significantly greater permeability, so no value of  $k_{HS}$  is listed for this location. The  $k_{HS}$  value at DRI-2 is probably similar to the  $k_{HS}$  values at the other DRI locations.

No factor of safety has been applied to the above values. The design engineer should decide if application of a factor of safety is appropriate.

### **Pavement Subgrade Preparation Recommendations**

The existing soils encountered at the site would generally be considered an excellent to good subgrade for either a flexible (asphalt) or rigid (concrete) pavement, if the soils are adequately prepared and compacted prior to placement of additional fill, stabilization of the pavement subgrade and pavement construction. The recommended soil preparation procedure is summarized below:

1. The parking/drive areas to be paved should be cleared (stripped) of all surface vegetation and organic debris. After stripping, this area should be grubbed or root-raked to completely remove roots with a diameter greater than ½ inch, stumps, or smaller roots in a concentrated state. The actual depths of stripping and grubbing must be determined by visual observation and judgment during the earthwork operation.
2. Following the clearing operations, the exposed subgrade should be evaluated and proof-rolled to confirm that all unsuitable materials have been removed. The proof-rolling should consist of compaction with equipment capable of providing the densities required below. Careful observations should be made during proof-rolling to help identify any areas of soft yielding soils that may require over-excavation and replacement. Care should be used when operating vibratory compactors near existing structures (within 75 feet) to avoid transmission of vibrations that could cause settlement damage. Areas close to existing structures should be compacted using static (non-vibratory) compaction methods.



3. After proof-rolling and remediation of any yielding areas noted, the parking/drive areas should be compacted with at least 6 passes with equipment capable of achieving the compaction requirements. Each pass should overlap the preceding pass by at least 30 percent (%). Sufficient passes should be made over the parking/drive areas to produce a density of at least 95% of Modified Proctor (ASTM D-1557) maximum density to a depth of 1 foot below the compacted surface.
4. After compaction and testing to verify that the desired compaction has been achieved at this elevation, fill (if required) consisting of clean fine sands containing no more than 12% passing the No. 200 sieve, and having a Unified Soil Classification (ASTM D-2487) of "SP" or "SP-SM," can be placed in level lifts not exceeding 12 inches loose thickness and compacted with the equipment described above. Each lift should be compacted to at least 95% of Modified Proctor maximum density prior to the placement of subsequent lifts and density tests shall be performed to confirm compaction in each fill lift before the next lift is placed.
5. A geotechnical engineer or his representative from Ardaman & Associates, Inc., Sarasota office, should inspect and test the compacted cleared and grubbed elevation and each layer of fill to verify compliance with the above recommendations.

If a stabilized sub-base having a minimum LBR of 40 is required for the pavement, stabilization of the existing soils likely be necessary. The "natural" sandy soils (i.e. the soils outside of or underlying the existing "shell" surface) will likely need to be stabilized with coarse aggregate (crushed concrete, gravel or coarse washed shell) in order to achieve the required LBR value. Silty or clayey materials should not be used as stabilizer. The stabilized subbase should be compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D-1557, AASHTO T-180).

Based upon the test borings at locations C-1 to C-4, the existing "shell" surface consists of fine sand to fine sand with shell mixed with shell and shell fragments. The borings indicate this layer to be approximately 3 to 4 inches thick at C-1 to C-3 and 8 inches thick at C-4. This layer could likely be mixed into the underlying sandy soils to construct a stabilized sub-base as described in the preceding paragraph.

If the proposed pavement design includes a shell base, the existing "shell" surface could also likely be reused as a pavement base by mixing with additional coarse aggregate (coarse shell or gravel) in order to achieve a minimum LBR value of 100 (or greater if required for the pavement design).



## GENERAL COMMENTS

The analysis and recommendations submitted in this report are based upon the data obtained from test borings performed at the locations indicated on the attached Figure 3A. This report does not reflect any variations which may occur outside of or between the boring locations. While the borings are representative of the subsurface conditions at their respective locations and within their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and may be encountered. The nature and extent of variations may not become evident until during the course of a ground improvement program, if such a program is undertaken. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report, after performing on-site observations during the construction period and noting the characteristics of any variations. The boring logs and related information are based upon the driller's logs and visual examination of selected samples in the laboratory. The delineation between soil types shown on the logs is approximate, and the description represents our interpretation of the subsurface conditions at the designated boring location on the particular date drilled.

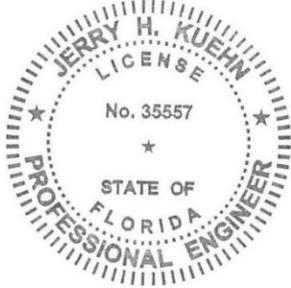
The groundwater table depths shown on the boring logs represent the groundwater surfaces encountered on the dates shown. Fluctuation of the groundwater table should be anticipated throughout the year.



It has been a pleasure to be of assistance to you with this project. Please contact us when we may be of further service to you, or should you have any questions concerning this report.

Very truly yours,

ARDAMAN & ASSOCIATES, INC.  
*Fl. Registry No. 5950*



This document has been digitally signed and sealed by:

Printed copies of this document are not considered signed and sealed. The signature must be verified on electronic documents.

Jerry H. Kuehn, P.E.  
Senior Project Engineer  
*Fl. License No. 35557*

A handwritten signature in blue ink that reads "Sofia E. Roman-Echevarria".

Sofia Roman-Echevarria, E.I.  
Staff Engineer

JHK/SRE:ly



## **APPENDIX I**

### **Soil Boring, Sampling and Test Methods**

## SOIL BORING, SAMPLING AND TESTING METHODS

### Standard Penetration Test

The Standard Penetration Test (SPT) is a widely accepted method of in situ testing of foundation soils (ASTM D-1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load. The following tables relate N-values to a qualitative description of soil density and, for cohesive soils, an approximate unconfined compressive strength (Qu):

Cohesionless Soils:	<u>N-Value</u>	<u>Description</u>	
	0 to 4	Very loose	
	4 to 10	Loose	
	10 to 30	Medium dense	
	30 to 50	Dense	
Above 50	Very dense		
Cohesive Soils:	<u>N-Value</u>	<u>Description</u>	<u>Qu (ton/ft<sup>2</sup>)</u>
	0 to 2	Very soft	Below 1/4
	2 to 4	Soft	1/4 to 1/2
	4 to 8	Medium stiff	1/2 to 1
	8 to 15	Stiff	1 to 2
	15 to 30	Very stiff	2 to 4
Above 30	Hard	Above 4	

The tests are usually performed at 5-foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from each sampling interval and from every different stratum are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. After thorough examination and testing of the samples, the samples are discarded unless prior arrangements have been made. After completion of a test boring, the hole is kept open until a steady state groundwater level is recorded. The hole is then sealed, if necessary, and backfilled.

A hammer with an automatic drop release (auto-hammer) is sometimes used. In this case, a correction factor is applied to the raw blow counts, since the energy efficiency of the auto-hammer is greater than that of the safety hammer. Based upon calibration of the auto-hammer (per ASTM D4633) and standard practice, we use a multiplier of 1.24 to correct the auto-hammer blow counts to equivalent safety hammer "N" values.

## **Hand Auger Borings**

Hand auger borings are used, if soil conditions are favorable, when the soil strata are to be determined within a shallow (approximately 5 to 9 feet) depth or when access is not available to power drilling equipment. A 3-inch diameter, hand bucket auger with a cutting head is simultaneously turned and pressed into the ground. The bucket auger is retrieved to the surface at approximately 6-inch intervals and its contents emptied for inspection. The soil sample so obtained is classified and representative samples put in bags or jars and transported to the laboratory for further classification and testing.

## **Laboratory Test Methods**

Soil samples returned to our laboratory are examined by a geotechnical engineer or geotechnician to obtain more accurate descriptions of the soil strata. Laboratory testing is performed on selected samples as deemed necessary to aid in soil classification and to further define engineering properties of the soils. The test results are presented on the soil boring logs at the depths at which the respective sample was recovered, except that grain size distributions or selected other test results may be presented on separate tables, figures or plates as described in this report. The soil descriptions shown on the logs are based upon a visual-manual classification procedure in general accordance with the Unified Soil Classification System (ASTM D-2488-84) and standard practice. Following is a list of abbreviations which may be used on the boring logs or elsewhere in this report.

- 200 - Fines Content (percent passing the No. 200 sieve); ASTM D1140
- DD - Dry Density of Undisturbed Sample; ASTM D2937
- Gs - Specific Gravity of Soil; ASTM D854
- k - Hydraulic Conductivity (Coefficient of Permeability)
- LL - Liquid Limit; ASTM D423
- OC - Organic Content; ASTM D2974
- pH - pH of Soil; ASTM D2976
- PI - Plasticity Index (LL-PL); ASTM D424
- PL - Plastic Limit; ASTM D424
- Qp - Unconfined Compressive Strength by Pocket Penetrometer;
- Qu - Unconfined Compressive Strength; ASTM D2166 (soil), D7012 (rock)
- SL - Shrinkage Limit; ASTM D427
- ST - Splitting Tensile Strength; ASTM D3967 (rock)
- USCS - Unified Soil Classification System; ASTM D2487, D2488
- w - Water (Moisture) Content; ASTM D2216

## Soil Classifications

The soil descriptions presented on the soil boring logs are based upon the Unified Soil Classification System (USCS), which is the generally accepted method (ASTM D-2487 and D-2488) for classifying soils for engineering purposes. The following modifiers are the most commonly used in the descriptions.

For Sands:	<u>Modifier</u>	<u>Fines, Sand or Gravel Content*</u>
	with silt or with clay	5% to 12% fines
	silty or clayey	12% to 50% fines
	with gravel or with shell	15% to 50% gravel or shell

For Silts or Clays:	<u>Modifier</u>	<u>Fines, Sand or Gravel Content*</u>
	with sand	15% to 30% sand and gravel; and % sand > % gravel
	sandy	30% to 50% sand and gravel; and % sand > % gravel
	with gravel	15% to 30% sand and gravel; and % sand < % gravel
	gravelly	30% to 50% sand and gravel; and % sand < % gravel

\* may be determined by laboratory testing or estimated by visual/manual procedures. Fines content is the combined silt and clay content, or the percent passing the No. 200 sieve.

The USCS also uses a set of Group Symbols, which may also be listed on the soil boring logs. The following is a summary of these.

<u>Group Symbol</u>	<u>General Group Name*</u>	<u>Group Symbol</u>	<u>General Group Name*</u>
GW	Well-graded gravel	SW	Well-graded sand
GP	Poorly graded gravel	SP	Poorly graded sand
GW-GM	Well-graded gravel with silt	SW-SM	Well-graded sand with silt
GW-GC	Well-graded gravel with clay	SW-SC	Well-graded sand with clay
GP-GM	Poorly graded gravel with silt	SP-SM	Poorly graded sand with silt
GP-GC	Poorly graded gravel with clay	SP-SC	Poorly graded sand with clay
GM	Silty gravel	SM	Silty sand
GC	Clayey gravel	SC	Clayey sand
GC-GM	Silty, clayey gravel	SC-SM	Silty, clayey sand
CL	Lean clay	ML	Silt
CL-ML	Silty clay	MH	Elastic silt
CH	Fat clay	OL or OH	Organic silt or organic clay

\* Group names may also include other modifiers, per standard or local practice.

Other soil classification standards may be used, depending on the project requirements. The AASHTO classification system is commonly used for highway design purposes and the USDA soil textural classifications are commonly used for septic (on-site sewage disposal) system design purposes.

## Double-Ring Infiltrometer Test

The double-ring infiltrometer test is used to determine the vertical infiltration rate of in situ soils above the water table. The test procedure is based upon ASTM D-3385.

The test uses two open-ended cylinders (rings), driven concentrically into the soil to a depth of a few inches. The radius of the outer ring is approximately twice that of the inner ring. Both the inner ring and the outer ring are partially filled with water (or other liquid, when appropriate) and the liquid is maintained at a constant level. The volume of liquid added to the inner ring, to maintain the liquid level constant during timed intervals, is used to calculate the incremental infiltration velocity. The maximum steady-state or average incremental infiltration velocity, depending upon the purpose/application of the test, for the inner ring is equivalent to the infiltration rate.

The purpose of the outer ring is to promote one-dimensional, vertical flow beneath the inner ring. The infiltration velocity for the outer ring may also be measured, as a check on the test integrity, but is not used to determine the infiltration rate.

### Application of Double-Ring Infiltrometer Test Results

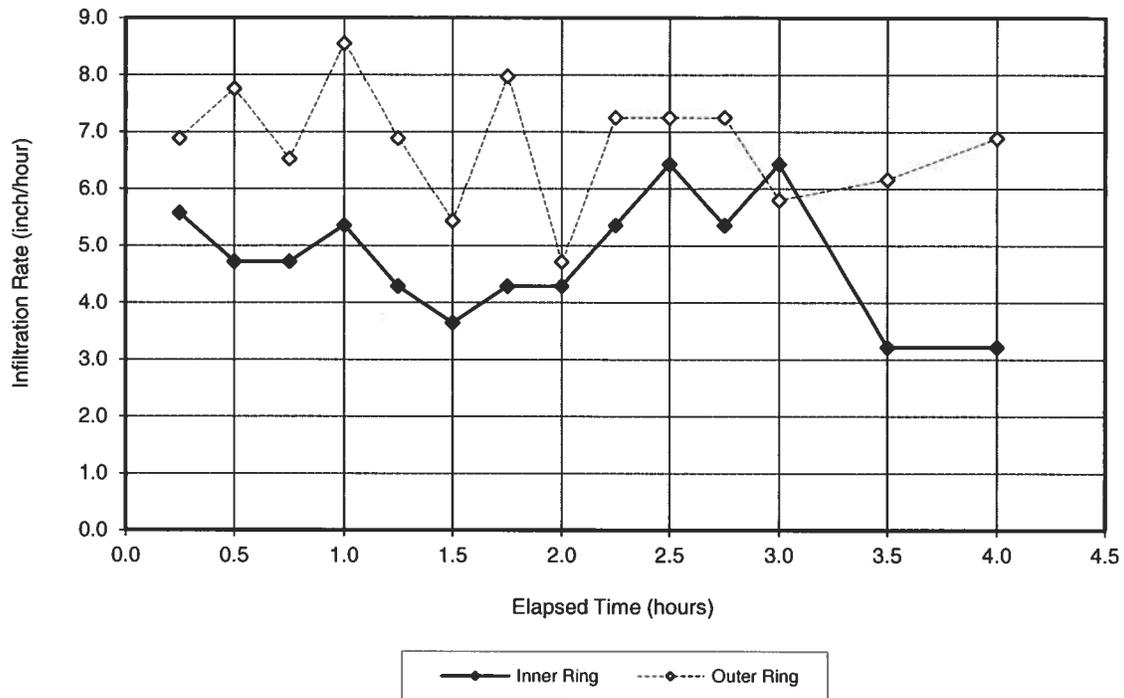
*Although the units of the infiltration rate and hydraulic conductivity ( $k$ ) of soils are similar, there is a distinct difference between these two quantities. They cannot be directly related unless the hydraulic boundary conditions (hydraulic gradient, extent of lateral flow of water, etc.) are known, or can be reliably estimated. In general, however, the infiltration rate near the end of the test is less than the saturated vertical hydraulic conductivity, since a fully saturated condition is generally not achieved by tests of this type and the hydraulic gradient near the end of the test is generally equal to or less than 1.0.*

*The test results represent a vertical infiltration rate for the conditions under which the test was performed and do not necessarily represent the infiltration rate for other conditions, such as the size of the infiltration basin and the depth of the water table. Some publications, such as EPA 65/1-81-013, recommend using a design infiltration rate that is a small percentage (typically 2% to 10%) of the infiltration rate measured by cylinder (ring) infiltrometers, to compensate for potential clogging of the infiltration surface and to correct for a larger proportion of horizontal flow (relative to vertical flow) that occurs from a small test area relative to a full-size infiltration basin area. This assumes, however, that the vertical infiltration rate (or vertical hydraulic conductivity) is the limiting factor in the basin's infiltration capacity. At sites where there is a shallow water table or shallow restrictive layer, the infiltration capacity of the full-size basin may be most limited by groundwater mounding, and not by the vertical hydraulic conductivity of the soil at or near the basin bottom. In this case, applying a percentage to a measured vertical infiltration rate or vertical hydraulic conductivity may over-estimate the actual infiltration capacity of the full-size basin, and groundwater mounding analyses should be performed by a professional engineer or geologist with expertise in groundwater hydrology.*

## **APPENDIX II**

### **Double-Ring Infiltrometer Test Results**

# Double-Ring Infiltrometer



**GRAPH DATA:**

Elapsed Time (hr:min)	Infiltration Rates (inch/hour)	
	Inner Ring	Outer Ring
0:15	5.6	6.9
0:30	4.7	7.8
0:45	4.7	6.5
1:00	5.4	8.6
1:15	4.3	6.9
1:30	3.6	5.4
1:45	4.3	8.0
2:00	4.3	4.7
2:15	5.4	7.2
2:30	6.4	7.2
2:45	5.4	7.2
3:00	6.4	5.8
3:30	3.2	6.2
4:00	3.2	6.9

**TEST NUMBER:**

**DRI-1**

Test Location:

DRI-1 (see Figure 3A)

Test Date:

26-May-20

Test Depth (inch, below grade): 3

Inner Ring - Outside Dia. (inch): 12.4

- Inside Dia. (inch): 12.0

- Water Depth (inch): 6

Outer Ring - Inside Dia. (inch): 24.1

- Water Depth (inch): 6

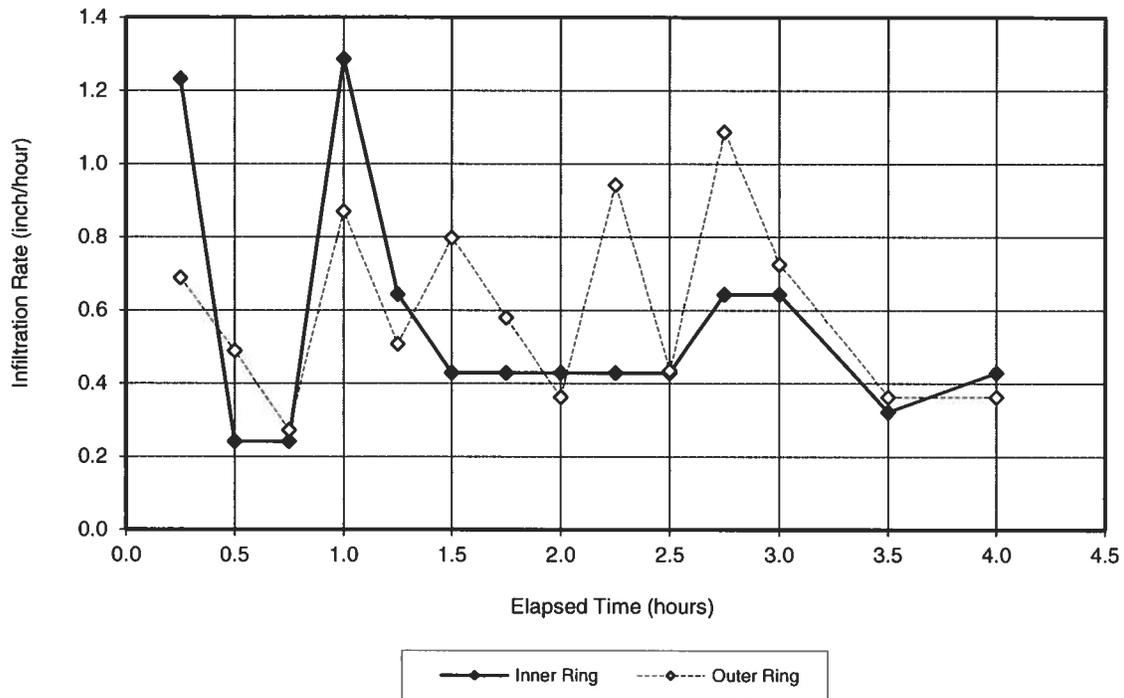
**SOIL PROFILE:**

Depth (ft)		
From	To	Soil Description
(see DRI-1, Figure 4A)		

Test Infiltration Rate = 4.4 inch/hour  
= 8.8 feet/day

 <b>Ardaman &amp; Associates, Inc.</b> Geotechnical, Environmental and Materials Consultants		
Kingfish Boatramp Holmes Beach Manatee County, Florida		
DRAWN <b>BRE/JHK</b>	CHECKED <b>BRE/JHK</b>	DATE: <b>6/2/20</b>
FILE NO: <b>11-7511</b>	APPROVED BY:	PLATE: <b>1</b>

# Double-Ring Infiltrometer



**GRAPH DATA:**

Elapsed Time (hr:min)	Infiltration Rates	
	Inner Ring (inch/hour)	Outer Ring (inch/hour)
0:15	1.2	0.7
0:30	0.2	0.5
0:45	0.2	0.3
1:00	1.3	0.9
1:15	0.6	0.5
1:30	0.4	0.8
1:45	0.4	0.6
2:00	0.4	0.4
2:15	0.4	0.9
2:30	0.4	0.4
2:45	0.6	1.1
3:00	0.6	0.7
3:30	0.3	0.4
4:00	0.4	0.4

**TEST NUMBER:**

**DRI-2**

Test Location:

DRI-2 (see Figure 3A)

Test Date:

21-May-20

Test Depth (inch, below grade): 3

Inner Ring - Outside Dia. (inch): 12.4

- Inside Dia. (inch): 12.0

- Water Depth (inch): 6

Outer Ring - Inside Dia. (inch): 24.1

- Water Depth (inch): 6

**SOIL PROFILE:**

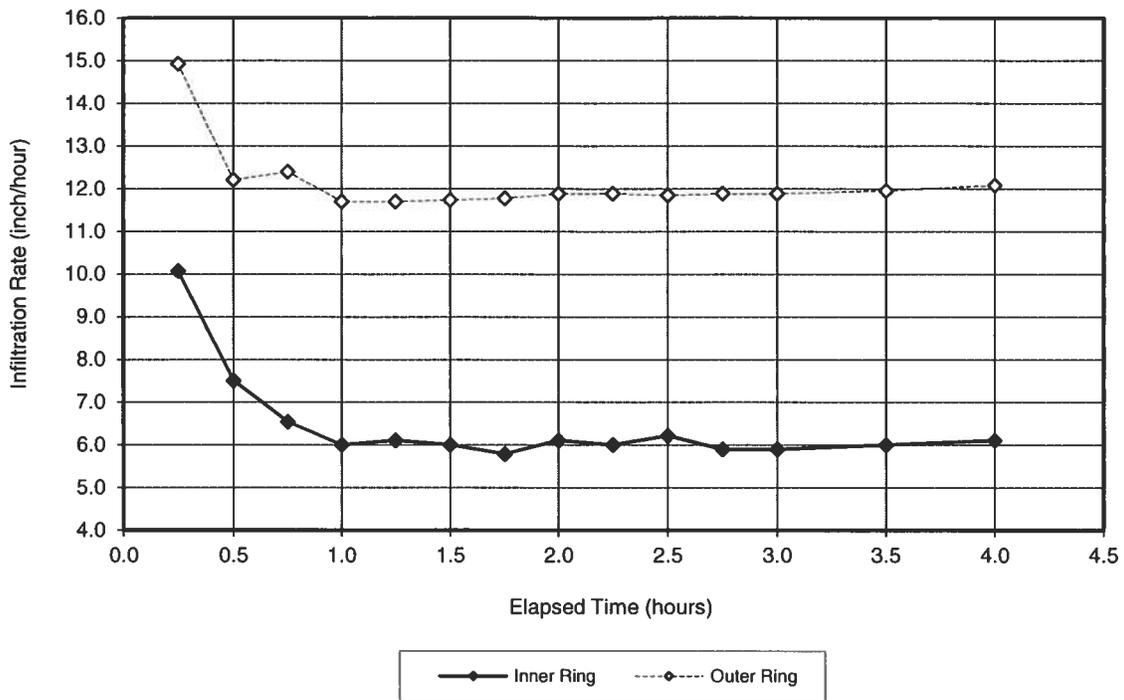
Depth (ft)

From To Soil Description  
(see DRI-2, Figure 4A)

Test Infiltration Rate = 0.45 inch/hour  
= 0.90 feet/day

 <b>Ardaman &amp; Associates, Inc.</b> Geotechnical, Environmental and Materials Consultants		
Kingfish Boatramp Holmes Beach Manatee County, Florida		
DRAWN <b>GRE/JHK</b>	CHECKED <b>GRE/JHK</b>	DATE: 6/2/20
FILE NO: 11-7511	APPROVED BY:	PLATE: 2

# Double-Ring Infiltrometer



**GRAPH DATA:**

Elapsed Time (hr:min)	Infiltration Rates	
	Inner Ring (inch/hour)	Outer Ring (inch/hour)
0:15	10.1	14.9
0:30	7.5	12.2
0:45	6.5	12.4
1:00	6.0	11.7
1:15	6.1	11.7
1:30	6.0	11.7
1:45	5.8	11.8
2:00	6.1	11.9
2:15	6.0	11.9
2:30	6.2	11.8
2:45	5.9	11.9
3:00	5.9	11.9
3:30	6.0	12.0
4:00	6.1	12.1

**TEST NUMBER:**

**DRI-3**

Test Location:

DRI-3 (see Figure 3A)

Test Date:

19-May-20

Test Depth (inch, below grade): 6

Inner Ring - Outside Dia. (inch): 12.4

- Inside Dia. (inch): 12.0

- Water Depth (inch): 6

Outer Ring - Inside Dia. (inch): 24.1

- Water Depth (inch): 6

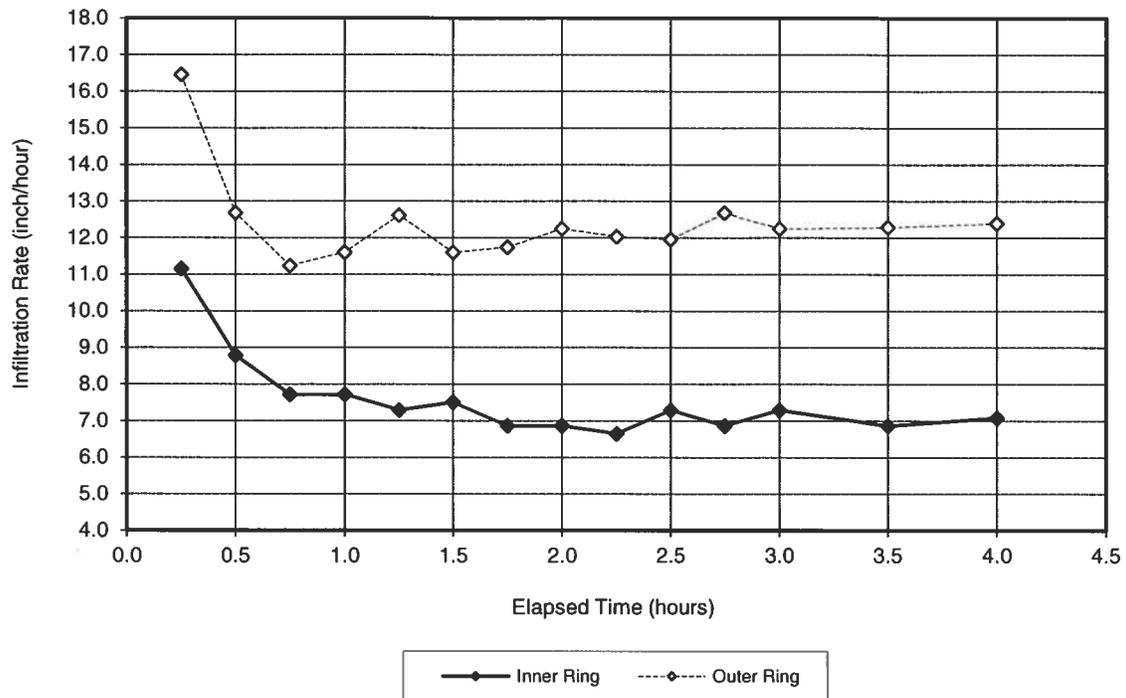
**SOIL PROFILE:**

Depth (ft)		
From	To	Soil Description
(see DRI-3, Figure 4A)		

Test Infiltration Rate = 6.0 inch/hour  
= 12 feet/day

 <b>Ardaman &amp; Associates, Inc.</b> Geotechnical, Environmental and Materials Consultants		
Kingfish Boatramp Holmes Beach Manatee County, Florida		
DRAWN <b>BRE/JHK</b>	CHECKED <b>BRE/JHK</b>	DATE <b>6/2/20</b>
FILE NO: <b>11-7511</b>	APPROVED BY:	PLATE: <b>3</b>

# Double-Ring Infiltrometer



**GRAPH DATA:**

Elapsed Time (hr:min)	Infiltration Rates	
	Inner Ring (inch/hour)	Outer Ring (inch/hour)
0:15	11.1	16.5
0:30	8.8	12.7
0:45	7.7	11.2
1:00	7.7	11.6
1:15	7.3	12.6
1:30	7.5	11.6
1:45	6.9	11.7
2:00	6.9	12.2
2:15	6.6	12.0
2:30	7.3	12.0
2:45	6.9	12.7
3:00	7.3	12.2
3:30	6.9	12.3
4:00	7.1	12.4

**TEST NUMBER:**

**DRI-4**

Test Location:

DRI-4 (see Figure 3A)

Test Date:

11-May-20

Test Depth (inch, below grade): 24

Inner Ring - Outside Dia. (inch): 12.4

- Inside Dia. (inch): 12.0

- Water Depth (inch): 6

Outer Ring - Inside Dia. (inch): 24.1

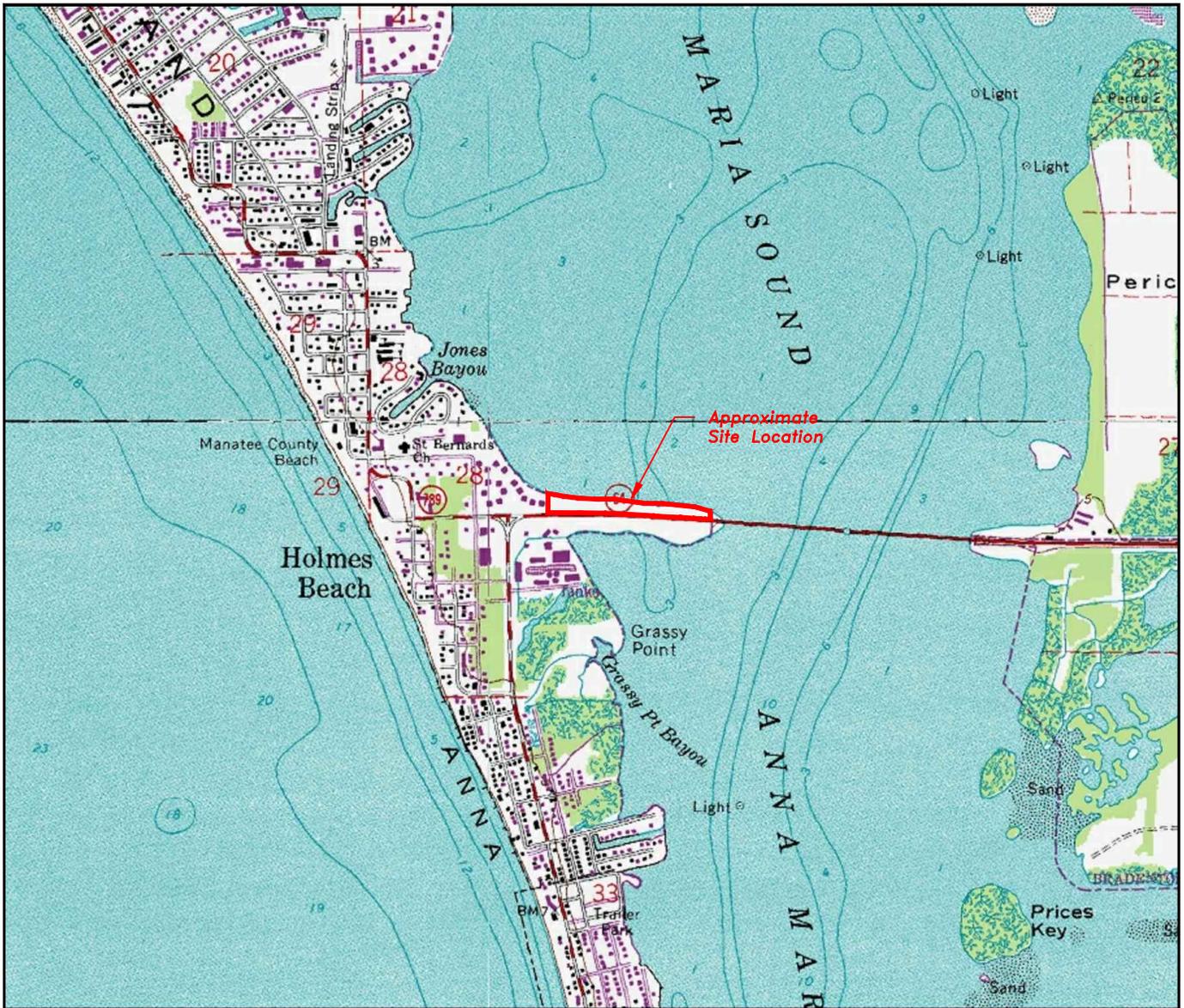
- Water Depth (inch): 6

**SOIL PROFILE:**

Depth (ft)		
From	To	Soil Description
(see DRI-4, Figure 4A)		

Test Infiltration Rate = 7.0 inch/hour  
= 14 feet/day

 <b>Ardaman &amp; Associates, Inc.</b> Geotechnical, Environmental and Materials Consultants		
Kingfish Boatramp Holmes Beach Manatee County, Florida		
DRAWN <b>GRE/JHK</b>	CHECKED <b>GRE/JHK</b>	DATE <b>6/2/20</b>
FILE NO. <b>11-7511</b>	APPROVED BY:	PLATE <b>4</b>

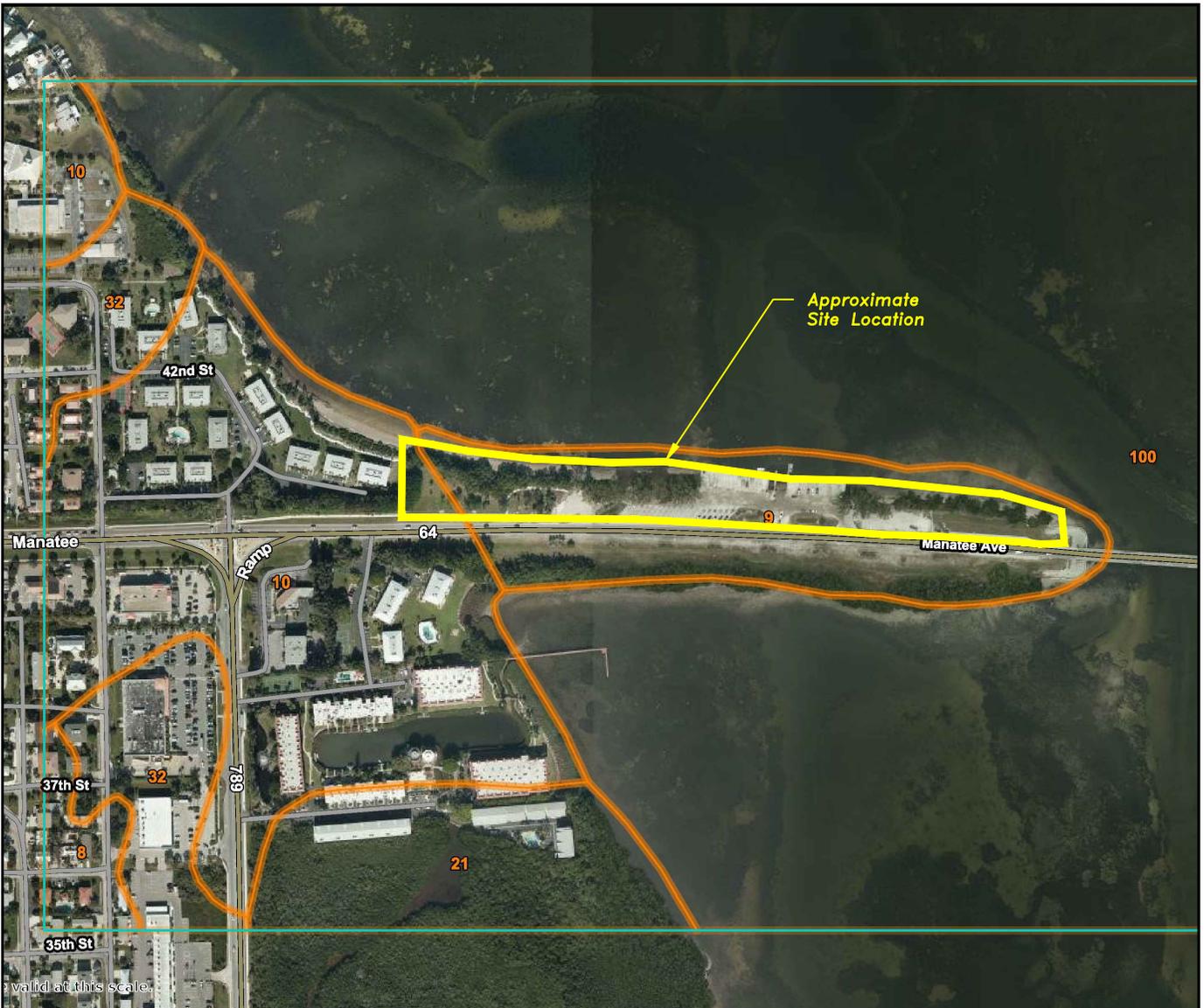


SCALE: 1"=2000'

**Ardaman & Associates, Inc.**  
 Geotechnical, Environmental and  
 Materials Consultants

*Location of Site on USGS Map  
 Kingfish Boat Ramp  
 Manatee Ave. W., Anna Maria  
 Manatee County, Florida*

DRAWN BY: <b>KGS</b>	CHECKED BY:	DATE: <b>6/2/20</b>
FILE NO. <b>11-7511</b>	APPROVED BY:	FIGURE: <b>1A</b>



**SOILS MAP LEGEND**

- 9 Canaveral sand, filled
- 10 Canaveral sand, organic substratum

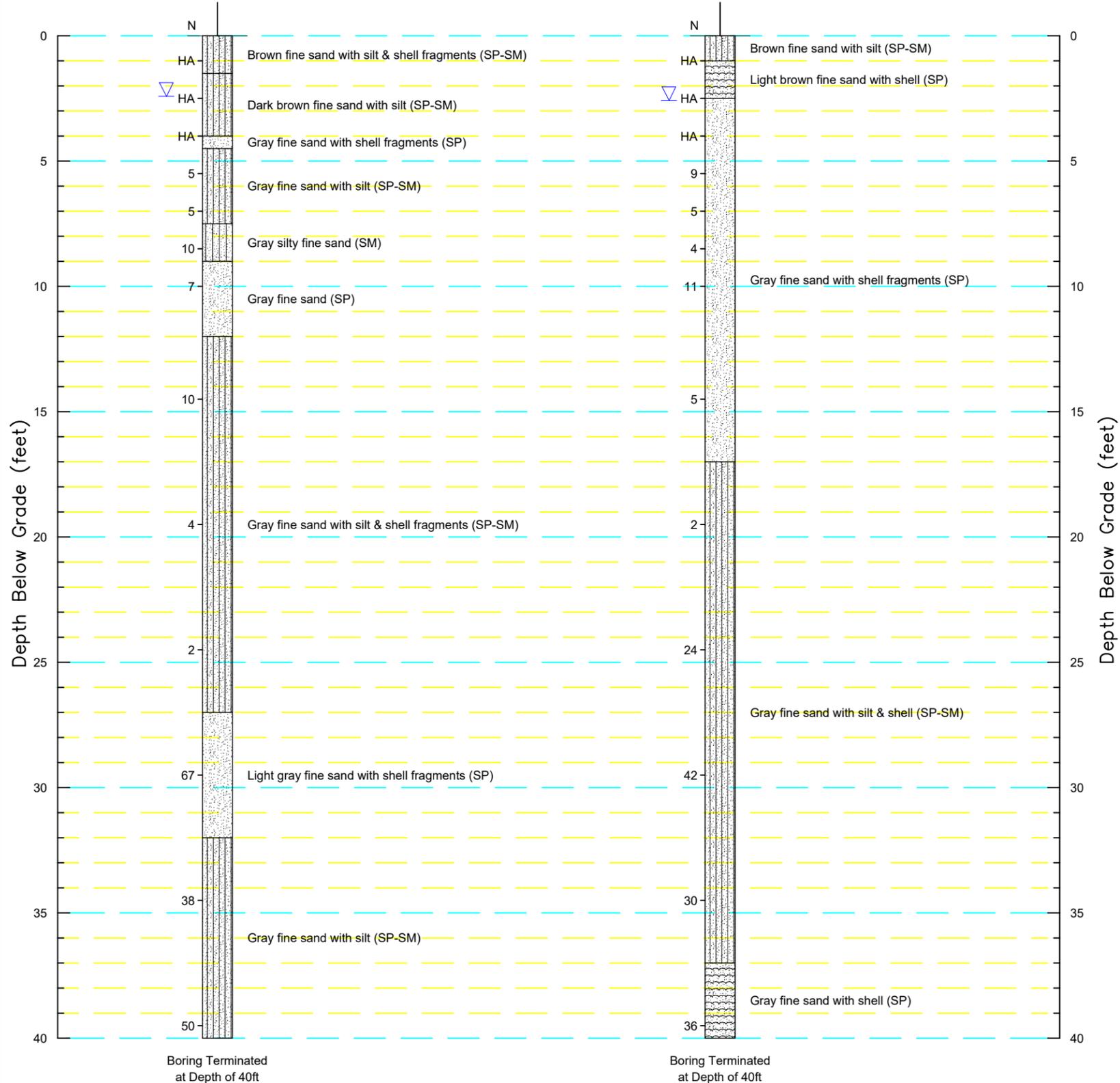


SCALE: 1"=500'

 <b>Ardaman &amp; Associates, Inc.</b> Geotechnical, Environmental and Materials Consultants		
Location of Site on USDA Soils Map Kingfish Boat Ramp Manatee Ave. W., Anna Maria Manatee County, Florida		
DRAWN BY: <b>KGS</b>	CHECKED BY:	DATE: <b>6/2/20</b>
FILE NO. <b>11-7511</b>	APPROVED BY:	FIGURE: <b>2A</b>

BOR # SPT-1  
 DATE 5/19/2020  
 DRILLER DP/WS  
 HAMMER Auto  
 RIG CME-45

BOR # SPT-2  
 DATE 5/18/2020  
 DRILLER DP/WS  
 HAMMER Auto  
 RIG CME-45



Base Aerial From Google Earth Pro

● TEST BORING LOCATIONS

**LEGEND**

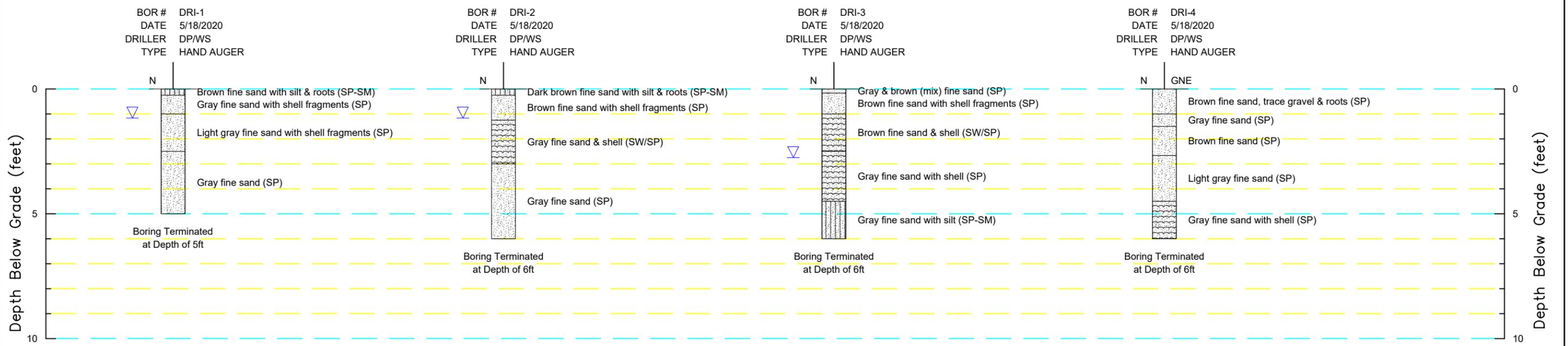
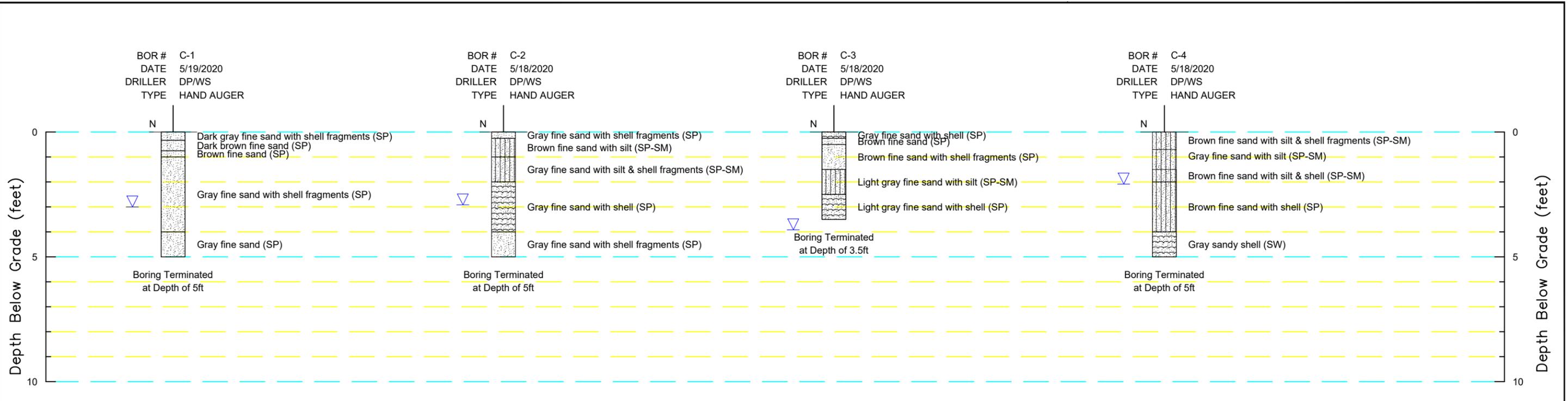
- ▽ GROUNDWATER LEVEL MEASURED ON DATE DRILLED
- N SPT N-VALUE IN BLOWS PER FOOT (UNLESS OTHERWISE NOTED)
- SPT N VALUES CONVERTED TO EQUIVALENT SAFETY HAMMER
- HA HAND AUGER

GRANULAR MATERIALS- RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	GREATER THAN 50
SILTS AND CLAYS CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 2
SOFT	2-4
FIRM	4-8
STIFF	8-15
VERY STIFF	15-30
HARD	GREATER THAN 30

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 Materials Consultants

Test Locations/Soil Boring Logs  
 Kingfish Boat Ramp  
 Manatee Ave. W., Anna Maria  
 Manatee County, Florida

DRAWN BY: KGS CHECKED BY: DATE: 5/29/20  
 FILE NO. 11-7511 APPROVED BY: FIGURE: 3A



**LEGEND**

▽ GROUNDWATER LEVEL MEASURED ON DATE DRILLED

GNE GROUND WATER NOT ENCOUNTERED

**Ardaman & Associates, Inc.**  
 Geotechnical, Environmental and  
 Materials Consultants

**Test Locations/Soil Boring Logs**  
 Kingfish Boat Ramp  
 Manatee Ave. W., Anna Maria  
 Manatee County, Florida

DRAWN BY: KGS CHECKED BY: DATE: 5/29/20  
 FILE NO. 11-7511 APPROVED BY: FIGURE: 4A

## **APPENDIX B**

### **Permits**

- Florida Department of Environmental Protection Permit No. 41-0319737-005-EM, dated 11/10/2021
- Army Core of Engineers Department of the Army Permit No.
- City of Holmes Beach Site Development Permit No.
- City of Holmes Beach Building Permit No.
- Manatee County Utilities Permit No.
- FDOT Driveway Access Permit No.
- FDOT Drainage Permit No.

## **APPENDIX C**

### **Manatee County Property Management Department – Preferred Building and Grounds Equipment, Materials, and Design Criteria Catalog**



*Property Management Department*  
**Preferred Building and Grounds Equipment,  
Materials and Design Criteria Catalog**



**Version 4 ; Revised: March 2020**

Contacts: [eric.caplan@mymanatee.org](mailto:eric.caplan@mymanatee.org)



## Summary

This catalog serves as a reference for project managers, building maintenance staff, managers, purchasing agents, architects, engineers, construction managers, and all others who may be selecting products and systems for new building design and/or remodeling and retrofitting of existing Manatee County facilities. When requesting products or services, refer to the County's blanket purchase vendors, and when applicable, ask the vendor to include a return on investment (ROI).

The catalog has been designed to follow the Construction Specifications Institute (CSI). CSI provides structured guidelines for specification writing in the Project Manual. This is the most widely used standard in the construction industry.

## All Manatee County Government Facilities

The Americans with Disabilities Act (ADA) ensures access to the built environment for people with disabilities. The ADA Standards establish design requirements for the construction and alteration of facilities subject to the law. These enforceable standards apply to places of public accommodation, commercial facilities, and state and local government facilities. State and local government facilities must follow the requirements of the 2010 Standards, including both the Title II regulations at 28 CFR 35.151; and the 2004 ADAAG at 36 CFR part 1191, appendices B and D.

If the start date for construction is on or after March 15, 2012, all newly constructed or altered State and local government facilities must comply with the 2010 Standards. Before that date, the 1991 Standards (without the elevator exemption), the UFAS, or the 2010 Standards may be used for projects when the start of construction commences on or after September 15, 2010.

The Department has assembled an official online version of the 2010 Standards to bring together the information in one easy-to-access location ([https://www.ada.gov/2010ADASTandards\\_index.htm](https://www.ada.gov/2010ADASTandards_index.htm)). It provides the scoping and technical requirements for new construction and alterations resulting from the adoption of revised 2010 Standards in the final rules for Title II (28 CFR part 35) and Title III (28 CFR part 36). All new construction and/or alterations must comply with these Department of Justice enforced standards.

For all existing buildings, we recommend following the ADA Checklist for Existing Facilities. Please see attachment 59 for the full document. Attachment 63 is a specific ADA Checklist for Existing Facilities Toilet Restrooms. We recommend checking with the local authority having jurisdiction (AHJ) that the attached checklist is acceptable.

Energy consuming products and devices shall meet or exceed the Energy Star specifications and be a qualified Energy Star product. Procedures, services, and standards listed in this catalog should meet or exceed the recommendations. During the construction process, new buildings are to be built to LEED silver standards. LEED certification is not required. **NOTE: Refer to the Florida Building with special attention to the Energy Code section which became effective July 1, 2015. The Energy Efficient Building Construction in Florida, authored by the University of Florida, IFAS office is also a recommended reference to review during a construction project.**

Florida Power and Light, our main utility provider, offers energy-saving programs and services which include rebates. Whether renovating or new construction, please review or have your consulting firm and or vendor review what is offered. **All new facilities built after January 1, 2018, will be considered for construction for use as safety shelters for employees and/or the public, during the blue sky and grey sky events. The standards used for this construction shall consider, but not be limited to, hardening of the structure, expansion of the kitchen area, expansion of the restroom facilities with showers, HVAC upgrades, and generator connectivity.**

A table listing programs Manatee County may qualify for are listed in the table below (FPL Business Program Services found in the Attachment folder).

Anything listed as “no substitution” must be submitted for review.

#### Florida Power and Light (FPL) REBATES for Large Business/Commercial/Industrial

Rebate	Description	How to Qualify	Benefits
<b>Business Lighting</b>	Receive a rebate for installing or upgrading to qualifying high-efficiency lamps and systems	Rebates are for interior lighting that is used regularly: <ul style="list-style-type: none"> <li>From 3 to 6 p.m.</li> <li>Every day of the workweek</li> <li>From June 1 to Sept. 30</li> </ul>	<ul style="list-style-type: none"> <li>Better quality lighting at a lower cost</li> <li>Reduced monthly operating costs</li> <li>Lower energy usage is environmentally friendly</li> </ul>
<b>Business Energy Evaluation</b>	Free on-site analysis of your energy use.  An Energy Expert comes to your business to do a complete evaluation of your equipment and energy use to find savings opportunities. <ul style="list-style-type: none"> <li>Equipment evaluated includes: <ul style="list-style-type: none"> <li>Heating, Ventilating and Air-Conditioning systems (HVAC)</li> <li>Building “envelope” where your building is exposed to the elements (areas such as roof, windows, and insulation)</li> <li>Lighting</li> <li>Water heating</li> <li>Processing equipment: motors, air compressor systems, elevators, conveyors, food preparation equipment and refrigeration equipment</li> </ul> </li> </ul>	Any business may schedule a Business Energy Evaluation (BEE)	Get personalized, detailed recommendations to help you: <ul style="list-style-type: none"> <li>Identify energy-saving programs that are right for you</li> <li>Lower energy costs: <ul style="list-style-type: none"> <li>✓ <b>Understand how your energy usage compares to that of similar businesses</b></li> <li>✓ <b>Understand how weather can affect your energy use</b></li> </ul> </li> <li>Qualify for rebates that may apply to your business</li> <li>Select equipment if you’re planning improvements, expansions or building new facilities</li> </ul>
<b>Thermal Energy Storage (TES)</b>	Install a TES system to reduce on-peak electricity use and to get a rebate on qualifying equipment.  TES systems produce and store cold water	<ul style="list-style-type: none"> <li>Purchase a qualifying TES system</li> <li>TES rebates are based on a minimum kW savings requirement</li> <li>Cooling load must be removed from the summer</li> </ul>	<ul style="list-style-type: none"> <li>Less expensive time-of-use rate</li> <li>Use more electricity during off-peak hours and less during peak</li> <li>Lower demand charge <ul style="list-style-type: none"> <li>– The shift in energy use from peak to off-peak hours reduces your on-</li> </ul> </li> </ul>

	or ice at night, when power is less expensive, and use it to cool your building efficiently throughout the day.	(June through Sept.) on-peak period of 3 to 6 p.m. weekdays	<p>peak demand</p> <ul style="list-style-type: none"> <li>• Potential savings on A/C compressors                             <ul style="list-style-type: none"> <li>– TES may minimize the need to buy large, expensive compressors to meet your cooling demand</li> </ul> </li> </ul>
<b>Direct Expansion Air Conditioning (DX AC)</b>	<p>Receive a rebate for installing or upgrading to a qualifying new DX AC system.</p> <p>When your qualifying new DX system is installed, you will receive a rebate based on the size, type and efficiency of the new unit.</p>	<p>Qualifying units include:</p> <ul style="list-style-type: none"> <li>• Air, water and evaporative-cooled air conditioners and heat pumps</li> <li>• Variable refrigerant flow (VRF) air conditioners and heat pumps, and computer room units.</li> <li>• Water-source heat pumps</li> <li>• Packaged terminal air conditioners or heat pump systems</li> <li>• Units that exceed the Florida Building Code</li> </ul>	<ul style="list-style-type: none"> <li>• Lowers cooling costs</li> <li>• Lowers HVAC maintenance costs</li> </ul>
<b>Energy Recovery Ventilation (ERV)</b>	<p>ERV systems keep cool energy in, that you would otherwise lose and send humidity and pollutants out.</p> <p>An ERV system allows outgoing room air that would normally be wasted to cool incoming warm air. The system reclaims energy from exhaust airflows. The system also transfers heat and moisture from inside to outside to balance humidity levels.</p>	<p>The following types of ERV units qualify for a rebate if the units are not already required by building code:</p> <ul style="list-style-type: none"> <li>• Enthalpy wheels</li> <li>• Plate-type heat exchangers</li> </ul>	<ul style="list-style-type: none"> <li>• Lower energy costs</li> <li>• Less wear and tear on air-conditioning units</li> <li>• Works with existing heating, ventilation and air-conditioning systems</li> </ul>
<b>Business Custom Incentive (BCI)</b>	<p>FPL offers customized incentives to Businesses or other organizations that upgrade their equipment or operations in ways that save significant amounts of energy.</p> <p>Contact your FPL Account Manager to help you develop a unique energy-saving energy-efficient equipment.</p>	<p>You can qualify for a BCI if your plan:</p> <ul style="list-style-type: none"> <li>• Trims at least 25 kilowatts from FPL's summer peak demand (June 1 – Sept. 30, 3-6 p.m. weekdays)</li> <li>• Differs from other FPL conservation programs</li> <li>• Passes the Florida Public Service Commission specified cost-effectiveness tests</li> </ul>	Meets your specific energy requirements
<b>Chillers</b>	<p>Purchase a new high-efficiency chiller to replace your existing chiller or install one in new construction and get a rebate.</p> <p>Contact us to help determine your needs for upgrades or equipment purchased for new construction projects.</p>	<ul style="list-style-type: none"> <li>• Purchase qualifying high-efficiency chiller models, rated at AHRI conditions</li> <li>• Incentive amounts and qualifying conditions vary, depending on the type and size of the equipment you replace or install</li> <li>• Back-up or emergency chillers do not qualify for rebates</li> </ul>	<ul style="list-style-type: none"> <li>• Significantly reduce electrical, operating and maintenance costs</li> <li>• Get ongoing energy savings</li> </ul>

Source: FPL; Save with Business Programs and Services (attachment)

## Technology

Manatee County continues to embrace mobility, accountability and the **Internet of Things (IoT)** or simply stated "smart technologies" that support projects with the most advanced technology to ensure efficiency and accuracy offered. The **Internet of Things (IoT)** is a proposed development of the Internet in which everyday objects have network connectivity, allowing them to send and receive data. It is the internet networking of physical devices, vehicles (also referred to as "connected devices" and "smart devices"), buildings and other items — embedded with electronics, software, sensors, actuators, and network connectivity that enable these objects to collect and exchange data.

Technology, materials, tools, processes, and operations will continue to change and improve. Manatee County is committed to finding and leveraging energy-efficient technologies. Thoughtful research for LED lighting upgrades, building automation, energy-efficient HVAC technologies, and new Bluetooth-enabled features such as automatic water meter reading systems are examples of the effort that will be taken for new technology to have a positive impact on both the County, community and the environment.

Networked lighting and connected lighting have begun to blossom as technological advancements continue to increase the viability of the IoT. Innovative Lighting has been on the cutting edge of networked lighting (often referred to as Power over Ethernet lighting). A PoE system both powers and controls the LED lighting, multi-functional sensors and preset dimming wall switches on simple Ethernet cable, and the need for conduit or expensive labor has been eliminated. Up to 86% energy savings when compared to conventional fluorescent lighting is no small feat. Add to that making LED fixtures last at least twice as long as their rated life and you begin to see why many see a PoE system as the destiny of energy-efficient LED lighting.

### EXAMPLE:



Given a single Power over Ethernet connection (single gray cable looping below), a PoE splitter provides both data (gray cable looping above) and power (black cable also looping above) connections for a [wireless access point](#). The splitter is the silver and black box in the middle, between the wiring box on the left and the access point (with its two antennas) on the right. The PoE connection eliminates the need for a nearby [power outlet](#).

<http://www.ecmag.com/section/systems/power-poe>

<http://www.ledsmagazine.com/articles/print/volume-12/issue-8/features/dc-grid/poe-technology-for-led-lighting-delivers-benefits-beyond-efficiency.html>

**Daylight Harvesting:** The term used in the building controls industry for a control system that reduces electric light in building interiors when daylight is available, to reduce energy consumption. Daylight harvesting is an energy management technique that reduces overhead lighting use by:

- Utilizing the ambient (natural & artificial) light present in a space
- Dimming or switching OFF lighting when sufficient ambient light is present or when the space is unoccupied
- Utilizing zones to stagger the dimming and switching of lighting loads depending on their distance from ambient light sources, such as windows and skylights
- Benefits of daylight harvesting: Save money on electrical; Automated control of lights; Health benefits of correct lighting.

**Note: “Daylight Harvesting Made Easy” found in Attachments - Lighting and Electrical folder**

## WELL Building Standard

It is recommended to follow the WELL Building Standard when during new construction and remodeling. The focus is on people and is performance-based. The seven concepts of the WELL Building Standard are air, water, nourishment, light, fitness, comfort and mind. Strategies include air quality testing and monitoring; filtration and treatment; ventilation; moisture control; cleaning protocol; material selection during construction processes and healthy entrance. WELL promotes lighting systems designed to increase alertness, enhance the experience and promote sleep. WELL also creates distraction-free, productive and comfortable indoor environments and encourages the integration of fitness and exercise into everyday life is aligned with the goals of Manatee County’s Employee Health Benefits program. <https://www.wellcertified.com/en/our-standard>

## County Graphic Standards for County Logo and Logo Colors

Colors for printing in Pantone Matching systems, CMYK and RGB-color systems are addressed in the County Standard and must be matched to these color system codes. Refer to the *Manatee County Graphic Standards Style Guide*. See attachment 10 for the Manatee County Graphics Standards Manual.

## Facilities Space Programming Standards

Square footage space standards will be followed.

Commissioner / Constitutional Officer.....	300
Other Elected Official or Appointed Staff.....	250
Division Director / Manager.....	180

Manager.....	150
Professional.....	120
Technical Staff.....	100
Professional. ....	100
Administrative Support.....	70

- Standard occupied office space temperature setpoints will be programmed to 75 degrees (74-76) and relative humidity will be programmed to 52-59%. Unoccupied or night-time settings will be programmed and determined as needed to maintain the facility function.
- The procurement of office furniture shall be coordinated through Property Management and the end-users due to the potential benefit from significant economies of scale in purchase volume or the potential of existing surplus supplies that may be re-assigned to the project at little to no additional cost.
- Breastfeeding rooms see [Section 13 21 14 Fairness for Breastfeeding Mothers Act of 2019 in this catalog](#)
- Service dog allowances
- If an office space required an erase board to be installed. Property Management required a glass erase board. Please see the photo below for a sample of the glass board required by Property Management.
- Conference rooms are recommended to be outfitted with: Smart monitors may be required, 1 telephone, 1 computer, 1 glass board, and ceiling fans with wall-mounted control switch.
- AED's mounted in buildings should be AED PLUS which comes complete with AED Pads and batteries for use. The manufacturer is ZOLL Medical and the mounting for the AED is ZOLL AED Cabinet. Flushed or Recessed mounting. All new and remodeled buildings shall have a ZOLL AED PLUS defibrillator. <http://www.heartsmart.com/ZOLL-AED-Plus-Value-Package-p/bus-pkg-plus.htm> or call 1-800-422-8129. (See AED Plus Brochure in the Attachments folder).



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**DIVISION 00 PROCUREMENT AND CONTRACTING REQUIREMENTS****PROJECT FORMS****CLOSEOUT PROCEDURES**

This section includes administrative and procedural requirements for contract closeout, including, but not limited to the following:

1. Substantial Completion Procedures
2. Final Completion Procedures
3. Warranties
4. Repair of the Work
5. Building Information Modeling (BIM)

***Related Requirements:***

1. "Photographic Documentation" for submitting completion construction photographic documentation.
2. "Execution Requirements" for process cleaning of the project site.
3. "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
4. "Operation and Maintenance Data" for operation and maintenance manual requirements.
5. "Demonstration and Training" for requirements for instructing the Owner's personnel.

**SUBSTANTIAL COMPLETION PROCEDURES**

- A. Contractor's list of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's Punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals before Substantial Completion: Complete the following a minimum of 10 days before requesting inspection for determining the date of Substantial Completion. List items below that are incomplete at the time of the request.
  1. Submit closeout submittals specified in other Division 01 sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
  2. Submit closeout submittals specified in the individual sections, including specific warranties, workmanship bonds, maintenance material service agreements, final certifications, and similar documents.
  3. Submit maintenance material submittals specified in individual sections, including tools, spare parts, extra materials, similar items, and delivery locations designated by Architect. Label with the manufacturer's name and model number, where applicable.
  4. Submit test/adjust/balance records.

- C. Procedures Before substantial completion: Complete the following a minimum of 10 days before requesting Inspection for determining the date of Substantial Completion. List items below that are incomplete at the time of the request.
1. Advise Owner of pending insurance changeover requirements
  2. Make final changes over permanent locks and deliver keys to the Owner. Advise Owner's personnel of changeover in security provisions.
  3. Complete startup and testing of systems and equipment.
  4. Perform preventive maintenance on equipment used before Substantial Completion.
  5. Instruct the Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01820 "Demonstration of Training."
  6. Advise Owner of the changeover in all utilities.
  7. Participate with the Owner in conducting inspection and walkthrough with local emergency responders.
  8. Terminate and remove temporary facilities from the Project site, along with mockups, construction tools, and similar elements.
  9. Complete final cleaning requirements, including touchup painting.
  10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion of a minimum of 10 days before the date the work will be completed and ready for final inspection and tests. On receipt of the request, the Architect will either proceed with inspection or notify Contractor unfulfilled requirements. The architect will prepare the Certificate of Substantial Completion after the inspection or will notify the Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before a certificate will be issued.
1. Reinspection: Request reinspection when the work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for final completion.

#### **FINAL COMPLETION PROCEDURES**

- A. Submittals Before Final Completion: Before requesting final inspection for determining completion, complete the following:
1. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. A certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance. (See Attachment - *Final Reconciliation, Warranty Period Declaration and Contractor affidavit*).
- B. Inspection: Submit a written request for a final inspection to determine acceptance of a minimum of 10 days before the date of work will be completed and ready for final inspection and tests. On receipt of the request, the Architect will either

proceed with inspection or notify the Contractor of unfulfilled requirements. The architect will review a final Certificate for Payment after the inspection or will notify the Contractor of construction issues that must be completed or corrected before a certificate will be issued.

1. Reinspection: Request reinspection when the work identified in previous inspections as incomplete is completed or corrected.

#### **LIST OF INCOMPLETE ITEMS (PUNCH LIST)**

- A. Organization of List: Include name and identification of each space and area affected by construction for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  1. Organize a list of spaces in sequential order, starting with exterior areas first and proceeding to the interior.
  2. Organize items applying to each space by the major element, including categories for the ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name
    - b. Date
    - c. Name of Architect
    - d. Name of Construction Manager
    - e. Page number

#### **REPAIR OF THE WORK**

- A. Complete repair and restoration operations before requesting an inspection to determine Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired.
  1. Remove and replace chipped, scratched and broken glass, reflective surfaces, and other damaged transparent materials.
  2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures (LED).

### **BUILDING INFORMATION MODELING (BIM)**

Building information modeling (BIM) is the equivalent of digitalization in the construction industry: It is a digitally supported process for planning, constructing and operating buildings that enable significant productivity increase in the construction industry.

An overall BIM approach should be used for the design-build process by contracted County architectural, engineering and construction firms. Products, solutions, and services reflect the whole building lifecycle, all disciplines in the building, the various user and customer types, the different energy forms and the hardware and software products used in buildings.

Construction projects are faced with numerous challenges and obstacles, lack of coordination on construction sites, unreliable schedules and costs, insufficient quality and planning errors or inaccurate, incomplete plans as well as a lack of cooperation. The BIM process will help eliminate these challenges and obstacles.

The BIM process is built on four principles:

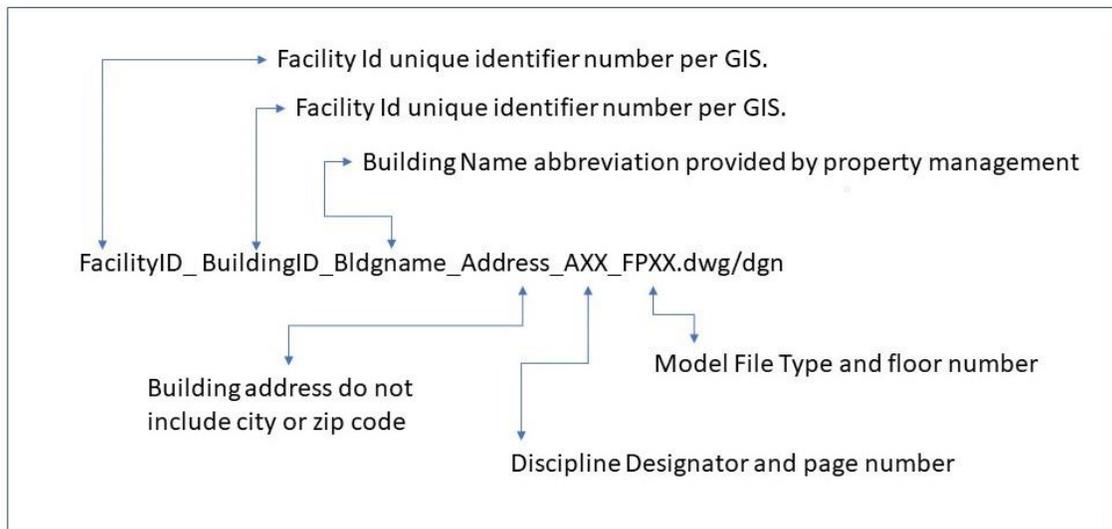
**Build twice:** Building twice is more efficient: first the digital model, then the actual construction process. This leads to better coordination, early or no errors and clash detection between all trades for a faster overall construction process with fewer errors.

**Build and plan together:** All stakeholders are involved in the planning process, so changes can be made in the model, change orders and time-intensive modifications on the construction site can be avoided.

**Create data only once:** It is much more efficient to invest more time in a highly accurate plan than to send someone into the building with a folding yardstick to re-measure.

**For the entire lifecycle:** Today, the focus of BIM is merely on planning. But BIM has benefits for the entire lifecycle of the building. The data model facilitates service, maintenance, and disposal.

Note the BIM Filename to follow the United States National CAD Standard. See the graphic below.



## END OF SECTION

### **DIVISION 01 00 00 GENERAL REQUIREMENTS**

#### **EXECUTION AND CLOSEOUT REQUIREMENTS**

##### CONSTRUCTION CLEANING

#### **Part 1 – General**

##### 1.01 Related work

- a. The Drawings and provisions of the General Conditions, Supplementary Conditions and the Sections included under Division 1, General requirements are included as part of this Section as though bound herein.

##### 1.02 Summary

- a. The Contractor shall act on behalf of the Owner about the clean-up responsibilities that are a part of the Contractor's Work. "Cleaning-Up," included in the General Conditions and the statement concerning cleaning-up which is included in the Scope of Work.

##### 1.03 Daily Cleaning

- a. The contractor shall remove his trash and debris to on-site disposal units (Dumpsters) to prevent fire and safety hazards as well as to provide a more efficient construction operation. If this cleaning is not performed to the satisfaction of the Owner and the Architect, it will be performed for the Contractor at his expense.

##### 1.04 Routine cleaning

a. Each Friday afternoon, or as directed by Owner, the Contractor shall perform an overall cleanup of the Project, including a broom cleaning of appropriate surfaces. The trades shall remove their trash and debris from the building site to the trash collection location promptly upon its accumulation and in no event later than the Contractor's regular Friday general cleanup. The Contractor shall provide a suitable location on the site with a sufficient quantity of trash bins and shall be responsible for the removal of trash from the site. If this cleaning is not performed to the satisfaction of the Owner and the Architect, it will be performed for the Contractor at his expense.

#### 1.05 Final Cleaning

a. The contractor shall perform an overall cleanup of the entire site, including a broom cleaning and dusting of appropriate surfaces. Vacuuming of carpets, three coats of wax to VCT flooring and buffing of rubber flooring. The trades shall remove their trash and debris from the building and site to the legal trash collection location.

**b. If this cleaning is not performed to the satisfaction of the Owner and the Architect, it will be performed for the Contractor at his expense.**

**c. The contractor shall also provide special/institutional cleaning as part of the final cleaning. This work shall be sub-contracted to a professional cleaning service.**

#### 1.06 Trash Container(s)

a. The Contractor shall provide dumpster type trash container(s) that are adequately sized for the waste, debris, and trash for the life of the Project.

b. The Contractor shall legally dispose of container(s) contents weekly or at more frequent intervals if required by inadequate container capacity.

c. Oily and/or other volatile waste and trash shall not be placed in the standard trash containers but shall be stored in separate approved containers in an exterior location at least 100 feet from the building until legally disposed of offsite.

#### 1.07 Cleaning Safety Requirements

a. Comply with authorities having jurisdiction and AGC recommendations. Submit and make available MSDS information on each cleaning product on the project site.

b. Hazards Control:

1. Store volatile wastes in covered metal containers and remove them from premises daily.

2. Prevent the accumulation of wastes that create hazardous conditions.

3. Provide adequate ventilation during the use of volatile or noxious substances.

- c. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
  1. Do not burn or bury trash and waste materials on the project site.
  2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  3. Do not dispose of wastes into streams or waterways.

#### 1.08 Exterior Envelope Performance

Once the building is enclosed to the elements. Property Management requires the contractor to perform inspections for air leakage and water intrusion. Property Management recommends performing a smoke infiltration test to determine the areas of concern for air leakage. Property Management recommends an infrared inspection to be performed to the exterior envelope and roof system to determine water infiltration areas of concern. Property Management requires the contractor to submit a report that states the findings and solutions method to properly seal-tight the building.

### **Part 2 – Products**

#### 2.01 Materials

- a. Use only cleaning materials recommended by the manufacturer of the surface to be cleaned.

#### 3.01 Daily Cleaning

- a. The contractor shall execute cleaning to ensure that buildings, grounds, and public properties are maintained free from accumulations of waste materials and trash.
- b. Daily, during the progress of work, clean site, and public properties and dispose of waste materials, debris and trash in dumpster type trash container provided under this Section.
- c. Schedule cleaning operation so that dust and other contaminants resulting from the cleaning process will not fall on wet, newly painted surfaces.
- d. Place no new work on dirty surfaces.
- e. No construction debris shall be buried into walls, partitions or ceilings.

#### 3.02 Routine Cleaning

- a. Weekly or at more frequent intervals if work activities justify it, perform the following cleaning. This includes all dirt, dust, debris not identifiable as part of a Contract. Broom clean floor and paved surfaces; rake clean other surfaces of ground.
- b. Maintain cleaning throughout the life of the Project.

c. Should the Contractor fail in the performance of this Work, the Owner may perform such Work and back charge the Contractor.

### 3.03 Final Cleaning

a. The contractor shall perform his respective final cleanup and shall leave the Work of the complete Project in clean, neat condition.

b. Employ an experienced cleaning company for final cleaning.

c. The following are examples, but not by the way of limitation, of cleaning levels required:

1. Remove labels that are not required as permanent labels.

2. Clean transparent materials, including mirrors and window/door glass to a polished condition, removing substances that are noticeable as vision-obscuring materials. Replace broken new or existing glass materials damaged during construction. Clean both interior and exterior of windows.

3. Clean exposed exterior and interior hard-surfaced finishes for a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances.

a. Except as otherwise indicated, avoid disturbance of natural weathering of exterior surfaces. Restore reflective surfaces to original reflective conditions.

4. Wipe surfaces of mechanical and electrical equipment clean, including elevator equipment and similar equipment; remove excess lubrication and other substances.

5. Remove debris and surface dust from limited-access spaces including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

6. Clean concrete floors in unoccupied spaces broom clean.

7. Vacuum clean carpeted surfaces and similar soft surfaces.

8. Clean plumbing fixtures to sanitary condition, free of stains, including those resulting from water exposure.

9. Clean light fixtures and lamps to function with full efficiency.

10. Clean project site (hard and grounds), including landscape development areas of litter and foreign substances. Sweep paved areas to a broom-clean condition, remove stains, Petro-chemical spills and other foreign deposits. Rake grounds which are neither planted nor paved to a smooth, even-textured surface.

11. Clean out storm drains and catch basins.

12. Final floor maintenance (sweeping, mopping, sealing, and waxing).

- a. VCT Flooring to have three coats of wax applied before owner acceptance.
  - b. Rubber flooring to be buffed as noted by the manufacturer before owner acceptance.
13. Cleaning of surfaces with detergent or mild chemical solvent type cleaners as required to remove dirt and stains. Verify the compatibility of cleaners and surfaces before use.
14. Dusting and waxing of finished surfaces (example casework, countertops, window trim, and other equipment and furniture items.
15. Coordinate with Owners maintenance staff for normal cleaning procedures used to assure compatibility.
16. Replace all air filters, clean exposed surfaces of diffusers, registers, and grills.
- a. Clean HVAC systems in compliance with NADCA standards 1992-01. Provide a written report on completion.
  - b. Remove smoke and fire alarm covers.

#### CLOSEOUT SUBMITTALS

#### SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the work where the commencement of warranties other than the date of Substantial Completion is indicated, or when a delay in the submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the work that are completed and occupied or used by the Owner during the construction period by separate agreement with Contractor and building official.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
  1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8 ½ of 11-inch paper.
  2. Provide heavy paper dividers with plastic covered tabs for each separate warranty. Mark tab to identify the product install or type a description of the product install, including the name of the product and the name, address and telephone number of Installer.
  3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
  4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed

electronic PDF file with links enabling navigation to each item. Provide a bookmarked table of contents at the beginning of the document.

- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

### **SUBMITTAL OPERATION AND MAINTENANCE DATA**

This section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory
2. Emergency Manuals
3. Operation Manuals for systems, subsystems, and equipment
4. Product maintenance manuals
5. Systems and equipment maintenance manuals

### **OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY**

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data, materials, listing items and their location to facilitate ready access to the desired information. Include a section in the directory for each of the following:
  1. List of documents.
  2. List of systems.
  3. List of equipment.
- B. Title page: Include the following information:
  1. Subject Matter included in the manual.
  2. Name and address of the Project.
  3. Name and address of Owner.
  4. Date of Submittal.
  5. Name and contact information for Construction Manager.
  6. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to the Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include a comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by the system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
1. Electronic Files: Use electronic files prepared by the manufacturer where available. Where scanning of paper documents is required, configure scanned files for minimum readable file size.
  2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to the system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
1. Binders: Heavy-duty, three-ring, vinyl-covered binders, in thickness necessary to accommodate contents, sized to hold 8 ½ by 11-inch paper; with the clear plastic sleeve on the spine to hold label describing contents and with pockets inside covers to hold folded oversized sheets.
    - a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for property operation or maintenance of equipment or system.
    - b. Identify each binder on front and spine, with the printed title "OPERATION AND MAINTENANCE MANUAL" Project title or name, and subject matter of contents, and indicate Specification Section number on the bottom of the spine. Indicate volume numbers for multiple-volume sets.
  2. Dividers: Heavy-paper dividers with plastic covered tabs for each section of the manual. Mark each tab to indicate contents. Include a typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
  3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.

4. Supplementary Text: Prepared on 8 ½ X 11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
  - a. If oversize drawings are necessary, fold and insert into the binder.

If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in the rear of the manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents and drawing locations.

### **SUSTAINABLE DESIGN CLOSEOUT SUBMITTALS**

- A. Manual content: Submit reviewed manual content formatted and organized as required.
  1. The architect will comment on whether the content of operations and maintenance submittals are acceptable.
  2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
  1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit digital media acceptable to Architect.
    - a. Name each indexed document file in composite electronic index with applicable item name. Include complete electronically linked operations and maintenance directory.
    - b. Enable inserted reviewer Comments on draft submittals.
  - B. Four paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. The architect will return all copies to be forwarded to the owner.
- C. Final Manual Submittal: Submit each manual in the final form before requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training.

### **EMERGENCY MANUALS**

- A. Organization: Organize manual into separate sections for each of the following:
  1. Type of Emergency
  2. Emergency Instructions
  3. Emergency Procedures

- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment and component.
1. Fire.
  2. Water leak.
  3. Water outage.
  4. A system, subsystem, or equipment failure.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of the Owner's operating personnel for notification of Installer, supplier, and signals. Include responsibilities of the Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable.
1. Instructions on stopping.
  2. Shutdown instructions for each type of emergency.
  3. Operating instructions for conditions outside normal operating limits
  4. Required sequences for electric or electronic systems.
  5. Special operating instructions and procedures.

**OPERATIONS MANUALS:**

- A. In addition to requirements in this Section, including operation data required in individual sections and the following information:
1. The system, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
  2. Performance and design criteria, if the Contractor has delegated design responsibility.
  3. Operating standards,
  4. Operating procedures.
  5. Operating logs.
  6. Wiring diagrams.
  7. Control diagrams.
  8. Piped system diagrams.
  9. Precautions against improper use.

10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:
1. Product name and model number. Use designations for products indicated on Contract Documents.
  2. Manufacturer's name.
  3. Equipment identification with a serial number of each component.
  4. Equipment function.
  5. Operating characteristics.
  6. Limiting conditions.
  7. Performance curves.
  8. Engineering data and tests.
  9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following as applicable:
1. Startup Procedures.
  2. Equipment or system break-in procedures.
  3. Routine and normal operating instructions.
  4. Regulation and control procedures.
  5. Instructions on stopping.
  6. Normal shutdown instructions.
  7. Seasonal and weekend operating instructions.
  8. Required sequences for electric or electronic systems.
  9. Special operating instructions and procedures.
- D. Systems and Equipment control: Describe the sequence of operation and diagram controls as installed.
- E. Piped Systems: Diagram piping as-built and identify color-coding is required for identification.

**PRODUCT MAINTENANCE MANUALS:**

- A. Content: Organize the manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds as described below.

- B. Source information: List each product included in the manual, identified by product name and arranged to match the manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Product Information: Include the following as applicable:
  - 1. Product name and model number.
  - 2. Manufacturer's name.
  - 3. Color, pattern, and texture.
  - 4. Material and chemical composition.
  - 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include Manufacturer's written recommendations and the following:
  - 1. Inspection procedures.
  - 2. Types of cleaning agents to be used and methods of cleaning.
  - 3. List of cleaning agents and methods of cleaning detrimental to the product.
  - 4. Schedule for routine cleaning and maintenance.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include lists of warranties and bonds and lists of circumstances and conditions that would affect the validity of warranties or bonds.
  - 1. Include procedures to follow and required notifications for warranty claims.

#### **SYSTEMS AND EQUIPMENT MAINTENANCE**

List each system, subsystem, and piece of equipment included in the manual, identified by product name and arranged to match the manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or scheduled designation or identifier where applicable.

- A. Manufacturers' maintenance Documentation: Manufacturer's maintenance documentation including the following information for each part or piece of equipment.
  - 1. Standard maintenance instructions and bulletins.
  - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement and assembly.

3. Identification and nomenclature of parts and components.
  4. List of items recommended to be stocked as spare parts.
- B. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
  2. Troubleshooting guide
  3. Precautions against improper maintenance.
  4. Disassembly; component removal, repair, replacement and reassembly instructions.
  5. Aligning, adjusting and checking instructions.
  6. Demonstration and training video recording, if available.
- C. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
  2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- D. Spare parts List and Source information: Include lists of replacement and repair parts, with parts identified and cross-referenced to, manufactures' maintenance documentation and local sources of maintenance materials and related services.
- E. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect the validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

**OTHER GENERAL MANUAL INFORMATION:**

- A. Operation and Maintenance Documentation Director: Prepare a separate manual that provides an organized reference to an emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by the Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
  - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
  - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by the Owner's operating personnel.
- E. Manufacturer's Data: Where manuals contain manufacturers' standard printed data include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data includes more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
  - 1. Prepare supplementary text if manufacturers' standard printed data to illustrate control sequence and flow diagrams. Coordinate these drawings with the information contained in record Drawings to ensure the correct illustration of the completed installation.

#### **PROJECT RECORD DOCUMENTS**

This section includes administrative and procedural requirements for project record documents, including the following:

- 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
  - 4. Building Information Management (BIM) System
- A. Related Requirements:
    - 1. "Closeout Procedures" for general closeout procedures.
    - 2. "Operation and Maintenance Data: for operation and maintenance manual requirements.

#### **CLOSEOUT SUBMITTALS**

- A. Record Drawings: Comply with the following:
  - 1. Submit 2 set(s) of marked-up record prints.
  - 2. Submit copies of Record Drawings as follows:
    - a. Initial Submittal:

- 1) Submit 1 paper copy-set(s) of marked-up record prints.
  - 2) Submit PDF electronic files of scanned record prints and one of the file prints.
  - 3) The architect will indicate whether the general scope of changes, additional information recorded, and the quality of drafting are acceptable.
- b. Final Submittal:
- 1) Submit three paper-copy set(s) of marked up record prints.
  - 2) Submit PDF electronic files of scanned record prints and three-set(s) of prints.
  - 3) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit three paper copies and annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit three paper copies and annotated PDF electronic files and directories of each submittal.
- \*Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Reports: Submit written report indicating items incorporated into project record documents concurrent with the progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

## RECORD DRAWINGS

Record prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued. Note all the drawings preening to Public Works should be submitted per the "Utility Standards Manual Section 1.14 Record Drawings". See attached Utility Standards Manual file 52 in the share point.

- A. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
1. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
  2. Accurately record information in an acceptable drawing technique.
  3. Record data as soon as possible after obtaining it.
  4. Record and check the markup before enclosing concealed installations.

5. Cross-reference record prints to corresponding archive photographic documentation.
- B. Content: Types of items requiring marking include, but are not limited to the following:
1. Dimensional changes to Drawings.
  2. Revisions to details shown on Drawings.
  3. Depths of foundations below the first floor.
  4. Locations and depths of underground utilities
  5. Revisions to routing of piping and conduits.
  6. Revisions to electrical circuitry and controls including low voltage
  7. Actual equipment locations.
  8. Duct size and routing.
  9. Locations of concealed internal utilities.
  10. Changes made by Change Order or work change Directive.
  11. Changes made following Architect's written orders.
  12. Details not on the original Contract Drawings.
  13. Field records for variable and concealed conditions.
  14. Record information on the Work that is shown only schematically.

Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in the production of marked-up record prints.

Mark recordsets with an erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

Mark important additional information that was either shown schematically or omitted from Original Drawings.

Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

- C. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When

authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Annotated PDF electronic file with comment function enabled.
  2. Incorporate changes and additional information previously marked on record prints. Delete, redrawn and add details and notations where applicable.
  3. Refer instances of uncertainty to the Architect for resolution.
  4. The architect will furnish the Contractor one set of digital data files of the contract Drawings for use in recording information.
    - a. The architect will provide data file layer information. Record markups in separate layers.
- D. Format: identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Format: Annotated PDF electronic file with comment function enabled.
  3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification.
  4. Identification: As follows:
    - a. Project name
    - b. Date
    - c. Designation "PROJECT RECORD DRAWINGS."
    - d. Name of Architect
    - e. Name of Construction Manager

Note: All other digital drawing records file names to be submitted per the United States National CAD Standard. See the sample graphic below.

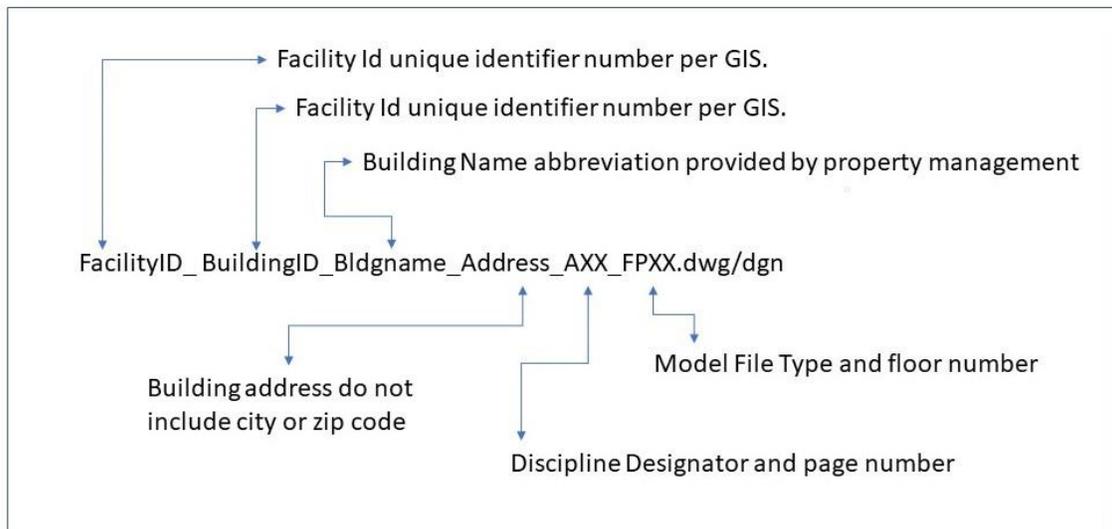


Figure. Digital drawing file name standard.

### RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished including substitutions and product options selected
  3. Record the name of the manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
  4. For each principal product, indicate whether record Product Data has been submitted in operation as record Product Data.
  5. Note related Change Orders, record Product data, and record Drawings where applicable.
- B. Format: Submit record Specifications as annotated PDF electronic file or scanned PDF electronic file(s) of a marked-up paper copy of Specifications.

### RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give attention to information on concealed products and installations that cannot be readily identified and recorded later.
  2. Include significant changes in the product delivered to the Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as an annotated PDF electronic file and scanned PDF electronic file(s) of a marked-up paper copy of Product Data.
1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

### **RECORD AND MAINTENANCE**

Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until the end of the Project.

Provide access to project record documents for the Architect and owner's reference during normal working hours.

### **DEMONSTRATION AND TRAINING**

Administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment
2. Training in the operation and maintenance of systems, subsystems, and equipment.
3. Demonstration and training video recordings.

### **CLOSEOUT SUBMITTALS**

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of the end of each training module.
1. Identification: On each copy, provide an applied label with the following information:
    - a. Name of the Project.
    - b. Name and address of videographer.
    - c. Name of Architect.
    - d. Name of Construction Manager.
    - e. Name of Contractor.
    - f. Date of video recording.
  2. Transcript: Prepared and bound in a format matching operation and maintenance manuals. Mark appropriate identification of the front and spine of each binder. Include a cover sheet with the same label information as the corresponding video recording. Include the name of the Project and date of video recording on each page.
  3. Transcript: Prepared in PDF electronic format. Include a cover sheet with the same label information as the corresponding video recording and a table of

contents with links to corresponding training components. Include the name of the Project and date of video recordings on each page.

4. After the completion of training, submit a complete training manual(s) for the Owner's use.
5. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events like those required.
6. Coordinate the instruction schedule with the Owner's operations. Adjust schedule as required to minimize disrupting the Owner's operations and to ensure availability of the Owner's personnel.
7. Coordinate content of training modules with the content of approved emergency, operation, and maintenance manuals. Do not submit an instruction program until operation and maintenance data has been reviewed and approved by Architect.

## INSTRUCTION PROGRAM

Program Structure: Develop an instruction program that includes individual training modules for each system, as required.

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
  - a. A system, subsystem, and equipment descriptions.
  - b. Performance and design criteria if the Contractor is delegated design responsibility.
  - c. Operating standards.
  - d. Regulatory requirements.
  - e. Equipment function.
  - f. Operating characteristics.
  - g. Limiting conditions.
  - h. Performance curves.
  
2. Documentation: Review the following items in detail:
  - a. Emergency manuals.
  - b. Operations manuals.
  - c. Maintenance manuals.
  - d. Project record documents.
  - e. Identification systems.
  - f. Warranties and bonds.
  - g. Maintenance service agreements and similar continuing commitments.
  
3. Emergencies: Include the following, as applicable:
  - a. Instructions on the meaning of warnings, trouble indications, and error messages.
  - b. Instructions on stopping.
  - c. Shutdown instructions for each type of emergency.
  - d. Operating instructions for conditions outside of normal operating limits.
  - e. Sequences for electric or electronic systems.
  - f. Special operating instructions and procedures.
  
4. Operations: Include the following, as applicable:
  - a. Startup procedures.
  - b. Equipment or system break-in procedures.
  - c. Routine and normal operating instructions.
  - d. Regulation and control procedures.
  - e. Control sequences.

- f. Safety procedures.
  - g. Instructions on stopping.
  - h. Normal shutdown instructions.
  - i. Operating procedures for emergencies.
  - j. Operating procedures for system, subsystem, or equipment failure.
  - k. Seasonal and weekend operating instructions.
  - l. Required sequences for electric or electronic systems.
  - m. Special operating instructions and procedures.
5. Troubleshooting: Include the following:
- a. Diagnostic instructions
  - b. Test and inspection procedures.
6. Maintenance: Include the following:
- a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to the product.
  - d. Procedures for routine cleaning.
  - e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on the use of special tools.

### **DEMONSTRATION AND TRAINING VIDEO RECORDINGS**

General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

At the beginning of each training module, record each chart containing a learning objective and lesson outline.

Video: Provide a minimum of 640 X 480 video resolution converted to mp4 format file type or a format file type acceptable to Owner, on electronic media.

1. Electronic Media: Read-only format compact disc acceptable to Owner, with the commercial-grade graphic label.
2. File Names: Utilize file names based upon the name of equipment generally described in the video segment, as identified in Project specifications.
3. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training DVD that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:
  - a. Name of Contractor/Installer.

- b. Business address.
- c. Business phone number.
- d. Point of contact.
- e. E-mail address.

Recording: Mount camera on a tripod before starting recording, unless otherwise necessary to adequately cover an area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.
  - a. Produce segments to present a single significant piece of equipment per segment.
  - b. Organize segments with multiple pieces of equipment to follow the order of the Project Manual table of contents.
  - c. Where a training session on a piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin the training sessions again upon commencement of the new filming segment.

Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are visible before recording.

1. Furnish additional portable lighting as required.

Pre produced Video Recordings: Provide video recordings used as a component of training modules in the same format as recordings of live training.

**END OF SECTION**

### **DIVISION 3 – CONCRETE**

#### **Section 03 40 00 Precast Concrete**

#### **Section 03 48 00 Precast Concrete Specialties**

#### **Section 03 48 26 Precast Concrete Parking Bumpers**

Manatee County requires parking bumpers only to protect curb, sidewalk, landscaping, building, pedestrians, or where ADA standards required a bumper. Do not install bumpers between parking spaces or any other location that is not required by code.

**END OF SECTION**

### **DIVISION 6 – WOOD, PLASTIC, and COMPOSITES**

#### **Section 06 10 00 Rough Carpentry**

General Notes

- All interior wood blocking, nailers and plywood shall be "TYPE A" fire-retardant treated.
- Shall be kiln dried after treatment (KDAT) to a maximum moisture content of 19% for lumber and 15% for plywood.
- Fire retardant treatment shall not contain VOCs, UREA formaldehyde or formaldehyde, halogens, sulfates, chlorines or ammonium phosphate.
- All equipment backing panels shall be no less than ¾" in nominal thickness.

- **END OF SECTION**

## **DIVISION 8 – OPENINGS AND DOOR HARDWARE**

### General Notes:

- On all access-controlled door strikes. Cylindrical locks are preferred over mortise locks. Preferred manufacturer Best locks.

Note: For access control systems see section 28 12 01

### **Section 08 10 00 Doors and Frames**

#### **Section 08 11 00 – Metal Doors & Frames**

- All exterior doors required for public restrooms and boat ramp facilities property management required a metal door design to handle Florida weather and that is corrosion resistance. Property Management recommends installing Cline Door series 100BE or similar door specs. Cline door series is Miami Dade wind load approved FL 6336.4. Please see attachment 74 for the Cline Door specs.
- All **interior metal doors** shall be full flush hollow metal doors with steel sheets each side, of a prime quality, cold-rolled, stretcher leveled steel, free from scale, pitting and surface defects. Fabricate galvanized doors from galvanized steel sheets conforming to ASTM A446. Provide 18-gauge metal sheets for interior doors, except where otherwise required. Provide hollow metal doors of sizes, types, and design scheduled or required, 1¾" thick. Door faces, and edges must have no visible seams or joints. Provide openings in the bottom closure of exterior doors for the escape of entrapped moisture. The top edge of doors closed flush, not recessed. Provide doors that are strong, rigid, neat in appearance, and free from defects, with plane surfaces smooth and free from warp or buckle. Provide bevel on lock stiles so doors operate without binding. Provide reinforcement for all hardware.
- All **interior door frames** shall be hollow metal fabricate steel frames ASTM A366 of commercial quality, cold-rolled steel, free from scale, pitting and surface defects.

Provide 16-gauge steel sheets for interior frames, except where otherwise required, 14-gauge galvanized steel sheets for exterior frames. For openings over 4'-0" wide, use material not less than 14-gauge thickness.

- Provide full welded unit construction frames. Knocked-down frames are not permitted. Fabricate with full mitered corners, including stops, continuously arc welded full depth and width of the frame. Grind and dress welds at frame face to form smooth invisible joints. Form stops and moldings integral with the frame. Finish work is rigid with a neat appearance and free from warp or buckle. Provide steel spreader temporarily attached to feet of both jambs for frame bracing during shipping and handling. Provide reinforcement for hardware.
- Fiberglass exterior doors and frames are to be used at beach locations.

#### END OF SECTION

#### Section 08 14 00 – Wood Doors

- **interior wood doors** shall be flat slab 3'0" x 7'0" x 1 3/4" solid core with oak veneer, Hallway doors shall be flat slab 3'0" x 7'0" x 1 3/4" solid core with oak veneer and glass insert opening 1' 10" x 4' 10" unless specifically specified differently. Refer to the Door Schedule for other door combinations, sizes, and doors with vision lites.

#### END OF SECTION

#### Section 08 70 00 – Hardware

- **Park and Recreation Restrooms** This type of door lock lever is set keyed on the exterior and button locked on the interior. When the door is in the locked position, the lever on the interior is always operable unlocking the door. This lock is wind load approve only with a metal frame and a single swing outdoor. Model Marshall Best Model T-Dormitory, MB1-3T-15-S1-626.
- **Entrance locksets** shall be as manufactured by Marshall Best Security Products, model MBx-x-xx-xx-xxx. MB1 series are BHMA (Builders Hardware Manufacturers Association) certified grade 1 extra heavy-duty, MB2 series is BHMA certified heavy duty. See attachment 53 for specs and prices. The County will provide cores and keys for all locksets. Where heavy-duty locksets are required. The County prefers not to entertain substitutions. Contact property management for locks approval before installing.
- **Vendor recommendation.** This vendor provided the door locks and hardware items for the Admin building in 2018. It can match all door locks to single master keys.

MBS Harris Security Solutions, Inc  
Marshall Best Security of FL  
6278 N Federal Hwy Suite 279  
Ft Lauderdale, FL 33308  
954-781-8079

- **Hinges** shall be as manufactured by Hager, model BB1168, standard weight, 5 knuckles, ball bearing, standard pin, US10B finish. Adjust weight and pin design as required for special doors. The County will entertain substitutions.
- **Door Closers** shall be as manufactured by LCN, series 4000. Preferred door control to be surface mount, parallel-arm, closer to meet ADA reduced opening force, adjustable backcheck, interior mounting. Finish and color shall be as selected by the design team. The County will entertain substitutions.
- **Wall Stops** shall be as manufactured by Rockwood, model 404, concave solid cast wall stops with concealed fasteners. Bumper and trim color and finish as selected by the design team. The County will entertain substitutions.
- **Floor Stops** shall be as manufactured by Rockwood, model 441, Low dome stop. Adjust model type for floor finish and door undercuts. Bumper and trim finish colors are as selected by the design team. The County will entertain substitutions.
- **Manual Flush Bolts**, pairs of doors requiring flush bolts shall be as manufactured by Ives Corporation, model FB257N for metal doors and model FB358 for wood doors. Two bolts required per door leaf. Finish shall be as selected by the design team.

#### END OF SECTION

#### Section 08 80 00 Glazing

- In addition to hurricane-rated windows, certain provided in-place window shutter(s) have protection rated for hurricane protection. Recommend Exeter "Storm Shield" or equal. Side-mounted piano hinge with internal safety latches (See Attachments).

#### END OF SECTION

#### Section 08 88 00 Special Function Glazing

#### Section 08 88 53 Security Glazing

When Ballistic Glass installation is required/approved for installation in a County owned facility, it shall be specified as Protective Level 1, 0.818 inch Glass Clad Polycarbonate, capable of withstanding three direct shots from a 9 millimeter handgun. Please see attachment 79 for the Veteran Services building Safety Glass installation specs performed on 2020. Please see attachment 80 "BR Deal Tray 16 Inch Product Data" and 81 "6201-Installation-DiagramSC-300" for the specs for future bullet resistant installations.

**DIVISION 9 – FINISHES****Section 09 01 00 Maintenance of Finishes****Section 09 01 30.91 Tile Restoration (Newly grouted joint treatment)**

Newly grouted tile shall use SaniGlaze Joint treatment according to guide specifications from SaniGlaze International, LLC (See Attachments folder). See attachment 16 for the SaniGlaze full specs sheets.

**END OF SECTION**

**Section 09 28 00 Backing Boards and Underlayment****Section 09 28 13 Cementitious Backing Boards**

Cementitious Backer Units: ANSI A 118.9 and ASTM C1288 or 1325, with manufacturer's standard edges. Thickness: 5/8 inch. Mold Resistance: ASTM D 3273, a score of 10 as rated according to ASTM D 3274.

**END OF SECTION**

**Section 09 28 16 Glass Mat Faced Gypsum Backing Boards****Specialty Gypsum Board**

Glass-Mat Interior Gypsum Board: ASTM C 1658/C 1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.

Mold-Resistance: ASTM D 3273, a score of 10 as rated according to ASTM D 3274.

**Tile Backing Panels**

- Glass-Mat, Water-Resistant Backing Board: ASTM C 1178/C 1178M, with manufacturer's standard edges. Core: 5/8-inch, Type X. Mold Resistance: ASTM D 3273, a score of 10 as rated according to ASTM D 3274.
- Water-Resistance Gypsum Backing Board: ASTM C 1396/C 1396M, with manufacturer's standard edges. Core: 5/8-inch, Type X.

**END OF SECTION**

### Section 09 29 00 Gypsum Board

#### General Notes:

- Drywall shall be manufactured by one manufacturer and no mixing of drywall/sheetrock.
- All mechanical rooms and janitor closets to have ½" cement board on the lower 48" of the walls

#### Trim Accessories

Interior Trim: ASTM C 1047. Material: Galvanized or aluminum-coated steel sheet or rolled zinc and mechanically fastened preferred.

Joint Treatment Materials – General: Comply with ASTM C 475/C 475M.

#### Joint Tape:

Interior Gypsum Board: Paper

Glass-Mat Gypsum Board: 10 by 10 glass mesh.

Tile Backing Panels: As recommended by panel manufacturer.

Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

#### Auxiliary Materials:

Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

Sound Attenuation Blankets: ASTM C 665, Type 1 (blankets without membrane facing)

Acoustical Joint sealant: ASTM C 834. The product effectively reduces airborne sound transmission through perimeter joints and openings as demonstrated by testing according to ASTM E 90.

Thermal Insulation: As specified in Section 072100 "Thermal Insulation."

#### Delivery, Storage and Handling

Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier

Store materials inside or undercover to keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

Handle gypsum board carefully to prevent damage to edges, ends, or surfaces. Do not bend or otherwise damage metal corner beads and trim.

### **Field Conditions**

Environmental limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

Do not install wet panels, those that are moisture-damaged, and those that are mold-damaged.

Indications that panels are wet or moisture-damaged include, but are not limited to discoloration, sagging or irregular shape.

Indications that panels are mold-damaged include but are not limited to fuzzy or splotchy surface contamination and discoloration.

Provide adequate building ventilation and room temperature levels for drying joint treatment or finishing materials.

### **Protection**

Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during the remainder of the construction period.

Remove and replace wet panels, moisture-damaged include, but are not limited to, discoloration, sagging or irregular shape.

Indications that panels are wet or moisture-damaged include, but are not limited to discoloration, sagging or irregular shape.

Indications that panels are mold damaged include but are not limited to fuzzy, or splotchy surface contamination and discoloration.

### **Requirements**

Sound transmission coefficient (STC) ratings

Commissioner's office and conference room – STC 55-65

Director's office – STC 45-55

Manager's office – STC 35-45

### **Interior Gypsum Board**

Gypsum Wallboard: ASTM C 1396/C 1396M.

Thickness 5/8 inch

Long edges: Tapered and featured (rounded or beveled) for prefilling

Gypsum Board, type X: ASTM C 1396/C 1396M.

Thickness 5/8 inch

Long Edges: Tapered and featured (rounded or beveled) for prefilling.

Gypsum Ceiling Board: ASTM C 1396/C 1396M

Thickness 5/8 inch

Long Edges: Tapered

### **Finishing of Gypsum Board**

Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:

Level 1: Ceiling plenum areas, concealed areas, and where indicated.

Level 2: Panels that are a substrate for tile.

Level 3: Where wallcoverings are specified as the finish.

Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.

Level 5: Where indicated on drawings or where gloss or semi-gloss paints are indicated as the final finish.

\*Remove and replace panels that are wet, moisture-damaged, and mold damage.

Panel Products: Obtain all gypsum board and other panel products for gypsum board assembly from a single manufacturer.

## **END OF SECTION**

### **Section 09 50 00 Ceilings**

#### **Section 09 51 00 Acoustical Ceilings**

##### **Section 09 51 13 Acoustical Panel Ceilings**

Acoustical panel ceiling tile shall be 2 x 2 Armstrong Ultima Beveled Tegular #1911 OR APPROVED EQUAL

Suspension System shall be Prelude XL 15/16" White OR APPROVED EQUAL

**END OF SECTION**

**Section 09 60 00 Flooring**

Section 09 65 00 Resilient Flooring

Section 09 65 13 Resilient Base and Accessories

Wall base shall be Rope Corporation, Pinnacle Rubber Base – 4" Standard Toe - Color Black

Adhesive as recommended by the manufacturer OR APPROVED EQUAL.

**END OF SECTION**

**Section 09 60 00 Flooring**

Section 09 66 00 Terrazzo Flooring

Section 09 66 23.16 Epoxy-Resin Terrazo flooring

Manatee County preferred the use of decorative vinyl chip with high solids epoxy resins with chemical resistant grout and urethane seal coats floor system. Please see attachment 82 "Horizon Surface System HSS DVB Terrazo vinyl epoxy flooring" submittal sample.

**END OF SECTION**

Section 09 68 00 Carpeting

Section 09 68 13 Carpet Tile

All carpet shall be manufactured from recycled products

***Interface Flooring***

Frequency II Style #1467502500 Color #9427 Routine

Geometry II Style #1469502500 Color #9949 Graphic

Gradient II Style #1469602500 Color #9958 Arc

Geometry II Style #1469502500 Color #9950 Optical

Captivate Style #59554 Color #54730

Kinetic Style #59359 Color #58150

Kinetic Style #59359 Color #58530 Interface Floor

Geometry II Style #1469502500 Color #9949 Graphic

Gradient II Style #1469602500 Color #9958 Arc

Geometry II Style #1469502500 Color #9950 Optical

### ***Shaw***

Captivate Style #59554 Color #54730

Kinetic Style #59359 Color #58150

Kinetic Style #59359 Color #58530

## **END OF SECTION**

### **Section 09 90 00 Painting and Coating**

#### **Section 09 91 00 Painting**

##### **Section 09 91 23 Interior and Exterior Painting**

All paint and paint products shall be low or no VOC (volatile organic compounds) whenever possible. Property Management recommends purchasing the wall paint from Scott Paint Company – 7839 Fruitville Rd, Sarasota, Florida. OR APPROVED EQUAL. Paint Color approval is required to contact the project manager to provide color approval. Scott paint provided a paint spec to be used as a reference. Please see the attachment 78 Manatee County Facilities General 00612 Paint spec PDF file.

Wall Paint - Shall be Scott Paint Co. Satin Latex Finish (Unless otherwise approved)

Door Frames - Shall be Scott Paint Co. Semigloss Enamel Finish (Unless otherwise approved)

VCT - Shall be selected by Property Management and Used in Common Areas, Hallways, Break Rooms, Under Machinery and Appliances.

## **END OF SECTION**

### **DIVISION 10 – SPECIALTIES**

#### **Section 10 01 00 Operation and Maintenance of Specialties**

### Section 10 01 10 Operation and Maintenance of Information Specialties

Property Management required the designer to follow the Manatee County, Florida – Code of Ordinances / Chapter 2-9 -Community Improvement / Article VI – Property Maintenance and Structural Standards. This chapter intends to promote, protect and improve the health, safety, and welfare of the citizens of Manatee County. Please follow the link to get access to this code.

[https://library.municode.com/fl/manatee\\_county/codes/code\\_of\\_ordinances?nodeId=PTIIMAC\\_OCOOR\\_CH2-9COIM\\_ARTVIPRMASTST](https://library.municode.com/fl/manatee_county/codes/code_of_ordinances?nodeId=PTIIMAC_OCOOR_CH2-9COIM_ARTVIPRMASTST)

#### END OF SECTION

### Section 10 06 00 Schedule for Specialties

#### Section 10 06 10 Schedules for information Specialties

Per the National Fire Protection Association and Other Standards Adopted. Notice signs require the placement of an identifying symbol on structures constructed with a light-frame truss component in a manner sufficient to warn persons conducting fire control and other emergency operations of the existence of light-frame truss-type construction in the structure.

Approved symbol” means a Maltese Cross measuring 8 inches horizontally and 8 inches vertically, of a bright red reflective color.

Any commercial, industrial, or any multiunit residential structure of three units or more that uses horizontal or vertical light-frame truss-type construction in any portion shall be marked with an approved symbol. Each approved symbol shall include within the center circle one of the following designations:

1. Structures with light-frame truss roofs shall be marked with the letter “R”.
2. Structures with light-frame truss floor systems shall be marked with the letter “F”.
3. Structures with light-frame truss floor and roof systems shall be marked with the letters “R/F”.

The approved symbol shall be placed within 24 inches to the left of the main entry door and: Be permanently attached to the face of the structure on a contrasting background or Be mounted on a contrasting base material which is then permanently attached to the face of the structure. The distance above the grade, walking surface or the finished floor to the bottom of the symbol shall be not less than 4 feet (48 in). The distance above the grade, walking surface or the finished floor to the top of the symbol shall be not more than 6 feet (72 in).

#### END OF SECTION

### Section 10 10 00 Information Specialties

#### Section 10 12 00 Display Cases

Property Management require the installation of Directory tablets at the entrance of each meeting room. Property Management required these tablets to have access to Wi-Fi and a 110 USB circuit outlet at the tablet required location. The project manager and the designer need to

contact Property Management for quantities, tablet height, and other user needs. The installation of these tablets will be performed only by the Property Management crew.

## END OF SECTION

### Section 10 14 00 Signage

#### Section 10 14 16 Dedication Plaques

Manatee County requires all the properties maintained by the Property Management department to install facility emergency report stickers at the front entrance or any other access door. Please see the below sticker sample. Please note there are other stickers required at the front entrance of buildings depending on the type of operation. Examples Libraries, Medical Facilities, Recreational Facilities, etc. Please contact Tom Roberts with Manatee County Property Management who oversees the front entrance stickers supply.

Manatee County requires dedication plaques to be installed in both new and renovated public buildings.

- Size:
1. Small (for smaller bldgs.) 12" wide by 9" high (Less than 50,000 sq. ft.)
  2. Large (for larger bldgs.) 24" wide by 18" high (Greater than 50,000 sq. ft)

Mounting Locations: Generally, in the lobby area of the main entrance.

Material: Cast Bronze or Plastic

Edges: Single Line (Raised)

Textures: Leatherette

Mounting: Prefer blind mount, but rosette mount can be used depending on the mounting surface.

Background Color: Brown, recessed

Lettering: Raised

Supply Companies Used:

Environmental Graphics Inc

11232 Challenger Ave., Suite 1

Odessa FL 33556

800-791-5065 or 727-376-5622

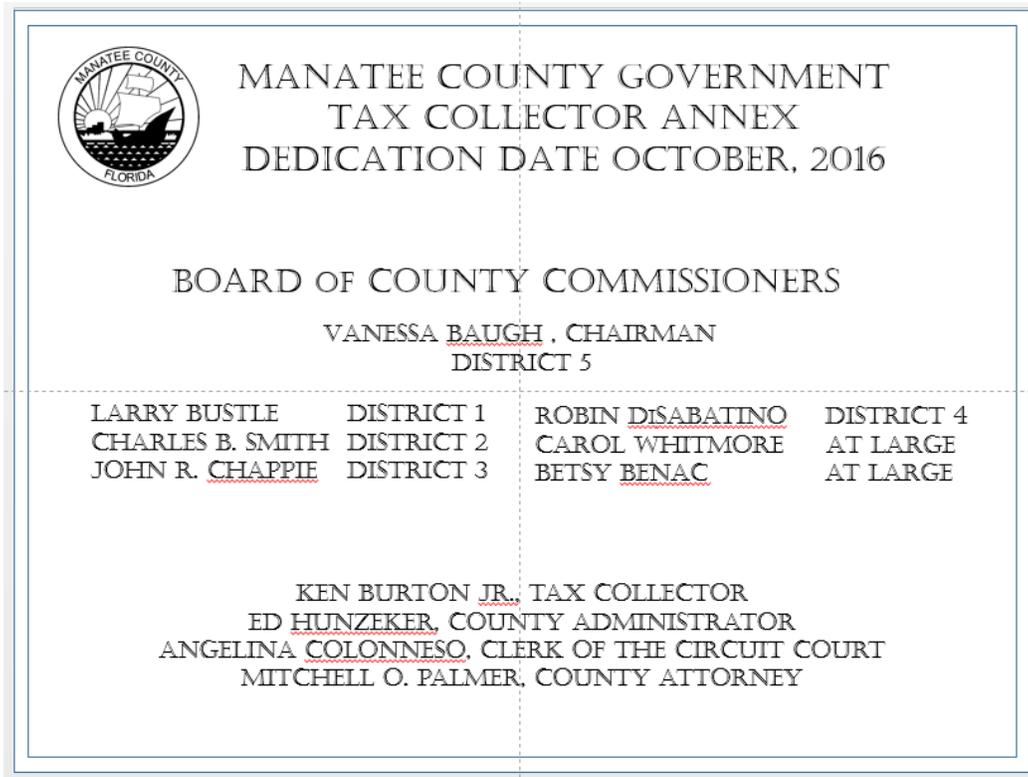
Build signs online, contact: Bob Twinem

2854 Manatee Ave E.

Bradenton, FL 34208

941-748-9400

- Example format of **Small Dedication Plaque**



- Example format of **Large Dedication Plaque**



**MANATEE COUNTY GOVERNMENT**  
**SOUTHEAST WATER RECLAMATION FACILITY**  
**COMPLETION DATE NOVEMBER XX 2015**  
**BOARD OF COUNTY COMMISSIONERS**  
 VANESSA BAUGH, CHAIRMAN

LARRY BUSTLE CHARLES B. SMITH JOHN R. CHAPPIE	ROBIN DISABATINO CAROL WHITMORE BETSY BENAC
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ED HUNZEKER, COUNTY ADMINISTRATOR  
 ANGELINA COLONNESO, CLERK OF THE CIRCUIT COURT  
 MITCHELL O. PALMER, COUNTY ATTORNEY

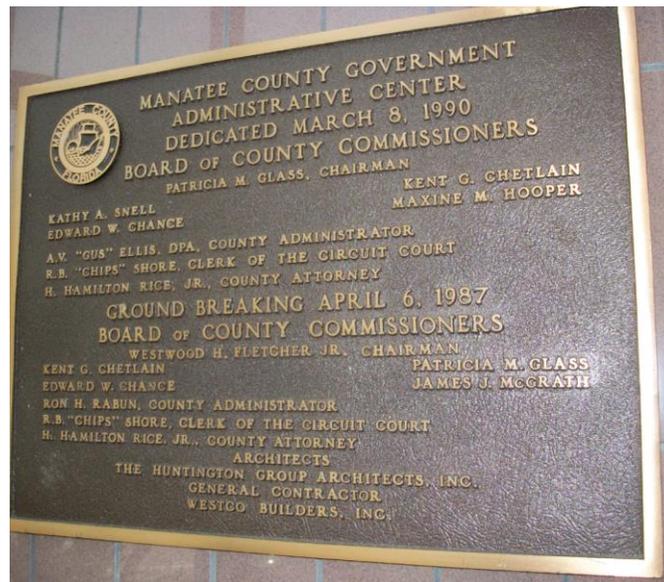
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**PROJECT APPROVAL SEPTEMBER 13, 2012**  
**BOARD OF COUNTY COMMISSIONERS**  
 JOHN R. CHAPPIE, CHAIRMAN

LARRY BUSTLE MICHAEL GALLEN ROBIN DISABATINO	DONNA HAYES CAROL WHITMORE JOE MCCLASH
--	--

ED HUNZEKER, COUNTY ADMINISTRATOR  
 R.B. "CHIPS" SHORE, CLERK OF THE CIRCUIT COURT  
 MITCHELL O. PALMER, COUNTY ATTORNEY

ARCHITECTS  
 UGARTE & ASSOCIATES, INC  
 GENERAL CONTRACTOR  
 NDC CONSTRUCTION COMPANY



- Example format of Facility emergency report sticker



## END OF SECTION

## Section 10 14 23 Panel Signage (Board of County Commissioners Photo Gallery)

The Design team shall incorporate an area at or near the main entrance of the building. A blank wall space of at least eight feet, six inches (8', 6") long so that the Board of County Commissioners pictures can be installed as shown in the sketch below. Manatee County will be responsible for installing the pictures and signs.



## END OF SECTION

**Section 10 20 00 Interior Specialties****Section 10 21 00 Compartments and Cubicles****Section 10 21 13 Toilet Compartments****General Notes:**

- OVERHEAD BRACED OR FLOOR ANCHORED TOILET partitions.
- Toilet Compartments shall be solid phenolic core overhead braced enclosure, wall hung urinal screen. Doors to be minimum  $\frac{3}{4}$ " thick panels, pilaster, and walls minimum  $\frac{1}{2}$ " thick with stainless steel hardware.
- Pilaster Shoes: Formed from a stainless-steel sheet, not less than 0.031-inch nominal thickness and 3 inches high.

**END OF SECTION****Section 10 28 00 Toilet, Bath, and Laundry Accessories****General Notes**

## Restroom Accessories and Requirements (specifications in attachments)

- All restrooms floors must be sloped and have floor drains
- No in-wall trash or wall mounted trash receptacles
- No built-in countertop soap dispensers
- Urinals will be water flush type only
- Grab Bars shall have concealed mounting with snap flange trim
- Shower Curtin Rods shall have concealed mounting
- Shower Curtains shall be vinyl opaque white matte with antibacterial and flame-retardant agents.
- Internal hose bib required.
- Mirrors and baby changing stations shall be ADA compliant.

## Toilet and Bath Accessories (Specifications in Attachments – Restrooms/Plumbing)

- Wall-mounted Soap Dispensers shall be Micrell Bag-in-box 800 series item # GOJO9721 OR APPROVED EQUAL
- Wall-mounted Multi-Fold Paper Towel Dispensers shall be San Jamar T1790TBK Ultrafold Oceans Large Capacity C-Fold. Color Black OR APPROVED EQUAL See attachment 70
- Wall Mounted Sanitary Napkin Dispenser shall be Rubbermaid RCP 6140WHI - Color: White OR APPROVED EQUAL
- Wall Mounted Toilet Tissue Dispenser twin jumbo roll shall be San Jamar R4000TBK – Color: Black OR APPROVED EQUAL
- Wall Mounted Toilet Seat Cover Dispenser shall be KRYDK100 OR APPROVED EQUAL (check with Carmine on outdoor facilities)
- Coat Hook shall be Bobrick B-212 Clothes Hook and Bumper OR APPROVED EQUAL
- Shower curtain hooks shall be Bobrick B-204-1 OR APPROVED EQUAL
- Folding Shower seat shall be Bobrick B-5181 OR APPROVED EQUAL

#### Hand / Hair Dryer

- Where applicable, an Xlerator manufactured by Excel Dryer shall be used. The preferred model is an XL-W with a preferred operating voltage of either 208/220/240

### END OF SECTION

#### Section 10 80 00 Other Specialties

##### Section 10 81 00 Pest Control Devices

- Integrated Pest Management is the method of pest management in all County activities including those carried out by contractors and vendors.
- Preferred termite treatments, in order of preference, include pre-treat with borate-based products during construction, approved exterior baiting systems, or the use of Disodium Octa borate Tetrahydrate (DOT) lumber or a pre-approved baiting system See attachment 20 for the Termiticides Registered in Florida for Preventive Treatment of new Construction.
- When the borate pre-treat process is used, the blue die should be included in the spray mix to verify coverage.
- To better prevent future pest infestations, all cracks, seals, and penetrations need to be 100% sealed. Special attention needs to be paid to abandoned roof drains, and other

plumbing pipes to ensure that they are sealed and will not allow rodents to enter the building.

- Where a structure has bay doors or a section of the building with outside exposure, the air-conditioned portion needs to be 100% sealed to prevent pest invasions.
- Cistern design will take into account the prevention of mold growth, breeding mosquitoes and other pest and structural problems. Cisterns and other water storage devices shall not share a common wall with interior spaces.

#### END OF SECTION

### Section 10 70 00 Exterior Specialties

#### Section 10 71 00 Exterior Protection

For hurricane shutter systems use the Exeter storm shield system guide specification. Refer to the attachment number 6 for the full spec for this product.

#### END OF SECTION

## DIVISION 11 – EQUIPMENT

### General Notes:

All exterior equipment that is required to be enclosed must be installed with a black chain link enclosure that includes black fence slat to secure the equipment. For example an enclosed air conditioning system, dumpster, lift station, etc. must be enclosed and secured.

### Section 11 30 00 Residential Equipment

#### Section 11 30 13 Residential Appliances

### General Notes:

Property Management recommends installing a Fire Ready Residential Range Hood over the cooking range. Only to facilities where the operation may present a risk to the property.

### Section 11 40 00 Foodservice Equipment

#### Section 11 46 00 Food Dispensing Equipment

#### Section 11 46 83 Ice Machines

**General Notes:**

- Commercial-Size Ice Maker(s) Freezers and Refrigerators – Must have an alarm that alerts extreme temperature change.
- All commercial size automatic ice makers shall where applicable have a waste chill recovery chiller/ exchanger installed on the inlet side of the potable water service. *Benefits – reduces potable water consumption, reduces energy cost to produce ice, less compressor runtime, reduces energy cost to remove heat from the air-conditioned area where an ice maker is installed, makes ice faster.*
- Backflow valves or vacuum breakers with shut off cocks and stainless-steel hoses are required. A floor sink or drain shall be provided.
- The preferred manufacturer is the Maximicer, Georgetown, TX for ice maker units of the manufacturer Manitowoa, Hoshizaki and Cornelius.

**END OF SECTION****DIVISION 12 - FURNISHINGS****Section 12 20 00 Window Treatments****Section 12 21 00 Window Blinds****Section 12 21 23 Roll Down Blinds**

Roller Shades shall be Hunter Douglas – Designer Screen Shades. Chain and clutch operating mechanism, bead chains with limit stops. Fabric shall be 95% light blocking. Fabric and Finish as selected by owner or Architect from a full range of colors. Material is to be flame resistant and comply with NFPA 701 Class A OR APPROVED EQUAL.

**END OF SECTION****DIVISION 13 – SPECIAL CONSTRUCTION****Section 13 20 00 Special Purpose Rooms****Section 13 21 00 Controlled Environment Rooms****Section 13 21 14 Fairness for Breastfeeding Mothers Act of 2019**

Property Management required the designer to work with the Manatee County project manager to determine if a breastfeeding room is needed for a new facility or building retrofit. (Sec. 2) This bill requires that certain public buildings that are open to the public and contain a public restroom provide a lactation room, other than a bathroom, that is hygienic and is available for use by members of the public to express milk. The lactation room must be shielded

from public view, be free from intrusion, and contain a chair, a working surface, and (if the building is supplied with electricity) an electrical outlet.

A public building may be excluded from such requirement at the discretion of the official responsible for its operation if

- it does not contain a lactation room for employees and does not have a space that could be repurposed as one or that could be made private by using portable materials, at a reasonable cost; or
- the cost of new construction to create a lactation room is not feasible.

## END OF SECTION

### **DIVISION 22 – PLUMBING**

Note Property Management required the designer to follow the Manatee County Public Works Standards Part 1 Utilities Standards Manual as well as the latest edition of the Florida Building Code. Please see the attachment 77 Utility Design Standards, Full Manual.

[Section 22 05 00 Common Work Results for Plumbing](#)

[Section 22 05 23 General Duty Valves Devices, Systems, Branch Lines](#)

#### **General Notes**

- All valves shall be ball-valve, shut-offs only. Larger valves (4 inches and above) for chilled water mains shall be butterfly or gate-type with remote or motorized operators.
- Each plumbing device fixture shall have shut-offs.
- All hot and cold, water mains to a multiple fixture area shall have ball shut off valves installed for isolation. Access panels or ceiling tiles shall be marked with a blue dot sticker on the metal portion of the panel.
- The contractor shall provide a valve list with plastic valve tags on each main shut off valve installed.
- Parks and outdoor public restrooms shall have internal hose bibs on the sink in a lockable water box.
- Parks and outdoor public restrooms shall be equipped with floor drains.

## END OF SECTION

[Section 22 10 00 Plumbing Piping](#)

### General Notes

- Use CPVC Schedule 40 or 80 (if and or when required due to its application).
- Use PVC Schedule 40 or 80 (if and or when required due to its application.)
- May use PVC schedule 40 or 80 for DWV (Drain-Waste-Vent).
- The use of Hard Copper Type K is permitted.
- No galvanized steel is permitted.
- No cast iron is permitted.
- Provide insulation on all interior roof drain-piping vertical and horizontal for sound attenuation. Provide insulation for all domestic and solar hot water supply, return, and chilled water supply and return piping per the Florida Energy Code and Florida Building Code.

### Clean Outs

- Shall be one at the base of every stack and under the Florida Plumbing Code and per Florida Plumbing Code; Section 708.

### Trap Primers

- No automatic trap primers shall be installed on County properties.
- Preferred – Trap primer tailpiece (waste line fed).

### Backflow Prevention – Potable Water Service

- Shall be the type RPZ (reduced flow) backflow preventer.
- On services, four (4) inches and larger, a bypass service line with a backflow preventer shall be installed on the same water (main) service. This feature will permit the servicing and testing of the main backflow preventer without total interruption of water service to the site.
- Sizing the bypass line - shall be equal to ½ of that of the main water service line.
- Reference Manatee County utility standards for requirements.
- Water meters preferred to be used in cooling towers for cost reduction in the sewer bills.

**END OF SECTION**

### Section 22 11 Facility Water Distribution

#### Section 22 11 23 Domestic Water Pumps

- All domestic water pumps shall be connected to generator power when available.

**END OF SECTION**

### Section 22 30 00 Plumbing Equipment

### Section 22 33 00 Hot Water Heaters – Electric / Gas

- All water heaters to be installed in the appropriate mechanical room where a floor drain is provided.
- All water heaters shall have a “water heater leak alarm and shut-off system”. Property management recommends RDT Reliance detection technologies. Model RS-094-MK6 kit. This system can be used on a new or existing water heater. Please see attachment 54 for more information.
  
- Property Management recommends installing the wireless water rope sensor for all existing water heater. This equipment will assist property management maintenance department to determine if the existing water heater has a leak. See attachment 64 for product specs.
  
- Thermal solar hot water heating is encouraged to be a part of all hot water heating applications as a primary source with gas or electric heating as backup and or supplemental.
  - Natural gas, when available, is the fuel source of choice.
  - Instant flow tankless water heater(s) shall be used if applicable to the usage and demand.
  - All 10 to 30-gallon electric water heaters dedicated to restrooms or break rooms shall have a timer switch controlling the off/on periods or be connected to the BAS.
  - Efficiencies shall meet or exceed the Florida Energy Code.

#### END OF SECTION

### Section 22 35 00 Domestic Water Heat Exchangers

- Where applicable, a timer switch or the BAS shall cycle off/on all circulating pumps dedicated to wash sink or shower hot water delivery.

#### END OF SECTION

### Section 22 40 00 Plumbing Fixtures

Manatee County recommend the use of touchless paper towel dispensers, and soup dispensers. The administration building in the present time is using the following brand and models.

- Paper towel dispenser Kimberly-Clark Professional Hands-Free
- Soap dispenser Hands-Free any Brand or models.

We recommend to install similar products to the ones installed at the Administration building. As shown above.

### Section 22 42 00 Commercial Plumbing Fixtures

#### Section 22 42 13 Commercial Water Closets, Urinals, and Bidets

- Preferred manufacturer: Sloan.
- All urinals shall use water-rated at 0.125 gpf. No waterless urinals shall be used.

- Public outdoor restroom(s) remote flush valves in a chase are preferred.
- Preferred water closet with oversized discharge.
- Tank water closets are not preferred.

**END OF SECTION**

#### Section 22 42 16.16 Sinks - Bathroom

- All sinks are to be china unless otherwise notes.
- Sinks in office buildings, community centers, libraries, and fire stations may be made of porcelain or stainless.
- Parks and public outdoor restrooms shall be stainless. Staff accessible (locked) restrooms may also use composite material, wall-hung singles, or multiple basins formed with countertops.
- All ADA sinks shall meet insulation and protection requirements under the Florida Plumbing Code.

**END OF SECTION**

#### Section 22 42 23 Shower Head(s)

- Showerheads installed for public areas, gyms, recreation, and employee fitness centers shall be ultra-low flow

**END OF SECTION**

#### Section 22 42 39 Commercial Faucets, Supplies, and Trim

- Manatee County recommend the use of Touchless sink faucets. See attachment 84 Sloan EBF-615-4-BAT-BDM-CP-0.5GPM-MLM-IR-BT-FCT this faucet has been approve for use in the Administration building.
- Faucets should have no exposed set screws and replacement parts that are readily available.
- All faucets in public and private wash areas shall have an aerator installed on it that does not exceed 0.5 GPM flow and shall be vandal-resistant. When available a recessed aerator shall be used. Ganged employee wash areas should have an aerator with the flow not to exceed 1.0 GPM.
- All exposed components/parts shall be constructed and made of metal.
- All faucets shall meet or exceed the current ADA Standards.
- Faucet spacing shall be on 4-inch centers.

**END OF SECTION**

#### Section 22 42 43 Flushometers Valves

- Manual flush valves are preferred in place of sensor type in staff areas. 1.6 gpf toilet, and 0.125 gpf urinal

- Where sensor flush detection is used there shall also be a manual mechanical override flush button. Adjustable flow for 0.5 to 3.5 gpf.
- All flush valves preferred manufactured should be by Sloan and be of solid brass construction.

#### END OF SECTION

### Section 22 47 00 Drinking Fountains and Water Coolers

#### Section 22 47 13 Drinking Fountains

- Manatee County required the use of ADA drinking water fountains for our park and any outdoor felicities. We recommend the use of “Most Dependable Fountains, Inc” Models 440 SM and 440 SMSS, or Elkay outdoor water fountains. Please see attachment 57 for the operation and specs manual.
- Manatee County preferred the use of ADA drinking water fountains for our dog park facilities. We recommend the use of “Most Dependable Fountains, Inc” Models 440 SMFA and 440 SMSSFA, or Elkay outdoor water fountains. Please see attachment 58 for the operation and specs manual.
- For interior water fountains most being installed with water filter system, Manatee County preferred Elkay EZH20 water fountains. These water fountains can be spec with or without the bottle filling station. Please see attachment 62 for the ELKAY EZH20 specs. These specs are a sample model. We recommend visiting <https://www.elkay.com/products/drinking-water/bottle-filling-stations/on-wall.html> to select from the different options models that may suit the application.

#### END OF SECTION

## DIVISION 23 – HEATING, VENTILATION, and AIR CONDITION (HVAC)

### General Notes

- Not Rooftop units (RTU) are allowed. All HVAC units to be installed in mechanical rooms or on the ground.
- Major components shall have a 5 Year warranty.
- Separate pricing shall be allowed for extended warranties.
- Building Automation System (BAS) shall be Automated Logic Systems Web Control only and integrated into the counties existing Building Automation Network.
- The BAS shall record, control, monitor and manage temperature, proper humidity and CO2 levels within the facility. **Note: Humidity and CO2 sensors shall be placed in the return air duct(s) of each air handler/unit servicing that facility.** The energy code requires CO2 is units over 3000 cfm.
- Generator circuits, when available shall power all HVAC equipment controls.
- Chiller systems are preferred over a DX system. Energy savings must be considered in the size of systems.

- DX high efficiency 16 SEER minimum rated with preconditioned outdoor air system sized for the air handler
- Condensate shut down/ alarm switches shall be installed on all condensate line traps.
- Duct-board is not allowed. All supply, return, outdoor air intakes, plenums, and smoke exhaust plenum ducts are to be externally insulated.
- Motorized fans in the Variable Air Volume (VAV) box are not allowed.
- No more than two rooms shall be on a single VAV box.
- The HVAC system must maintain positive building pressure except where noted.
- Standards that apply are the Florida Mechanical Code, ASHRAE Healthcare Ventilation Standard. Water and Wastewater design standards also apply to ventilation on specific buildings.
- Outside air (makeup) shall utilize a VAV box for air monitoring to control building pressure and CO2. Airflow measuring stations shall be reviewed as an option.
- Variable Frequency Drives shall be used wherever applicable and be controlled by the BAS.
- Programmable thermostats are required by the Florida Energy Code on small buildings.
- Sound attenuation shall be used to reduce noise transfer. All conference, meeting and study rooms/areas shall be separate with a separate ducted return.
- Insulation shall meet the Florida Energy Code section 403.2.8 and be covered to resist condensation build-up.
- Variable speed drives shall be considered on all Air Handling Units.
- Rooms, areas designated or planned for data processing or needing 24-hour cooling, shall be sized accordingly for HVAC chill water AND have DX systems for night time and weekend cooling. Where no chiller is used, dual DX systems are required. Data DX cooling is to be stand-alone and controlled by local thermostats and monitored by the BAS.
- Each Air Handling Unit / Fan Coil Unit shall have an isolation valve or valves.
- Each supply air diffuser shall have an air balance damper.
- All Mechanical spaces shall have floor drains and floors with a slope that pitch to the drain.
- Data Centers or other areas needing 24/7 cooling services shall have dedicated DX systems connected to emergency generator power for night time cooling and chilled water cooling for normal occupancy. If no chilled water is available, two sources of DX cooling will be installed in each space.
- Water sensors shall be installed on all data systems underfloor for alarm through the BAS control system and shut down.
- Buildings with chillers shall have chilled water piping and valves installed for a quick connection rental chiller.
- A UL-listed kitchen hood make-up air system and ductwork with a chemical extinguisher and power/fuel supply shutdown and fire alarm connection shall be installed on commercial kitchen systems as requested and as required for specific cooking appliances under the Florida Building Code.
- On the ceiling metal frame or access panel, a red dot shall be installed for the location of each variable air volume box and inline exhaust fan installed for maintenance access.
- Small buildings required specific products similar to residential split air handler/ fan coils with separate heat pumps or air-cooled condensers. EER shall be 16 or greater to meet the Florida Energy Code. Rooftop must be approved by Property Management.

- Package terminal units may be considered in small locations such as Emergency response rooms.
- Coil coating is required on evaporator and condenser coils.
- Ductwork type and insulation shall meet SMACNA standards for sheet metal, pressure class, duct sealing are preferred for duct above 2" static pressure. The Florida Energy Code requires insulation and application.
- Building air and water balance testing are required by the Florida Energy Code.
- When a split air conditioning unit installation is required for a new building or in a restoration area. We recommend including in the design and installation of a Samsung Free Joint Multi-Zone mini-split unit. See attachment 60 for the recommended Samsung splits unit specification.
  
- When a split air conditioning unit is installed, we required a Pelican wireless system internet programmable thermostat TS200 to be installed to control the split air condition unit. See attachment 61 for the Pelican wireless system thermostat TS200 brochure.

### END OF SECTION

## **DIVISION 26 – ELECTRICAL**

- Modular furniture shall be grounded, and UL listed. Power and data connections shall be by wire mold and MC cable.
- All electrical distribution panels shall be completely labeled as to what device or system each breaker services. Normal non-generator power shall be labeled black and white, generator power panels shall be labeled green with white background, and UPS panels shall be labeled blue with white background. All building receptacles, lighting pull boxes, and wall switches shall have circuits noted in the marker inside the pull box for each room.
- Every building with an electrical generator (and associated auto-transfer switching) shall also have a double throw disconnect designed for easy and quick connection of a rental generator. The switch is to be located on the exterior of the building in an area that allows for the rental generator space. Each double throw disconnect shall also have a control circuit installed for automatic start/stop of the rental generator.
- Buildings without a generator shall also have a double throw disconnect for a rental generator connection, as determined by Property Management.
- Buildings with chillers shall have a disconnect installed and wired for a rental chiller connection. The disconnect is to be sized to support the full load of the chiller system. There shall also be chilled water piping and valves installed to where the portable rented chiller is designed to be parked.
- All buildings shall have the load electrically balanced by the electrical contractor at the project construction completion. The Engineer of record, in writing to Property Management, shall confirm this process.
- The Engineer of Record will confirm as a written observance of the on-site electrical contractor before termination of electrical power being applied to the building that all electrical devices and connections are "forward Rrtation". No "reverse rotation" electrical connections are allowed. The contractor shall schedule a time when the

Owner and Engineer are available for onsite testing. Each electrical panel shall be verified and documented by the electrician that it is in the "forward rotation".

- Communication and Electrical conduits under soft ground, grassy areas, and shell parking areas must be fully encased in 12" of concrete. The soft ground being not under streets and paved parking areas.

## **Section 26 30 00 Facility Electrical Power Generating and Storing Equipment**

### **Section 26 36 00 Transfer Switches**

#### **Section 26 36 23 Automatic Transfer Switches**

- All transfer switches must be the forward rotation and should be tested after installation.  
(See "Automatic Transfer Switches" in Lighting-Electrical Attachment Folder).
- Automatic transfer and manual transfer switches shall have a manual bypass function.
- Transfer switches shall meet or exceed the fault current rating and shall UL list for the proposed functions.
- The ATS manufacturer shall be certified to ISO 9001 International Quality Standard and the manufacturer shall have third party certification verifying quality assurance in design/development, production, installation, and service by following ISO 9001.

**END OF SECTION**

## **Section 26 50 00 Lighting**

**General Note:** There are .pdf documents for lighting and electrical in the Attachments folder.

- No Incandescent lamps shall be used.
- No U-Tube fluorescent lamps shall be used.
- No Metal Halide, Mercury, or HPS lighting shall be installed indoors.
- Lighting shall be designed using current industry standards and proper foot-candle requirements for the application. General lighting in office, bathrooms, and hallways shall include automatic sensor control.
- In place of conduit, MC capable may be used for lighting and is permitted only for control wiring and fixture whips.
- Remote ballast shall be identified on the ceiling grid system and as-built drawings.
- Building lighting control systems shall be Leviton and Lutron computerized controls, motion sensors, and daylight harvesting should be incorporated and used. All sites using this system will require the Lutron and Leviton software application program for troubleshooting and program maintenance for 3 years to be included with the system installation and also include operator training.
- Buildings over 5000 square feet require lighting controls per the Florida Energy code.
- All exterior lighting is to be controlled by exterior lighting sensors if no Building Automation System (BAS) is installed. No time clocks are to be used.
- Where dimming ballasts are interfaced with a variable voltage lighting system, be it new or existing, all components shall be approved in writing by each manufacturer as being an approved device cable of interfacing and functioning properly with one another.

- 277-volt lighting fixtures (exception – canister fixtures) shall be the first choice where applicable to design and building power system voltages are available.
- Do not mount any lighting hardwire to any shelving or other floor mounted furniture.
- Shall be LED for new or retrofit. All retrofit kits shall be DLC tested and listed.
- Shall use electronic ballast, Programmed Start, and shall be high efficiency 120 volt.
- Levitron USB Charger devices to be installed for new construction and renovations (see attachment).
- No internal emergency battery backed ballast shall be used.
- Ballast voltage shall be 120 volts.
- Each fixture shall have a sized internal line fuse and holder accessible at the ballast for disconnection of power at the fixture.
- All lamps shall have a minimum K-Value of 4100k.

#### **Drop Ceiling LED Flat Panels**

- Manatee County preferred the use of LED flat panels light fixtures in the drop ceiling applications. Please see attachment 83 “spec sheet LED Flat Panels CCT Selectable-86” specification as a preferred product reference.

#### **Hi-Bay Warehouse & Storage / Recreational Lighting**

- Shall be LED lighting or induction where there is a constant high temperature.
- Ballast, generator voltage shall be 120 volts.
- Each fixture shall have a sized internal line fuse and holder accessible at the ballast.
- All light fixtures installed in a gymnasium atmosphere shall have a wire guard protecting the fixture and or lamps.
- All lamps shall have a minimum K-Value of 4100 k.

#### **Exterior Signage with Lighting / Messaging Boards**

- No metered service shall be installed solely dedicated to any signage/messaging board applications.

#### **Recessed Indoor Canister and Exterior Canopy Lighting**

- All canister light fixtures shall be LED.
- All installed exterior lighting shall be LED and so designed and labeled for outdoor use.
- All fixtures shall be vandal resistant.

#### **Exit & Emergency Wall-Pak Lights**

- Shall be an LED lamp(s) only.
- Legend (Word - Exit) shall be the color – Red
- Combination Exit and Emergency Lights may be used where applicable.

#### **Flag Pole Lighting**

- Fixture(s) shall be LED lighting. No Timers for this application.

### **Lightning Protection**

- When required and with the approval of Property Management, the building shall be protected against lightning damage with a system equal or that exceed the specs for the following suggested product Preventor™ lightning protection, employing a single air terminal. The Lightning system shall be UL listed and provide an insurance certificate. The system shall comply with the current National Fire Protection codes and IEEE standards. A master label system shall be provided with the installation.

### **Parking Lot / Security / Façade Lighting**

- Shall Be LED lighting.
- Pole shall have an internal wire chase with hand hole at ground level and pole top where available.
- Manatee County recommends the use of Kad LED area luminaire fixtures or similar products.
- Manatee County recommends following the Manatee County Section 26 56 00 Exterior Lighting. Please see attachment 73

### **Beach & Specialty Lighting**

- All waterfront lighting, in or near ocean environments, shall meet or exceed Manatee Counties Water Front (Sea Turtle- Amber Lighting) requirements.

**END OF SECTION**

## **DIVISION 27 COMMUNICATIONS**

### **Section 27 10 00 Structured Cabling for Data Rooms**

#### **General Notes**

Property Management required all data rooms to follow the Standard Data/Voice Cabling Requirements as shown in - Refer to Attachments 18.

**END OF SECTION**

## **DIVISION 28 – ELECTRONIC SAFETY AND SECURITY**

### **Section 28 10 00 Access Control**

#### **Section 28 11 00 Access Control Global Applications**

#### **Section 28 12 01 General Requirements for Access Control Systems**

- All integrated entry access systems shall be GE Facilities Commander integrated into the county's existing network-wide system.
- Von Duprin panic hardware with surface mounted rods; use of concealed rods in exit doors.
- "Mag" locks shall be Securitron with a holding force of 1200 lbs. and be battery-backed and rated for a hold (energized) time of 24 hours minimum and connected to the generator power, if the facility has a generator.
- One lighted, push-button with the legend EXIT shall be installed per manufacturer's requirements at all egress's doors with Mag locks.
- Card access swipe card system shall be Facilities Commander system and integrated into the existing Manatee County database by our authorized vendor.

#### END OF SECTION

### Section 28 20 00 Video Surveillance

#### Section 28 21 00 Surveillance Cameras

- All camera installations shall follow and be approved through Manatee County Policy and Procedure Number 606.003 (See Policy in Attachments folder)

#### END OF SECTION

### Section 28 40 00 Life Safety

#### Section 28 46 00 Fire Detection and Alarm

##### Section 28 46 20 Fire Alarm

- Firelite or Silent knight are preferred systems.
- All fire systems and peripheral devices shall be non-proprietary.
- All systems shall be full addressable, voice-evacuation fire alarm systems.
- All applicable and current codes and regulations for the jurisdiction shall be met or exceeded.
- All fire alarm raceway(s) junction box(s) lids and covers shall appear in the color red. Single panels with auto dialer and fire alarm access at the entry?

#### END OF SECTION

##### Section 28 46 12.19 Fire Sprinkler

- Shall be a dry pre-action type in data rooms. All others shall be wet type systems.
- Shall have a reduced pressure backflow preventer.

**END OF SECTION**

### **DIVISION 31 – EARTHWORK METHODS**

**General Note:** Manatee County Public Works Roadway and Drainage Design Standards shall be utilized.

- All existing trees on the site need to be barricaded with 2" X 2" posts and rope, colored tape, or wood to prevent any vehicular traffic or power equipment (mixers, etc.) in that area during the whole construction process. This barricade should be at the drip line at a minimum and extend out farther wherever possible.
- All rinsing, washing or dumping of construction products or equipment should be in a designated area only. This area should be away from existing trees and future planting locations.
- Before final grade, the contractor needs to clean the site of debris, spillage and do a thorough cleanup of rinse areas and dumpster locations
- Preferred final grade material is grey surface sand with a neutral pH (6.0 – 7.5).
- Final grade should ensure proper drainage away from building and into onsite retention/detention mechanisms.

**END OF SECTION**

### **DIVISION 32 – EXTERIOR IMPROVEMENTS**

#### **General Notes:**

Where both communication and electrical conduits are placed under soft ground, grassy areas and shell parking areas must be fully encased in 12" of concrete. The soft ground being not under streets and paved parking areas.

#### **Section 32 10 00 Bases, Ballasts, and Paving**

#### **Section 32 12 00 Flexible Paving**

#### **Section 32 12 16 Asphalt Paving**

Refer to Attachments Folder- File 21, 22, 23 True Gird Porous Flexible Paving system.

**END OF SECTION**

#### **Section 32 12 43 Porous Flexible Paving**

#### **General Notes**

For vehicle and traffic loads for gravel or grass overflow parking lots, driveways, fire lanes, etc., use “TrueGrid” or APPROVED equal permeable pavers. Made in the U.S.A. and 100% post-consumer recycled material. (See TrueGrid Porous Flexible Paving Specifications in Attachments folder file 22).

#### END OF SECTION

### Section 32 30 00 Site Improvements

#### Section 32 31 00 Fences and Gates

##### Section 32 31 13 Chain Link Fencing

Refer to Attachments Folder- file 4 “Chain-link Fences and Gates Section 323113 part 1 10/24/17 spec”. The chain-link fence is requirements are as follow

1. All fencing connections and hardware shall be painted black to match the fence fabric and posts.
2. The chain link fence shall be 9 gauge core
3. The chain link is require be installed with the selvage up
4. The chain link fence requires to have black fence fabric or black vinyl coated slats
5. The chain link post and supports to be black in color
6. All 2” post are required to be black vinyl coated with black vinyl coated caps
7. All 2.5” corner post are required to be black vinyl coated with black vinyl coated caps
8. All 1.5” lateral supports are required to be black vinyl coated.
9. All exterior equipment that is required to be enclosed with a chain link, fence slat must be installed to secure the equipment. As a sample enclosed air condition system, dumpster, lift. Must be enclosed and secured.

#### END OF SECTION

#### Section 32 33 00 Site Furnishings

##### 32 33 23 Site Trash and Littler Receptacle

- Big belly High Capacity Compactor. See attachment for the Big belly technical specifications (BB5). Please note the vendor no longer sells the units individually. They sell a five-year “subscription” or lease. This includes the Clean Management Software license for each unit, hardware parts warranty including batteries and one annual 21-point station inspection and cleaning. The subscription also includes the installation of each station.

Big Belly Solar, Inc.  
150 A Street  
Suite 103  
Needham Heights, MA 02494  
Mike Phillips – Regional Accounts Manager  
mphillips@bigbelly.com  
(617) 206-4437

#### END OF SECTION

## Section 32 80 00 Irrigation

All installations regarding water conservation should at a minimum have:

- Functioning rain sensor.
- Separate zones for turf and plant bed areas.
- A timer is capable of dual programming.
- Use of low volume emitters or drip tube in plant bed areas.
- Use of reclaimed water whenever possible. Potable urban water is the last choice for a water source.
- Netafim drip irrigation should be used on all new projects and will be installed to manufacturer's specifications.
- The system will be designed for 100% coverage of all bed areas and newly planted trees. NOTE: Identity and "avoid" planting on an existing irrigation system.
- Each tree will have its own emitters/bubbler.
- Determination of whether to irrigate turf will be made on a per-project basis by **County horticulture staff**.
- If a cistern is to be the main water source, a backup source needs to be provided for times of drought.
- Piping material should be Class 160 or Schedule 40. Depth is 18 to 24 inches.

### Controller (Irrigation)

- For new installation, the controller (minimum requirement) shall be Rainbird ESP-LXD for 2-wire systems and the ESP-LXME/ESPLXMEF for traditionally wired systems (wire running from each valve to the controller along with a ground wire). Each system will communicate with the Manatee County Rainbird master IQ system.
- Master Valve (electrical) in mainline water source for each area.
- Heads – Replace all heads with the same head and nozzle (or equivalent PR and coverage area, if the same head is not available). Hunter for rotors (I-20, I-25, I-40, and I-90) and Toro for spray heads (570s).
- Valves – The standard for Installation or replacement of valves is the Irritrol (P100s) valve on sites with "clean water" and Irritrol (100s-retrofit kit which includes diaphragm assembly with continuous scrubbing mechanism) "scrubber" valves where reclaimed water is in use.

**END OF SECTION**

## DIVISION 33 UTILITIES

### Section 33 70 00 Electrical Utilities

### Section 33 71 00 Electric Utility Transmission and Distribution

#### General Notes

- New and modified electrical distribution service(s) 400 amp and larger shall be balanced to an acceptable level per industry standards with lighting and support systems on and functioning. Phasing shall be verified and confirmed to be forward rotation.

- Written documentation of electrical balance is required for each panel.
- Real-time current and voltage readings per phase primary and secondary at the main transformer and distribution point shall be noted, and a written report given to Property Management Department showing all readings with a time of day, day of week reading was obtained.
- All new panels and disconnects are to match existing equipment manufacturer in remodels.
- New structures – Square D is the preferred manufacturer.
- Surge suppression with a visual indicator(s) on all main and branch panels.
- All switches and receptacles are to be spec grade, 20-amp minimum.
- All circuits shall be identified on the faceplate of all devices.
- All panel board circuit breaker, disconnects shall be clearly labeled and have a legend
- Typed, not hand-written panel schedules shall be installed in all panels by the electrical contractor. All panels and distribution systems shall be exteriorly labeled by following the National Electrical Code.
- Phase Loss / Phase Monitoring on all 3 Phase motors, equipment, and systems.
- Transient voltage suppressors meeting NEC requirements shall be provided for all incoming services from a utility or portable generator.
- The amperage balance of panels is required to reduce neutral currents and save energy.
- Phase rotation shall be verified and documented by the electrician and contractor after installation.

#### END OF SECTION

### Section 33 80 00 Communications Utilities

#### Section 33 81 00 Communications and Utility Structures

##### Section 33 81 29 Communications and Utilities Vaults, Pedestals, and Enclosures

If need it Manatee County suggests the use of Milbank commercial pedestals or similar specs. these pedestals can be used for municipal power, site power, communications, motor control, outdoor lighting, power distribution, etc. See attachment 55 and 56 for the Milbank catalog.

Milbank Energy at Work  
Justin Enge  
[Jenge@milbankworks.com](mailto:Jenge@milbankworks.com)  
[www.milbankworks.com](http://www.milbankworks.com)

#### END OF SECTION

## DIVISION 46 00 00 WATER AND WASTEWATER EQUIPMENT

### Section 46 20 00 Water and Wastewater Preliminary Treatment Equipment

#### Section 48 25 00 Oil and Grease Separation and Removal Equipment

##### Section 46 25 23 Grease Traps

Per Manatee County Ordinance 16 -12 The Board of County Commissioners finds that regulating the discharge and disposal in the sanitary sewer collection system will prevent blockages, sewer overflows, and provide the proper operation and maintenance of the sanitary sewer collection system. See attached Ordinance doc 51.

Refer to FBC - Plumbing Chapter 10 for the proper design criteria and submittal requirements for permit approval.

#### END OF SECTION

### **DIVISION 48 00 00 ELECTRICAL POWER GENERATION**

#### **Section 48 10 00 Electrical Power Generation Equipment**

##### Section 48 11 00 Fossil Fuel Plant Electrical Power Generation Equipment

##### Section 48 11 26 Fossil Fuel Electrical Power Plant Generators

#### **General Notes**

- Preferred manufacturers are Caterpillar, Kohler, and Cummings.
- Preferred engine type – Natural Gas. Install diesel engines if natural gas is not available.
- Fuel Storage requirement, runtime shall be 168 hours (minimum) with onsite fuel loaded to 90% capacity and an electrical load based on a 75% power load.
- Option at facility/site with no installed generator: install one (sized to branch electrical panel) transfer switch that is isolated to that branch panel for powering limited lighting, communications, alarms, and electrical outlets for powering this location with a portable generator so sized and rated for the application and load.
- An outdoor accessible plug for a trailer-mounted or vehicle-mounted generator: Provide and install one generator power female plug, dead-Front, amp size as needed, 3 - wire, 4 - pole switched with one circuit breaker serving as a disconnect switch and or all sized and rated for that locations panel voltage and load. Verify plug assembly is available. A NEMA 3R weatherproof wiretap box (IT pole cabinet) may be required if power requirements exceed the nominal plug size (see Attachment).
- If load control is employed, NESHAP requirements need to be met.
- Generator plugs manufactured by Hubbell are preferred.

#### END OF SECTION

##### Section 48 14 00 Solar Energy Electrical Power Generation Equipment

##### Section 48 14 13 Solar Energy Collectors (Solar Ready Buildings)

- Determine if the installation of a solar energy system is a viable option to be included in the project.
- Determine if there are enough funds available for the making new building solar - ready, or if the building can be retrofit for solar-ready.
- Determine if the solar energy system can be installed during construction, or in the future.
- Determine if the budget will increase by including solar-ready design to the project.
- If all of the above conditions are positive. please follow the below design recommendations.

### **Shading**

Shaded areas should be avoided both in and around the location of the solar panel system. We recommend using a sun path calculator, such as Solar Pathfinder, to help analyze optimal solar panel placement areas. Since the solar energy system may not be installed for several years, landscaping and future construction planning should avoid negatively affecting the solar resource and sun path.

### **Site Orientation**

Before breaking ground on a project, project managers should review and analyze the site layout to accommodate the incorporation of a solar panel system. Project managers should stay conscious of the sun path and the location of shaded areas to help increase the surface area available for solar panels. If a building is designed with a sloping roof, orienting the roof area facing in the southern direction is recommended. This orientation will ensure that sunlight will strike the solar panel at a more optimal angle. Most solar panels are mounted with a panel tilt angle, relative to horizontal, that is approximately equal to the site latitude.

### **Roof Type and Load**

The type, quality, and warranty of the roof system are factors that will affect the cost of solar panel installation. Solar panels often have a 25-year warranty, making it important to install a roof system that has a lifespan similar to the solar panels. It should be noted that roof penetrations may void the roof warranty for existing roof systems. It is recommended to pre-install the solar panel support system before the roof system is installed. This method will ensure that the solar panels are properly attached to the roof deck, as well as provide an opportunity to reinforce the structure if needed. The support system and attachment system design must meet the Florida building code and wind load design standards.

### **Electrical panel and wiring**

It is recommended that the electrical panel be installed indoors and be designed strong enough to handle both the incoming supply and solar panel electrical loads. A metallic conduit must run from the solar panel combiner box to the Balance of System (BOS) near the electrical panel.

If a monitoring system is required for the solar panel system, an internet connection at the electrical room is also required.

### **Special Loads**

If the building requires uninterrupted power for auxiliary systems, then a battery storage system is required. The battery back-up system should be sized by an electrical engineer following the Florida building code.

**END OF SECTION**

**ATTACHMENTS LIST AND THEIR LOCATION**

LOCATED ON THE SHAREPOINT SITE; PROVIDED UPON REQUEST TO THE VENDOR

<https://mymanatee.sharepoint.com/sites/EnergySustainability/Shared%20Documents/Forms/AllItems.aspx?viewid=d6f44594%2Dd29c%2D427a%2D95bf%2D297141ca02a2&id=%2Fsites%2FEnergySustainability%2FShared%20Documents%2FPreferred%20Building%20Equipment%20%26%20Materials>

File Title	File Type	Description
<b>1</b>	PDF	Zoll AED Plus Value Package price and provider website
<b>Cable spec 1</b>	JPG	Photo cable concrete floor termination sample
<b>Cable spec 2</b>	JPG	Photo cable concrete floor termination sample
<b>3</b>	PDF	Manatee County Asphalt Paving Section 321216 Part 1 10/2017 spec
<b>Cable specs 3</b>	JPG	Photo cable concrete floor termination sample
<b>4</b>	PDF	Chain-link Fences and Gates Section 323113 part 1 10/24/17 spec
<b>Cable specs 4</b>	JPG	Photo cable concrete floor termination sample
<b>5</b>	PDF	Large dedication plaque
<b>6</b>	PDF	Exeter Storm Shield Hurricane Shutter System Specification guide
<b>7</b>	PDF	Final Reconciliation, Warranty Period Declaration and Contractors Affidavit Form
<b>8</b>	PDF	Manatee County Section 088813 Fire Resistant Glazing Rev 10/2017
<b>9</b>	PDF	FPL Business Programs and Services brochure
<b>10</b>	PDF	Manatee County logo Graphics Standards Manual
<b>11</b>	PDF	Nema Type 3r Power Vented Outdoor Enclosure with built-in fan spec
<b>12</b>	PDF	Flexco Radial Rubber Tile Maintenance manual
<b>13</b>	PDF	Public Works Standards Part 1 Section 1.14 Record Drawings
<b>14</b>	PDF	Roller Shades Hunter Douglas Brochure
<b>15</b>	PDF	Roppe Rubber & Vinyl Flooring pinnacle rubber base product brochure
<b>16</b>	PDF	SaniGlaze International Newly Grouted Joint Treatment Specifications Guide Section 09 01 30.91
<b>17</b>	PDF	Manatee County Procedure # 606.003 Security Camera Installation Procedure 01-14-2016
<b>18</b>	PDF	Manatee County Government Standard Data/Voice Cabling Requirements
<b>19</b>	PDF	Termite Protection in the buildings code reference
<b>20</b>	PDF	Termiticides Registered in Florida for preventive treatment of new construction List
<b>21</b>	PDF	True Grid Pro Plus Manufacturer's Product Spec. Sheet
<b>22</b>	PDF	True Grid Porous Flexible Paving Section 02795
<b>23</b>	PDF	True Grid Permeable Paver Technical Specifications

		Section 32 1243 Porous Flexible Paving
24	PDF	Zoll AED Plus Value Package Brochure
25	PDF	Manatee county Automatic transfer switches Division26 spec
26	PDF	Leviton Daylight Harvesting Brochure
27	PDF	GE lighting Evolve LED area light scalable are light EASB spec
28	PDF	RAB Lighting ALED3T78 spec
29	PDF	Deco digital De23 LED 23" Area light floodlight spec
30	PDF	Deco digital D402-LED Medium wall pack spec
31	PDF	Nema type 3r Power vented outdoor enclosure with a built-in fan
32	PDF	GE lighting Albeo led luminaire linear low bay lighting ALC4 series spec
33	PDF	Leviton USB charger devices smart outlet brochure
34	PDF	Leviton USB charger devices smart outlet brochure and spec
35	PDF	Bobrick B-212 clothes hook and bumper prices and provider website
36	PDF	Sloan sensor activated electronic hand washing faucet ETF-880 spec
37	PDF	Xlerator Hand Dryer Model XL Technical datasheet
38	PDF	Bradley Mounted overhead Braced Restroom Partitions Phenolic Series 400 Sentinel specs
39	PDF	Sloan rear spud floor mount toilet fixture website sample
40	PDF	Sloan Rear spud floor mount ADA compliant toilet fixture websites sample
41	PDF	Bobrick B-5181 reversible folding shower seat cost and provider website
42	PDF	Sloan Royal optima Sensor activated Flushometers model 152 ES-S TMO SWB SPECS
43	PDF	Sloan Royal optima Sensor activated Flushometers model 140-1.28 ES-S TMO SPECS
44	PDF	Micrell 800 Series Soap Dispenser cost and provider website
45	PDF	Bobrick B-204-1 Shower curtain hook price and provider website
46	PDF	Bobrick B-207x72 Shower curtain rod with concealed mounting prices and provider website
47	PDF	Sloan Act o Matic showerheads website sample
48	PDF	Bobrick B-204-2 Vinyl Shower Curtain cost and provider website
49	PDF	Sloan Wall hung, wall outlet, water-free, vitreous china urinal spec
50	PDF	Bigbelly High Capacity Compactor
51	PDF	Manatee County ordinance 16-12 for grease traps
52	PDF	Manatee County Public Works Utility Standards, 2015 (Record Drawing)
53	PDF	Marshall Best Security lock product list
54	PDF	Water heater leak Alarm and shut-off system by RDT reliance detection technologies

55	PDF	Milbank Enclosed Controls Product Catalog
56	PDF	Milbank Enclosed Controls Product Portfolio
57	PDF	Water Fountain Pedestal Most Dependable 440
58	PDF	Most Dependable Pedestal ADA and Pet Water Fountain
59	PDF	ADA Checklist for Existing Facilities
60	PDF	Samsung Free Joint Multi Zone Split A/C units
61	PDF	Pelican TS200 Internet Enabled Thermostat
62	PDF	Elkay EZH20 bottle Filling Station sample model LZS8WSLK
63	PDF	ADA Checklist and Requirements for Toilet Restrooms
64	PDF	MDS-046-Water-Rope-Sensor-Data-Sheet
65	PDF	Armstrong Acoustical ceiling panel tiles Ultima Tegular fine texture specs
66	PDF	Roppe Rubber & Vinyl Flooring pinnacle rubber base product brochure
67	PDF	Sloan Rear spud Wall hung toilet fixture website sample
68	PDF	San Jamar Twin roll jumbo vision Bath tissue dispenser price and provider website
69	PDF	Sloan wall hung, wall outlet, water-free, vitreous china urinal WES-1000 spec
70	PDF	San Jamar T1790TBK ultra fold oceans large capacity C-fold /multi-fold towel dispenser prices and provider website
71	PDF	Rubbermaid 6140 Sanitary napkin receptacle w/rigid liner, price and provider website
72	PDF	The email that shows the cost of low bay lighting
73	PDF	Exterior Lighting spec 26 5200
74	PDF	100BE Exterior aluminum door brochure
75	PDF	Fire Ready Residential Range Hood
76	PDF	Fire Ready Residential Range Hood Installation guide
77	PDF	Utility Design Standards Full Manual
78	PDF	Manatee County Facilities General 00612 Paint spec
79	PDF	VA Front Desk Specs
80	PDF	BR Deal Tray 16 Inch Product Data
81	PDF	6201-Installation-DiagramSC-300
82	PDF	Horizon Surface System HSS DVB Terrazo vinyl epoxy flooring
83	PDF	spec sheet LED Flat Panels CCT Selectable-86
84	PDF	84 Sloan 3315154-EBF-615-4-BAT-BDM-CP-0.5GPM-MLM-IR-BT-FCT

## **EXHIBIT 2, PROPOSAL RESPONSE**

This section identifies specific information which must be contained within the Proposal response and the order in which such information should be organized. The information each Proposer provides will be used to determine those Proposers with the background, experience and capacity to perform the scope of services as stated in this RFQ and which Proposer(s) best meets the overall needs of the County. For more information on the evaluation process, refer to Section B, Evaluation of Responses.

### **2.01 INFORMATION TO BE SUBMITTED**

The contents of each Response will be organized and arranged with tabs in the same order as listed below and with the same TAB numbers. The Response should contain sufficient detail to permit the County to conduct a meaningful evaluation. However, overly elaborate responses are not requested or desired. **There are no page limits for this RFQ, however exhibits, diagrams, charts and main body of text shall be legible. No fancy light font or font smaller than business size. Each tab shall have a cover page that identifies Proposer, the RFQ by title and the RFQ number.**

### **2.02 RESPONSE FORMAT**

#### **TAB 1 - INTRODUCTION**

Include the following in Tab 1 of the Response.

1. A cover page that identifies Proposer, the RFQ by title and the RFQ number.
2. An introductory letter/statement that describe your Response in summary form (limit 2 pages).
3. A table of contents.

#### **TAB 2 – MINIMUM QUALIFICATION REQUIREMENTS**

In Tab 2 submit the information and documentation requested that confirms Proposers meets the following minimum qualification requirement(s):

1. Must be registered with the State of Florida, Division of Corporations to do business in Florida.

**No documentation is required. The County will verify registration.**

2. Proposer and/or its subcontractor(s) has made an inspection of the construction site for work specified in this RFQ on or after the date of advertisement of this RFQ and prior to the Due Date and Time.

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

3. Proposer and/or its subcontractor(s) must possess current, valid licenses and certifications required under Florida Statute to perform Construction Management at Risk Services, to include but not limited to: general contractor, engineering, architectural, or surveying services as outlined in the RFQ, for a minimum of three (3) years prior to the due date of the Proposal.

**Submit information and documentation from the issuing agency that confirms Proposer and/or its subcontractor(s) meet the following:**

- a. **Certified under Section 489.119, Florida Statutes, to engage in contracting through a certified or registered general contractor or a certified or registered building contract as the qualifying agent; AND**
  - b. **Certified under Section 471.023, Florida Statutes, to practice or to offer to practice engineering; or Certified under Section 481.219, Florida Statutes, to practice or to offer to practice architecture; or**
  - c. **Certified under Section 481.319, Florida Statutes, to practice or to offer to practice landscape architecture.**
4. Proposer or its subcontractor has completed (which means that certificate of occupancy has been issued) a minimum of three (3) boat ramp improvement projects since December 1, 2011. Provide the following information for each qualifying project.
    - a. **Identify who was contracted to complete the project (Proposer or subcontractor)**
    - b. **Project name and location**
    - c. **Client/Organization name**
    - d. **Contact name**
    - e. **Contact phone**
    - f. **Contact email**
    - g. **Project dates (Start/End)**
  5. Proposer Is NOT listed on the Florida State Board of Administration, Scrutinized List of Prohibited Companies.

**No documentation is required. The County will verify.**

6. Proposer is not on the Florida Suspended or Debarred Vendor List

**No documentation is required. The County will verify.**

7. Proposer is not on the Federal Convicted Vendor or Excluded Parties list (SAM/EPLS)

**No documentation is required. The County will verify.**

8. Proposer is not on the Florida Department of Transportation Contractor Suspended List

**No documentation is required. The County will verify.**

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

**If Proposer is a joint venture, provide a copy of Proposer's approved filing with the Florida Department of Business and Professional Regulation.**

**If Proposer is not a joint venture, provide a statement to that effect.**

10. Proposer has no reported conflict of interests in relation to this RFQ.

**If no conflicts of interests are present, Bidder must submit a fully completed copy of Form 4.**

**If there is a potential conflict of interest, on a separate page submit a statement to that affect and disclose the name of any officer, director or agent who is an employee of the County. Disclose the name of any County employee who owns, directly or indirectly, any interest in Bidder's firm or any of its branches.**

### **TAB 3 – FORMS**

Provide the completed and executed Forms listed below in Tab 3.

- Form 1, Acknowledgement of Addenda
- Form 2, Response Signature Form
- Form 3, Public Contracting and Environmental Crimes Certification
- Form 4, Conflict of Interest Disclosure
- Form 5, Non-Collusion Affidavit
- Form 6, Truth in Negotiation Certification
- Form 7, Scrutinized Company Certification
- Form 8, Insurance Statement
- Form 9, Indemnity and Hold Harmless
- Form 10, Florida Trench Safety Act
- Form 11, Clean Air and Federal Water Pollution Control Acts
- Form 12, Debarment and Suspension
- Form 13, Byrd Anti-Lobbying Amendment

**TAB 4 - TRADE SECRETS**

Pursuant to Section A.24, Trade Secrets, in Tab 4 identify any trade secret being claimed. Proposer must submit purported trade secret as follows:

1. Trade secret material must be segregated, within the applicable TAB, from the portions of the Response that are not being declared as trade secret. NOTE: Responses cannot be designated as 'Proprietary' or 'Confidential' in their entirety.
2. Proposer shall cite, for each trade secret being claimed, the Florida Statute number which supports the designation.
3. Proposer shall offer a brief written explanation as to why information claimed as trade secret fits the cited Statute.
4. Proposer shall provide an additional electronic copy of its Response that redacts all designated trade secrets.

**TAB 5 - PROPOSER STATEMENT OF ORGANIZATION**

In Tab 5, provide information and documentation on Proposer as follows:

1. Legal contracting name including any dba.
2. State of organization or incorporation.
3. Ownership structure of Proposer's company.  
(e.g., Sole Proprietorship, Partnership, Limited Liability Corporation, Corporation)
4. Federal Identification Number.
5. A fully completed (signed and dated) copy of Proposer's W-9.
6. Contact information for Proposer's corporate headquarters and local office (if different) NOTE: local is defined as Manatee, DeSoto, Hardee, Hillsborough, Pinellas or Sarasota counties.
  - a. Address
  - b. County, State, Zip
  - c. Phone
  - d. Number of years at this location
7. List of officers, owners and/or partners, or managers of the firm. Include names, addresses, email addresses, and phone numbers.
8. Provide supporting documentation from the certifying agent indicating Proposer is a certified Minority-owned Business Enterprise, if applicable.
9. Contact information for Proposer's primary and secondary representatives during this RFQ process to include the following information:
  - a. Name
  - b. Phone
  - c. E-mail
  - d. Mailing Address
  - e. County, State, Zip

10. Provide a brief summary regarding any prior or pending litigation, either civil or criminal, involving a governmental agency or which may affect the performance of the services to be rendered herein, in which the Proposer, any of its partners, employees or subcontractors is or has been involved within the last three (3) years.
11. Provide details of any ownership changes to Proposer's organization in the past three (3) years or changes anticipated within six (6) months of the Due Date and Time (e.g., mergers, acquisitions, changes in executive leadership).
12. Confirm if Proposer's electronic format proposal submission is compliant with the ADA accessibility standards of Section 508 and/or WCAG2.0AA. If not, provide the contact

*(Remainder of this page is intentionally left blank)*

**TAB 6 – PROPOSER AND TEAM’S EXPERIENCE (25 POINTS)**

In Tab 6, provide details of Proposer and its team’s experience to include the following:

1. Provide a summary of Proposer’s background, size and years in business.
2. Describe Proposer’s experience in boat ramp reconstruction, sitework, upland and waterside improvements as well as restroom construction and associated utility work as outlined in the RFQ for other government agencies, particularly those within Florida.
3. Provide Proposer’s years of experience in boat ramp reconstruction, sitework, upland and waterside improvements as well as restroom construction and associated utility work as outlined in the RFQ.
4. Identify and include information regarding experience and qualifications of Proposer’s key staff to be assigned to the services. Include a resume for each with the name of the firm(s) for their current and previous employers, their full names, professional credentials (e.g., certifications and/or licenses), and roles and duties which the individuals will provide to the County.  
Include the address of their current primary office location, email address and phone number.
5. Identify any proposed sub-consultants to accomplish the work. Include the company name, the name of the individual(s) to be assigned, and an overview of their experience and qualifications applicable to their role in the provision of construction manager at risk services for the County.
6. Describe any significant or unique accomplishments, recognition, or awards received by Proposer, its key personnel, or its subcontractors for previous similar services.
7. Provide a minimum of three (3) client references for boat ramp improvements performed by Proposer, who are agreeable to responding to an inquiry by the County. References should include the following information:
  - a. Client name
  - b. Client address
  - c. Client contact name
  - d. Client contact phone and fax numbers
  - e. Client contact email address
  - f. Brief description of work (1-2 sentences)
  - g. Performance period (start/end dates)
  - h. Total dollar value of contract
8. Proposer and/or its subcontractor(s) key project staff hold a Florida Department of Transportation (FDOT) certification in the category of “Advanced MOT”. Include name of person who holds the qualification, their firm and the role within the firm.
9. Proposer and/or its subcontractor(s) key project staff hold a Florida Department of Transportation (FDOT) Professional Services qualification in Work Group 8 – Surveying and Mapping. Include name of person who holds the qualification, their firm and the role within the firm.

*(Remainder of this page is intentionally left blank)*

## **TAB 7 – APPROACH (35 POINTS)**

In Tab 7, provide Proposer’s project approach to include the following:

1. A narrative of the project approach and an explanation of how this approach meets County objectives and requirements as specified in this RFQ.
2. An explanation of Proposer’s technical ability to perform all facets of the scope of services defined in Exhibit 1. If more than one Proposer is jointly filing a Response, details must be provided to clearly demonstrate individual roles and responsibility for all components of the project.
3. Details of implementation plan and schedule. Provide an implementation schedule for each component of services (e.g., design, demolition, construction). NOTE: Proposer must commit to a timetable of no more than 486 calendar days for substantial completion of the project.
4. Provide a narrative of the methodology for engaging with County representatives in-the-course of performing the duties.
5. Proposer shall thoroughly explain:
  - a. Its accessibility in the areas of availability for meetings, general communications, coordination, and supervision
  - b. How Proposer physically plans on attending pre-scheduled meetings
  - c. How Proposer plans on ensuring accessibility and availability during the term of the Agreement
6. Proposer’s Risk Management and Safety Plan that includes a list of risks related to the provision of services and Proposer’s proposed mitigation procedures for each item.
7. Include a detailed description of the Proposer’s safety plan to control the environment of the work site during on site construction.
8. Proposers are encouraged to propose the use of as many environmentally preferable, sustainable, ‘green’ products, materials and supplies to promote a safe and healthy environment. Submit a summary of Proposer’s environmental sustainability initiatives and any products, materials or supplies that are proposed for the County’s work that have documented evidence of reducing adverse effects on the environment.
9. Provide a statement on company letterhead and signed by an authorized official of Proposer attesting to its commitment to meet the County’s time and budget requirements for all assigned work.
10. Submit any additional information not previously requested which Proposer believes would assist County in the evaluation of Proposer’s approach to provide the required services.

*(Remainder of this page is intentionally left blank)*

## **TAB 8 - ORGANIZATIONAL STRUCTURE AND CAPACITY (15 POINTS)**

1. Submit details of Proposer's staffing resources, at the location that will provide services to the County as well as corporately; by discipline and the number of personnel within each discipline.
2. Detail the location of the managing office and what plans will be adopted to ensure County citizens receive consideration for employment; and suppliers located within the County will be used for the acquisition of goods and services needed to perform the scope of services.
3. If Proposer's staffing resources includes sub-consultants, submit the name of the firm(s) who will perform each discipline. If more than one firm is listed for a discipline, then label which firm is the primary firm for that discipline. Firms may perform more than one discipline.
4. Submit an organizational diagram clearly identifying key personnel as well as other staffing resources who are designated to provide services to the County. For each individual in the organization diagram, include each individual's name, title, firm and indicate their functional relationship to each other.
5. If Proposer is teaming with other entities to provide the required goods and services, detail any prior similar work any two or more team members have jointly performed.
6. If a joint venture is proposed, provide an affidavit attesting to the formulation of the joint venture and provide proof of incorporation as a joint venture or a copy of the formal joint venture agreement between all joint venture parties, indicating their respective roles, responsibilities, and levels of participation in the project.
7. An explanation, in general terms, of Proposers' financial capacity to perform the scope of services. If Proposer is jointly filing a Response with other entities, details must be provided to demonstrate financial capacity of each entity.
8. Provide a statement on company letterhead and signed by a company official authorizing a County auditor and/or financial analysts access to your financial records, including all records prepared by an independent firm, or the financial records of other entities for which you have ownership interest. Such access will occur at the primary location of the Proposer, or such other location as may be agreed, for the purposes of verifying financial representations, and/or to review and assess the historical and current financial capacity of Proposer's business entity and its expected ability to meet ongoing financial obligations related to the required services, if awarded a contract. If an audit is conducted, the County's audit and/or financial analysts will report their findings in a summary report to the Procurement Official, which will be placed in the Response files for subsequent use, review, and discussions during evaluations.
9. Disclose any ownership interest in other entities proposed for services. This ownership disclosure includes ownership by the Proposer through a parent, subsidiary or holding company or any other form of business entity. Submit entity names and the percent of ownership for each.
10. Detail Proposer and any subcontractor's current workloads and any projected changes to the workload within the next six months.
11. Provide a list of construction and/or CMAR projects that have been awarded to the Proposer by Manatee County in the past ten (10) years since December 1, 2011. Include the following information for each:

- a. Name of the project.
  - b. Date of award.
  - c. Dollar value of the project.
12. Provide details of Proposer's capacity to bond the project. Include a letter of intent form Proposer's bonding company which confirms Proposer's bonding capacity.
  13. Submit any additional information not previously requested which Proposer believes would assist County in the evaluation of Proposer's capacity to provide the required services.

*(Remainder of this page is intentionally left blank)*

**TAB 9 - SIMILAR COMPLETED PROJECTS (25 POINTS)**

Provide a list of up to three (3) projects, particularly those boat ramp reconstruction, sitework, upland and waterside improvements as well as restroom construction and associated utility work as outlined in the RFQ which Proposer has provided services since December 1, 2011. Include the following information:

- a. Organization/Owner name
- b. Address (County/State)
- c. Project date (Start/End)
- d. Proposer's role in the project (e.g., prime/lead, sub)
- e. Scope of work (Brief description 1-2 sentences)
- f. Total project costs

NOTE: Representative photographs and exhibits supporting the above projects are permitted as an attachment to this section.

**END EXHIBIT 2**

## **EXHIBIT 3, SPECIAL PROVISIONS – FEDERAL GRANTS**

### **CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS**

In addition to other provisions required, all contracts made by the County that are funded in whole, or in part, by a Federal grant the following provisions will apply:

#### **A. Equal Opportunity Employment**

In accordance with 41 C.F.R. §60-1.4(b), the Subrecipient hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the contractor agrees as follows:

The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

- i. Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- ii. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
- iii. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not

otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

- iv. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- v. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- vi. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- vii. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- viii. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

**B. Contract Work Hours and Safety Standards Act (40 U.S.C. 3701–3708)**

Where applicable, Contractors for Federal grant funded contracts awarded by the County in excess of \$100,000 that involve the employment of mechanics or laborers must comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act. The Contractor must compute the wages of every mechanic and laborer based on a standard work week of 40 hours.

Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the workweek. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or underworking conditions which are unsanitary, hazardous or dangerous.

NOTE: These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

**C. Clean Air Act (42 U.S.C. 7401–7671q.) and the Federal Water Pollution Control Act (33U.S.C. 1251–1387), as amended**

Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C.1251–1387). Contractor shall report all violations of such Acts to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

**D. Suspension and Debarment (Executive Orders 12549 and 12689)**

Any Contractor listed on the government-wide exclusions in the System for Award Management (SAM), will not be eligible for award in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

**E. Byrd Anti-Lobbying Amendment (31U.S.C. 1352)**

Contractors for an award exceeding \$100,000 must file the required anti-lobbying certification. Each tier must certify to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award. See § 200.322 Procurement of recovered materials.

**F. Minority/Women-owned/Labor Surplus Firms' Participation**

The County, in accordance with the requirements as stated in C.F.R. 200.321 encourages the active participation of minority businesses, women-owned business enterprises and labor surplus area firms as a part of any subsequent agreement whenever possible. If subcontracts are to be let, by the Contractor, Contractor shall be required to take the affirmative steps listed in items 1 through 5 below:

1. Place qualified small and minority businesses and women-owned business enterprises on its solicitation lists;
2. Assure that small and minority businesses, and women-owned business enterprises are solicited whenever they are potential sources;
3. Divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small, minority, and women-owned business enterprises;
4. Establish delivery schedules, where the requirement permits, which encourage participation by small, minority, and women-owned business enterprises;
5. Use the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

**FORM 11, CLEAN AIR AND FEDERAL WATER POLLUTION CONTROL ACTS**

**Clean Air Act (42 U.S.C. 7401–7671q.) and the Federal Water Pollution Control Act (33U.S.C. 1251–1387), as amended** - If awarded, Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401–7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C.1251–1387). Contractor shall report all violations of such Acts to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

Acknowledged by:

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Firm Name (print)

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Signature

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Printed Name and Title

**FORM 12, DEBARMENT AND SUSPENSION**

By signing below, Contractor confirms that it **is not** listed on the government wide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.”

---

Firm Name (print)

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Signature

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Printed Name and Title

**FORM 13, BYRD ANTI-LOBBYING AMENDMENT**

By signing below, Contractor confirms that it has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352

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Firm Name (print)

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Signature

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Printed Name and Title

**FORM 14, MINORITY/WOMEN-OWNED/LABOR SURPLUS FIRMS'  
PARTICIPATION**

Pursuant to C.F.R. 200.321 Contractor, agrees to take the affirmative steps listed in items 1 through 5 below:

1. Place qualified small and minority businesses and women-owned business enterprises on its solicitation lists;
2. Assure that small and minority businesses, and women-owned business enterprises are solicited whenever they are potential sources;
3. Divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small, minority, and women-owned business enterprises;
4. Establish delivery schedules, where the requirement permits, which encourage participation by small, minority, and women-owned business enterprises;
5. Use the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

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Firm Name (print)

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Address

---

City/State/Zip

---

Signature

---

Printed Name and Title

AGREEMENT # (Number)

*for*

CONSTRUCTION MANAGEMENT AT RISK  
SERVICES

*between*

MANATEE COUNTY (AS OWNER)

*and*

\_\_\_\_\_  
(AS CONSTRUCTION MANAGER)

**AGREEMENT FOR  
CONSTRUCTION MANAGEMENT AT RISK SERVICES  
[PROJECT NAME]**

**THIS AGREEMENT** (“Agreement”) is made and entered into by and between Manatee County, a political subdivision of the State of Florida, referred to herein as “Owner”, and the firm of \_\_\_\_\_, incorporated in the State of \_\_\_\_\_ and registered and licensed to do business in the State of Florida (License # \_\_\_\_\_), referred to herein as “Construction Manager.”

**WHEREAS**, the Owner intends to construct **[PROJECT DESCRIPTION]**, the improvements being hereinafter referred to and defined as the “Project”; and

**WHEREAS**, Owner desires Construction Manager to provide the professional construction management services requisite to the implementation of the Project, and

**WHEREAS**, in response to Owner’s Request for Proposal No. \_\_\_\_\_ (the “RFP”), Construction Manager has submitted its Proposal (the “Proposal”) to provide the services.

**NOW THEREFORE**, the Owner and the Construction Manager, in consideration of the mutual covenants hereinafter set forth, the sufficiency of which is hereby acknowledged, agree as follows:

**ARTICLE 1  
GENERAL PROVISIONS**

**1.1 RELATIONSHIP OF PARTIES.** The Construction Manager accepts the relationship of trust and confidence established with the Owner by this Agreement, and covenants with the Owner to furnish the Construction Manager’s reasonable skill and judgment and to cooperate with the Architect/Engineer in furthering the interests of the Owner. The Construction Manager shall furnish construction administration and management services and use the Construction Manager’s best efforts to perform the Project in an expeditious and economical manner consistent with the interests of the Owner. The Owner shall endeavor to promote harmony and cooperation among the Owner, Architect/Engineer, Construction Manager and other persons or entities employed by the Owner for the Project.

**1.2 GENERAL CONDITIONS.** The general conditions of the contract shall be the attached General Conditions of the Construction Agreement, which is incorporated herein by reference. The term “Contractor” as used in the General Conditions shall mean the Construction Manager. The term “Contract Sum” as used in the General Conditions shall mean Guaranteed Maximum Price (GMP).

**ARTICLE 2**  
**CONSTRUCTION MANAGER'S RESPONSIBILITIES**

The Construction Manager shall perform the services described in this Article. The services to be provided under Sections 2.1 and 2.2 constitute the Preconstruction services. If the Owner and Construction Manager agree, after consultation with the Architect/Engineer, the Construction Phase may commence before the Preconstruction Phase is completed, in which case both phases will proceed concurrently.

**2.1 PRECONSTRUCTION PHASE.**

A. PRELIMINARY EVALUATION. The Construction Manager shall provide a preliminary evaluation of the Owner's program and Project budget requirements, each in terms of the other.

B. CONSULTATION. The Construction Manager, with the Architect/Engineer, shall jointly schedule and attend regular meetings with the Owner. The Construction Manager shall consult with the Owner and Architect/Engineer regarding site use and improvements and the selection of materials, building systems and equipment. The Construction Manager shall provide recommendations on construction feasibility; actions designed to minimize adverse effects of labor or material shortages; time requirements for procurement, installation and construction completion; and factors related to construction cost, including estimates of alternative designs or materials, preliminary budgets and possible economies.

C. PRELIMINARY PROJECT SCHEDULE. When Project requirements described in Section 3.1.A have been sufficiently identified, the Construction Manager shall prepare, and periodically update, a preliminary Project schedule for the Architect/Engineer's review and the Owner's approval. The Construction Manager shall obtain the Architect/Engineer's approval of the portion of the preliminary Project schedule relating to the performance of the Architect/Engineer's services. The Construction Manager shall coordinate and integrate the preliminary Project schedule with the services and activities of the Owner, Architect/Engineer and Construction Manager. As design proceeds, the preliminary Project schedule shall be updated to indicate proposed activity sequences and durations, milestone dates for receipt and approval of pertinent information, submittal of a Guaranteed Maximum Price (GMP) proposal, preparation and processing of shop drawings and samples, delivery of materials or equipment requiring long-lead-time procurement, Owner's occupancy requirements showing portions of the Project having occupancy priority, and proposed date of Substantial Completion. If preliminary Project schedule updates indicate that previously approved schedules may not be met, the Construction Manager shall make appropriate recommendations to the Owner and Architect/Engineer.

D. PHASED CONSTRUCTION. The Construction Manager shall make recommendations to the Owner and Architect/Engineer regarding the phased issuance of Project Plans and Specifications to facilitate phased construction of the Work, if such phased construction

is appropriate for the Project, taking into consideration such factors as economies, time of performance, availability of labor and materials, and provisions for temporary facilities.

E. PRELIMINARY COST ESTIMATES.

1. When the Owner has sufficiently identified the Project requirements and the Architect/Engineer has prepared other basic design criteria, the Construction Manager shall prepare, for the review of the Architect/Engineer and approval of the Owner, a preliminary cost estimate utilizing area, volume or similar conceptual estimating techniques.
2. When schematic design documents have been prepared by the Architect/Engineer and approved by the Owner, the Construction Manager shall prepare, for the review of the Architect/Engineer and approval of the Owner, a more detailed estimate with supporting data. During the preparation of the design development documents, the Construction Manager shall update and refine this estimate at appropriate intervals agreed to by the Owner, Architect/Engineer and Construction Manager.
3. When design development documents have been prepared by the Architect/Engineer and approved by the Owner, the Construction Manager shall prepare a detailed estimate with supporting data for review by the Architect/Engineer and approval by the Owner. During the preparation of the construction documents, the Construction Manager shall update and refine this estimate at appropriate intervals agreed to by the Owner, Architect/Engineer and Construction Manager.
4. If any estimate submitted to the Owner exceeds previously approved estimates or the Owner's budget, the Construction Manager shall make appropriate recommendations to the Owner and Architect/Engineer.

F. SUBCONTRACTORS AND SUPPLIERS. The Construction Manager shall seek to develop Subcontractor interest in the Project and shall furnish to the Owner and Architect/Engineer for their information a list of possible Subcontractors, including suppliers who are to furnish materials or equipment fabricated to a special design, from whom proposals will be requested for each principal portion of the Work. The Architect/Engineer will promptly reply in writing to the Construction Manager if the Architect/Engineer or Owner know of any objection to such Subcontractor or supplier. The receipt of such list shall not require the Owner or Architect/Engineer to investigate the qualifications of proposed Subcontractors or suppliers, nor shall it waive the right of the Owner or Architect/Engineer later to object to or reject any proposed Subcontractors or suppliers.

G. LONG-LEAD-TIME ITEMS. The Construction Manager shall recommend to the Owner and Architect/Engineer a schedule for procurement of long-lead-time items which

will constitute part of the Work as required to meet the Project schedule. If such long-lead-time items are procured by the Owner, they shall be procured on terms and conditions acceptable to the Construction Manager. Upon the Owner's acceptance of the Construction Manager's GMP proposal, all contracts for such items shall be assigned by the Owner to the Construction Manager, who shall accept responsibility for such items as if procured by the Construction Manager. The Construction Manager shall expedite the delivery of long-lead-time items.

H. EXTENT OF RESPONSIBILITY. The Construction Manager does not warrant or guarantee estimates and schedules except as may be included as part of the GMP. The recommendation and advice of the Construction Manager concerning design alternatives shall be subject to the review and approval of the Owner and the Owner's professional consultants. It is not the Construction Manager's responsibility to ascertain that the Project Plans and Specifications are in accordance with applicable laws, statutes, ordinances, building codes, rules and regulations. However, if the Construction Manager recognizes that portions of the Project Plans and Specifications are at variance therewith, the Construction Manager shall promptly notify the Architect/Engineer and Owner in writing.

I. EQUAL EMPLOYMENT OPPORTUNITY AND AFFIRMATIVE ACTION. The Construction Manager shall comply with applicable laws, regulations and special requirements of the Contract Documents regarding equal employment opportunity and affirmative action programs.

## **2.2 GUARANTEED MAXIMUM PRICE PROPOSAL AND CONTRACT TIME.**

A. TIMING. When the Project Plans and Specifications are sufficiently complete, the Construction Manager shall propose a GMP, which shall be the sum of the estimated Cost of the Work and the Contractor's Fee.

B. FURTHER DEVELOPMENT OF PROJECT PLANS AND SPECIFICATIONS. As the Project Plans and Specifications may not be finished at the time the GMP proposal is prepared, the Construction Manager shall provide in the GMP for further development of the Project Plans and Specifications by the Architect/Engineer that is consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include such things as changes in scope, systems, kinds and quality of materials, finishes or equipment, all of which, as required, shall be incorporated by Change Order.

C. CONTINGENCY. The estimated Cost of the Work shall include the Construction Manager's contingency, a sum established by the Construction Manager for the Construction Manager's exclusive use to cover costs arising under Section 2.2.B and other costs which are properly reimbursable as Cost of the Work but not the basis for a Change Order.

D. BASIS OF GUARANTEED MAXIMUM PRICE. The Construction Manager shall include with the GMP proposal a written statement of its basis, which shall include:

1. A list of the Project Plans and Specifications, including all addenda thereto and the Conditions of the Contract, which were used in preparation of the GMP proposal.
2. A list of allowances and a statement of their basis.
3. A list of the clarifications and assumptions made by the Construction Manager in the preparation of the GMP proposal to supplement the information contained in the Project Plans and Specifications.
4. The proposed GMP, including a statement of the estimated costs organized by trade categories, allowances, contingency, and other items and the Fee that comprise the GMP.
5. The Date of Substantial Completion upon which the proposed GMP is based, and a schedule of the construction documents issuance dates upon which the date of Substantial Completion is based.

E. MEETING OF CONSTRUCTION TEAM. The Construction Manager shall meet with the Owner and Architect/Engineer to review the GMP proposal and the written statement of its basis. In the event that the Owner or Architect/Engineer discover any inconsistencies or inaccuracies in the information presented, they shall promptly notify the Construction Manager, who shall make appropriate adjustments to the GMP proposal, its basis, or both.

F. ACCEPTANCE. Unless the Owner accepts the GMP proposal in writing on or before the date specified in the proposal for such acceptance and so notifies the Construction Manager, the GMP proposal shall not be effective without written acceptance by the Construction Manager.

G. NO COSTS IN ADVANCE. Prior to the Owner's acceptance of the Construction Manager's GMP proposal and issuance of a Notice to Proceed, the Construction Manager shall not incur any cost to be reimbursed as part of the Cost of the Work, except as the Owner may specifically authorize in writing.

H. GMP ADDENDUM. Upon acceptance by the Owner of the GMP proposal, the GMP and its basis shall be set forth in the GMP Addendum. The GMP shall be subject to additions and deductions by a change in the Work as provided in the Contract Documents, and the Substantial Completion Date shall be subject to adjustment as provided in the Contract Documents.

I. REVISIONS TO PROJECT PLANS AND SPECIFICATIONS. The Owner shall authorize and cause the Architect/Engineer to revise the Project Plans and Specifications to the extent necessary to reflect the agreed-upon assumptions and clarifications contained in the GMP Addendum. Such revised Project Plans and Specifications shall be furnished to the Construction Manager in accordance with schedules agreed to by the Owner, Architect/Engineer

and Construction Manager. The Construction Manager shall promptly notify the Architect/Engineer and Owner if such revised Project Plans and Specifications are inconsistent with the agreed-upon assumptions and clarifications.

J. TAXES. The GMP shall include in the Cost of the Work only those taxes which are enacted at the time the GMP is established.

## **2.3 CONSTRUCTION PHASE.**

### **A. GENERAL.**

1. The Construction Phase shall commence on the earlier of:
  - i. the owner's acceptance of the Construction Manager's GMP proposal and issuance of a Notice to Proceed, or
  - ii. the Owner's first authorization to the Construction Manager to:
    - (a) award a Subcontract,
    - (b) undertake construction Work with the Construction Manager's own forces, or
    - (c) issue a purchase order for materials or equipment required for the Work.

### **B. ADMINISTRATION.**

1. Those portions of the Work that the Construction Manager does not customarily perform with the Construction Manager's own personnel shall be performed under Subcontracts or by other appropriate agreements with the Construction Manager. The Construction Manager shall obtain bids from Subcontractors and from suppliers of materials or equipment fabricated to a special design for the Work from the list previously reviewed and, after analyzing such bids, shall deliver such bids to the Owner and Architect/Engineer. The Owner will then determine, with the advice of the Construction Manager and subject to the reasonable objection of the Architect/Engineer, which bids will be accepted. The Owner may designate specific persons or entities from whom the Construction Manager shall obtain bids; however, if the GMP has been established, the Owner may not prohibit the Construction Manager from obtaining bids from other qualified bidders. The Construction Manager shall not be required to contract with anyone to whom the Construction Manager has reasonable objection.

2. If the GMP has been established, and a specific bidder among those whose bids are delivered by the Construction Manager to the Owner and Architect/Engineer (1) is recommended to the Owner by the Construction Manager; (2) is qualified to perform that portion of the Work; and (3) has submitted a bid which conforms to the requirements of the Contract Documents without reservations or exceptions, but the Owner requires that another bid be accepted, then a Change Order shall be issued to adjust the Contract Time and the GMP by the difference between the bid of the person or entity recommended to the Owner by the Construction Manager and the amount of the Subcontract or other agreement actually signed with the person or entity designated by the Owner.
3. Subcontracts and agreements with suppliers furnishing materials or equipment fabricated to a special design shall conform to the payment provisions of Sections 7.1.H and 7.1.I and shall not be awarded on the basis of cost plus a fee without the prior consent of the Owner.
4. The Construction Manager shall schedule and conduct a meeting at which the Owner, Architect/Engineer, Construction Manager and appropriate Subcontractors can discuss the status of the Work. The Construction Manager shall prepare and promptly distribute meeting minutes.
5. Promptly after the Owner's acceptance of the GMP proposal, the Construction Manager shall prepare a schedule in accordance with Section 2.3 of the General Conditions, including the Owner's occupancy requirements.
6. The Construction Manager shall provide monthly written reports to the Owner and Architect/Engineer on the progress of the entire Work. The Construction Manager shall maintain a daily log containing a record of weather, Subcontractors working on the Project Site, number of workers, Work accomplished, problems encountered and other similar relevant data as the Owner may reasonably require. The log shall be available to the Owner and Architect/Engineer.
7. The Construction Manager shall develop a system of cost control for the Work, including regular monitoring of actual costs for activities in progress and estimates for uncompleted tasks and proposed changes. The Construction Manager shall identify variances between actual and estimated costs and report the variances to the Owner and Architect/Engineer at regular intervals.

**2.4 PROFESSIONAL SERVICES.** Sections 2.1 and 2.2 of the General Conditions shall apply to both the Preconstruction and Construction Phases.

**2.5 HAZARDOUS MATERIALS.** Sections 2.4.U and 5.5 of the General Conditions shall apply to both the Preconstruction and Construction Phases.

**ARTICLE 3  
OWNER'S RESPONSIBILITIES**

**3.1 INFORMATION AND SERVICES.**

A. GENERAL INFORMATION. The Owner shall provide full information in a timely manner regarding the requirements of the Project, including a program which sets forth the Owner's objectives, constraints and criteria, including space requirements and relationships, flexibility and expandability requirements, special equipment and systems, and site requirements.

B. BUDGET. The Owner shall establish and update an overall budget for the Project, based on consultation with the Construction Manager and Architect/Engineer, which shall include contingencies for changes in the Work and other costs which are the responsibility of the Owner.

C. STRUCTURAL AND ENVIRONMENTAL TESTS, SURVEYS AND REPORTS. In the Preconstruction Phase, the Owner shall furnish the following with reasonable promptness and at the Owner's expense. Except to the extent that the Construction Manager knows of any inaccuracy, the Construction Manager shall be entitled to rely upon the accuracy of any such information, reports, surveys, drawings and tests described in subsections 1 through 5, below, but shall exercise customary precautions relating to the performance of the Work.

1. Reports, surveys, drawings and tests concerning the conditions of the Project Site which are required by law.
2. Surveys describing physical characteristics, legal limitations and utility locations for the Project Site, and a written legal description of the Project Site. The surveys and legal information shall include, as applicable, grades and lines of streets, alleys, pavements and adjoining property and structures; adjacent drainage; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the Project Site; locations, dimensions and necessary data pertaining to existing buildings, other improvements and trees; and information concerning available utility services and lines, both public and private, above and below grade, including inverts and depths. All information on the survey shall be referenced to a Project benchmark.
3. The services of a geotechnical engineer when such services are requested by the Construction Manager. Such services may include but are not limited to test borings, test pits, determinations of soil bearing values, percolations tests, evaluations of hazardous materials, ground corrosion and resistivity tests, including necessary operations for anticipating subsoil conditions, with reports and appropriate professional recommendations.

4. Structural, mechanical, chemical, air and water pollution tests, tests for hazardous materials, and other laboratory and environmental tests, inspections and reports which are required by law.
5. The services of other consultants when such services are reasonably required by the scope of the Project and are requested by the Construction Manager.

**3.2 OWNER'S DESIGNATED REPRESENTATIVE.** The Owner shall designate in writing its Owner's Project Representative who shall have authority to perform those duties set forth in Section 7.8 of the General Conditions. The Owner's Project Representative shall render decisions promptly and furnish information expeditiously, to avoid unreasonable delay in the services or Work of the Construction Manager.

**3.3 ARCHITECT/ENGINEER.** The Owner shall retain an Architect/Engineer to provide basic services, including normal structural, mechanical and electrical engineering services, other than cost estimating services, described in Article VI of the General Conditions. The Owner shall authorize and cause the Architect/Engineer to provide those additional services requested by the Construction Manager which must necessarily be provided by the Architect/Engineer for the Preconstruction and Construction Phases of the Work. Such services shall be provided in accordance with time schedules agreed to by the Owner, Architect/Engineer and Construction Manager. Upon request of the Construction Manager, the Owner shall furnish to the Construction Manager a copy of the Owner's Agreement with the Architect/Engineer.

**3.4 LEGAL REQUIREMENTS.** The Owner shall determine and advise the Architect/Engineer and Construction Manager of any special legal requirements relating specifically to the Project which differ from those generally applicable to construction in the jurisdiction of the Project. The Owner shall furnish such legal services as are necessary to provide the information and services required under Section 3.1.

## **ARTICLE 4 COMPENSATION AND PAYMENTS FOR PRECONSTRUCTION SERVICES**

The Owner shall compensate and make payments to the Construction Manager for Preconstruction Services as follows:

### **4.1 COMPENSATION.**

A. PRECONSTRUCTION SERVICES. For the Preconstruction Services described in Section 2.1, the Construction Manager's compensation shall be calculated as follows:

*(State basis of compensation, whether a stipulated sum, multiple of Direct Personnel Expense, actual cost, etc. Include a statement of reimbursable cost items as applicable.)*

B. ADJUSTMENT. Compensation for Preconstruction Services shall be equitably adjusted if such services extend beyond \_\_\_\_ ( ) days from the date of this Agreement or if the originally contemplated scope of services is significantly modified.

C. PERSONNEL EXPENSE. If compensation is based on a multiple of Direct Personnel Expense, "Direct Personnel Expense" shall mean the direct salaries of the Construction Manager's personnel engaged in the Project and the portion of the cost of their mandatory and customary contributions and benefits related thereto, such as employment taxes and other statutory employee benefits, insurance, sick leave, holidays, vacations, pensions and similar contributions and benefits.

#### 4.2 PAYMENTS.

A. TIMING. Subject to the requirements of Article III of the General Conditions, payments for Preconstruction Services shall be made monthly following presentation of the Construction Manager's invoice and, where applicable, shall be in proportion to services performed.

B. DUE DATES. Payments shall be made by Owner in accordance with the requirements of Section 218.735, Florida Statutes.

### ARTICLE 5 COMPENSATION FOR CONSTRUCTION PHASE SERVICES

The Owner shall compensate the Construction Manager for Construction Phase services as follows:

**5.1 COMPENSATION.** For the Construction Manager's performance of the Work as described in Section 2.3, the Owner shall pay the Construction Manager in current funds the Contract Sum consisting of the Cost of the Work as defined in Article 6 and the Construction Manager's Fee determined as follows:

*(State a lump sum, percentage of actual Cost of the Work or other provision for determining the Construction Manager's Fee, and explain how the Construction Manager's Fee is to be adjusted for changes in the Work. Example: **The Construction Management Fee Percentage shall not exceed <Percentage> of the total cost of the Work.**)*

**5.2 GUARANTEED MAXIMUM PRICE.** The sum of the Cost of the Work and the Construction Manager's Fee are guaranteed by the Construction Manager not to exceed the amount provided as the GMP in the GMP Addendum, subject to additions and deductions by changes in the Work as provided in the Contract Documents. Such maximum sum as adjusted by approved changes in the Work is referred to in the Contract Documents as the GMP. Costs which would

cause the GMP to be exceeded shall be paid by the Construction Manager without reimbursement by the Owner.

*(Insert specific provisions if the Construction Manager is to participate in any savings.)*

### **5.3 CHANGES IN THE WORK**

A. ADJUSTMENTS TO GMP. Adjustments to the GMP on account of changes in the Work subsequent to the execution of the GMP Addendum may be determined by any of the methods listed in Article V of the General Conditions.

B. "COST". In calculating adjustments to Subcontracts (except those awarded with the Owner's prior consent on the basis of cost plus a fee), the Owner and Construction Manager shall proceed in accordance with Section 5.6 of the General Conditions. Adjustments to subcontracts awarded with the Owner's prior consent on the basis of cost plus a fee shall be calculated in accordance with the terms of those subcontracts. In calculating adjustments to the Agreement, the terms "cost" and "costs" as used in the above-referenced General Conditions shall mean the Cost of the Work as defined in Article 6 of this Agreement.

C. CONSTRUCTION MANAGER'S FEE. If no specific provision is made in Section 5.1 for adjustment of the Construction Manager's Fee in the case of changes in the Work, or if the extent of such changes is such that, in the aggregate, the application of the adjustment provisions of Section 5.1 will cause substantial inequity to the Owner or Construction Manager, the Construction Manager's Fee shall be equitably adjusted on the basis of the Fee established for the original Work.

## **ARTICLE 6**

### **COST OF THE WORK FOR CONSTRUCTION PHASE**

#### **6.1 COSTS TO BE REIMBURSED**

A. COST OF WORK. The term "Cost of the Work" shall mean costs necessarily incurred by the Construction Manager in the proper performance of the Work. Such costs shall be at rates not higher than those customarily paid at the place of the Project except with prior consent of the Owner. The Cost of the Work shall include only the items set forth in this Article 6.

B. LABOR COSTS.

1. Wages or salaries of construction workers directly employed by the Construction Manager to perform the construction of the Work at the Project Site or, with the Owner's written approval, at off-site workshops.

2. Wages or salaries of the Construction Manager's supervisory and administrative personnel when stationed at the Project Site and performing Work, with the Owner's prior written approval.

Classification

Rate

*(If it is intended that the wages or salaries of certain personnel stationed at the Construction Manager's principal office or offices other than the site office shall be included in the Cost of the Work, such personnel shall be identified below.)*

3. Wages or salaries of the Construction Manager's supervisory or administrative personnel engaged, at factories, workshops or while traveling, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work.
4. Costs paid or incurred by the Construction Manager for taxes, insurance, contributions, assessments and benefits required by law or collective bargaining agreements, and, for personnel not covered by such agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided that such costs are based on wages and salaries included in the Cost of the Work under Sections 6.1.B.1 through 6.1.B.3.

C. SUBCONTRACT COSTS. Payments made by the Construction Manager to Subcontractors in accordance with the requirements of the Subcontracts.

D. COSTS OF MATERIALS AND EQUIPMENT INCORPORATED IN THE COMPLETED CONSTRUCTION.

1. Costs, including transportation, of materials and equipment incorporated or to be incorporated in the completed construction.
2. Costs of materials described in the preceding Section 6.1.D.1 in excess of those actually installed but required to provide reasonable allowance for waste and for spoilage. Unused excess materials, if any, shall be handed over to the Owner at the completion of the Work or, at the Owner's option, shall be sold by the Construction Manager; amounts realized, if any, from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

E. COSTS OF OTHER MATERIALS AND EQUIPMENT, TEMPORARY FACILITIES AND RELATED ITEMS.

1. Costs, including transportation, installation, maintenance, dismantling and removal of materials, supplies, temporary facilities, machinery, equipment, and

hand tools not customarily owned by the construction workers, which are provided by the Construction Manager at the Project Site and fully consumed in the performance of the Work; and cost less salvage value on such items if not fully consumed, whether sold to others or retained by the Construction Manager. Cost for items previously used by the Construction Manager shall mean fair market value.

2. Rental charges for temporary facilities, machinery, equipment and hand tools not customarily owned by the construction workers, which are provided by the Construction Manager at the Project Site, whether rented from the Construction Manager or others, and costs of transportation, installation, minor repairs and replacements, dismantling and removal thereof. Rates and quantities of equipment rented shall be subject to the Owner's prior approval. The total rental cost of any item may not exceed the purchase price of any comparable item.
3. Costs of removal of debris from the Project Site, including proper and legal disposal of same.
4. Reproduction costs, costs of telegrams, facsimile transmissions and long-distance telephone calls, postage and express delivery charges, telephone at the Project Site and reasonable petty cash expenses of the Project Site office.
5. That portion of the reasonable travel and subsistence expenses of the Construction Manager's personnel incurred while traveling in discharge of duties connected with the Work.

F. MISCELLANEOUS COSTS.

1. That portion directly attributable to this Agreement of premiums for insurance and bonds.

*(If charges for self-insurance are to be included, specify the basis of reimbursement.)*

2. Sales, use or similar taxes imposed by a governmental authority which are related to the Work and for which the Construction Manager is liable.
3. Fees and assessments for the building permit and for other permits, licenses and inspections for which the Construction Manager is required by the Contract Documents to pay.
4. Fees of testing laboratories for tests required by the Contract Documents, except those related to nonconforming Work other than that for which payment is permitted by Section 6.1.G.2, reproduction costs, costs of telegrams, facsimile

transmissions and long-distance telephone calls, postage and express delivery charges, telephone at the Project Site and reasonable petty cash expenses of the Project Site office.

5. Royalties and license fees paid for the use of a particular design, process or product required by the Contract Documents; the cost of defending suits or claims for infringement of patent or other intellectual property rights arising from such requirement by the Contract Documents; payments made in accordance with legal judgments against the Construction Manager resulting from such suits or claims and payments of settlements made with the Owner's consent; provided, however, that such costs of legal defenses, judgment and settlements shall not be included in the calculation of the Construction Manager's Fee or the GMP and provided that such royalties, fees and costs are not excluded by the Contract Documents.
6. Costs for communications services, electronic equipment and software, directly related to the Work and located at the Project Site, with the Owner's prior written approval.
7. Deposits lost for causes other than the Construction Manager's negligence or failure to fulfill a specific responsibility to the Owner set forth in this Agreement.
8. Legal, mediation and arbitration costs, other than those arising from disputes between the Owner and Construction Manager, reasonably incurred by the Construction Manager in the performance of the Work and with the Owner's written permission, which permission shall not be unreasonably withheld.
9. Expenses incurred in accordance with Construction Manager's standard personnel policy for relocation and temporary living allowances of personnel required for the Work, in case it is necessary to relocate such personnel from distant locations, with the Owner's prior written approval.
10. Other costs incurred in the performance of the Work if and to the extent approved in advance in writing by the Owner.

G. EMERGENCIES AND REPAIRS TO DAMAGED OR NONCONFORMING WORK. The Cost of the Work shall also include costs described in Section 6.1.A which are incurred by the Construction Manager:

1. In acting to prevent threatened damage, injury or loss in case of emergency affecting the safety of persons and property, as provided in Section 2.4.P of the General Conditions.

2. In repairing or correcting damaged or nonconforming Work executed by the Construction Manager or the Construction Manager's Subcontractors or suppliers, provided that such damage or nonconforming Work was not caused by the negligence or failure to fulfill a specific responsibility to the Owner set forth in this Agreement or by the Construction Manager's foremen, engineers or superintendents, or other supervisory, administrative or managerial personnel of the Construction Manager, or by the failure of the Construction Manager's personnel to supervise adequately the Work of the Subcontractors or suppliers, and only to the extent that the cost of repair or correction is not recoverable by the Construction Manager from insurance, sureties, Subcontractors, suppliers or others.

H. COSTS TO BE INCLUDED. The costs described in Sections 6.1.A through 6.1.G shall be included in the Cost of the Work notwithstanding any provisions of the General Conditions which may require the Construction Manager to pay such costs, unless such costs are excluded by the provisions of Section 6.2.

**6.2 COSTS NOT TO BE REIMBURSED.** The Cost of the Work shall not include:

1. Salaries and other compensation of the Construction Manager's personnel stationed at the Construction Manager's principal office or offices other than the Project Site office, except as specifically provided in Sections 6.1.B.2 and 6.1.B.3.
2. Bonuses, profit sharing, incentive compensation, and any other discretionary payments, paid to anyone hired by the Construction Manager or paid to any Subcontractor or vendor, unless the Owner has provided prior written approval.
3. Expenses of the Construction Manager's principal office and offices other than the Project Site office, except as specifically provided in Section 6.1.
4. Overhead and general expenses, except as may be expressly included in Section 6.1.
5. The Construction Manager's capital expenses, including interest on the Construction Manager's capital employed for the Work.
6. Rental costs of machinery and equipment, except as specifically provided in Section 6.1.E.2.
7. Costs due to the negligence of the Construction Manager or to the failure of the Construction Manager to fulfill a specific responsibility to the Owner set forth in this Agreement.
8. Costs incurred in the performance of Preconstruction Services.

9. Except as provided in Section 6.1.F.10, any cost not specifically and expressly described in Section 6.1.
10. Costs which would cause the GMP to be exceeded.

### **6.3 DISCOUNTS, REBATES AND REFUNDS**

A. ACCURAL TO OWNER. Cash discounts obtained on payments made by the Construction Manager shall accrue to the Owner if (1) before making the payment, the Construction Manager included them in an Application for Payment and received payment therefor from the Owner, or (2) the Owner has deposited funds with the Construction Manager with which to make payments; otherwise, cash discounts shall accrue to the Construction Manager. Trade discounts, rebates, refunds and amounts received from sales of surplus materials and equipment shall accrue to the Owner, and the Construction Manager shall make provisions so that they can be secured.

B. DEDUCTION FROM COST OF WORK. Amounts which accrue to the Owner in accordance with the provisions of Section 6.3.A shall be credited to the Owner as a deduction from the Cost of the Work.

**6.4 ACCOUNTING RECORDS**. The Construction Manager shall keep full and detailed accounts and exercise such controls as may be necessary for proper financial management, in order to substantiate all costs incurred under this Agreement. The accounting and control systems shall be satisfactory to the Owner. The Owner and the Owner's accountants or other Owner-authorized personnel shall be afforded access to the Construction Manager's records, books, correspondence, instructions, drawings, receipts, subcontracts, purchase orders, vouchers, memoranda and all other data relating to this Project, and the Construction Manager shall preserve these for a period of three years after final payment, or for such longer period as may be required by law.

## **ARTICLE 7 CONSTRUCTION PHASE**

### **7.1 PROGRESS PAYMENTS.**

A. PROGRESS PAYMENTS. Subject to the requirements of Article III of the General Conditions, based upon Applications for Payment submitted to the Architect/Engineer by the Construction Manager and Certificates for Payment issued by the Architect/Engineer, the Owner shall make progress payments on account of the GMP to the Construction Manager as provided below and elsewhere in the Contract Documents.

B. PERIOD COVERED. The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, **or as follows:**

***(State period to be covered by Applications for Payment.) Remove if not applicable.***

C. DATE OF PAYMENT. Payments shall be made by Owner in accordance with the requirements of Section 218.735, Florida Statutes.

D. SUPPORTING DOCUMENTATION. With each Application for Payment, the Construction Manager shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached and any other evidence required by the Owner or Architect/Engineer to demonstrate that cash disbursements already made by the Construction Manager on account of the Cost of the Work equal or exceed (1) progress payments already received by the Construction Manager; less (2) that portion of those payments attributable to the Construction Manager's Fee; plus (3) payrolls for the period covered by the present Application for Payment.

E. SCHEDULE OF VALUES. Each Application for Payment shall be based upon the most recent schedule of values submitted by the Construction Manager in accordance with the Contract Documents. The schedule of values shall allocate the entire GMP among the various portions of the Work, except that the Construction Manager's Fee shall be shown as a single separate item. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect/Engineer may require. This schedule, unless objected to by the Architect/Engineer, shall be used as a basis for reviewing the Construction Manager's Application for Payment.

F. Applications for Payment shall show the percentage completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed or (2) the percentage obtained by dividing (a) the expense which has actually been incurred by the Construction Manager on account of that portion of the Work for which the Construction Manager has made or intends to make actual payment prior to the next Application for Payment by (b) the share of the GMP allocated to that portion of the Work in the schedule of values.

G. COMPUTATION. Subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

1. Take that portion of the GMP properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the GMP allocated to that portion of the Work in the schedule of values. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 5.6 of the General Conditions, even though the GMP has not yet been adjusted by Change Order.
2. Add that portion of the GMP properly allocable to materials and equipment delivered and suitably stored at the Project Site for subsequent incorporation in the Work or, if approved in advance by the Owner, suitably stored off the Project Site at a location agreed upon in writing, supported by paid receipts.

3. Add the Construction Manager's Fee, less retainage of five percent (5%). The Construction Manager's Fee shall be computed upon the Cost of the Work described in the two preceding Sections at the rate stated in Section 5.1. or, if the Construction Manager's Fee is stated as a fixed sum in that Section, shall be an amount which bears the same ratio to that fixed-sum Construction Manager's Fee as the Cost of the Work in the two preceding Sections bears to a reasonable estimate of the probable Cost of the Work upon its completion.
4. Subtract the aggregate of previous payments made by the Owner.
5. Subtract the shortfall, if any, indicated by the Construction Manager in the documentation required by Section 7.1.D to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner in such documentation.
6. Subtract amounts, if any, for which the Architect/Engineer has withheld or nullified a Certificate for Payment as provided in Section 3.3.C of the General Conditions.

H. SUBCONTRACTOR RETAINAGE. Except with the Owner's prior approval, payments to Subcontractors shall be subject to retention of not less than five percent (5%). The Owner and the Construction Manager shall agree upon a mutually acceptable procedure for review and approval of payments and retention for Subcontracts.

I. REDUCTION IN RETAINAGE. Notwithstanding the foregoing, upon completion of at least fifty percent (50%) of the Work, as determined by the Architect/Engineer and Owner, the Owner may, with the concurrence of the Architect/Engineer, reduce to two and one-half percent (2.5%) the amount of retainage withheld from the Construction Manager's Fee in each subsequent progress payment.

J. NO ADVANCE PAYMENTS. Except with the Owner's prior approval, the Construction Manager shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the Project Site.

K. RELIANCE ON INFORMATION. In taking action on the Construction Manager's Applications for Payment, the Architect/Engineer shall be entitled to rely on the accuracy and completeness of the information furnished by the Construction Manager and shall not be deemed to represent that the Architect/Engineer has made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Section 7.1.D or other supporting data, that the Architect/Engineer has made exhaustive or continuous on-site inspections or that the Architect/Engineer has made examinations to ascertain how or for what purposes the Construction Manager has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner acting in the sole interest of the Owner.

## 7.2 FINAL PAYMENT.

A. CONDITIONS OF FINAL PAYMENT. Final payment shall be made by the Owner to the Construction Manager when (1) the Agreement has been fully performed by the Construction Manager except for the Construction Manager's responsibility to correct nonconforming Work, as provided in Section 2.4.C of the General Conditions, and to satisfy other requirements, if any, which necessarily survive final payment; (2) a final Application for Payment and a final accounting for the Cost of the Work have been submitted by the Construction Manager and reviewed by the Owner; and (3) a final Certificate for Payment has then been issued by the Architect/Engineer; such final payment shall be made by the Owner not more than thirty (30) days after the issuance of the Architect/Engineer's final Certificate for Payment, or as follows:

B. CALCULATION. The amount of the final payment shall be calculated as follows:

1. Take the sum of the Cost of the Work substantiated by the Construction Manager's final accounting and the Construction Manager's Fee, but not more than the GMP.
2. Subtract amounts, if any, for which the Architect/Engineer withholds, in whole or in part, a final Certificate for Payment as provided in Section 2.4.C of the General Conditions or other provisions of the Contract Documents.
3. Subtract the aggregate of previous payments made by the Owner.

If the aggregate of previous payments made by the Owner exceeds the amount due the Construction Manager, the Construction Manager shall reimburse the difference to the Owner. Failing reimbursement by the Construction Manager and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall have the right to bring a direct action in the Circuit Court to recover such overpayment.

C. REVIEW. The Owner's fiscal staff will review and report in writing on the Construction Manager's final accounting within thirty (30) days after delivery of the final accounting to the Architect/Engineer by the Construction Manager. Based upon such Cost of the Work as the Owner's fiscal staff report to be substantiated by the Construction Manager's final accounting, and provided the other conditions of Section 7.2.A have been met, the Architect/Engineer will, within seven days after receipt of the written report of the Owner's fiscal staff, either issue to the Owner a final Certificate for Payment with a copy to the Construction Manager or notify the Construction Manager and Owner in writing of the Architect/Engineer's reasons for withholding a certificate as provided in Section 3.5.C of the General Conditions.

D. ISSUANCE. If the Owner's fiscal staff report the Cost of the Work as substantiated by the Construction Manager's final accounting to be less than claimed by the Construction Manager, the Construction Manager shall be entitled to proceed in accordance with

Article VIII of the General Conditions without a further decision of the Architect/Engineer. A demand shall be made by the Construction Manager within fifteen (15) days after the Construction Manager's receipt of a copy of the Architect/Engineer's final Certificate for Payment. Failure to make such demand within this 15-day period shall result in the substantiated amount reported by the Owner's fiscal staff becoming final and binding on the Construction Manager. Pending a final resolution of the disputed amount, the Owner shall pay the Construction Manager the amount certified in the Architect/Engineer's final Certificate for Payment.

E. ADDITIONAL REIMBURSEMENTS. If, after final payment and at the Owner's request, the Construction Manager incurs costs described in Section 6.1 and not excluded by Section 6.2, (1) to correct nonconforming Work or (2) arising from the resolution of disputes, the Owner shall reimburse the Construction Manager such costs and the Construction Manager's Fee, if any, related thereto on the same basis as if such costs had been incurred prior to final payment, but not in excess of the GMP. If the Construction Manager has participated in savings, the amount of such savings shall be recalculated and appropriate credit given to the Owner in determining the net amount to be paid by the Owner to the Construction Manager.

## **ARTICLE 8 INSURANCE AND BONDS**

**8.1 INSURANCE.** If and to the extent required by the RFP documents, the Construction Manager shall furnish insurance coverage for (but not necessarily limited to) workers' compensation, commercial general liability, auto liability, excess liability, and builder's risk. The Construction Manager shall furnish to the Owner all appropriate policies and Certificate(s) of Insurance.

### **8.2 PAYMENT AND PERFORMANCE BOND.**

A. BOND REQUIRED. The Construction Manager shall post a Payment and Performance Bond in the amount of the GMP, in a form approved by the Owner.

B. DELIVERY. The Construction Manager shall deliver the required bond to the Owner at least three days before the commencement of any Construction Phase services.

## **ARTICLE 9 MISCELLANEOUS PROVISIONS**

**9.1 DISPUTE RESOLUTION.** During both the Preconstruction and Construction Phases, claims, disputes or other matters in question between the parties to this Agreement shall be resolved as provided in Article VIII of the General Conditions.

**9.2 OTHER PROVISIONS.** Unless otherwise noted, the terms used in this Agreement shall have the same meaning as those in the General Conditions.

**9.3 EXTENT OF CONTRACT.** This Agreement and the other documents incorporated herein by reference, represents the entire and integrated agreement between the Owner and the Construction Manager and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both the Owner and Construction Manager. Except as provided in Section 9.13 below, if anything in any document incorporated into this Agreement is inconsistent with this Agreement, this Agreement shall govern.

**9.4 OWNERSHIP AND USE OF DOCUMENTS.** Section 10.4 of the General Conditions shall apply to both the Preconstruction and Construction Phases.

**9.5 GOVERNING LAW; VENUE.** This Agreement shall be governed by the laws of the State of Florida. Venue for any petition for writ of certiorari or other court action allowed by this Agreement shall be in the Circuit Court of the Twelfth Judicial Circuit in and for Manatee County, Florida.

**9.6 ASSIGNMENT.** The Owner and Construction Manager respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents. Neither party to the Agreement shall assign the Agreement as a whole without written consent of the other. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Agreement.

**9.7 SUBSTANTIAL COMPLETION DEFINED.** Substantial Completion shall be defined as provided in Article I of the General Conditions. In the event a temporary certificate of occupancy or completion is issued establishing Substantial Completion, the Construction Manager shall diligently pursue the issuance of a permanent certificate of occupancy or completion.

**9.8 PROJECT MEETINGS.** During the Construction Phase, there shall be project meetings, at the jobsite or other location acceptable to the parties, on a regularly scheduled basis. The meetings will be attended by a representative of the Construction Manager, Architect/Engineer and Owner. These representatives shall be authorized to make decisions that are not otherwise contrary to the requirements of this Agreement.

**9.9 WEATHER.** During the Construction Phase, any rainfall, temperatures below 32 degrees Fahrenheit or winds greater than 25 m.p.h. which actually prevents Work on a given day, shall be considered lost time and an additional day added to the Contract Time, provided no work could be done on site, and provided written notice has been submitted to the Owner by the Construction Manager documenting same.

**9.10 SHOP DRAWINGS; CRITICAL SUBMITTALS.** In consideration of the impact of timely review of submittals and shop drawings on the overall progress of the Work, it is hereby agreed that the Owner shall cause his agents and design professionals to accomplish the review of

any particular “critical” submittals and/or shop drawings and return same to the Construction Manager within fourteen (14) days.

**9.11 PUNCH LIST.** Within 30 days after obtainment of Substantial Completion, the Owner shall generate a “punch list” of all work items requiring remedial attention by the Construction Manager. Within 5 days thereafter the Architect/Engineer shall assign a fair value to the punch list items, which sum shall be deducted from the next scheduled progress payment to the Construction Manager. Upon satisfactory completion of the punch list items, as certified by the Architect/Engineer, the previously deducted sum shall be paid to the Construction Manager.

**9.12 CLOSEOUT DOCUMENTATION.** Within 30 days after obtainment of Substantial Completion and before final payment, Construction Manager shall gather and deliver to Owner all warranty documentation, all manufacturer’s product and warranty literature, all manuals (including parts and technical manuals), all schematics and handbooks, and all as-built drawings.

**9.13 GOVERNING PROVISIONS; CONFLICTS.** In the event of a conflict between this Agreement and the Specifications or as between the General Conditions and the Specifications, the Specifications shall govern.

**9.14 E-VERIFY.** The Construction Manager’s employment of unauthorized aliens is a violation of Section 274(e) of the Federal Immigration and Employment Act. The Construction Manager shall utilize the U.S. Department of Homeland Security E-Verify system to verify the employment eligibility of all new employees hired during the term of this Agreement, and shall require the same verification procedure of all Subcontractors.

**9.15 INDEPENDENT CONTRACTOR.** The Construction Manager acknowledges that it is functioning as an independent contractor in performing under the terms of this Agreement, and it is not acting as an employee of the Owner.

**9.16 WAIVERS.** Neither this Agreement nor any portion of it may be modified or waived orally. However, each party (through its governing body or properly authorized officer) shall have the right, but not the obligation, to waive, on a case-by-case basis, any right or condition herein reserved or intended for the benefit or protection of such party without being deemed or considered to have waived such right or condition for any other case, situation, or circumstance and without being deemed or considered to have waived any other right or condition. No such waiver shall be effective unless made in writing with an express and specific statement of the intent of such governing body or officer to provide such waiver.

**9.17 VALIDITY.** Each of the Owner and Construction Manager represents and warrants to the other its respective authority to enter into this Agreement.

**9.18 COVENANT TO DEFEND.** Neither the validity of this Agreement nor the validity of any portion hereof may be challenged by any party hereto, and each party hereto hereby waives any right to initiate any such challenge. Furthermore, if this Agreement or any portion hereof is challenged by a third party in any judicial, administrative, or appellate proceeding (each party

hereby covenanting with the other party not to initiate, encourage, foster, promote, cooperate with, or acquiesce to such challenge), the parties hereto collectively and individually agree, at their individual sole cost and expense, to defend in good faith its validity through a final judicial determination or other resolution, unless all parties mutually agree in writing not to defend such challenge or not to appeal any decision invalidating this Agreement or any portion thereof.

**9.19 DISCLAIMER OF THIRD PARTY BENEFICIARIES; SUCCESSORS AND ASSIGNS.** This Agreement is solely for the benefit of the parties hereto, and no right, privilege, or cause of action shall by reason hereof accrue upon, to, or for the benefit of any third party. Nothing in this Agreement is intended or shall be construed to confer upon or give any person, corporation, partnership, trust, private entity, agency, or other governmental entity any right, privilege, remedy, or claim under or by reason of this Agreement or any provisions or conditions hereof. This Agreement shall be binding upon, and its benefits and advantages shall inure to, the successors and assigns of the parties hereto.

**9.20 HEADINGS AND CAPTIONS.** The headings and captions of articles, sections, and paragraphs used this Agreement are for convenience of reference only and are not intended to define or limit their contents, nor are they to affect the construction of or be taken into consideration in interpreting this Agreement.

**9.21 LEGAL REFERENCES.** All references to statutory sections or chapters shall be construed to include subsequent amendments to such provisions, and to refer to the successor provision of any such provision. References to “applicable law” and “general law” shall be construed to include provisions of local, state and federal law, whether established by legislative action, administrative rule or regulation, or judicial decision.

**9.22 SEVERABILITY.** The provisions of this Agreement are declared by the parties hereto to be severable. In the event any term or provision of this Agreement shall be held invalid by a court of competent jurisdiction, such invalid term or provision should not affect the validity of any other term or provision hereof; and all such terms and provisions hereof shall be enforceable to the fullest extent permitted by law as if such invalid term or provision had never been part of this Agreement; provided, however, if any term or provision of this Agreement is held to be invalid due to the scope or extent thereof, then, to the extent permitted by law, such term or provision shall be automatically deemed modified in order that it may be enforced to the maximum scope and extent permitted by law.

**9.23 ATTORNEY’S FEES AND COSTS.** In any claim dispute procedure or litigation arising from this Agreement, each party hereto shall be solely responsible for paying its attorney’s fees and costs regardless of the outcome of any such procedure or litigation.

**9.24 NOTICES.** All notices, comments, consents, objections, approvals, waivers, and elections under this Agreement shall be in writing and shall be given only by hand delivery for which a receipt is obtained, or certified mail, prepaid with confirmation of delivery requested, or by electronic mail with delivery confirmation. All such communications shall be addressed to the

applicable addressees set forth below or as any party may otherwise designate in the manner prescribed herein.

To the Owner:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Email: \_\_\_\_\_

To the Construction Manager:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Email: \_\_\_\_\_

Notices, comments, consents, objections, approvals, waivers and elections shall be deemed given when received by the party for whom such communication is intended at such address herein specified, or such other physical address or email address as such party may have substituted by notice to the other.

**9.25 PUBLIC RECORDS LAW.** The Construction Manager shall comply with the Florida Public Records Act (Chapter 119, Florida Statutes), and shall:

- A. Keep and maintain public records required by the Owner to perform the services called for in this Agreement.
- B. Upon request from the Owner's custodian of public records, provide the Owner with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes or as otherwise provided by law.
- C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of this Agreement and following completion of this Agreement if the Construction Manager does not transfer the records to the Owner.
- D. Upon completion of this Agreement, transfer, at no cost, to the Owner all public records in possession of the Construction Manager or keep and maintain such public records. If the Construction Manager transfers all public records to the Owner upon completion of the Agreement, the Construction Manager shall destroy any duplicate public records that are exempt or confidential and exempt

from public records disclosure requirements. If the Construction Manager keeps and maintains public records upon completion of the Agreement, the Construction Manager shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the Owner, upon request from the Owner's custodian of public records, in a format that is compatible with the information technology systems of the Owner.

IF THE CONSTRUCTION MANAGER HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSTRUCTION MANAGER'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE OWNER'S CUSTODIAN OF PUBLIC RECORDS AT 941-748-4501, EXT. 5845; [DEBBIE.SCACCIANOCE@MYMANATEE.ORG](mailto:DEBBIE.SCACCIANOCE@MYMANATEE.ORG); POST OFFICE BOX 1000, BRADENTON, FLORIDA 34206.

## **ARTICLE 10 TERMINATION OR SUSPENSION**

### **10.1 TERMINATION PRIOR TO ESTABLISHING GUARANTEED MAXIMUM PRICE.**

A. RIGHT OF TERMINATION. Prior to execution by both parties of the GMP Addendum, the Owner may terminate this Agreement at any time without or without cause pursuant to Sections 14.1 and 14.2 of the General Conditions, and the Construction Manager may terminate this Agreement for any of the reasons described in Section 14.6 of the General Conditions.

B. COMPENSATION FOR PRECONSTRUCTION SERVICES. If the Owner or Construction Manager terminates this Contract pursuant to this Section 10.1 prior to commencement of the Construction Phase, the Construction Manager shall be equitably compensated for Preconstruction Services performed prior to receipt of notice of termination; provided, however, that the compensation for such services shall not exceed the compensation set forth in Section 4.1.A.

C. ADDITIONAL COMPENSATION FOR CONSTRUCTION SERVICES. If the Owner or Construction Manager terminates this Agreement pursuant to this Section 10.1 after commencement of the Construction Phase, the Construction Manager shall, in addition to the compensation provided in Section 10.1.B, be paid an amount calculated as follows:

1. Take the Cost of the Work incurred by the Construction Manager.
2. Add the Construction Manager's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 5.1 or, of the Construction Manager's Fee is stated as a fixed sum in that Section, an amount which bears

the same ratio to that fixed-sum Fee as to Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion.

3. Subtract the aggregate of previous payments made by the Owner on account of the Construction Phase.

The Owner shall also pay the Construction Manager fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Construction Manager which the Owner elects to retain and which is not otherwise included in the Cost of the Work under Section 10.1.C.1. To the extent that the Owner elects to take legal assignment of Subcontracts and purchase orders (including rental agreements), the Construction Manager shall as a condition of receiving the payments referred to in this Article 10, execute and deliver all such papers and take all such steps, including the legal assignment of such Subcontracts and other contractual rights of the Construction Manager, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Construction Manager under such Subcontracts or purchase orders.

Subcontracts, purchase orders and rental agreements entered into by the Construction Manager with the Owner's written approval prior to the execution of the GMP Addendum shall contain provisions permitting assignment to the Owner as described above. If the Owner accepts such assignment, the Owner shall reimburse or indemnify the Construction Manager with respect to all costs arising under the Subcontract, purchase order or rental agreement except those which would not have been reimbursable as Cost of the Work if the contract had not been terminated. If the Owner elects not to accept the assignment of any Subcontract, purchase order or rental agreement which would have constituted a Cost of the Work had this Agreement not been terminated, the Construction Manager shall terminate such Subcontract, purchase order or rental agreement and the Owner shall pay the Construction Manager the costs necessarily incurred by the Construction Manager by reason of such termination.

**10.2 TERMINATION AFTER ESTABLISHING GUARANTEED MAXIMUM PRICE.** After execution by both parties of the GMP Addendum, the Agreement may be terminated as provided in Article 14 of the General Conditions.

A. LIMITATION ON PAYMENT; TERMINATION BY OWNER. In the event of such termination by the Owner, the amount payable to the Construction Manager pursuant to Section 14.2 of the General Conditions shall not exceed the amount the Construction Manager would have been entitled to receive pursuant to Sections 10.1.B and 10.1.C of this Agreement.

B. LIMITATION ON PAYMENT; TERMINATION BY CONSTRUCTION MANAGER. In the event of such termination by the Construction Manager, the amount to be paid to the Construction Manager under Section 14.6 of the General Conditions shall not exceed the amount the Construction Manager would have been entitled to receive pursuant to Sections 10.1.B and 10.1.C above, except that the Construction Manager's Fee shall be calculated as if the Work had been fully completed by the Construction Manager, including a reasonable estimate of the Cost of the Work for Work not actually completed.

**10.3 SUSPENSION.** The Work may be suspended by the Owner as provided in Section 14.3 of the General Conditions. In such case, the term “Contract Sum” in that Section shall be understood to mean Cost of the Work.

***WHEREFORE, the parties hereto have entered into this Agreement as of the date last executed below.***

\_\_\_\_\_  
Name of Construction Manager

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**MANATEE COUNTY**, a political subdivision  
of the State of Florida

By: \_\_\_\_\_

Printed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

SAMPLE

GENERAL CONDITIONS  
*of the*  
CONSTRUCTION AGREEMENT

SAMPLE

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**GENERAL CONDITIONS**  
**ARTICLE I**  
**DEFINITIONS**

**1.1 Definitions.** For purposes of the Contract Documents, the following terms shall have the following meanings.

A. Acceptance: The acceptance of the Project into the Owner's operating public infrastructure.

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

C. Architect/Engineer: \_\_\_\_\_, a \_\_\_\_\_ corporation or limited liability company, registered and licensed to do business in the State of Florida, OR \_\_\_\_\_, an employee of Owner.

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

E. Construction Services: The Construction Services to be provided by Contractor pursuant to Section 2.4, in accordance with the terms and provisions of the Contract Documents.

F. Construction Team: The working team established pursuant to Section 2.1.B.

G. Contract Sum: The total compensation to be paid to the Contractor for Construction Services rendered pursuant to the Contract Documents, as set forth in Contractor's Bid (or Guaranteed Maximum Price Addendum), unless adjusted in accordance with the terms of the Contract Documents

H. Contract Time: The time period during which all Construction Services are to be completed pursuant to the Contract Documents, to be set forth in the Project Schedule.

I. Contractor's Personnel: The Contractor's key personnel designated by Contractor.

J. Days: Calendar days except when specified differently. When time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or legal holiday, such day will be omitted from the computation.

K. Defective: When modifying the term “Work”, referring to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or that does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or that has been damaged prior to Owner’s approval of final payment (unless responsibility for the protection thereof has been assumed by Owner).

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

M. Final Completion Date: The date upon which the Project is fully constructed and all Work required on the Project and Project Site is fully performed as verified in writing by the Owner.

N. Float Time: The time available in the Project Schedule during which an unexpected activity can be completed without delaying Substantial Completion of the Work.

O. Force Majeure: Those conditions constituting excuse from performance as described in and subject to the conditions described in Article XII.

P. Notice to Proceed: Written notice by Owner (after execution of Contract) to Contractor fixing the date on which the Contract Time will commence to run and on which Contractor shall start to perform the Work.

Q. Owner: Manatee County, a political subdivision of the State of Florida.

R. Owner’s Project Representative: The individual designated by Owner to perform those functions set forth in Section 7.8.

S. Payment and Performance Bond: The Payment and Performance Bond security posted pursuant to Section 2.4.Y to guarantee payment and performance by the Contractor of its obligations hereunder.

T. Permitting Authority: Any applicable governmental authority acting in its governmental and regulatory capacity which is required to issue or grant any permit, certificate, license or other approval which is required as a condition precedent to the commencement or approved of the Work, or any part thereof, including the building permit.

U. Procurement Ordinance: The Manatee County Procurement Code, Chapter 2-26 of the Manatee County Code of Laws, as amended from time to time.

V. Progress Report: A report to Owner that includes all information required pursuant to the Contract Documents and submitted in accordance with Section 2.4.EE, hereof.

W. Project: The total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by Owner and by separate contractors. For the purposes of the Contract Documents, the term Project shall

include all areas of proposed improvements and all areas which may reasonably be judged to have an impact on the Project.

X. Project Costs: The costs incurred by the Contractor to plan, construct and equip the Project and included within, and paid as a component of, the Contract Sum.

Y. Project Manager: Subject to the prior written consent of Owner, the individual designated to receive notices on behalf of the Contractor, or such other individual designated by the Contractor, from time to time, pursuant to written notice in accordance with the Contract Documents.

Z. Project Plans and Specifications: The one hundred percent (100%) construction drawings and specifications prepared by the Architect/Engineer, and any changes, supplements, amendments or additions thereto approved by the Owner, which shall also include any construction drawings and final specifications required for the repair or construction of the Project, as provided herein.

AA. Project Schedule: The schedule and sequence of events for the commencement, progression and completion of the Project, developed pursuant to Section 2.3., as such schedule may be amended as provided herein.

BB. Project Site: The site depicted in the Project Plans and Specifications, inclusive of all rights of way, temporary construction easements or licensed or leased sovereign lands.

CC. Subcontractor: Any individual (other than a direct employee of the Contractor) or organization retained by Contractor to plan, construct or equip the Project pursuant to Article IV.

DD. Substantial Completion and Substantially Complete: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Owner has received all certificates of occupancy or completion and other permits, approvals, licenses, and other documents from any governmental authority which are necessary for the beneficial occupancy of the Project or any designated portion thereof.

EE. Substantial Completion Date: The date on which the Project or designated portion thereof is deemed to be Substantially Complete, as evidenced by receipt of (i) the Architect/Engineer's certificate of Substantial Completion, (ii) written Acceptance of the Project by the Owner, and (iii) approvals of any other authority as may be necessary or otherwise required.

FF. Substitute: Materials or equipment offered by the Contractor as an alternative to that set forth in the Project Plans and Specifications, where (i) the Project Plans and Specifications do not authorize an "approved equal", or (ii) the Owner, in its reasonable discretion, determines that a pre-authorized "approved equal" will result in a substantial change to the Work because of cost, quality or other difference in comparison to the materials or equipment specified.

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

HH. Work: The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

II. Work Directive Change: A written directive to Contractor, issued on or after the effective date of the Agreement pursuant to Section 5.8 and signed by Owner’s Project Representative, ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or responding to emergencies.

## **ARTICLE II RELATIONSHIP AND RESPONSIBILITIES**

**2.1 Relationship between Contractor and Owner.** The Contractor accepts the relationship of trust and confidence established with Owner pursuant to the Contract Documents. The Contractor shall furnish its best skill and judgment and cooperate with Owner and Owner’s Project Representative in furthering the interests of the Owner. The Contractor agrees to provide the professional services required to complete the Project consistent with the Owner’s direction and the terms of the Contract Documents. All services provided hereunder by Contractor, either directly or through Subcontractors, shall be provided in accordance with sound construction practices and applicable professional construction standards.

A. Purpose. The purpose of the Contract Documents is to provide for the provision of construction services for the Project on the Project Site by the Contractor, and construction of the Project by the Contractor in accordance with the Project Plans and Specifications. The further purpose of the Contract Documents is to define and delineate the responsibilities and obligations of the parties to the Contract Documents and to express the desire of all such parties to cooperate to accomplish the purposes and expectations of the Contract Documents.

B. Construction Team. The Contractor, Owner and Architect/Engineer shall be called the “Construction Team” and shall work together as a team commencing upon full execution of the Contract Documents through Substantial Completion. As provided in Section 2.2, the Contractor and Architect/Engineer shall work jointly through completion and shall be available thereafter should additional services be required. The Contractor shall provide leadership to the Construction Team on all matters relating to construction. The Contractor understands, acknowledges and agrees that the Architect/Engineer shall provide leadership to the Construction Team on all matters relating to design.

C. Owner’s Reliance on Bid (or Guaranteed Maximum Price Addendum). The Contractor acknowledges that the representations, statements, information and pricing contained in its Bid (or Guaranteed Maximum Price Addendum) have been relied upon by the Owner and have resulted in the award of this Project to the Contractor.

**2.2 General Contractor Responsibilities.** In addition to the other responsibilities set forth herein, the Contractor shall have the following responsibilities pursuant to the Contract Documents:

A. Personnel. The Contractor represents that it has secured, or shall secure, all personnel necessary to perform the Work, none of whom shall be employees of the Owner. Primary liaison between the Contractor and the Owner shall be through the Owner's Project Representative and Contractor's Project Manager. All of the services required herein shall be performed by the Contractor or under the Contractor's supervision, and all personnel engaged in the Work shall be fully qualified and shall be authorized or permitted under law to perform such services.

B. Cooperation with Architect/Engineer. The Contractor's services shall be provided in conjunction with the services of the Architect/Engineer. In the performance of professional services, the Contractor acknowledges that time is critical for Project delivery. The Contractor acknowledges that timely construction utilizing the services of an Architect/Engineer and a Contractor requires maximum cooperation between all parties.

C. Timely Performance. The Contractor shall perform all services as expeditiously as is consistent with professional skill and care and the orderly progress of the Work, in accordance with the Project Schedule. Verification of estimated Project Schedule goals will be made as requested by the Owner.

D. Duty to Defend Work. In the event of any dispute between the Owner and any Permitting Authority that relates to the quality, completeness or professional workmanship of the Contractor's services or Work, the Contractor shall, at its sole cost and expense, cooperate with the Owner to defend the quality and workmanship of the Contractor's services and Work.

E. Trade and Industry Terminology. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe Work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or at the time of execution of the Guaranteed Maximum Price Addendum), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of Owner or Contractor, or any of their agents or employees from those set forth in the Contract Documents. Computed dimensions shall govern over scaled dimensions.

**2.3 Project Schedule.** The Contractor, within ten (10) days after being awarded the Agreement, shall prepare and submit for the Owner's and Architect/Engineer's information a Contractor's construction schedule for the Work. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the

extent required by the Contract Documents, and shall provide for expeditious and practicable execution of Work.

- A. The Project Schedule shall show a breakdown of all tasks to be performed, and their relationship in achieving the completion of each phase of Work, subject to review of Owner and Architect/Engineer and approval or rejection by Owner. The Project Schedule shall show, at a minimum, the approximate dates on which each segment of the Work is expected to be started and finished, the proposed traffic flows during each month, the anticipated earnings by the Contractor for each month and the approximate number of crews and equipment to be used. The Project Schedule shall include all phases of procurement, approval of shop drawings, proposed Change Orders in progress, schedules for Change Orders, and performance testing requirements. The Project Schedule shall include a construction commencement date and Project Substantial Completion Date, which dates shall accommodate known or reasonably anticipated geographic, atmospheric and weather conditions.
- B. The Project Schedule shall serve as the framework for the subsequent development of all detailed schedules. The Project Schedule shall be used to verify Contractor performance and to allow the Owner's Project Representative to monitor the Contractor's efforts.
- C. The Project Schedule may be adjusted by the Contractor pursuant to Article V. The Owner shall have the right to reschedule Work provided such rescheduling is in accord with the remainder of terms of the Contract Documents.
- D. The Contractor shall prepare a submittal schedule, promptly after being awarded the Agreement and thereafter as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Architect/Engineer's approval. The Architect/Engineer's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect/Engineer reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.
- E. The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect/Engineer.

**2.4 Construction Services.** The Contractor shall provide the following Construction Services:

- A. Construction of Project. The Contractor shall work from the receipt of a Notice to Proceed through the Substantial Completion of the Project in accordance with the terms of the Contract Documents to manage the construction of the Project. The Construction Services provided by the Contractor to construct the Project shall include without limitation (1) all services

necessary and commensurate with established construction standards, and (2) all services described in the Invitation for Bid (or Request for Proposal) and the Bid (or Guaranteed Maximum Price Addendum).

B. Notice to Proceed. A Notice to Proceed may be given at any time within thirty (30) days after the effective date of the Agreement. Contractor shall start to perform the Work on the date specified in the Notice to Proceed, but no Work shall be done at the site prior to the issuance of the Notice to Proceed.

C. Quality of Work. If at any time the labor used or to be used appears to the Owner as insufficient or improper for securing the quality of Work required or the required rate of progress, the Owner may order the Contractor to increase its efficiency or to improve the character of its Work, and the Contractor shall conform to such an order. Any such order shall not entitle Contractor to any additional compensation or any increase in Contract Time. The failure of the Owner to demand any increase of such efficiency or any improvement shall not release the Contractor from its obligation to secure the quality of Work or the rate of progress necessary to complete the Work within the limits imposed by the Contract Documents. The Owner may require the Contractor to remove such personnel as the Owner deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Project is deemed to be contrary to the Owner's interest. The Contractor shall provide good quality workmanship and shall promptly correct construction defects without additional compensation. Acceptance of the Work by the Owner shall not relieve the Contractor of the responsibility for subsequent correction of any construction defects.

D. Materials. All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by Architect/Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable supplier except as otherwise provided in the Contract Documents.

E. Accountability for Work. The Contractor shall be solely accountable for its Work, including plans review and complete submittals. The Contractor shall be solely responsible for means, methods, techniques, sequences and procedures of construction. If a specific means, method, technique, sequence or procedure of construction is required by the Contract Documents, the Contractor may utilize an alternative means, method, technique, sequence or procedure acceptable to the Architect/Engineer if the Contractor submits sufficient information to allow the Architect/Engineer to determine that the alternative is equivalent to that required by the Contract Documents.

F. Contract Sum. The Contractor shall construct the Project so that the Project can be built for a cost not to exceed the Contract Sum.

G. Governing Specifications. In the absence of specified Owner design standards or guidelines, the Architect/Engineer shall use, and the Contractor shall comply with, the most recent version of the applicable FDOT or AASHTO design standards. In general, the Project shall be constructed by the Contractor in accordance with applicable industry standards. The Contractor shall be responsible for utilizing and maintaining current knowledge of any laws,

ordinances, codes, rules, regulations, standards, guidelines, special conditions, specifications or other mandates relevant to the Project or the services to be performed.

H. Adherence to Project Schedule. The development and equipping of the Project shall be undertaken and completed in accordance with the Project Schedule, and within the Contract Time described therein.

I. Superintendent. The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project Site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

(1) The Contractor, as soon as practicable after award of the Agreement, shall furnish in writing to the Owner through the Architect/Engineer the name and qualifications of the proposed superintendent. The Architect/Engineer may reply within 14 days to the Contractor in writing stating (1) whether the Owner or the Architect/Engineer has reasonable objection to the proposed superintendent or (2) that the Architect/Engineer requires additional time to review. Failure of the Architect/Engineer to reply within 14 days shall constitute notice of no reasonable objection.

(2) The Contractor shall not employ a proposed superintendent to whom the Owner or Architect/Engineer has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not be unreasonably withheld or delayed.

J. Work Hours. Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and Contractor shall not permit overtime work or the performance of Work on a Saturday, Sunday or legal holiday without Owner's written consent given after prior notice to Architect/Engineer (at least seventy-two (72) hours in advance).

K. Overtime-Related Costs. Contractor shall pay for all additional Architect/Engineer charges, inspection costs and Owner staff time for any overtime work which may be authorized. Such additional charges shall be an obligation of Contractor and no extra payment shall be made by Owner because such overtime work. At Owner's option, such overtime costs may be deducted from Contractor's monthly payment request or Contractor's retainage prior to release of final payment. Contractor's obligation to pay all overtime-related costs shall not apply if Contractor is directed by Owner to work overtime solely for Owner's convenience.

L. Insurance, Overhead and Utilities. Unless otherwise specified, Contractor shall furnish and assume full responsibility for all bonds, insurance, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

M. Cleanliness. The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials from and about the Project Site. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents. If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and Owner shall be entitled to reimbursement from Contractor.

N. Loading. Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

O. Safety and Protection. Contractor shall comply with all applicable federal, state and local safety regulations. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to:

- (1) All employees on the Work and other persons and organizations who may be affected thereby;
- (2) All the Work and materials and equipment to be incorporated therein, whether in storage on or off the Project Site; and
- (3) Other property at the Project Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement during construction.

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss, and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for the protection required by public authority or local conditions. Contractor shall provide reasonable maintenance of traffic for the public and preservation of the Owner's business, taking into full consideration all local conditions. Contractor's duties and responsibilities for safety and protection with regard to the Work shall continue until such time as all the Work is completed.

P. Emergencies. In emergencies affecting the safety or protection of persons or the Work or property at the Project Site or adjacent thereto, Contractor, without special instruction or authorization from Architect/Engineer or Owner, shall act to prevent threatened damage, injury or loss. Contractor shall give Owner prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Owner determines that a change in the Project is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variation.

Q. Substitutes. For Substitutes not included with the Bid (or Guaranteed Maximum Price Addendum), but submitted after the effective date of the Agreement (or

Guaranteed Maximum Price Addendum), Contractor shall make written application to Architect/Engineer for acceptance thereof, certifying that the proposed Substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will also contain an itemized estimate of all costs and delays or schedule impacts that will result directly or indirectly from review, acceptance and provision of such Substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by the Architect/Engineer in evaluating the proposed Substitute. Architect/Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed Substitute. In rendering a decision, Owner, Architect/Engineer and Contractor shall have access to any available Float Time in the Project Schedule. If Substitute materials or equipment not included as part of the Bid (or Guaranteed Maximum Price Addendum), but proposed after the effective date of the Agreement, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the Owner and an appropriate Change Order executed to adjust the Contract Sum.

- (1) Architect/Engineer will be allowed a reasonable time within which to evaluate each proposed Substitute. Architect/Engineer will be the sole judge of acceptability and no Substitute will be ordered, installed or utilized without Architect/Engineer's prior written acceptance which will be evidenced by either a Change Order or an approved shop drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any Substitute.
- (2) Contractor shall reimburse Owner for the charges of Architect/Engineer and Architect/Engineer's Consultants for evaluating each proposed Substitute submitted after the effective date of the Agreement and all costs resulting from any delays in the Work while the Substitute was undergoing review.

R. Surveys and Stakes. The Contractor shall furnish, as part of the Contract Sum, all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the Work. Where rights-of-way, easements, property lines or any other conditions which make the lay-out of the Project or parts of the Project critical are involved, the Contractor shall employ a competent surveyor who is registered in the State of Florida for lay-out and staking. These stakes and marks shall constitute the field control by and in accord with which the Contractor shall govern and execute the Work. The Contractor shall be held responsible for the preservation of all stakes and marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they shall be immediately and accurately replaced by the Contractor.

S. Suitability of Project Site. The Contractor has, by careful examination, satisfied itself as to the nature and location of the Work and all other matters which can in any way affect the Work, including, but not limited to details pertaining to borings, as shown on the drawings. Such boring information is not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the Project Site, approximately at the locations indicated. The Contractor has examined boring data, where available, made its own interpretation of the subsurface conditions and other preliminary data, and has based its Bid (or Guaranteed Maximum Price Addendum) on its own opinion of the conditions likely to be

encountered. Except as specifically provided in Sections 2.4.U., 5.4 and 5.5, no extra compensation or extension of time will be considered for any Project Site conditions that existed at the time of bidding (or at the time of execution of the Guaranteed Maximum Price Addendum). No verbal agreement or conversation with any officer, agent or employee of the Owner, before or after the execution of the Agreement, shall affect or modify any of the terms or obligations herein contained.

T. Project Specification Errors. If the Contractor, during the Work, finds that the drawings, specifications or other Contract Documents cannot be followed, the Contractor shall immediately inform the Owner in writing, and the Owner shall promptly check the accuracy of the information. Any Work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's sole risk of non-payment and delay.

U. Remediation of Contamination. Owner and Contractor recognize that remediation of subsurface conditions may be necessary due to potential hazardous materials contamination. Because the presence or extent of any contamination is not known, Contractor shall include no cost in the Contract Sum, and no time in the Project Schedule, for cost or delays that might result from any necessary remediation. The Project Schedule will provide a period of time between demolition activities and the start of the next activity to commence any remediation if needed. Contractor shall use all reasonable efforts in scheduling the Project to minimize the likelihood that remediation delays construction. Any hazardous materials remediation Work which Contractor agrees to perform shall be done pursuant to a Change Order or amendment consistent with the following:

- (1) The dates of Substantial Completion shall be equitably adjusted based on delays, if any, incurred in connection with remediation efforts.
- (2) Contractor, and any Subcontractors which have mobilized on the Project Site, shall be paid for demonstrated costs of overhead operations at the Project Site during any period of delay of more than seven (7) days, except to the extent that Work proceeds concurrently with remediation. The categories of costs to be reimbursed are limited to those reasonably incurred at the jobsite during the delay period (such as trailers or offices, telephones, faxes, and the like); equipment dedicated to the Project and located at the Project Site; salaries and associated costs of personnel dedicated to the Project to the extent that they do not perform work on other projects; and other jobsite costs that are reasonable and which are incurred during the delay period. Subcontractors and suppliers which have not mobilized are limited to the costs set forth in Section 2.4.U(3).
- (3) Contractor and any Subcontractor or supplier on the Project who is eligible for compensation shall be paid any demonstrated costs of escalation in materials or labor, and reasonable costs of off-site storage of materials identified to the Project, arising because of any delay of more than seven (7) days. Such Contractor, Subcontractors and suppliers are obligated to take all reasonable steps to mitigate escalation costs, such as through early purchase of materials.

- (4) Contractor, for itself and all Subcontractors and suppliers on the Project, hereby agrees that the extension of time for delays under Section 2.4.U(1), and payment of the costs identified in Sections 2.4.U(2) and/or Section 2.4.U(3), are the sole remedies for costs and delays described in this Section, and waives all claims and demands for extended home office overhead (including, but not limited to, "Eichleay" claims), lost profit or lost opportunities, and any special, indirect, or consequential damages arising as a result of delays described in this Section. The Contract Sum shall be adjusted to reflect payment of allowable costs.
- (5) If any delay described in this section causes the time or cost for the Project to exceed the Contract Time or the Contract Sum, then the Owner may terminate the Agreement pursuant to Section 14.2.
- (6) Contractor and any Subcontractor or supplier seeking additional costs under this Section 2.4.U. shall promptly submit estimates or any costs as requested by Owner, and detailed back-up for all costs when payment is sought or whenever reasonably requested by Owner. All costs are auditable, at Owner's discretion. Bid, estimate and pricing information reasonably related to any request for additional compensation will be provided promptly upon request.
- (7) Contractor shall include provisions in its subcontracts and purchase orders consistent with this Section.

V. Interfacing.

- (1) The Contractor shall take such measures as are necessary to ensure proper construction and delivery of the Project, including but not limited to providing that all procurement of long-lead items, the separate construction Subcontractors, and the general conditions items are performed without duplication or overlap to maintain completion of all Work on schedule. Particular attention shall be given to provide that each Subcontractor bid package clearly identifies the Work included in that particular separate subcontract, its scheduling for start and completion, and its relationship to other separate contractors.
- (2) Without assuming any design responsibilities of the Architect/Engineer, the Contractor shall include in the Progress Reports required under this Section 2.4 comments on overlap with any other separate subcontracts, omissions, lack of correlation between drawings, and any other deficiencies noted, in order that the Architect/Engineer may arrange for necessary corrections.

W. Job Site Facilities. The Contractor shall arrange for all job site facilities required and necessary to enable the Contractor and Architect/Engineer to perform their respective duties and to accommodate any representatives of the Owner which the Owner may choose to have present on the Project Site.

X. Weather Protection. The Contractor shall provide temporary enclosures of building areas to assure orderly progress of the Work during periods when extreme weather conditions are likely to be experienced. The Contractor shall also be responsible for providing weather protection for Work in progress and for materials stored on the Project Site. A contingency plan shall be prepared upon request of the Owner for weather conditions that may affect the construction.

Y. Payment and Performance Bond. Prior to the construction commencement date, the Contractor shall obtain, for the benefit of and directed to the Owner, a Payment and Performance Bond satisfying the requirements of Section 255.05, Florida Statutes, covering the faithful performance by the Contractor of its obligations under the Contract Documents, including but not limited to the construction of the Project on the Project Site and the payment of all obligations arising thereunder, including all payments to Subcontractors, laborers, and materialmen. The surety selected by the Contractor to provide the Payment and Performance Bond shall be approved by the Owner prior to the issuance of such Bond, which approval shall not be unreasonably withheld or delayed provided that the surety is rated A or better by Best's Key Guide, latest edition. For Changes in the Work that result in an increase in the Contract Sum, Owner reserves the right to require the Contractor to secure and deliver additive riders to the Payment and Performance Bond.

Z. Construction Phase; Building Permit; Code Inspections. Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work.

(1) Building Permit. The Owner and Architect/Engineer shall provide such information to any Permitting Authority as is necessary to obtain approval from the Permitting Authority to commence construction prior to beginning construction. The Contractor shall pull any required building permit, and shall be responsible for delivering and posting the building permit at the Project Site prior to the commencement of construction. The cost of the building permit is included in the Contract Sum. The Owner and Architect/Engineer shall fully cooperate with the Contractor when and where necessary.

(2) Code Inspections. The Project requires detailed code compliance inspection during construction in disciplines determined by any Permitting Authority. These disciplines normally include, but are not necessarily limited to, structural, mechanical, electrical, plumbing, general building and fire. The Contractor shall notify the appropriate inspector(s) and the Architect/Engineer, no less than 24 hours in advance, when the Work is ready for inspection and before the Work is covered up. All inspections shall be made for conformance with the applicable ordinances and building codes. Costs for all re-inspections of Work found defective and subsequently repaired shall not be included as Project Costs and shall be borne by the Contractor or as provided in the contract between Contractor and Subcontractor.

- (3) Contractor's Personnel. The Contractor shall maintain sufficient off-site support staff and competent full-time staff at the Project Site authorized to act on behalf of the Contractor to coordinate, inspect, and provide general direction of the Work and progress of the Subcontractors. At all times during the performance of the Work, the Owner shall have the right to demand replacement of Contractor Personnel to whom the Owner has reasonable objection, without liability to the Contractor.
- (4) Lines of Authority. To provide general direction of the Work, the Contractor shall establish and maintain lines of authority for its personnel and shall provide this information to the Owner and all other affected parties, such as the code inspectors of any Permitting Authority, the Subcontractors, and the Architect/Engineer. The Owner and Architect/Engineer may attend meetings between the Contractor and his Subcontractors; however, such attendance is optional and shall not diminish either the authority or responsibility of the Contractor to administer the subcontracts.

AA. Quality Control. The Contractor shall develop and maintain a program, acceptable to the Owner and Architect/Engineer, to assure quality control of the construction. The Contractor shall be responsible for and supervise the Work of all Subcontractors, providing instructions to each when their Work does not conform to the requirements of the Project Plans and Specifications, and the Contractor shall continue to coordinate the Work of each Subcontractor to ensure that corrections are made in a timely manner so as to not affect the efficient progress of the Work. Should a disagreement occur between the Contractor and the Architect/Engineer over the acceptability of the Work, the Owner, at its sole discretion and in addition to any other remedies provided herein, shall have the right to determine the acceptability, provided that such determination is consistent with standards for construction projects of this type and generally accepted industry standards for workmanship in the State of Florida.

BB. Management of Subcontractors. All Subcontractors shall be compensated in accordance with Article IV. The Contractor shall solely control the Subcontractors. The Contractor shall negotiate all Change Orders and Field Orders with all affected Subcontractors and shall review the costs and advise the Owner and Architect/Engineer of their validity and reasonableness, acting in the Owner's best interest. When there is an imminent threat to health and safety, and Owner's Project Representative concurrence is impractical, the Contractor shall act immediately to remove the threats to health and safety and shall subsequently fully inform Owner of all such action taken. The Contractor shall also carefully review all shop drawings and then forward the same to the Architect/Engineer for review and actions. The Architect/Engineer will transmit them back to the Contractor, who will then issue the shop drawings to the affected Subcontractor for fabrication or revision. The Contractor shall maintain a suspense control system to promote expeditious handling. The Contractor shall request the Architect/Engineer to make interpretations of the drawings or specifications requested of him by the Subcontractors and shall maintain a business system to promote timely response. The Contractor shall inform the Architect/Engineer which shop drawings or requests for clarification have the greatest urgency, to enable the Architect/Engineer to prioritize requests coming from the Contractor. The Contractor shall advise the Owner and Architect/Engineer when timely response is not occurring on any of the above.

CC. Job Requirements.

- (1) The Contractor shall provide each of the following as a part of its services hereunder:
  - (a) Maintain a log of daily activities, including manpower records, equipment on site, weather, delays, major decisions, etc;
  - (b) Maintain a roster of companies on the Project with names and telephone numbers of key personnel;
  - (c) Establish and enforce job rules governing parking, clean-up, use of facilities, and worker discipline;
  - (d) Provide labor relations management and equal opportunity employment for a harmonious, productive Project;
  - (e) Provide and administer a safety program for the Project and monitor for subcontractor compliance without relieving them of responsibilities to perform Work in accordance with best acceptable practice;
  - (f) Provide a quality control program as provided under Section 2.4.C above;
  - (g) Provide miscellaneous office supplies that support the construction efforts which are consumed by its own forces;
  - (h) Provide for travel to and from its home office to the Project Site and to those other places within Manatee County as required by the Project;
  - (i) Verify that tests, equipment, and system start-ups and operating and maintenance instructions are conducted as required and in the presence of the required personnel and provide adequate records of same to the Architect/Engineer;
  - (j) Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and sample submissions, reproductions of original Contract Documents including all addenda, change orders, field orders, additional drawings issued after execution of the Agreement, Owner/Architect/Engineer's clarifications and interpretations of the Contract Documents, Progress Reports, as-built drawings, and other project related documents;
  - (k) Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions; list of visiting officials and representatives or manufacturers, fabricators,

suppliers and distributors; daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures, and provide copies of same to Owner/Architect/Engineer;

- (l) Record names, addresses and telephone numbers of all Contractors, Subcontractors and major suppliers of materials and equipment;
  - (m) Furnish Owner/Architect/Engineer periodic reports, as required, of progress of the Work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions;
  - (n) Consult with Owner/Architect/Engineer in advance of scheduling major tests, inspections or start of important phases of the Work;
  - (o) Verify, during the course of the Work, that certificates, maintenance and operations manuals and other data required to be assembled and furnished are applicable to the items actually installed, and deliver same to Owner/Architect/Engineer for review prior to final Acceptance of the Work; and
  - (p) Cooperate with Owner in the administration of grants.
- (2) The Contractor shall provide personnel and equipment, or shall arrange for separate Subcontractors to provide each of the following as a Project Cost:
- (a) Services of independent testing laboratories, and provide the necessary testing of materials to ensure conformance to contract requirements; and
  - (b) Printing and distribution of all required bidding documents and shop drawings, including the sets required by Permitting Authority inspectors.

DD. As-Built Drawings. The Contractor shall continuously review as-built drawings and mark up progress prints to provide as much accuracy as possible. Prior to, and as a requirement for authorizing final payment to the Contractor due hereunder, the Contractor shall provide to the Owner an original set of marked-up, as-built Project Plans and Specifications and an electronic format of those records showing the location and dimensions of the Project as constructed, which documents shall be certified as being correct by the Contractor and the Architect/Engineer. Final as-built drawings shall be signed and sealed by a registered Florida surveyor.

EE. Progress Reports. The Contractor shall forward to the Owner, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the Work, to include those parts of the Work in fabrication and in the field, stating the existing status, estimated time of completion and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Owner's review

and approval. In addition, more detailed schedules may be required by the Owner for daily traffic control.

FF. Contractor's Warranty. The Contractor warrants to the Owner and Architect/Engineer that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements will be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect/Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

- (1) Contractor shall use its best efforts and due diligence to ensure that during the warranty period, those entities or individuals who have provided direct warranties to the Owner as required by the Contract Documents perform all required warranty Work in a timely manner and at the sole cost and expense of such warranty providers. Any such cost or expense not paid by the warranty providers shall be paid by the Contractor, to include any costs and attorney's fees incurred in warranty-related litigation between Contractor and any Subcontractors.
- (2) The Contractor shall secure guarantees and warranties of Subcontractors, equipment suppliers and materialmen, and assemble and deliver same to the Owner in a manner that will facilitate their maximum enforcement and assure their meaningful implementation. The Contractor shall collect and deliver to the Owner any specific written guaranties or warranties given by others as required by subcontracts.
- (3) At the Owner's request, the Contractor shall conduct, jointly with the Owner and the Architect/Engineer, no more than two (2) warranty inspections within three (3) years after the Substantial Completion Date.

GG. Apprentices. If Contractor employs apprentices, their performance of Work shall be governed by and shall comply with the provisions of Chapter 446, Florida Statutes.

HH. Schedule of Values. Unit prices shall be established for this Agreement by the submission of a schedule of values within ten (10) days of receipt of the Notice to Proceed. The schedule shall include quantities and prices of items equaling the Contract Sum and will subdivide the Work into components in sufficient detail to serve as the basis for progress payments during construction. Such prices shall include an appropriate amount of overhead and profit applicable to each item of Work. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

II. Other Contracts. The Owner reserves the right to let other contracts in connection with this Work. The Contractor shall afford other contractors reasonable

opportunity for the introduction and storage of their materials and execution of their work, and promptly connect and coordinate the Work with theirs.

### ARTICLE III COMPENSATION

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

A. Adjustments. The Contract Sum may only be changed by Change Order or by a written amendment. Any claim for an increase or decrease in the Contract Sum shall be based on written notice delivered by the party making the claim to the other party. Notice of the amount of the claim with supporting data shall be delivered within fifteen (15) days from the beginning of such occurrence and shall be accompanied by claimant's written statement that the amount claimed covers all amounts to which the claimant is entitled as a result of the occurrence of said event. Failure to deliver a claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

B. Valuation. The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Sum shall be determined in one of the following ways (at Owner's discretion):

- (1) In the case of Unit Price Work, in accordance with Section 3.1.C, below; or
- (2) By mutual acceptance of a lump sum; or
- (3) On the basis of the cost of the Work, plus a negotiated Contractor's fee for overhead and profit. Contractor shall submit an itemized cost breakdown together with supporting data.

C. Unit Price Work. The unit price of an item of Unit Price Work shall be subject to re-evaluation and adjustment pursuant to a requested Change Order under the following conditions:

- (1) If the total cost of a particular item of Unit Price Work amounts to 5% or more of the Contract Sum and the variation in the quantity of the particular item of Unit Price Work performed by Contractor differs by more than 15% from the estimated quantity of such item indicated in the Agreement; and
- (2) If there is no corresponding adjustment with respect to any other item of Work; and
  - (i) If Contractor believes that it has incurred additional expense as a result thereof; or
  - (ii) If Owner believes that the quantity variation entitles it to an

adjustment in the unit price; or

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

**3.2 Schedule of Compensation.** All payments for services and material under the Contract Documents shall be made in accordance with the following provisions.

A. Periodic Payments for Services. The Contractor shall be entitled to receive payment for Construction Services rendered pursuant to Section 2.4 in periodic payments which shall reflect a fair apportionment of cost and schedule of values of services furnished prior to payment, subject to the provisions of this Section.

B. Payment for Materials and Equipment. In addition to the periodic payments authorized hereunder, payments may be made for material and equipment not incorporated in the Work but delivered and suitably stored at the Project Site, or another location, subject to prior approval and acceptance by the Owner on each occasion.

C. Credit toward Contract Sum. All payments for Construction Services made hereunder shall be credited toward the payment of the Contract Sum as Contractor's sole compensation for the construction of the Project.

**3.3 Invoice and Payment.** All payments for services and materials under the Contract Documents shall be invoiced and paid in accordance with the following provisions.

A. Invoices. The Contractor shall submit to the Owner periodic invoices for payment, in a form acceptable to the Owner, which shall include a sworn statement certifying that, to the best of the Contractor's knowledge, information and belief, the construction has progressed to the point indicated, the quality and the Work covered by the invoice is in accord with the Project Plans and Specifications, and the Contractor is entitled to payment in the amount requested, along with the cost reports required pursuant to Article II, showing in detail all monies paid out, Project Costs accumulated, or Project Cost incurred during the previous period. This data shall be attached to the invoice.

B. Additional Information; Processing of Invoices. Should an invoiced amount appear to exceed the Work effort believed to be completed, the Owner may, prior to processing of the invoice for payment, require the Contractor to submit satisfactory evidence to support the invoice. All Progress Reports and invoices shall be delivered to the attention of the Owner's Project Representative. Invoices not properly prepared (mathematical errors, billing not reflecting actual Work done, no signature, etc.) shall be returned to the Contractor for correction.

C. Architect/Engineer's Approval. Payment for Work completed shall be subject to the Architect/Engineer approving the payment requested by the Contractor and certifying the amount thereof that has been properly incurred and is then due and payable to the Contractor, and identifying with specificity any amount that has not been properly incurred and that should not be paid.

D. Warrants of Contractor with Respect to Payments. The Contractor warrants that (1) upon payment of any retainage, materials and equipment covered by a partial payment request will pass to Owner either by incorporation in construction or upon receipt of payment by the Contractor, whichever occurs first; (2) Work, materials and equipment covered by previous partial payment requests shall be free and clear of liens, claims, security interests, or encumbrances; and (3) no Work, materials or equipment covered by a partial payment request which has been acquired by the Contractor or any other person performing Work at the Project Site, or furnishing materials or equipment for the Project, shall be subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or any other person.

E. All Compensation Included. Contractor's compensation includes full payment for services set forth in the Contract Documents, including but not limited to overhead, profit, salaries or other compensation of Contractor's officers, partners and/or employees, general operating expenses incurred by Contractor and relating to this Project, including the cost of management, supervision and data processing staff, job office equipment and supplies, and other similar items.

## **ARTICLE IV SUBCONTRACTORS**

**4.1 Subcontracts.** At the Owner's request, the Contractor shall provide Owner's Project Representative with copies of all proposed and final subcontracts, including the general and supplementary conditions thereof.

A. Subcontracts Generally. All subcontracts shall: (1) require each Subcontractor to be bound to Contractor to the same extent Contractor is bound to Owner by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor, (2) provide for the assignment of the subcontracts from Contractor to Owner at the election of Owner, upon termination of Contractor, (3) provide that Owner will be an additional indemnified party of the subcontract, (4) provide that Owner will be an additional insured on all insurance policies required to be provided by the Subcontractor, except workers' compensation, (5) assign all warranties directly to Owner, and (6) identify Owner as an intended third-party beneficiary of the subcontract.

(1) A Subcontractor is a person or entity who has a direct contract with Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

(2) A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

B. No Damages for Delay. Except when otherwise expressly agreed to by Owner in writing, all subcontracts shall provide:

“LIMITATION OF REMEDIES – NO DAMAGES FOR DELAY. The Subcontractor's exclusive remedy for delays in the performance of the contract caused by events beyond its control, including delays claimed to be caused by the Owner or Architect/Engineer or attributable to the Owner or Architect/Engineer and including claims based on breach of contract or negligence, shall be an extension of its contract time and shall in no way involve any monetary claim.”

Each subcontract shall require that any claims by the Subcontractor for delay must be submitted to the Contractor within the time and in the manner in which the Contractor must submit such claims to the Owner, and that failure to comply with the conditions for giving notice and submitting claims shall result in the waiver of such claims.

C. Subcontractual Relations. The Contractor shall require each Subcontractor to assume all the obligations and responsibilities which the Contractor owes the Owner pursuant to the Contract Documents, by the parties to the extent of the Work to be performed by the Subcontractor. Said obligations shall be made in writing and shall preserve and protect the rights of the Owner and Architect/Engineer, with respect to the Work to be performed by the Subcontractor, so that the subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with its sub-subcontractors.

D. Insurance; Acts and Omissions. Insurance requirements for Subcontractors shall be no more stringent than those requirements imposed on the Contractor by the Owner. The Contractor shall be responsible to the Owner for the acts and omissions of its employees, agents, Subcontractors, their agents and employees, and all other persons performing any of the Work or supplying materials under a contract to the Contractor.

**4.2 Relationship and Responsibilities.** Except as specifically set forth herein with respect to direct materials acquisitions by Owner, nothing contained in the Contract Documents or in any Contract Document does or shall create any contractual relation between the Owner or Architect/Engineer and any Subcontractor. Specifically, the Contractor is not acting as an agent of the Owner with respect to any Subcontractor. The utilization of any Subcontractor shall not relieve Contractor from any liability or responsibility to Owner, or obligate Owner to the payment of any compensation to the Subcontractor or additional compensation to the Contractor.

**4.3 Payments to Subcontractors; Monthly Statements.** The Contractor shall be responsible for paying all Subcontractors from the payments made by the Owner to Contractor pursuant to Article III, subject to the following provisions:

A. Payment. The Contractor shall, no later than ten (10) days after receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's Work, pay to each Subcontractor the amount to which the Subcontractor is entitled in accordance with the terms of the Contractor's contract with such Subcontractor. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make

payments to sub-Subcontractors in a similar manner. After receipt of payment from Owner, if the need should arise to withhold payments to Subcontractors for any reason, as solely determined by Contractor, the Contractor shall promptly restore such monies to the Owner, adjusting subsequent pay requests and Project bookkeeping as required.

B. Final Payment of Subcontractors. The final payment of retainage to Subcontractors shall not be made until the Project has been inspected by the Architect/Engineer or other person designated by the Owner for that purpose, and until both the Architect/Engineer and the Contractor have issued a written certificate that the Project has been constructed in accordance with the Project Plans and Specifications and approved Change Orders. Before issuance of final payment to any Subcontractor without any retainage, the Subcontractor shall submit satisfactory evidence that all payrolls, material bills, and other indebtedness connected with the Project have been paid or otherwise satisfied, warranty information is complete, as-built markups have been submitted, and instruction for the Owner's operating and maintenance personnel is complete. Final payment may be made to certain select Subcontractors whose Work is satisfactorily completed prior to the completion of the Project, but only upon approval of the Owner's Project Representative.

**4.4 Responsibility for Subcontractors.** As provided in Section 2.4.BB, Contractor shall be fully responsible to Owner for all acts and omissions of the Subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect Contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions.

**4.5 Contingent Assignment of Subcontracts.** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that:

- (1) assignment is effective only after termination of the Contract by the Owner for cause pursuant to Article XIV and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- (2) assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Agreement.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract. Upon such assignment, if the Work has been suspended for more than thirty (30) days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension. Upon such assignment to the Owner, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

## **ARTICLE V CHANGES IN WORK**

**5.1 General.** Changes in the Work may be accomplished after execution of the Agreement, and without invalidating the Agreement, by Change Order, Work Directive Change

or order for a minor change in the Work, subject to the limitations stated in this Article V and elsewhere in the Contract Documents. A Change Order shall be based upon agreement among the Owner, Contractor and Architect/Engineer; a Work Directive Change requires agreement by the Owner and Architect/Engineer and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Architect/Engineer alone. Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Work Directive Change or order for a minor change in the Work.

**5.2 Minor Changes in the Work.** The Owner or Architect/Engineer shall have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such change will be effected by written order signed by the Architect/Engineer and shall be binding on the Owner and Contractor. The Contractor shall abide by and perform such minor changes. Such changes shall be effected by a Field Directive or a Work Directive Change. Documentation of changes shall be determined by the Construction Team, and displayed monthly in the Progress Reports. Because such changes shall not affect the Contract Sum to be paid to the Contractor, they shall not require a Change Order pursuant to Section 5.6.

**5.3 Emergencies.** In any emergency affecting the safety of persons or property, the Contractor shall act at its discretion to prevent threatened damage, injury, or loss. Any increase in the Contract Sum or extension of time claimed by the Contractor because of emergency Work shall be determined as provided in Section 5.6. However, whenever practicable, the Contractor shall obtain verbal concurrence of the Owner's Project Representative and Architect/Engineer where the act will or may affect the Contract Sum or Contract Time.

**5.4 Concealed Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect/Engineer before conditions are disturbed and in no event later than ten (10) days after first observance of the conditions. The Architect/Engineer will promptly investigate such conditions and, if the Architect/Engineer determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect/Engineer determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect/Engineer shall promptly notify the Owner and Contractor in writing, stating the reasons. If the Contractor disputes the Architect/Engineer's determination or recommendation, the Contractor may proceed as provided in Article VIII. If the Owner disputes the Architect/Engineer's determination or recommendation, the Owner may appeal directly to the Purchasing Official and shall thereafter follow the process set forth in Section 8.5.

**5.5 Hazardous Materials.** In the event the Contractor encounters on the Project Site material reasonably believed to be hazardous, petroleum or petroleum related products, or other hazardous or toxic substances, except as provided in Section 2.4.U, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and the

Architect/Engineer in writing. The Work in the affected area shall not thereafter be resumed except by Change Order or written amendment, if in fact the material or substance has not been rendered harmless. The Work in the affected area shall be resumed when the Project Site has been rendered harmless, in accordance with the final determination by the Architect/Engineer or other appropriate professional employed by Owner. The Contractor shall not be required to perform without its consent any Work relating to hazardous materials, petroleum or petroleum related products, or other hazardous or toxic substances. In the event the Contractor encounters on the Project Site materials believed in good faith to be hazardous or contaminated material, and the presence of such hazardous or contaminated material was not known and planned for at the time the Contractor submitted its Bid (or Guaranteed Maximum Price proposal), and it is necessary for the Contractor to stop Work in the area affected and delays Work for more than a seven (7) day period, adjustments to the Contract Sum and/or Contract Time shall be made in accordance with this Article V.

#### **5.6 Change Orders; Adjustments to Contract Sum.**

A. Change Orders Generally. The increase or decrease in the Contract Sum resulting from a change authorized pursuant to the Contract Documents shall be determined:

- (1) By mutual acceptance of a lump sum amount properly itemized and supported by sufficient substantiating data, to permit evaluation by the Architect/Engineer and Owner; or
- (2) By unit prices stated in the Agreement or subsequently agreed upon; or
- (3) By any other method mutually agreeable to Owner and Contractor.

If Owner and Contractor are unable to agree upon increases or decreases in the Contract Sum and the Architect/Engineer certifies that the work needs to be commenced prior to any such agreement, the Contractor, provided it receives a written Change Order signed by or on behalf of the Owner, shall promptly proceed with the Work involved. The cost of such Work shall then be determined on the basis of the reasonable expenditures of those performing the Work attributed to the change. However, in the event a Change Order is issued under these conditions, the Owner, through the Architect/Engineer, will establish an estimated cost of the Work and the Contractor shall not perform any Work whose cost exceeds that estimated without prior written approval by the Owner. In such case, the Contractor shall keep and present in such form as the Owner may prescribe an itemized accounting, together with appropriate supporting data of the increase in overall costs of the Project. The amount of any decrease in the Contract Sum to be allowed by the Contractor to the Owner for any deletion or change which results in a net decrease in costs will be the amount of the actual net decrease.

**5.7 Owner-Initiated Changes.** Without invalidating the Agreement and without notice to any Surety, Owner may, at any time, order additions, deletions or revisions in the Work. These will be authorized by a written amendment, a Field Directive, a Change Order, or a Work Directive Change, as the case may be. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the

Contract Documents (except as otherwise specifically provided). A Work Directive Change may not change the Contract Sum or the Contract Time; but is evidence that the parties expect that the change directed or documented by a Work Directive Change will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Sum or Contract Time.

**5.8 Unauthorized Work.** Contractor shall not be entitled to an increase in the Contract Sum or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents.

**5.9 Defective Work.** Owner and Contractor shall execute appropriate Change Orders (or written amendments) covering changes in the Work which are ordered by Owner, or which may be required because of acceptance of defective Work, without adjustment to the Contract Sum.

**5.10 Estimates for Changes.** At any time Architect/Engineer may request a quotation from Contractor for a proposed change in the Work. Within twenty-one (21) calendar days after receipt, Contractor shall submit a written and detailed proposal for an increase or decrease in the Contract Sum or Contract Time for the proposed change. Architect/Engineer shall have twenty-one (21) calendar days after receipt of the detailed proposal to respond in writing. The proposal shall include an itemized estimate of all costs and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in sufficient detail to reasonably permit an analysis by Architect/Engineer of all material, labor, equipment, subcontracts, overhead costs and fees, and shall cover all Work involved in the change, whether such Work was deleted, added, changed or impacted. Notwithstanding the request for quotation, Contractor shall carry on the Work and maintain the progress schedule. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.

**5.11 Form of Proposed Changes.** The form of all submittals, notices, Change Orders and other documents permitted or required to be used or transmitted under the Contract Documents shall be determined by the Owner. Standard Owner forms shall be utilized.

**5.12 Changes to Contract Time.** The Contract Time may only be changed pursuant to a Change Order or a written amendment to the Contract Documents. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered by the party making the claim to the other party. Notice of the extent of the claim with supporting data shall be delivered within fifteen (15) days from detection or beginning of such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled to because of the occurrence of said event. The Contract time will be extended in an amount equal to time lost due to delays beyond the control of Contractor. Such delays shall include, but not be limited to, acts or neglect by Owner or others performing additional Work; or to fires, floods, epidemics, abnormal weather conditions or acts of God. Failure to deliver a written notice of claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.

## **ARTICLE VI ROLE OF ARCHITECT/ENGINEER**

## 6.1 General.

A. Retaining. The Owner shall retain an Architect/Engineer (whether an individual or an entity) lawfully licensed to practice in Florida. That person or entity is identified as the Architect/Engineer in the Agreement and is referred to throughout the Contract Documents as if singular in number.

B. Duties. Duties, responsibilities and limitations of authority of the Architect/Engineer as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner and Architect/Engineer. Consent shall not be unreasonably withheld.

C. Termination. If the employment of the Architect/Engineer is terminated, the Owner shall employ a successor Architect/Engineer as to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect/Engineer.

**6.2 Administration.** The Architect/Engineer will provide administration of the Agreement as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect/Engineer approves the final Application for Payment. The Architect/Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

A. Site Visits. The Architect/Engineer will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work complete, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. Unless specifically instructed by Owner, the Architect/Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect/Engineer will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

B. Reporting. Based on the site visits, the Architect/Engineer will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and report to the Owner (1) known deviations from the Contract Documents and from the most recent construction schedule submitted by the Contractor, and (2) defects and deficiencies observed in the Work. The Architect/Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect/Engineer will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

**6.3 Interpretation of Project Plans and Specifications.** The Architect/Engineer will be the interpreter of the requirements of the Project Plans and Specifications. Upon receipt of comments or objections by Contractor or Owner, the Architect/Engineer will make decisions on all claims, disputes, or other matters pertaining to the interpretation of the Project Plans and Specifications.

**6.4 Rejection of Non-Conforming Work.** Upon consultation with Owner, the Architect/Engineer shall have the authority to reject Work which does not conform to the Project Plans and Specifications.

**6.5 Correction of Work.** The Contractor shall promptly correct all Work rejected by the Architect/Engineer for being defective or as failing to conform to the Project Plans and Specifications, whether observed before or after the Substantial Completion Date and whether or not fabricated, installed, or completed. The Contractor shall bear all costs of correcting such rejected Work, including compensation for Architect/Engineer's additional services made necessary thereby.

**6.6 Timely Performance of Architect/Engineer.** The Contractor shall identify which requests for information or response from the Architect/Engineer have the greatest urgency and those items which require prioritizing in response by the Architect/Engineer. The Contractor shall also identify the preferred time period for response and shall request a response time which is reasonably and demonstrably related to the needs of the Project and Contractor. If Architect/Engineer claims that Contractor's expectations for a response are unreasonable, Owner shall require Architect/Engineer to communicate such claim to Contractor in writing together with the specific time necessary to respond and the date upon which such response will be made. If Contractor believes that Architect/Engineer is not providing timely services or responses, Contractor shall notify Owner of same in writing not less than two (2) weeks before Contractor believes performance or response time from Architect/Engineer is required without risk of delaying the Project.

## **ARTICLE VII OWNER'S RIGHTS AND RESPONSIBILITIES**

**7.1 Project Site; Title.** The Owner shall provide the lands upon which the Work under the Contract Documents is to be done, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same. The Owner hereby represents to the Contractor that it currently has and will maintain up through and including the Substantial Completion Date, good title to all of the real property constituting the Project Site. Owner agrees to resolve, at its expense, any disputes relating to the ownership and use of the Project Site which might arise during construction.

**7.2 Project Plans and Specifications; Architect/Engineer.** The parties hereto acknowledge and agree that Owner has previously entered into an agreement with Architect/Engineer. Pursuant to the terms of such agreement, the Architect/Engineer, as an agent and representative of Owner, is responsible for the preparation of Project Plans and Specifications which consist of drawings, specifications, and other documents setting forth in detail the requirements for the construction of the Project. All such Project Plans and Specifications shall be provided either by Owner or the Architect/Engineer, and Contractor shall be under no obligation to provide same and shall be entitled to rely upon the accuracy and completeness of the Project Plans and Specifications provided by the Architect/Engineer and all preliminary drawings prepared in connection therewith. The Contractor will be furnished a reproducible set of all drawings and specifications reasonably necessary for the performance of Contractor's services hereunder and

otherwise ready for printing. The Contractor shall be notified of any written modification in the agreement between Owner and Architect/Engineer.

**7.3 Surveys; Soil Tests and Other Project Site Information.** Owner shall be responsible for providing a legal description and certified land survey of the Project Site in a form and content and with such specificity as may be required by the Architect/Engineer and Contractor to perform their services. To the extent deemed necessary by Owner and Architect/Engineer, and solely at Owner's expense, Owner may engage the services of a geotechnical consultant to perform test borings and other underground soils testing as may be deemed necessary by the Architect/Engineer or the Contractor. Contractor shall not be obligated to provide such surveys or soil tests and shall be entitled to rely upon the accuracy and completeness of the information provided; subject, however, to the provisions of Section 2.4.S hereof. Owner shall provide Contractor, as soon as reasonably possible following the execution of the Contract Documents, all surveys or other survey information in its possession describing the physical characteristics of the Project Site, together with soils reports, subsurface investigations, utility locations, deed restrictions, easements, and legal descriptions then in its possession or control. Upon receipt of all surveys, soils tests, and other Project Site information, Contractor shall promptly advise Owner of any inadequacies in such information and of the need for any additional surveys, soils or subsoil tests. In performing this Work, Contractor shall use the standard of care of experienced contractors and will use its best efforts timely to identify all problems or omissions. Owner shall not be responsible for any delay or damages to the Contractor for any visible or disclosed site conditions or disclosed deficiencies in the Project Site which should have been identified by Contractor and corrected by Owner prior to the execution of the Contract Documents.

**7.4 Information; Communication; Coordination.** The Owner's Project Representative shall examine any documents or requests for information submitted by the Contractor and shall advise Contractor of Owner's decisions pertaining thereto within a reasonable period of time to avoid unreasonable delay in the progress of the Contractor's services. Contractor shall indicate if any such documents or requests warrant priority consideration. However, decisions pertaining to approval of the Project Schedule as it relates to the date of Substantial Completion, the Project Cost, Contractor's compensation, approving or changing the Contract Sum shall only be effective when approved by Owner in the form of a written Change Order or amendment to the Contract Documents. Owner reserves the right to designate a different Owner's Project Representative provided Contractor is notified in writing of any such change. Owner and Architect/Engineer may communicate with Subcontractors, materialmen, laborers, or suppliers engaged to perform services on the Project, but only for informational purposes. Neither the Owner nor the Architect/Engineer shall attempt to direct the Work of or otherwise interfere with any Subcontractor, materialman, laborer, or supplier, or otherwise interfere with the Work of the Contractor. Owner shall furnish the data required of Owner under the Contract Documents promptly.

**7.5 Governmental Body.** The Contractor recognizes that the Owner is a governmental body with certain procedural requirements to be satisfied. The Contractor has and will make reasonable allowance in its performance of services for such additional time as may be required for approvals and decisions by the Owner and any other necessary government agency.

**7.6 Pre-Completion Acceptance.** The Owner shall have the right to take possession of and use any completed portions of the Work, although the time for completing the entire Work

or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents.

**7.7 Ownership and Use of Drawings, Specifications and Other Instruments of Service.**

- (1) The Architect/Engineer and the Architect/Engineer's consultants shall be deemed the authors and owners of their respective instruments of service, including the Project Plans and Specifications, and will retain all common law, statutory and other reserved rights, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers shall not own or claim a copyright in the instruments of service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the Architect/Engineer's or Architect/Engineer's consultants' reserved rights.
- (2) The Contractor, Subcontractors, Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce the drawings and specifications provided to them solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Project Plans and Specifications or other instruments of service. The Contractor, Subcontractors, Sub-subcontractors, and material or equipment suppliers may not use the drawings or specifications on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect/Engineer and the Architect/Engineer's consultants.

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

A. Responsibilities. Except as otherwise instructed in writing by Owner, the Owner's Project Representative will:

- (1) Attend preconstruction conferences; arrange a schedule of progress meetings and other job conferences as required in consultation with Owner/Architect/Engineer and notify those expected to attend in advance; and attend meetings and maintain and circulate copies of minutes thereof;
- (2) Serve as Owner/Architect/Engineer's liaison with Contractor, working principally through Contractor's superintendent, to assist in understanding the intent of the Contract Documents. As requested by Owner/Architect/Engineer, assist in obtaining additional details or information when required at the job site for proper execution of the Work;

- (3) Report to Owner/Architect/Engineer whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents;
- (4) Accompany visiting inspectors representing public or other agencies having jurisdiction over the project; record the outcome of these inspections and report to Owner/Architect/Engineer;
- (5) Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Owner/Architect/Engineer; and
- (6) Perform those duties as set forth elsewhere within the Contract Documents.

B. Limitations. Except upon written instructions of Owner, Owner's Project Representative shall not:

- (1) Authorize any deviation from the Contract Documents or approve any substitute materials or equipment;
- (2) Exceed limitations on Owner/Architect/Engineer's authority as set forth in the Contract Documents;
- (3) Undertake any of the responsibilities of Contractor, Subcontractors or Contractor's superintendent, or expedite the Work;
- (4) Advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the Contract Documents;
- (5) Advise on or issue directions as to safety precautions and programs in connection with the Work;
- (6) Authorize Owner to occupy the project in whole or in part; or
- (7) Participate in specialized field or laboratory tests.

## ARTICLE VIII RESOLUTION OF DISAGREEMENTS; CLAIMS FOR COMPENSATION

**8.1 Owner to Decide Disputes.** The Owner shall reasonably decide all questions and disputes (with the exception of matters pertaining to the interpretation of the Project Plans and Specifications which shall be resolved by the Architect/Engineer pursuant to Section 6.3) that may arise in the execution and fulfillment of the services provided for under the Contract Documents, in accordance with the Procurement Ordinance.

**8.2 Finality.** The decision of the Owner upon all claims, questions, disputes and conflicts shall be final and conclusive, and shall be binding upon all parties to the Contract Documents, subject to judicial review as provided in Section 8.5 below.

**8.3 No Damages for Delay.** If at any time Contractor is delayed in the performance of Contractor's responsibilities under the Contract Documents as the result of a default or failure to perform in a timely manner by Owner or Owner's agents or employees, Contractor shall not be entitled to any damages except for compensation specifically authorized in Article III. Contractor's sole remedy will be a right to extend the time for performance. Nothing herein shall preclude Contractor from any available remedy against any responsible party other than Owner. Contractor shall be responsible for liquidated damages for delay if otherwise provided for in the Contract Documents.

**8.4 Permitted Claims Procedure.** Where authorized or permitted under the Contract Documents, all claims for additional compensation by Contractor, extensions of time affecting the Substantial Completion Date, for payment by the Owner of costs, damages or losses due to casualty, Force Majeure, Project Site conditions or otherwise, shall be governed by the following:

- (1) All claims must be submitted as a request for Change Order in the manner as provided in Article V.
- (2) The Contractor must submit a notice of claim to Owner's Project Representative and to the Architect/Engineer within fifteen (15) days of the beginning of such occurrence. Failure to submit a claim within the requisite 15-day period shall constitute a waiver of the right to pursue said claim.
- (3) Within twenty (20) days of submitting its notice of claim, the Contractor shall submit to the Owner's Project Representative its request for Change Order, which shall include a written statement of all details of the claim, including a description of the Work affected.
- (4) After receipt of a request for Change Order, the Owner's Project Representative, in consultation with the Architect/Engineer, shall deliver to the Contractor, within twenty (20) days after receipt of request, its written response to the claim.
- (5) In the event the Owner and Contractor are unable to agree on the terms of a Change Order, the Owner shall have the option to instruct the Contractor to proceed with the Work. In that event, the Owner shall pay for those parts of the Work, the scope and price of which are not in dispute. The balance of the disputed items in the order to proceed will be resolved after completion of the Work, based upon completed actual cost.
- (6) The rendering of a decision by Owner with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Owner or Contractor of such right or remedies as either may otherwise have under the Contract Documents or by laws or regulations in respect of any such claim, dispute or other matter.

**8.5 Contract Claims and Disputes.** After completion of the process set forth in Section 8.4 above, any unresolved dispute under this Agreement shall be decided by the Purchasing Official in accordance with Section 2-26-63 of the Manatee County Code of Laws, subject to an administrative hearing process as provided in Section 2-26-64. The decision of the hearing officer in accordance with Section 2-26-64 of the Manatee County Code of Laws shall be the final and conclusive decision subject to exclusive judicial review in circuit court by a petition for certiorari.

**8.6 Claims for Consequential Damages.** The Contractor and Owner waive claims against each other for consequential damages arising out of or relating to this Agreement. This mutual waiver includes:

- (1) damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons, unless any of such damages or losses are covered by insurance placed by the Contractor; and
- (2) damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article XIV. Nothing contained in this Section 8.6 shall be deemed to preclude assessment of liquidated direct damages, when applicable, in accordance with the requirements of the Contract Documents.

## **ARTICLE IX INDEMNITY**

### **9.1 Indemnity.**

A. Indemnification Generally. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect/Engineer, Architect/Engineer's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 9.1.

B. Indemnification; Enforcement Actions. The Contractor's duty to indemnify and hold harmless the Owner in Section 9.1 above shall extend to fines, penalties and costs incurred by the Owner as related to any enforcement action taken by local, state, regional or federal regulatory entities. The Owner may deduct any of such fines, penalties and costs as described in this Section from any unpaid amounts then or thereafter due the Contractor under the Contract Documents. Any of such fines, penalties and costs not so deducted from any unpaid amounts due the Contractor shall be payable to the Owner at the demand of the Owner, together with interest from the date of the demand at the maximum allowable rate.

C. Claims by Employees. In claims against any person or entity indemnified under this Section 9.1 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 9.1.A. shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

**9.2 Duty to Defend.** The Contractor shall defend the Owner in any action, lawsuit, mediation or arbitration arising from the alleged negligence, recklessness or intentionally wrongful conduct of the Contractor and other persons employed or utilized by the Contractor in the performance of the Work. Notwithstanding any other provisions within this Article IX, so long as Contractor, through its own counsel, performs its obligation to defend the Owner pursuant to this Section, Contractor shall not be required to pay the Owner's costs associated with the Owner's participation in the defense.

## ARTICLE X ACCOUNTING RECORDS; OWNERSHIP OF DOCUMENTS

**10.1 Accounting Records.** Records of expenses pertaining to all services performed shall be kept in accordance with generally accepted accounting principles and procedures.

**10.2 Inspection and Audit.** The Contractor's records shall be open to inspection and subject to examination, audit, and/or reproduction during normal working hours by the Owner's agent or authorized representative to the extent necessary to adequately permit evaluation and verification of any invoices, payments or claims submitted by the Contractor or any of its payees during the performance of the Work. These records shall include, but not be limited to, accounting records, written policies and procedures, Subcontractor files (including proposals of successful and unsuccessful bidders), original estimates, estimating worksheets, correspondence, Change Order files (including documentation covering negotiated settlements), and any other supporting evidence necessary to substantiate charges related to the Contract Documents. They shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with the Contract Documents. For such audits, inspections, examinations and evaluations, the Owner's agent or authorized representative shall have access to said records from the effective date of the

Contract Documents, for the duration of Work, and until three (3) years after the date of final payment by the Owner to the Contractor pursuant to the Contract Documents.

**10.3 Access.** The Owner's agent or authorized representative shall have access to the Contractor's facilities and all necessary records to conduct audits in compliance with this Article. The Owner's agent or authorized representative shall give the Contractor reasonable advance notice of intended inspections, examinations, and/or audits.

**10.4 Ownership of Documents.** Upon obtainment of Substantial Completion or termination of the Agreement, all records, documents, tracings, plans, specifications, maps, evaluations, reports, transcripts and other technical data, other than working papers, prepared or developed by the Contractor shall be delivered to and become the property of the Owner. The Contractor at its own expense may retain copies for its files and internal use.

## **ARTICLE XI PUBLIC CONTRACT LAWS**

### **11.1 Equal Opportunity Employment.**

A. Employment. The Contractor shall not discriminate against any employee or applicant for employment because of race, creed, sex, color, national origin, disability or age, and will take affirmative action to ensure that all employees and applicants are afforded equal employment opportunities without discrimination because of race, creed, sex, color, national origin, disability or age. Such action will be taken with reference to, but shall not be limited to, recruitment, employment, job assignment, promotion, upgrading, demotion, transfer, layoff or termination, rates of training or retraining, including apprenticeship and on-the-job training.

B. Participation. No person shall, on the grounds of race, creed, sex, color, national origin, disability or age, be excluded from participation in, be denied the proceeds of, or be subject to discrimination in the performance of the Agreement.

**11.2 Immigration Reform and Control Act of 1986.** Contractor acknowledges that it is responsible for complying with the provisions of the Immigration Reform and Control Act of 1986, located at 8 U.S.C. Section 1324, et seq., and regulations relating thereto. Failure to comply with the above statutory provisions shall be considered a material breach and shall be grounds for immediate termination of this Agreement.

**11.3 No Conflict of Interest.** The Contractor warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Agreement, and that it has not paid or agreed to pay any person, company, corporation, individual, or firm other than a bona fide employee working solely for the Contractor, any fee, commission, percentage, gift or any other consideration, contingent upon or resulting from the award or making of this Agreement.

A. No Interest in Business Activity. By accepting award of this Agreement, the Contractor, which shall include its directors, officers and employees, represents that it presently has no interest in and shall acquire no interest in any business or activity which would conflict in any manner with the performance of services required hereunder, including without limitation as described in the Contractor's own professional ethical requirements. An interest in a business or activity which shall be deemed a conflict includes but is not limited to direct financial interest in any of the material and equipment manufacturers, suppliers, distributors, or contractors who will be eligible to supply material and equipment for the Project for which the Contractor is furnishing its services required hereunder.

B. No Appearance of Conflict. The Contractor shall not knowingly engage in any contractual or professional obligations that create an appearance of a conflict of interest with respect to the services provided pursuant to the Agreement. The Contractor has provided the Affidavit of No Conflict, incorporated into the Contract Documents as Exhibit "C", as a material inducement for Owner entering the Agreement. If, in the sole discretion of the County Administrator or designee, a conflict of interest is deemed to exist or arise during the term of this Agreement, the County Administrator or designee may cancel this Agreement, effective upon the date so stated in a written notice of cancellation, without penalty to the Owner.

**11.4 Truth in Negotiations.** By execution of the Contract Documents, the Contractor certifies to truth-in-negotiations and that wage rates and other factual unit costs supporting the compensation are accurate, complete and current at the time of contracting. Further, the original Contract Sum and any additions thereto shall be adjusted to exclude any significant sums where the Owner determines the Contract Sum was increased due to inaccurate, incomplete or non-current wage rates and other factual unit costs. Such adjustments must be made within one (1) year after final payment to the Contractor.

**11.5 Public Entity Crimes.** The Contractor is directed to the Florida Public Entity Crimes Act, Section 287.133, Florida Statutes, specifically section 2(a), and the Owner's requirement that the Contractor comply with it in all respects prior to and during the term of the Agreement.

## ARTICLE XII FORCE MAJEURE, FIRE OR OTHER CASUALTY

### 12.1 Force Majeure.

A. Unavoidable Delays. Delays in any performance by any party contemplated or required hereunder due to fire, flood, sinkhole, earthquake or hurricane, acts of God, unavailability of materials, equipment or fuel, war, declaration of hostilities, revolt, civil strife, altercation or commotion, strike, labor dispute, or epidemic, archaeological excavation, lack of or failure of transportation facilities, or any law, order, proclamation, regulation, or ordinance of any government or any subdivision thereof, or for any other similar cause to those enumerated, beyond the reasonable control and which with due diligence could not have been reasonably anticipated, shall be deemed to be events of Force Majeure and any such delays shall be excused. In the event such party is delayed in the performance of any Work or obligation pursuant to the Contract Documents for any of the events of Force Majeure stated in this Section 12.1, the date for

performance required or contemplated by the Contract Documents shall be extended by the number of calendar days such party is actually delayed.

B. Concurrent Contractor Delays. If a delay is caused for any reason provided in Section 12.1.A. and during the same time period a delay is caused by Contractor, the date for performance shall be extended as provided in 12.1.A. but only to the extent the time is or was concurrent.

C. Notice; Mitigation. The party seeking excuse for nonperformance based on Force Majeure shall give written notice to the Owner, if with respect to the Contractor, or to the Contractor if with respect to the Owner, specifying its actual or anticipated duration. Each party seeking excuse from nonperformance based on Force Majeure shall use its best efforts to rectify any condition causing a delay and will cooperate with the other party, except that neither party shall be obligated to incur any unreasonable additional costs and expenses to overcome any loss of time that has resulted.

**12.2 Casualty; Actions by Owner and Contractor.** During the construction period, if the Project or any part thereof shall have been damaged or destroyed, in whole or in part, the Contractor shall promptly make proof of loss; and Owner and Contractor shall proceed promptly to collect, or cause to be collected, all valid claims which may have arisen against insurers or others based upon such damage or destruction. The Contractor shall diligently assess the damages or destruction and shall prepare an estimate of the cost, expenses, and other charges, including normal and ordinary compensation to the Contractor, necessary for reconstruction of the Project substantially in accordance with the Project Plans and Specifications. Within fifteen (15) days following satisfaction of the express conditions described in subsections (1), (2) and (3) below, the Contractor covenants and agrees diligently to commence reconstruction and to complete the reconstruction or repair of any loss or damage by fire or other casualty to the Project to substantially the same size, floor area, cubic content, and general appearance as prior to such loss or damage:

- (1) Receipt by the Owner or the trustee of the proceeds derived from collection of all valid claims against insurers or others based upon such damage or destruction, and receipt of other sums from any source such that the funds necessary to pay the Project Cost and any additions to the Project Cost necessitated for repair or reconstruction are available;
- (2) Written agreement executed by the Contractor and the Owner, by amendment to the Contract Documents or otherwise, authorizing and approving the repair or reconstruction and any additions to the Project Cost necessitated thereby, including any required adjustment to the Contract Sum; and
- (3) Final approval by the Owner of the Project Plans and Specifications for such repair or reconstruction and issuance of any required building permit.

**12.3 Approval of Plans and Specifications.** The Owner agrees to approve the plans and specifications for such reconstruction or repair if the reconstruction or repair contemplated by such plans and specifications is economically feasible, and will restore the Project, or the damaged portion thereof, to substantially the same condition as prior to such loss or damage, and such plans

and specifications conform to the applicable laws, ordinances, codes, and regulations. The Owner agrees that all proceeds of any applicable insurance or other proceeds received by the Owner or the Contractor as a result of such loss or damage shall be used for payment of the costs, expenses, and other charges of the reconstruction or repair of the Project.

**12.4 Notice of Loss or Damage.** The Contractor shall promptly give the Owner written notice of any significant damage or destruction to the Project, defined as loss or damage which it is contemplated by Contractor will increase the Contract Sum or extend the Substantial Completion Date, stating the date on which such damage or destruction occurred, the then expectations of Contractor as to the effect of such damage or destruction on the use of the Project, and the then proposed schedule, if any, for repair or reconstruction of the Project. Loss or damage which the Contractor determines will not affect the Contract Sum or Substantial Completion Date will be reported to Owner and Architect/Engineer immediately, and associated corrective actions will be undertaken without delay.

### **ARTICLE XIII REPRESENTATIONS, WARRANTIES AND COVENANTS**

**13.1 Representations and Warranties of Contractor.** The Contractor represents and warrants to the Owner each of the following.

A. The Contractor is a construction company, organized under the laws of the State of \_\_\_\_\_, authorized to transact business in the State of Florida, with \_\_\_\_\_ as the primary qualifying agent. Contractor has all requisite power and authority to carry on its business as now conducted, to own or hold its properties, and to enter into and perform its obligations hereunder and under each instrument to which it is or will be a party, and is in good standing in the State of Florida.

B. Each Contract Document to which the Contractor is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Contractor enforceable against the Contractor in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally and subject to usual equitable principles in the event that equitable remedies are involved.

C. There are no pending or, to the knowledge of the Contractor, threatened actions or proceedings before any court or administrative agency, within or without the State of Florida, against the Contractor or any partner, officer, or agent of the Contractor which question the validity of any document contemplated hereunder, or which are likely in any case, or in the aggregate, to materially adversely affect the consummation of the transactions contemplated hereunder, or materially adversely affect the financial condition of the Contractor.

D. The Contractor has filed or caused to be filed all federal, state, local, or foreign tax returns, if any, which were required to be filed by the Contractor, and has paid, or caused to be paid, all taxes shown to be due and payable on such returns or on any assessments levied against the Contractor.

E. Neither Contractor nor any agent or person employed or retained by Contractor has acted fraudulently or in bad faith or in violation of any statute or law in the procurement of this Agreement.

F. The Contractor shall timely fulfill or cause to be fulfilled all of the terms and conditions expressed herein which are within the control of the Contractor or which are the responsibility of the Contractor to fulfill. The Contractor shall be solely responsible for the means and methods of construction.

G. It is recognized that neither the Architect/Engineer, the Contractor, nor the Owner has control over the cost of labor, materials, or equipment, over a Subcontractor's methods of determining bid prices, or over competitive bidding, market, or negotiating conditions.

H. During the term of the Contract Documents, and the period of time that the obligations of the Contractor under the Contract Documents shall be in effect, the Contractor shall cause to occur and to continue to be in effect those instruments, documents, certificates, and events contemplated by the Contract Documents that are applicable to, and the responsibility of, the Contractor.

I. The Contractor shall assist and cooperate with the Owner and shall accomplish the construction of the Project in accordance with the Contract Documents and the Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, or orders that are or will be applicable thereto.

J. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective, and that Owner, representatives of Owner, and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. Contractor shall give Architect/Engineer timely notice of readiness of the Work for all required approvals and shall assume full responsibility, including costs, in obtaining required tests, inspections, and approval certifications and/or acceptance, unless otherwise stated by Owner.

K. If any Work (including Work of others) that is to be inspected, tested, or approved is covered without written concurrence of Architect/Engineer, it must, if requested by Architect/Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Architect/Engineer timely notice of Contractor's intention to cover the same and Architect/Engineer has not acted with reasonable promptness in response to such notice. Neither observations by Architect/Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the Work in accordance with the Contract Documents.

L. If the Work is defective, or Contractor fails to supply sufficient skilled workers, or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof and terminate payments to the Contractor until the cause for such order has been eliminated. Contractor shall bear all direct, indirect and consequential costs for satisfactory reconstruction or removal and replacement with non-defective Work, including, but not limited to fees and charges of Architect/Engineers, attorneys and other professionals and any additional expenses experienced by Owner due to delays to other

Contractors performing additional Work and an appropriate deductive change order shall be issued. Contractor shall further bear the responsibility for maintaining the schedule and shall not be entitled to an extension of the Contract Time or the recovery of delay damages due to correcting or removing defective Work.

M. If Contractor fails within seven (7) days after written notice to correct defective Work, or fails to perform the Work in accordance with the Contract Documents, or fails to comply with any other provision of the Contract Documents, Owner may correct and remedy any such deficiency to the extent necessary to complete corrective and remedial action. Owner may temporarily exclude Contractor from all or part of the site, temporarily take possession of all or part of the Work, Contractor's tools, construction equipment and machinery at the site or for which Owner has paid Contractor but which are stored elsewhere, all for such duration as is reasonably necessary to correct the deficiency. All direct and indirect costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Architect/Engineer and a Change Order will be issued incorporating the necessary revisions.

N. If within three (3) years after the Substantial Completion Date or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective Work or if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instruction, Owner may have the defective Work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor. Failing payment by the Contractor and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall have the right to bring a direct action in the Circuit Court to recover such costs.

**13.2 Representations of the Owner.** To the extent permitted by law, the Owner represents to the Contractor that each of the following statements is presently true and accurate:

- A. The Owner is a validly existing political subdivision of the State of Florida.
- B. The Owner has all requisite corporate or governmental power and authority to carry on its business as now conducted and to perform its obligations under the Contract Documents and each Contract Document contemplated hereunder to which it is or will be a party.
- C. The Contract Documents and each Contract Document contemplated hereby to which the Owner is or will be a party has been duly authorized by all necessary action on the part of, and has been or will be duly executed and delivered by, the Owner, and neither the execution and delivery thereof nor compliance with the terms and provisions thereof or hereof: (a) requires the approval and consent of any other person or party, except such as have been duly obtained or as are specifically noted herein; (b) contravenes any existing law, judgment, governmental rule, regulation or order applicable to or binding on the Owner; or (c) contravenes or results in any breach of, default under, or result in the creation of any lien or encumbrance upon the Owner under any indenture, mortgage, deed of trust, bank loan, or credit agreement, the charter, ordinances, resolutions, or any other agreement or instrument to which the Owner is a

party, specifically including any covenants of any bonds, notes, or other forms of indebtedness of the Owner outstanding on the date of the Contract Documents.

D. The Contract Documents and each document contemplated hereby to which the Owner is or will be a party constitutes, or when entered into will constitute, a legal, valid, and binding obligation of the Owner enforceable against the Owner in accordance with the terms thereof, except as such enforceability may be limited by applicable bankruptcy, insolvency, or similar laws from time to time in effect which affect creditors' rights generally, and subject to usual equitable principles in the event that equitable remedies are involved.

E. There are no pending or, to the knowledge of the Owner, threatened actions or proceedings before any court or administrative agency against the Owner which question the validity of the Contract Documents or any document contemplated hereunder, or which are likely in any case or in the aggregate to materially adversely affect the consummation of the transactions contemplated hereunder or the financial or corporate condition of the Owner.

F. The Owner shall use due diligence to timely fulfill or cause to be fulfilled all of the conditions expressed in the Contract Documents which are within the control of the Owner or which are the responsibility of the Owner to fulfill.

G. During the pendency of the Work and while the obligations of the Owner under the Contract Documents shall be in effect, the Owner shall cause to occur and to continue to be in effect and take such action as may be necessary to enforce those instruments, documents, certificates and events contemplated by the Contract Documents that are applicable to and the responsibility of the Owner.

H. The Owner shall assist and cooperate with the Contractor in accomplishing the construction of the Project in accordance with the Contract Documents and the Project Plans and Specifications, and will not knowingly violate any laws, ordinances, rules, regulations, orders, contracts, or agreements that are or will be applicable thereto or, to the extent permitted by law, enact or adopt any resolution, rule, regulation, or order, or approve or enter into any contract or agreement, including issuing any bonds, notes, or other forms of indebtedness, that will result in the Contract Documents or any part thereof, or any other instrument contemplated by and material to the timely and effective performance of a party's obligations hereunder, to be in violation thereof.

## ARTICLE XIV TERMINATION AND SUSPENSION

**14.1 Termination for Cause by Owner.** This Agreement may be terminated by Owner upon written notice to the Contractor should Contractor fail substantially to perform a material obligation in accordance with the terms of the Contract Documents through no fault of the Owner. In the event Owner terminates for cause and it is later determined by a court of competent jurisdiction that such termination for cause was not justified, then in such event such termination for cause shall automatically be converted to a termination without cause pursuant to Section 14.2.

A. Nonperformance. If the Contractor fails to timely perform any of its

obligations under the Contract Documents, including any obligation the Contractor assumes to perform Work with its own forces, or if it persistently or repeatedly refuses or fails, except in case for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or fails, without being excused, to maintain an established schedule (failure to maintain schedule shall be defined as any activity that falls thirty (30) days or more behind schedule) which has been adopted by the Construction Team, or it fails to make prompt payment to Subcontractors for materials or labor, or disregards laws, rules, ordinances, regulations, or orders of any public authority having jurisdiction, or otherwise is guilty of substantial violations of the Agreement the Owner may, after seven (7) days written notice, during which period the Contractor fails to perform such obligation, make good such deficiencies and perform such actions. The Contract Sum shall be reduced by the cost to the Owner of making good such deficiencies, and the Contractor's compensation shall be reduced by an amount required to manage the making good of such deficiencies. Provided, however, nothing contained herein shall limit or preclude Owner from pursuing additional damages from Contractor because of its breach.

B. Insolvency. If the Contractor is adjudged bankrupt, or if it makes a general assignment for the benefit of its creditors, or if a receiver is appointed because its insolvency, then the Owner may, without prejudice to any other right or remedy, and after giving the Contractor and its surety, if any, fourteen (14) days written notice, and during which period the Contractor fails to cure the violation, terminate the Agreement. In such case, the Contractor shall not be entitled to receive any further payment. Owner shall be entitled to recover all costs and damages arising because of failure of Contractor to perform as provided in the Contract Documents, as well as reasonable termination expenses, and costs and damages incurred by the Owner may be deducted from any payments left owing the Contractor.

C. Illegality. Owner may terminate the Agreement if Contractor disregards laws or regulations of any public body having jurisdiction.

D. Rights of Owner. The Owner may, after giving Contractor (and the surety, if there is one) seven (7) days written notice, terminate the services of Contractor for cause; exclude Contractor from the Project Site and take possession of the Work and of all Contractor's tools, construction equipment and machinery at the Project Site and use the same to the full extent they could be used (without liability to Contractor for trespass or conversion); incorporate in the Work all materials and equipment stored at the Project Site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment beyond an amount equal to the value of material and equipment not incorporated in the Work, but delivered and suitably stored, less the aggregate of payments previously made. If the direct and indirect costs of completing the Work exceed the unpaid balance of the Contract Sum, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Owner in writing; but in finishing the Work, Owner shall not be required to obtain the lowest quote for the Work performed. Contractor's obligations to pay the difference between such costs and such unpaid balance shall survive termination of the Agreement. In such event and notwithstanding any other provisions of the Contract Documents to the contrary, Owner shall be entitled to bring a direct action in the Circuit Court to recover such costs.

**14.2 Termination without Cause by Owner.** The Owner, through its County Administrator or designee, shall have the right to terminate the Agreement, in whole or in part, without cause upon sixty (60) calendar days' written notice to the Contractor. In the event of

such termination for convenience, the Owner shall compensate Contractor for payments due through the date of termination, and one subsequent payment to cover costs of Work performed through the date of termination, subject to the terms and conditions of Section 3.1. The Contractor shall not be entitled to any other further recovery against the Owner, including, but not limited to, anticipated fees or profit on Work not required to be performed, or consequential damages or costs resulting from such termination.

A. Release of Contractor. As a condition of Owner's termination rights provided for in this subsection, Contractor shall be released and discharged from all obligations arising by, through, or under the terms of the Contract Documents, and the Payment and Performance Bond shall be released. Owner shall assume and become responsible for the reasonable value of Work performed by Subcontractors prior to termination plus reasonable direct close-out costs, but in no event shall Subcontractors be entitled to unabsorbed overhead, anticipatory profits, or damages for early termination.

B. Waiver of Protest. Contractor hereby waives any right to protest the exercise by Owner of its rights under this Section that may apply under the Procurement Ordinance.

**14.3 Suspension without Cause.** Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) days by written notice to Contractor, which will fix the date on which Work will be resumed. Contractor shall be allowed an increase in the Contract Sum or an extension of the Contract Time, or both, directly attributable to any suspension if Contractor makes an approved claim therefor.

**14.4 Termination Based Upon Abandonment, Casualty or Force Majeure.** If, after the construction commencement date (i) Contractor abandons the Project (which for purposes of this paragraph shall mean the cessation of all construction and other activities relating to the Project, excluding those which are necessary to wind down or otherwise terminate all outstanding obligations with respect to the Project, and no recommencement of same within one hundred twenty (120) days following the date of cessation), or (ii) the Project is stopped for a period of thirty (30) consecutive days due to an instance of Force Majeure or the result of a casualty resulting in a loss that cannot be corrected or restored within one hundred twenty (120) days (excluding the time required to assess the damage and complete the steps contemplated under Section 12.2), the Owner shall have the right to terminate the Agreement and pay the Contractor its compensation earned or accrued to date.

**14.5 Vacation of Project Site; Delivery of Documents.** Upon termination by Owner pursuant to Section 14.2 or 14.4, Contractor shall withdraw its employees and its equipment, if any, from the Project Site on the effective date of the termination as specified in the notice of termination (which effective date shall not be less than two (2) working days after the date of delivery of the notice), regardless of any claim the Contractor may or may not have against the Owner. Upon termination, the Contractor shall deliver to the Owner all original papers, records, documents, drawings, models and other material set forth and described in the Contract Documents.

**14.6 Termination by the Contractor.** If, through no act or fault of Contractor, the

Work is suspended for a period of more than ninety (90) consecutive days by Owner or under an order of court or other public authority, or Owner fails to act on any Application for Payment or fails to pay Contractor any sum finally determined to be due; then Contractor may, upon fourteen (14) days written notice to Owner terminate the Agreement and recover from Owner payment for all Work executed, any expense sustained plus reasonable termination expenses. In lieu of terminating the Agreement, if Owner has failed to act on any Application for Payment or Owner has failed to make any payment as aforesaid, Contractor may upon fourteen (14) days written notice to Owner stop the Work until payment of all amounts then due.

SAMPLE

Exhibit A  
Title(s) of Drawings

SAMPLE

Exhibit B  
Title(s) of Specifications

SAMPLE

Exhibit C  
Affidavit of No Conflict

SAMPLE

Exhibit D  
Contractor's Certificate(s) of Insurance

SAMPLE

Exhibit E  
Contractor's Payment and Performance Bond

SAMPLE

Exhibit F  
Standard Forms

SAMPLE

**EXHIBIT 5, PHASE 1 SITE PLAN**

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

**EXHIBIT 6, DESIGN PLAN**

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

**EXHIBIT 7, RESTROOMS PLAN**

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