

Project Manual

7th and Shelter Bay Drive Drainage Improvements

City of Key Colony Beach, Florida

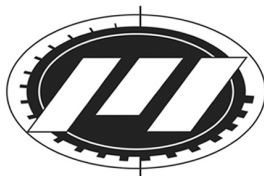
Project Number 0604-20-1

February 2025



BID SET

Prepared by:



MITTAUER
& ASSOCIATES, INC.
CONSULTING ENGINEERS &
PROJECT FUNDING SPECIALISTS
FLORIDA RY NO. 6569

PROJECT MANUAL
FOR
7TH AND SHELTER BAY DRIVE DRAINAGE IMPROVEMENTS
CITY OF KEY COLONY BEACH, FLORIDA



Orange Park, Florida
Project No. 0604-20-1
February 2025

7TH AND SHELTER BAY DRIVE DRAINAGE IMPROVEMENTS
CITY OF KEY COLONY BEACH, FLORIDA

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Not Applicable

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Not Applicable

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Not Applicable

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Not Applicable

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Not Applicable

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11100 Pond Fountains

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Not Applicable

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Not Applicable

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Not Applicable

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Not Applicable

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SECTION 00111
ADVERTISEMENT FOR BIDS
7TH AND SHELTER BAY DRIVE DRAINAGE IMPROVEMENTS
CITY OF KEY COLONY BEACH, FLORIDA

Sealed Bids for the construction of the 7th and Shelter Bay Drive Drainage Improvements project will be received by City of Key Colony Beach, Florida, at the office of the Mayor, Key Colony Beach City Hall, 600 West Ocean Drive, Key Colony Beach, Florida 33051, until **March 13, 2025 at 2:00 p.m.** local time. At that time, the Bids received will be publicly opened and read aloud.

The Project includes the following Work: Base Bid: Conversion of existing dry detention pond into a wet detention system with outfall structures and check valves. Miscellaneous drainage improvements, landscaping, and fountains. Additive Alternate No. 1 includes drainage improvements along 7th Street and golf course. Additive Alternate No. 2 include pervious paver work. Additive Alternate No. 3 includes an allowance for an observation deck.

Bids are requested for the following Contract: 7th and Shelter Bay Drive Drainage Improvements.

The Issuing Office for the Bidding Documents is: Mittauer & Associates, Inc., 580-1 Wells Road, Orange Park, Florida 32073, (904) 278-0030. Prospective Bidders may examine the Bidding Documents at the Issuing Office, Monday through Friday (excluding holidays), and may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents will be provided electronically as portable document format (PDF) files and as printed Bidding Documents, both for a non-refundable charge of \$150.00 per set payable to "Mittauer & Associates, Inc." Upon Issuing Office's receipt of payment, the digital files will be emailed, and the printed Bidding Documents will be sent via UPS Ground. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including addenda, if any, obtained from sources other than the Issuing Office.

Bidding Documents also may be examined at City Hall, City of Key Colony Beach, 600 West Ocean Drive, Key Colony Beach, Florida 33051, (305) 289-1212, Monday through Friday (excluding holidays).

A Pre-Bid Conference will not be held.

Bid security must be furnished in accordance with the Instructions to Bidders.

To be considered qualified the Bidder shall be licensed to engage in the business of contracting in the State of Florida by the Construction Industry Licensing Board. In addition, the Bidder shall have successfully completed, as prime contractor, a minimum of 3 projects of a similar nature within the past 5 years each having a minimum contract value of \$300,000 with at least one project having a contract value in excess of \$500,000.

The City of Key Colony Beach, Florida is an Equal Opportunity Employer.

Instructions to Bidders.

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

END OF SECTION

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SECTION 00200

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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ARTICLE 1—DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 Owner has not established a Bidding Documents Website.
- 2.04 Bidder may register as a plan holder and obtain complete sets of Bidding Documents, in the number and format stated in the Advertisement for Bids, from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.05 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 To be considered qualified, bidder shall be licensed to engage in the business of contracting in the State of Florida by the Construction Industry Licensing Board. Additionally, a qualified bidder shall have successfully completed, as prime contractor, a minimum of 3 projects of a similar nature within the past 5 years each having a minimum contract value of \$300,000 with at least one project having a contract value in excess of \$500,000. To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five (5) days of Owner's request, Bidder must submit the following information:
- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
- B. Evidence that Bidder is authorized to do business in the state where the Project is located.

- C. Bidder's State of Florida contractor license number.
 - D. Subcontractor and Supplier qualification information.
 - E. List of similar projects completed within the most recent five (5) years. Provide brief description of project, date completed, original contract amount, final contract amount, contact names and phone numbers of Owners and Engineers.
 - F. List of currently active projects with project description, contract amount, percent complete, contact names and phone numbers of Owners and Engineers.
 - G. Other required information regarding qualifications.
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4—PRE-BID CONFERENCE

- 4.01 A pre-bid conference will not be conducted.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

5.02 *Existing Site Conditions*

A. *Subsurface and Physical Conditions; Hazardous Environmental Conditions*

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:
 - a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
 - b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
 - c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
4. *Geotechnical Report:* The Bidding Documents contain a Geotechnical Report (GR).
 - a. As set forth in the Supplementary Conditions, the GR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations. The GR is a Contract Document.
 - b. The Conditions in the GR are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Report Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the GR, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are represented in the GR.
 - c. Nothing in the GR is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.
- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 *Other Site-related Documents*

- A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A, the following other documents relating to conditions at or adjacent to the Site are known to Owner and made available to Bidders for reference:
 1. Not ApplicableOwner will make copies of these other Site-related documents available to any Bidder on request.
- B. Owner has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.
- C. The other Site-related documents are not part of the Contract Documents.

- D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.
- E. No other Site-related documents are available.

5.04 *Site Visit and Testing by Bidders*

- A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.
- B. A site visit has not been pre-scheduled. Bidders shall use contact information in Paragraph 5.03 D. to arrange access.
- C. Bidders visiting the Site are required to arrange their own transportation to the Site.
- D. All access to the Site other than during a regularly scheduled Site visit must be coordinated through the following Owner contact for visiting the Site: John Bartus, City Administrator, (305) 289-1212, cityadministrator@keycolonybeach.net Bidder must conduct the required Site visit during normal working hours.
- E. Bidder is not required to conduct any subsurface testing or exhaustive investigations of Site conditions.
- F. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.
- G. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- H. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

- A. An Owner Safety Program is not in place.

5.06 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

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ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder’s examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner, on its own initiative, may issue Addenda to clarify, correct, supplement, or change non-technical aspects of the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:
 - A. Jason Shepler, P.E., jshepler@mittauer.com
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder’s maximum Bid price (determined by adding the base bid and all additive alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 business days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner’s damages in the case of a damages-form bond. Such forfeiture will be Owner’s exclusive remedy if Bidder defaults.

The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the

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contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 8.03 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.
- 9.02 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10—SUBSTITUTE AND “OR EQUAL” ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 10.02 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 11.02 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for all major component and construction disciplines of the Work within five days after Bid opening.
- 11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder’s Bid price will be increased (or decreased) by

the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12—PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in non-erasable ink and the Bid Form signed in non-erasable ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
 - B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½-inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 12.06 A Bid by an individual must show the Bidder’s name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

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- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located in the form of a valid business license number, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 After bid opening, Owner may request evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract.
- 12.13 Bidder must be licensed to engage in the business of contracting in the State of Florida by the Construction Industry Licensing Board. Bidder's state contractor license number must be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Lump Sum*

- A. Bidders must submit a Bid on a lump sum basis as set forth in the Bid Form.

13.02 *Allowances*

- A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 14—SUBMITTAL OF BID

- 14.01 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the **City of Key Colony Beach, 600 West Ocean Drive, Key Colony Beach, Florida 33051.**
- 14.02 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.
- 14.03 Bids may not be submitted electronically.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted

prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

- 16.01 Bids will be opened at the time and place indicated in the Advertisement for Bids and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right, in its sole discretion, to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.
- 18.05 *Evaluation of Bids*
 - A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
 - B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner will announce to all bidders a “Base Bid plus alternates” budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority

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established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

- 18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.
- 19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 21—SALES AND USE TAXES – NOT APPLICABLE

ARTICLE 22—CONTRACTS TO BE ASSIGNED – NOT APPLICABLE

ARTICLE 23 – WAGE RATES – NOT APPLICABLE

END OF SECTION

SECTION 00410
BID FORM
7TH AND SHELTER BAY DRIVE DRAINAGE IMPROVEMENTS
CITY OF KEY COLONY BEACH, FLORIDA

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—BIDDER

SUBMITTED BY: _____ **DATE:** _____
Company Name (printed or typed)

Address

City, State, Zip

BIDDER'S CONTACT: _____
Name

PHONE NO.: _____

FAX NO.: _____

EMAIL ADDRESS: _____

CONTRACTOR'S FLORIDA LICENSE NO.: _____

ARTICLE 2—OWNER

2.01 This Bid is submitted to:

City of Key Colony Beach
600 West Ocean Drive
Key Colony Beach, Florida 33051

2.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 3—ATTACHMENTS TO THIS BID

3.01 The following documents are submitted with and made a condition of this Bid:

- A. Required Bid security;
- B. If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign;

ARTICLE 4—BASIS OF BID

4.01 *Lump Sum Bid*

- A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s):

Item No.	Description	Lump Sum Price
1	Base Bid	\$
2	Utility Relocation Allowance	\$15,000.00
3	FKEC Electrical Allowance	\$5,000.00
TOTAL BASE BID		\$
4	Additive Alternate No. 1 – 7 th St. & Golf Course Drainage Improvements	\$
5	Additive Alternate No. 2 – Permeable Pavers	\$
6	Additive Alternate No. 3 – Observation Deck Allowance	\$25,000.00

ARTICLE 5—TIME OF COMPLETION

5.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

5.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 6—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

6.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

6.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

6.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 7—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

7.01 *Bidder’s Representations*

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
 6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder’s (Contractor’s) safety precautions and programs.
 7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.
12. Bidder is licensed to engage in the business of contracting in the State of Florida by the Construction Industry Licensing Board.

7.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:		Attest:	
	<i>(Individuals Signature)</i>		<i>(Individuals Signature)</i>
Name:		Name:	
	<i>(typed or printed)</i>		<i>(typed or printed)</i>
Title:		Title:	
	<i>(typed or printed)</i>		<i>(typed or printed)</i>
Date:		Date:	
	<i>(typed or printed)</i>		<i>(typed or printed)</i>

Address for giving notices:

Bidder's Business License No. _____

Affix corporate seal, if applicable.

END OF SECTION

SECTION 00430
BID BOND (PENAL SUM FORM)

Bidder Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: City of Key Colony Beach, Florida Address <i>(principal place of business)</i> : City of Key Colony Beach 600 West Ocean Drive Key Colony Beach, Florida 33051	Bid Project <i>(name and location)</i> : 7 th and Shelter Bay Drive Drainage Improvements Key Colony Beach, Florida Bid Due Date:
Bond: 5% of Maximum Bid (Base Bid plus Alternates) Bond No.: Penal Sum: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
 - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by Owner, or
 - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

Modified per Mittauer & Associates, Inc.
EJCDC® C-430, Bid Bond (Penal Sum Form).

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SECTION 00510

Date of Issuance:

Owner: City of Key Colony Beach, Florida

Owner's Project No.:

Engineer: Mittauer & Associates, Inc.

Engineer's Project No.: 0604-20-1

Project: 7th and Shelter Bay Drive Drainage Improvements

Contract Name:

Bidder:

Bidder's Address:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

[Describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is \$_____. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

[_____] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

☐ Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner [_____] counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: City of Key Colony Beach, Florida

By (*signature*): _____

Name (*printed*): Joey Raspe

Title: Mayor

Copy: Mittauer & Associates, Inc.

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EJCDC® C-510, Notice of Award.

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SECTION 00520

AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between the City of Key Colony Beach, Florida ("Owner") and _____ ("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

- 1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Base Bid: Conversion of existing dry detention pond into a wet detention system with outfall structures and check valves. Miscellaneous drainage improvements, landscaping, and fountains. Additive Alternate No. 1 includes drainage improvements along 7th Street and golf course. Additive Alternate No. 2 include pervious paver work. Additive Alternate No. 3 includes an allowance for an observation deck.

ARTICLE 2—THE PROJECT

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: 7th and Shelter Bay Drive Drainage Improvements.

ARTICLE 3—ENGINEER

- 3.01 The Owner has retained Mittauer & Associates, Inc. ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.
- 3.02 The Project has been designed by Mittauer & Associates, Inc., 580-1 Wells Road, Orange Park, Florida 32073.

ARTICLE 4—CONTRACT TIMES

- 4.01 *Time is of the Essence*
- A. All time limits for Milestones (if any), Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- 4.02 *Contract Times: Days*
- A. The Work will be substantially complete within 120 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 150 days after the date when the Contract Times commence to run.

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4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
1. *Substantial Completion:* Contractor shall pay Owner \$500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
 2. *Completion of Remaining Work:* After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$250 for each day that expires after such time until the Work is completed and ready for final payment.
 3. Liquidated damages for failing to timely attain Substantial Completion and Final Completion are additive and will be imposed concurrently.
- B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

4.04 *Special Damages - Not Applicable*

ARTICLE 5—CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:
- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6—PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract, including funding agency (if any) approval. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based

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on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

a. 95 percent of the value of the Work completed (with the balance being retainage).

b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05 *Interest*

A. All amounts not paid when due will bear interest at the rate of 1/12th of the federal prime interest rate (on the date of the application) per month.

ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

A. The Contract Documents consist of all of the following:

1. This Agreement (Section 00520, with attachments).

2. Bonds:

a. Performance bond (together with power of attorney) (Section 00610).

b. Payment bond (together with power of attorney) (Section 00615).

3. General Conditions (Section 00700).

4. Supplementary Conditions (Section 00800).

5. Specifications as listed in the table of contents of the project manual.

6. Drawings (not attached but incorporated by reference), with each sheet bearing the following general title: 7th and Shelter Bay Drive Drainage Improvements.

7. Addenda (numbers ____ to ____, inclusive).

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8. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (Section 00410)
9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
 - e. Warranty Bond, if any.
- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 Contractor's Representations

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
 1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
 2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
 6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the

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effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.
12. Contractor is authorized to do business in the state where the Project is located.
13. Bidder is licensed to engage in the business of contracting in the State of Florida by the Construction Industry Licensing Board.

8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary Conditions.

[Remainder of page intentionally blank]

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

Owner:

City of Key Colony Beach, Florida

(typed or printed name of organization)

By:

(individual's signature)

Date:

(date signed)

Name: Joey Raspe

(typed or printed)

Title: Mayor

(typed or printed)

Attest:

(individual's signature)

Title:

(typed or printed)

Address for giving notices:

City of Key Colony Beach

600 West Ocean Drive

Key Colony Beach, Florida 33051

Designated Representative:

Name: John Bartus

(typed or printed)

Title: City Administrator

(typed or printed)

Address:

City of Key Colony Beach

600 West Ocean Drive

Key Colony Beach, Florida 33051

Phone: (305) 289-1212

Email: cityadministrator@keycolonybeach.net

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

Contractor:

(typed or printed name of organization)

By:

(individual's signature)

Date:

(date signed)

Name:

(typed or printed)

Title:

(typed or printed)

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

(individual's signature)

Title:

(typed or printed)

Address for giving notices:

Designated Representative:

Name:

(typed or printed)

Title:

(typed or printed)

Address:

Phone:

Email:

License No.:

(where applicable)

State:

END OF SECTION

Modified per Mittauer & Associates, Inc.

EJCDC® C-520, Agreement between Owner and Contractor for Construction Contract (Stipulated Price).

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THE CITY OF KEY COLONY BEACH, FLORIDA

NON-COLLUSION AFFIDAVIT

I, _____ of the city/township/parrish
of _____, according to law on my oath, and under penalty of perjury, depose
and say that;

1) I am _____, the bidder making the Proposal for the project
described as follows:

7th and Shelter Bay Drive Drainage Improvements
City of Key Colony Beach, Florida
Mittauer & Associates, Inc. Project No. 0604-20-1

2) The prices in this bid have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;

3) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to bid opening, directly or indirectly, to any other bidder or to any competitor; and

4) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit, or not to submit, a bid for the purpose of restricting competition;

5) The statements contained in this affidavit are true and correct, and made with full knowledge that The School Board of Monroe County, Florida, relies upon the truth of the statements contained in this affidavit in awarding contracts for said project.

(Signature of Bidder)

DATED: _____

STATE OF _____,

COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority,

_____ who, after first being sworn by me, (name of individual signing) affixed his/her
signature in the space provided above on this

_____ day of _____, 20_____.

NOTARY PUBLIC

My commission expires:

THE CITY OF KEY COLONY BEACH, FLORIDA

E-VERIFY AFFIDAVIT

Beginning January 1, 2021, Florida law requires all contractors doing business with the the City of Key Colony Beach, Florida to register with and use the E-Verify System in order to verify the work authorization status of all newly hired employees. The City requires all vendors who are awarded contracts with the City to verify employee eligibility using the E-Verify System. As before, vendors are also required to maintain all I-9 Forms of their employees for the duration of the contract term. To enroll in the E-Verify System, vendors should visit the E- Verify Website located at [www.e- verify.gov](http://www.e-verify.gov).

In accordance with Florida Statute § 448.095, IT IS THE RESPONSIBILITY OF THE AWARDED VENDOR TO ENSURE COMPLIANCE WITH ALL APPLICABLE E-VERIFY REQUIREMENTS.

By affixing your signature below, you hereby acknowledge that Florida Law requires you to register with and use the E-Verify System to verify the work authorization status of all newly hired employees. Furthermore, by signing this affidavit you affirm, under penalty of perjury, that you have complied with all applicable E-Verify requirements as of the effective date below.

Date

(Signature of Authorized Representative)

STATE OF _____, COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority, _____
_____, who, ☐ being personally known or ☐
having produced _____ as
identification, and after first being sworn by me, affixed his/her signature in the space provided above on
this

_____ day of _____
_____ 20 _____.

Signature, NOTARY PUBLIC

My commission expires:

STAMP/SEAL

DRUG FREE WORKPLACE FORM

The undersigned vendor in accordance with Florida Statute 287.087 hereby certifies that:

(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection CO, notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 (Florida Statutes) or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, or any employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

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

Date: _____

Applicant's Signature

DEBARMENT CERTIFICATION

“The bidder certifies that, neither the firm nor any person associated therewith in the capacity of owner, partner, director, officer, principal, investigator, project director, manager, auditor, and/or position involving the administration of federal funds:

(a) Is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions, as defined in 2 CFR Chapter 180, by any federal department or agency;

(b) Has within a three-year period preceding this certification been convicted of or had a civil judgment rendered against it for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a federal, state, or local government transaction or public contract; violation of federal or state antitrust statutes; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Is presently indicted for or otherwise criminally or civilly charged by a federal, state, or local Governmental entity with commission of any of the offenses enumerated in paragraph (b) of this certification; and

(d) Has within a three-year period preceding this certification had one or more federal, state, or local government public transactions terminated for cause or default.

The bidder certifies that it shall not knowingly enter into any transaction with any subcontractor, material supplier, or vendor who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this project by any federal agency.

Dated this _____ day of _____, 20_____.

By _____
Authorized Signature/Contractor

Street Address

City/State/Zip Code

Area Code/Telephone Number

State of Florida

Affidavit Regarding the Use of Coercion for Labor and Services

Respondent Vendor Name: _____

Vendor FEIN: _____

Vendor's Authorized Representative Name and Title: _____

Address: _____

City: _____ State: _____ ZIP: _____

Phone Number: _____

Email Address: _____

Section 787.06(13), Florida Statutes requires all nongovernmental entities executing, renewing, or extending a contract with a governmental entity to provide an affidavit signed by an officer or representative of the nongovernmental entity under penalty of perjury that the nongovernmental entity does not use coercion for labor or services as defined in that statute.

As the person authorized to sign on behalf of Respondent, I certify that the company identified does not:

- Use or threaten to use physical force against any person;
- Restrain, isolate, or confine or threaten to restrain, isolate, or confine any person without lawful authority and against her or his will;
- Use lending or other credit methods to establish a debt by any person when labor or services are pledged as a security for the debt, if the value of the labor or services as reasonably assessed is not applied toward the liquidation of the debt, the length and nature of the labor or services are not respectively limited and defined;
- Destroy, conceal, remove, confiscate, withhold, or possess any actual or purported passport, visa, or other immigration document, or any other actual or purported government identification document, of any person;
- Cause or threaten to cause financial harm to any person;
- Entice or lure any person by fraud or deceit; or
- Provide a controlled substance as outlined in Schedule I or Schedule II of s. 893.03 to any person for the purpose of exploitation of that person.

Under penalties of perjury, I declare that I have read the foregoing document and that the facts stated in it are true.

By: _____
AUTHORIZED SIGNATURE

Print Name and Title: _____

Date: _____

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

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

1. This sworn statement is submitted to _____
(print name of the public entity)
by _____ for _____
(print individual's name and title) (print name of entity submitting sworn statement)

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

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt of a conviction of public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment of information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea guilty or nolo contendere.

4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:
- (a). A predecessor or successor of a person convicted of a public entity crime; or
 - (b). An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in Paragraph 287.133 (1) ©, Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

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

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

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

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

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

(Signature)

(Date)

STATE OF _____
COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority, who, after first sworn by me, affixed his/her signature in the space provided above on this _____ day of _____, 2024.

(name of individual signing)

NOTARY PUBLIC

My commission expires:

BUSINESS/PERSONAL RELATIONSHIP DISCLOSURE AFFIDAVIT

I, _____, of the City/Township/Parrish of _____, State of _____, and according to law on my oath, and under penalty of perjury, depose and say that;

1) I am the authorized representative of the company or entity making a proposal for a project described as follows: (Name of company/vendor): _____
and (Nature of services presently being offered to The City of Key Colony Beach, Florida): _____

2) I have _____ have not _____, at any time, excluding the instant proposal, had a business or personal relationship with any member of The City of Key Colony Beach Board of Commissioners, and/or with any employee of The City of Key Colony Beach, Florida.

- The details of my or my company's present and/or former relationship, excluding the instant proposal, are: *{include particular Board member or employee's name(s), position held by such member or employee and relevant date(s); use reverse for space if needed}*

_____.

3) The statements contained in this affidavit are true and correct, and made with full knowledge that The City of Key Colony Beach, Florida relies upon the truth of the statements contained in this affidavit in awarding contracts for the subject project.

(Signature of Authorized Representative) Dated: _____

Print: _____

STATE OF _____,
COUNTY OF _____

PERSONALLY APPEARED BEFORE ME, the undersigned authority, who, being personally known, _____ or having produced _____
as identification, and after first being sworn by me, affixed his/her signature in the space provided above on this _____ day of 20____.

NOTARY PUBLIC

My commission expires

SECTION 00610
PERFORMANCE BOND

Contractor Name: _____ Address <i>(principal place of business)</i> : _____ Phone No.: _____	Surety Name: _____ Address <i>(principal place of business)</i> : _____ Phone No.: _____
Owner Name: City of Key Colony Beach, Florida Mailing address <i>(principal place of business)</i> : City of Key Colony Beach 600 West Ocean Drive Key Colony Beach, Florida 33051 Phone No.: (305) 289-1212	Contract Description <i>(name and location)</i> : 7 th and Shelter Bay Drive Drainage Improvements Key Colony Beach, Florida Contract Price: _____ Effective Date of Contract: _____
Bond Bond No.: _____ Bond Amount: _____ Date of Bond: _____ <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input checked="" type="checkbox"/> See Paragraph 16	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <div style="text-align: center;"><i>(Signature)</i></div>	By: _____ <div style="text-align: center;"><i>(Signature)(Attach Power of Attorney)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>	Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

Modified per Mittauer & Associates, Inc.

EJCDC® C-610, Performance Bond.

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- 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - 5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

Modified per Mittauer & Associates, Inc.

EJCDC® C-610, Performance Bond.

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statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

16. Modifications to this Bond are as follows:

Bond shall be recorded in the County in which work is performed in accordance with Florida Statutes Section 255.05. A certified copy of the recorded bond shall be provided to the Owner prior to commencing work.

SECTION 00615

PAYMENT BOND

Contractor Name: _____ Address <i>(principal place of business)</i> : Phone No.: _____	Surety Name: _____ Address <i>(principal place of business)</i> : Phone No.: _____
Owner Name: <u>City of Key Colony Beach, Florida</u> Mailing address <i>(principal place of business)</i> : City of Key Colony Beach 600 West Ocean Drive Key Colony Beach, Florida 33051 Phone No.: (305) 289-1212	Contract Description <i>(name and location)</i> : 7 th and Shelter Bay Drive Drainage Improvements Key Colony Beach, Florida Contract Price: _____ Effective Date of Contract: _____
Bond Bond No.: _____ Bond Amount: _____ Date of Bond: _____ <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input checked="" type="checkbox"/> See Paragraph 18	
Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <div style="text-align: center;"><i>(Signature)</i></div>	By: _____ <div style="text-align: center;"><i>(Signature)(Attach Power of Attorney)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>	Attest: _____ <div style="text-align: center;"><i>(Signature)</i></div>
Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>	Name: _____ <div style="text-align: center;"><i>(Printed or typed)</i></div>
Title: _____	Title: _____
Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.	

Modified per Mittauer & Associates, Inc.

EJCDC® C-615, Payment Bond.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Contractor
 - 5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

Modified per Mittauer & Associates, Inc.

EJCDC® C-615, Payment Bond.

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8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

Modified per Mittauer & Associates, Inc.

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- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
- 16.1.7. The total amount of previous payments received by the Claimant; and
- 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
- 17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
- 18. Modifications to this Bond are as follows:

Bond shall be recorded in the County in which work is performed in accordance with Florida Statutes Section 255.05. A certified copy of the recorded bond shall be provided to the Owner prior to commencing work.

Contractor's Application for Payment

Owner: <u>City of Key Colony Beach, Florida</u>	Owner's Project No.: _____
Engineer: <u>Mittauer & Associates, Inc.</u>	Engineer's Project No.: <u>0604-20-1</u>
Contractor: _____	Contractor's Project No.: _____
Project: <u>7th and Shelter Bay Drive Drainage Improvements</u>	
Contract: _____	
Application No.: _____ Application Date: _____	
Application Period: From _____ to _____	

1. Original Contract Price	\$	-
2. Net change by Change Orders	\$	-
3. Current Contract Price (Line 1 + Line 2)	\$	-
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	-
5. Retainage		
a. _____ X \$ _____ Work Completed	\$	-
b. _____ X \$ _____ Stored Materials	\$	-
c. Total Retainage (Line 5.a + Line 5.b)	\$	-
6. Amount eligible to date (Line 4 - Line 5.c)	\$	-
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application	\$	-
9. Balance to finish, including retainage (Line 3 - Line 6)	\$	-

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

Contractor: _____	
Signature: _____	Date: _____

Recommended by Engineer	Approved by Owner
By: _____	By: _____
Title: <u>Jason R. Shepler, P.E., VP of Environ. Serv.</u>	Title: <u>John Bartus, City Administrator</u>
Date: _____	Date: _____
Approved by Funding Agency	
By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____

Modified per Mittauer Associates, Inc.

EJCDC C-620 Contractor's Application for Payment

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Progress Estimate - Lump Sum Work - Original Contract

Contractor's Application for Payment

Owner:	City of Key Colony Beach, Florida	Owner's Project No.:	
Engineer:	Mittauer & Associates, Inc.	Engineer's Project No.:	0604-20-1
Contractor:		Contractor's Project No.:	
Project:	7th and Shelter Bay Drive Drainage Improvements		
Contract:			

Application No.:		Application Period:	From		to		Application Date:	
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A	B	C	D	E	F	G	H	I
Item No.	Description	Scheduled Value (\$)	Work Completed		Materials Currently Stored (not in D or E) (\$)	Work Completed and Materials Stored to Date (D + E + F) (\$)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) (\$)
			(D + E) From Previous Application (\$)	This Period (\$)				
Original Contract								
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Original Contract Totals		\$ -	\$ -	\$ -	\$ -	\$ -		\$ -

Progress Estimate - Lump Sum Work - Change Orders

Contractor's Application for Payment

Owner: City of Key Colony Beach, Florida
Engineer: Mittauer & Associates, Inc.
Contractor:
Project: 7th & Shelter Bay Drive Drainage Improvements
Contract:

Owner's Project No.:
Engineer's Project No.: 0604-20-1
Contractor's Project No.:

Application No.: Application Period: From to Application Date:

A	B	C	D	E	F	G	H	I
Item No.	Description	Scheduled Value (\$)	Work Completed		Materials Currently Stored (not in D or E) (\$)	Work Completed and Materials Stored to Date (D + E + F) (\$)	% of Scheduled Value (G / C) (%)	Balance to Finish (C - G) (\$)
			(D + E) From Previous Application (\$)	This Period (\$)				
Change Orders								
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Stored Materials Summary
Contractor's Application for Payment

Owner: City of Key Colony Beach, Florida						Owner's Project No.:					
Engineer: Mittauer & Associates, Inc.						Engineer's Project No.: 0604-20-1					
Contractor:						Contractor's Project No.:					
Project: 7th and Shelter Bay Drive Drainage Improvements											
Contract:											

Application No.:		Application Period:		From	to	Application Date:					
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A	B	C	D	E	F	G	H	I	J	K	L	M	
Item No. (Lump Sum Tab) or Bid Item No. (Unit Price Tab)	Supplier Invoice No.	Submittal No. (with Specification Section No.)	Description of Materials or Equipment Stored	Storage Location	Application No. When Materials Placed in Storage	Materials Stored			Incorporated in Work		Total Amount Incorporated in the Work (J+K) (\$)	Materials Remaining in Storage (I-L) (\$)	
						Previous Amount Stored (\$)	Amount Stored this Period (\$)	Amount Stored to Date (G+H) (\$)	Amount Previously Incorporated in the Work (\$)	Amount Incorporated in the Work this Period (\$)			
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Totals						\$	-	\$	-	\$	-	\$	-

SECTION 00641

WAIVER AND RELEASE OF LIEN UPON FINAL PAYMENT

The undersigned lienor, in consideration of the final payment in the amount of \$_____, hereby waives and releases its lien and right to claim a lien for labor, services, or materials furnished to the **City of Key Colony Beach, Florida** on the job of **7th and Shelter Bay Drive Drainage Improvements** to the following described property:

**7TH AND SHELTER BAY DRIVE DRAINAGE IMPROVEMENTS
KEY COLONY BEACH, FLORIDA
MITTAUER & ASSOCIATES, INC. PROJECT NO. 0604-20-1**

DATED on (month and day), (year)

By:

(Name)

(Title)

(Name of Business)

Sworn to and subscribed before me this day of _____ (date) by _____ (name),

Who is personally known to me or produced (_____ (form of I.D.)), as identification, and did take an oath.

Name of Notary Public

My Commission Expires: _____ (date)

CONTRACTOR'S FINAL PAYMENT AFFIDAVIT

Contractor's Final Payment Affidavit

SECTION 00645

FINAL WAIVER AND RELEASE OF LIEN AND OF RIGHT TO CLAIM
AGAINST THE PAYMENT BOND (Subcontractor)
(FINAL PAYMENT)

STATE OF FLORIDA

COUNTY OF _____

The undersigned, in consideration of the final payment in the amount of \$_____, the receipt of which is hereby acknowledged does hereby waive and release any and all lien, right of lien and its right to claim against the payment bond for labor, services, or materials furnished under contract with or by order from _____, (the general contractor on the job) owned by _____ (Owner) for improvements to the following described project:

7TH AND SHELTER BAY DRIVE DRAINAGE IMPROVEMENTS
KEY COLONY BEACH, FLORIDA
MITTAUER & ASSOCIATES, INC. PROJECT NO. 0604-20-1

SIGNED, SEALED and DELIVERED this _____ day of _____, 20____.

(Lienor)

By: _____

Printed Name: _____

Title: _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____ as President of _____ who did/did not take an oath and who:

_____ is/are personally known to me.

_____ produced current Florida driver's license as identification.

_____ produced _____ as identification.

Notary Public

My Commission Expires: _____

SECTION 00650

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

Project Name: 7th and Shelter Bay Drive Drainage Improvements

Location: Key Colony Beach, Florida

A/E#: 0604-20-1

TO (Owner): City of Key Colony Beach

Address: 600 West Ocean Drive

City/ State/ Zip: Key Colony Beach, Florida 33051

Contractor: Contract Date:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(here insert name and address of Surety Company)

, Surety Company,

on bond of (here insert name and address of Contractor)

, Contractor,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not
relieve the Surety Company of any of its obligations to the City of Key Colony Beach, Florida, Owner, as set forth
in the said Surety Company's bond.

IN WITNESS WHEREOF,
the Surety Company has hereunto set its hand this _____ day of _____ , _____

Surety Company

Signature of Authorized Representative

Title

Attest:
(Seal)

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By



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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*
 - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. A demand for money or services by a third party is not a Claim.
- 11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
 - 12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
 - 13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
 - 14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
 - 15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
 - 16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
 - 17. *Cost of the Work*—See Paragraph 13.01 for definition.
 - 18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
 - 19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
 - 20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 - 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - 1. does not conform to the Contract Documents;
 - 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - 3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
 - 1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 - 2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 - 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
 - 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. 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.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. 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 Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. Abnormal weather conditions;
 - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
 - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures:* 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 structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
 - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
 3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
 4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

- of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
 - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
 2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, 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 performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 Substitutes

- A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
 - a. will certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design;
 - 2) be similar in substance to the item specified; and
 - 3) be suited to the same use as the item specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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 which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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 persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
 2. *Samples*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
- 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 Contractor's General Warranty and Guarantee

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
 - 1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 - 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
 - 1. Observations by Engineer;
 - 2. Recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. Use or occupancy of the Work or any part thereof by Owner;
 - 5. Any review and approval of a Shop Drawing or Sample submittal;
 - 6. The issuance of a notice of acceptability by Engineer;
 - 7. The end of the correction period established in Paragraph 15.08;
 - 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 Delegation of Professional Design Services

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
 - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
 - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

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

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
 2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
 3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
1. A mutually acceptable fixed fee; or
 2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
 - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.
- B. *Change Proposal Procedures*
 - 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
 - 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
 - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
 5. Other costs consisting of the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
 - 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.
- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work does not include any of the following items:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
 - 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
 - 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 6. Expenses incurred in preparing and advancing Claims.
 - 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee*
- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
 - 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances*: Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
 - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
 - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. Review of Applications

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. The Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. The Contract Price has been reduced by Change Orders;
 - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
 - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
- 3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
 - 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
 - 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 - 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 - 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract 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 on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00800

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

SC-1.01 The following have been modified:

Add the following sentence to **"4. Bid"** **"The words 'Bid' and 'Proposal' are interchangeable throughout this Contract."**

Add the following sentence to **"28. Notice of Award"** **"When requested by OWNER, the Notice of Award may be issued by the ENGINEER."**

Add the following sentence to **"29. Notice to Proceed"** **"When requested by OWNER, the Notice to Proceed may be issued by ENGINEER."**

Add the following new defined terms:

"51. Product - As used in the Project Manual, includes materials, fabrications, systems and equipment."

"52. Construct - As used in the Project Manual, means to furnish and install, complete and ready for intended use."

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

SC-2.01 Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in place of 2.01 B.:

- B. *Evidence of Contractor's Insurance:* When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

Modified per Mittauer & Associates, Inc.

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2.02 *Copies of Documents*

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

- A. Owner shall furnish to Contractor four (4) printed copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

Delete the last sentence of 2.02 B., "Owner may delegate the responsibilities under this provision to Engineer." and substitute in its place the following:

"Engineer is not custodian of Public Records related to this project."

SC-2.03 Add the following immediately after 2.03 A.3.:

- "4. Contractor shall perform no portion of the Work at any time without Contract Documents or, where specified, approved Shop Drawings for such portion of the Work."**

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

- B. *Electronic Documents Protocol:* The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol ("EDP" or "Protocol") for exchange of electronic transmittals.

1. *Basic Requirements*

- a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.
- b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.
- c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
- d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.
- e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party's use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.

Modified per Mittauer & Associates, Inc.

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- f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

- a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions ("System Infrastructure") at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.
 - 1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is 20 MB. Attachments larger than that may be exchanged using large file transfer functions or physical media.
 - 2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.
- b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology ("IT") for maintaining operations of its System Infrastructure during the Project, including coordination with the party's individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.
- c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
- d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.

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- e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.
- f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.
- g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the Electronic Document or use an alternative delivery method to complete the communication.

C. Software Requirements for Electronic Document Exchange; Limitations

- 1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.
 - a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
- 2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.
- 3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01 A. Delete in its entirety and substitute in its place:

“4.01 Commencement of Contract Times: Notice to Proceed

A. The date of commencement of the Work is the date established in the Notice to Proceed. If there is no Notice to Proceed, it shall be the date of the OWNER-CONTRACTOR Agreement or such other date as may be established therein.”

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SC-4.02 Add the following Paragraph 4.02 B. as follows:

“B. Contractor shall perform no portion of the Work at any time without Contract Documents or, where specified, approved Shop Drawings for such portion of the Work.”

SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs:

5. *Weather-Related Delays*

- a. If “abnormal weather conditions” as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.
- b. The existence of abnormal weather conditions will be determined on a month-by-month basis in accordance with the following:
 - 1) Every workday on which one or more of the following conditions exist will be considered a “bad weather day”:
 - i) Total precipitation (as rain equivalent) occurring between 7:00 p.m. on the preceding day (regardless of whether such preceding day is a workday) through 7:00 p.m. on the workday in question equals or exceeds 1" of precipitation (as rain equivalent, based on the snow/rain conversion indicated in the table entitled Foreseeable Bad Weather Days; such table is hereby incorporated in this SC-4.05.C by reference.
 - ii) Ambient outdoor air temperature at 11:00 a.m. is equal to or less than the following low temperature threshold: 32 degrees Fahrenheit; or, at 3:00 p.m. the ambient outdoor temperature is equal to or greater than the following high temperature threshold: 101 degrees Fahrenheit.
 - 2) Determination of actual bad weather days during performance of the Work will be based on the weather records measured and recorded by NOAA weather monitoring station at Marathon Airport FL USA, ID GHCND:USW00012896, Lat/Long 24.725822, -81.051679.
 - 3) The existence of abnormal weather conditions will not relieve Contractor of the obligation to demonstrate and document that delays caused by abnormal weather are specific to the planned work activities or that such activities thus delayed were on Contractor’s then-current Progress Schedule’s critical path for the Project.

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03 D.:

“E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
Geotechnical Data Letter Report – 480 8 th St.	February 26, 2020	Geotech Information
Geotechnical Engineering Report-Boring Logs	February 5, 2016	Boring Logs

SC-5.06 Add the following new paragraph immediately following Paragraphs 5.06 A.3.:

“4. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner or Engineer.”

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2010, 2013, or 2018 edition).
2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2010, 2013, or 2018 edition).

6.02 *Insurance—General Provisions*

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker’s compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the state within the last 12 months.

SC-6.02 Delete Paragraph 6.02 E. in its entirety.

SC-6.02 Paragraph 6.02 F. Delete the words “or Contractor” in the paragraph.

6.02 *Contractor’s Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: None.

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- E. *Workers' Compensation and Employer's Liability*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	Policy limits of not less than:
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Employer's Liability	
Each accident	\$100,000
Each employee	\$100,000
Policy limit	\$500,000

- F. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
 2. damages insured by reasonably available personal injury liability coverage, and
 3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
 - a. Such insurance must be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 4. Underground, explosion, and collapse coverage.
 5. Personal injury coverage.

6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
 4. Any exclusion of coverage relating to earth subsidence or movement.
 5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
 6. Any limitation or exclusion based on the nature of Contractor's work.
 7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy limits of not less than:
General Aggregate	\$2,000,000
Products—Completed Operations Aggregate	\$ N/A
Personal and Advertising Injury	\$ N/A
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

- J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	\$1,000,000
Each Accident	\$1,000,000

Automobile Liability	Policy limits of not less than:
Property Damage	
Each Accident	\$100,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	\$1,000,000

- K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	\$2,000,000
General Aggregate	\$2,000,000

- L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of \$1,000,000 after accounting for partial attribution of its limits to underlying policies, as allowed above.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

- D. Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular workday. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

Add the following new paragraph:

- 7.20 Public Records: Pursuant to section 119.0701, Florida Statutes, for any tasks performed by Contractor on behalf of the City, Contractor shall: (a) keep and maintain all public records, as that term is defined in chapter 119, Florida Statutes ("Public Records"), required by the City to perform the work contemplated by this Agreement; (b) upon request from the City's custodian of public records, provide the City with a copy of the requested Public Records or allow the Public Records to be inspected or copied within a reasonable time at a cost that

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does not exceed the costs 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 the term of this Agreement and following completion or termination of this Agreement, if Contractor does not transfer the records to the City in accordance with (d) below; and (d) upon completion or termination of this Agreement, (i) if the City, in its sole and absolute discretion, requests that all Public Records in possession of Contractor be transferred to the City, Contractor shall transfer, at no cost, to the City, all Public Records in possession of Contractor within thirty (30) days of such request or (ii) if no such request is made by the City, Contractor shall keep and maintain the Public Records required by the City to perform the work contemplated by this Agreement. If Contractor transfers all Public Records to the City pursuant to (d)(i) above, Contractor shall destroy any duplicate Public Records that are exempt or confidential and exempt from Public Records disclosure requirements within thirty (30) days of transferring the Public Records to the City and provide the City with written confirmation that such records have been destroyed within thirty (30) days of transferring the Public Records. If Contractor keeps and maintains Public Records pursuant to (d)(ii) above, Contractor shall meet all applicable requirements for retaining Public Records. All Public Records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology of the City. If Contractor does not comply with a Public Records request, or does not comply with a Public Records request within a reasonable amount of time, the City may pursue any and all remedies available in law or equity including, but not limited to, specific performance.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

Telephone number: 305-289-1212, Ext. 2

E-mail address: citvclerk@keycolonvbeach.net

Mailing Address: 600 West Ocean Dr., P.O. Box 510141, Key Colony Beach FL 33051

ARTICLE 9—OWNER'S RESPONSIBILITIES

SC-9.13 Add the following new paragraph immediately after Paragraph 9.12 of the General Conditions:

9.13 *Owner's Site Representative*

- A. Owner will furnish an "Owner's Site Representative" to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner's Site Representative is not Engineer's consultant, agent, or employee. Owner's Site Representative will be Michael Guarino.

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ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

SC-10.03 Add the following new subparagraph immediately after Paragraph 10.03.A:

1. On this Project, by agreement with the Owner, the Engineer will not furnish a Resident Project Representative to represent Engineer at the Site or assist Engineer in observing the progress and quality of the Work.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 *Progress Payments*

SC-15.01 In the first line of Paragraph 15.01.D.1., change “**Ten days....**” to read “**Twenty-five days...**”

15.03 *Substantial Completion*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

Add the following new paragraphs:

15.09 Key Colony Beach Prompt Payment: In consideration of Contractor's faithful performance of the covenants and promises in the Contract Documents, the City agrees to pay Contractor up to the Contract Total for work performed in accordance with this Agreement and approved by the City, in accordance with the terms of the Florida Prompt Payment Act, section 218.74, Florida Statutes. All invoices must be mailed to accounts payable address as indicated on the Notice to Proceed. Any other address will result in a processing delay. Each application for payment shall be accompanied by a release and affidavit in a form approved by the City showing that all materials, labor, equipment, and other bills associated with that portion of the Project have been paid in full. The City shall not be required to make any payment until all such information has been provided, as the submittal of this information is a condition precedent to entitlement to payment of any application for payment. Each application for payment is subject to the City's review and approval. The City shall have the right to refuse to approve payments for any amounts, or portions thereof, if attributable to: (a) defective or deficient work not properly remedied in accordance with the terms of the Contract Documents; (b) the filing or reasonable evidence indicating the probably filing of third party claims against the City attributable to the fault or neglect of Contractor; (c) Contractor's failure to make timely and proper payments to all subcontractors and suppliers; (d) reasonable evidence that the remaining work cannot be completed within the Contract Total; (e) reasonable evidence that the remaining work on the Project cannot be completed within the Contract Time; (f) Contractor's failure to perform the Project in a satisfactory manner to the City and in accordance with the requirements of the Contract Documents; (g) Contractor's failure to submit documentation required by the Contract

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Documents, or requested by the City; or (g) any other breach of the requirements of the Contract Documents by Contractor, its subcontractors or consultants.

- 15.10 E-Verify: Pursuant to Florida Statute § 448.095, Contractor shall be required to register with and use the United States Department of Homeland Security's E-Verify system to verify the work authorization status of all employees hired after January 1, 2021. If Contractor enters into any contract with a subcontractor, Contractor shall be required to obtain an affidavit from the subcontractor confirming that the subcontractor does not employ, contract with, or subcontract with any person who is not authorized under federal law to be employed in the United States. Contractor shall be required to maintain a copy of said affidavit for the duration of the Contract Term and shall produce said affidavit to the City upon request. Notwithstanding any other provision herein, City reserves the right to immediately terminate this Contract upon notice to Contractor that the City has developed a good faith belief that Contractor has knowingly violated this section.

ARTICLE 16—FINAL RESOLUTIONS OF DISPUTES

SC-17.02 Add the following new paragraph immediately after Paragraph 17.01.

17.02 *Arbitration*

- A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of \$100,000 or less will be settled in accordance with the American Arbitration Association's supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.
- C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.
- D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.

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- E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.
- F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.
- G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
 - 1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;
 - 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;
 - 3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and
 - 4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.
- H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

17.03 Attorneys' Fees

SC-17.03 Add the following new paragraph immediately after Paragraph 17.02.

17.03 Attorneys' Fees

- A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

END OF SECTION

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EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contractors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
Notes				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
Key				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive, file sharing service)			
PDF	Portable Document Format readable by Adobe® Acrobat Reader DC or newer			
DWG	Autodesk® AutoCAD .dwg format Version 2007 or newer			
DOC	Microsoft® Word .docx format Version Office 365			
EXC	Microsoft® Excel .xls or .xml format Version Office 365			

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SECTION 00812

**Certification Regarding Debarment, Suspension, and Other
Responsibility Matters (Primary Covered Transactions)**

April, 2015

Owner: City of Key Colony Beach, Florida

Name of Company Selected as a Prime Contractor: _____

DUNS Number: _____

- 1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Authorized Signature

Date

Name Typed

Title

Street Address

City, State, Zip

(24 CFR 24.510 and 24 CFR, Part 24, Appendix A)

73C-23.0051, FAC

SECTION 00813

**Certification Regarding Debarment, Suspension, Ineligibility
and Voluntary Exclusion (Subcontractor)**

April, 2015

Owner: City of Key Colony Beach, Florida

Name of Subcontractor: _____

DUNS Number: _____

Lower Tier Covered Transactions

- (1) The prospective lower tier participant certifies, by submission of this document, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to the above statement, the prospective participant shall attach an explanation to this form.

Authorized Signature

Date

Name Typed

Title

Street Address

City, State, Zip

(24 CFR 24.510 and 24 CFR, Part 24, Appendix A)

73C-23.0051, FAC

SECTION 00900

ADDENDA AND MODIFICATIONS

Bidding addenda and/or modifications issued prior to signing of the construction agreement are to be attached hereto.

END OF SECTION

CHANGE ORDER NO. ____

Owner: City of Key Colony Beach, Florida
Engineer: Mittauer & Associates, Inc.
Contractor:
Project: 7th and Shelter Bay Drainage
Improvements

Owner's Project No.:
Engineer's Project No.: 0604-20-1
Contractor's Project No.:

Date Issued:

Effective Date of Change Order:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments:

Change in Contract Price	Change in Contract Times (Contract Times) OR (Number of Days)
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] from previously approved Change Orders No. ____ to No. ____ \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ____ to No. ____ Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] this Change Order: \$ _____	[Increase] [Decrease] this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

Authorized by Owner

By: _____
Title: John Bartus, City Administrator
Date: _____

Authorized by Contractor

Modified per Mittauer & Associates, Inc.

EJCDC® C-941, Change Order.

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SECTION 01000

ABBREVIATIONS

PART 1 - GENERAL

1.01 ABBREVIATIONS AND DESCRIPTIONS (WHERE APPLICABLE):

ABS	ACRYLONITRILE BUTADIENE STYRENE	CNR	CORNER
ABV	ABOVE	CO	CLEAN OUT
ACP	ASBESTOS CEMENT PIPE	CONC	CONCRETE
AFF	ABOVE FINISH FLOOR (REF. ELEV.)	CONT	CONTINUOUS
AFG	ABOVE FINISH GRADE (REF. ELEV.)	COORD	COORDINATE
ALUM	ALUMINUM	CPLG	COUPLING
ALT	ALTERNATE	CPP	CORRUGATED PLASTIC PIPE
APRX	APPROXIMATE(LY)	CPVC	CHLORINATED POLYVINYL CHLORIDE
ARCH	ARCHITECT(URAL)	CUL	CULVERT
ARV	AIR RELEASE VALVE	CV	CHECK VALVE
ASPH	ASPHALT	CY	CUBIC YARD
ASSY	ASSEMBLY	C/C	CENTER TO CENTER
BE	BURIED ELECTRIC	DBL	DOUBLE
BF	BOTTOM FACE	DEMO	DEMOLITION
BFO	BURIED FIBER OPTIC	DI	DUCTILE IRON
BFV	BUTTERFLY VALVE	DIA	DIAMETER
BITUM	BITUMINOUS OR BITUMASTIC	DIM	DIMENSION
BL	BASELINE	DIP	DUCTILE IRON PIPE
BLDG	BUILDING	DOT	DEPARTMENT OF TRANSPORTATION
BLK	BLOCK	DR	DRAIN
BM	BENCH MARK	DW	DRIVEWAY
BOC	BACK OF CURB	DWG	DRAWING
BOT	BOTTOM	E	EAST
BT	BURIED TELEPHONE-CABLE	EA	EACH
BV	BALL VALVE	ECC	ECCENTRIC
BW	BOTH WAYS	EF	EACH FACE
C, CND	CONDUIT	EL, ELEV	ELEVATION
CAP	CAPACITY	ELEC	ELECTRIC(AL)
CATV	CABLE TELEVISION	EMER	EMERGENCY
CCUA	CLAY COUNTY UTILITY AUTHORITY	EP	EDGE OF PAVEMENT
CFM	CUBIC FEET PER MINUTE	EPDM	ETHYLENE PROPYLENE DIENE MONOMER
CFS	CUBIC FEET PER SECOND	ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
CI	CAST IRON	EQUIP	EQUIPMENT
CIP	CAST IRON PIPE	ESMT	EASEMENT
℄	CENTERLINE	EST	ESTIMATE(D)
CLF	CHAIN LINK FENCE	EW	EACH WAY
CLR	CLEAR OR CLEARANCE	EWTB	EACH WAY TOP & BOTTOM
CM	CONCRETE MONUMENT	EXP	EXPANSION
CMP	CORRUGATED METAL PIPE	EX, EXIST	EXISTING
CMU	CONCRETE MASONRY UNIT	EXT	EXTERIOR

FB	FLAT BAR	IP	IRON PIPE
FD	FLOOR DRAIN	IPS	INTERNATIONAL PIPE STANDARD; IRON PIPE SIZE
FDN	FOUNDATION	JB	JUNCTION BOX
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	JT	JOINT
FF	FINISH FLOOR	K	KIP(1,000 LB)
FH	FIRE HYDRANT	KVA	KILOVOLT-AMPERE
FIG	FIGURE	KW	KILOWATT
FIN	FINISH(ED)	L	LEFT
FIN GR	FINISH GRADE	LAB	LABORATORY
FJ	FLANGED JOINT	LAV	LAVATORY
FL	FLANGE(D)	LB	POUND
FM	FORCE MAIN	LF	LINEAR FEET
FPM	FEET PER MINUTE	LP	LIGHT POLE
FPS	FEET PER SECOND	LR	LONG RADIUS
FPT	FEMALE PIPE THREAD	LS	LUMP SUM
FRP	FIBERGLASS REINFORCED PLASTIC	LWL	LOW WATER LEVEL
FT	FOOT OR FEET	MAINT	MAINTAIN OR MAINTENANCE
FW	FINISHED WATER	MAN	MANUAL(LY)
F/F	FACE TO FACE	MAX	MAXIMUM
G	GAS MAIN	MCC	MOTOR CONTROL CENTER
GAL	GALLON(S)	MES	METERED END SECTION
GALV	GALVANIZED	MECH	MECHANICAL
GIP	GALVANIZED IRON PIPE	MFR	MANUFACTURE
GND	GROUND	MG	MILLION GALLON(S)
GPD	GALLONS PER DAY	MGD	MILLION GALLONS PER DAY
GPH	GALLONS PER HOUR	MH	MANHOLE
GPM	GALLONS PER MINUTE	MIN	MINIMUM; MINUTE(S)
GPS	GALLONS PER SECOND	MISC	MISCELLANEOUS
GR	GRADE	MJ	MECHANICAL JOINT
GS	GALVANIZED STEEL	MON	MONUMENT
GSP	GALVANIZED STEEL PIPE	MPH	MILES PER HOUR
GV	GATE VALVE	MPT	MALE PIPE THREAD
HB	HOSE BIBB	MTD	MOUNTED
HDPE	HIGH-DENSITY POLYETHYLENE	MW	MANWAY; MONITORING WELL
HGT	HEIGHT	N	NORTH
HR	HAND RAIL	NE	NORTHEAST
HOA	HAND-OFF-AUTO SWITCH	NIC	NOT IN CONTRACT; NOT INCLUDED
HORIZ	HORIZONTAL	NOM	NOMINAL
HP	HORSEPOWER	NO	NUMBER
HR	HOUR	NPT	NATIONAL PIPE THREAD
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	NPW	NON-POTABLE WATER
HWL	HIGH WATER LEVEL	NTS	NOT TO SCALE
HWY	HIGHWAY	NW	NORTHWEST
ID	INSIDE DIAMETER	N/A	NOT APPLICABLE
IF	INSIDE FACE	OA	OVERALL DIMENSION
IN	INCH(ES)	OC	ON CENTER
INF	INFLUENT	OD	OUTSIDE DIAMETER
INT	INTERSECTION	OF	OUTSIDE FACE
INTR	INTERIOR	OH	OVERHEAD
INV	INVERT	OHE	OVERHEAD ELECTRIC

OPT	OPTIONAL	SLV	SLEEVE
O&M	OPERATION AND MAINTENANCE	SP	SERVICE POLE, DROP POLE
PAVT,PVMT	PAVEMENT	SPEC	SPECIFICATION
PC	POINT OF CURVE	SQ	SQUARE
PE	PLAIN END	SR	STATE ROAD
PI	POINT OF INTERSECTION	SS	SANITARY SEWER, STAINLESS STEEL
PL	PLATE	ST	STREET
PLF	POUNDS PER LINEAR FOOT	STA	STATION
POB	POINT OF BEGINNING	STD	STANDARD
PP	POWER POLE	STL	STEEL
PPD	POUNDS PER DAY	STRUCT	STRUCTURAL
PPM	PARTS PER MILLION	SW	SOUTHWEST
PRES	PRESSURE	SWD	SIDEWATER DEPTH
PRV	PRESSURE REDUCING VALVE	SYM	SYMBOL
PS	PUMP STATION	SYMM	SYMMETRICAL
PSF	POUNDS PER SQUARE FOOT	S/W	SIDEWALK
PSI	POUNDS PER SQUARE INCH	TAN	TANGENT
PSIA	POUNDS PER SQUARE INCH ABSOLUTE	TBM	TEMPORARY BENCH MARK
PSIG	POUNDS PER SQUARE INCH GAGE	TBR	TO BE REMOVED
PT	POINT OF TANGENCY	TC, TOC	TOP OF CONCRETE
PV	PLUG VALVE	TDH	TOTAL DYNAMIC HEAD
PVC	POLYVINYL CHLORIDE	TEL, TELE	TELEPHONE
PW	POTABLE WATER	TEMP	TEMPORARY
PWR	POWER	TF	TOP FACE
Q	FLOW	TG	THREADED JOINT
QTY	QUANTITY	THD	THREAD(ED)
R, RAD	RADIUS	THK	THICK(NESS)
RCP	REINFORCED CONCRETE PIPE	TOB	TOP OF BANK
RD	ROAD	TOE	TOE OF SLOPE
RED	REDUCER	TOS	TOE OF SLOPE; TOP OF STEEL
REBAR	REINFORCING STEEL BARS	TP	TELEPHONE POLE, TOP OF PAVEMENT
REF	REFERENCE	TR	TO REMAIN
REINF	REINFORCE(D)(ING)(MENT)	TV	TELEVISION
REQD	REQUIRED	TYP	TYPICAL
REST	RESTRAINED	T&B	TOP AND BOTTOM
RM	ROOM	UG	UNDERGROUND
RPM	REVOLUTIONS PER MINUTE	UGE	UNDERGROUND ELECTRIC
RR	RAILROAD	UN	UNION
RT	RIGHT	UTIL	UTILITY
RW	RAW WATER	V	VOLT(S)
RWM	RAW WATER MAIN	VAC	VACUUM
ROW,R/W	RIGHT-OF-WAY	VAR	VARIES
S	SEWER; SOUTH	VCP	VITRIFIED CLAY PIPE
SAN	SANITARY SEWER	VEL	VELOCITY
SCHED	SCHEDULE	VERT	VERTICAL
SE	SOUTHEAST	VFD	VARIABLE FREQUENCY DRIVE
SECT	SECTION	VOL	VOLUME
SF	SQUARE FOOT OR FEET	W	WATER, WEST
SHT	SHEET(ED)(ING)	WL	WATER LINE
SJ	SLIP JOINT	WM	WATER MAIN

WS	WATER SURFACE
WTP	WATER TREATMENT PLANT
WT	WEIGHT
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
WWTP	WASTEWATER TREATMENT PLANT
W/	WITH
W/O	WITHOUT
XFER	TRANSFER
XFMR	TRANSFORMER
YD	YARD(S)
YR	YEAR(S)

END OF SECTION

SECTION 01020

ALTERNATES AND ALLOWANCES

PART 1 - GENERAL

1.01 DESCRIPTION: The Work includes the following Allowances:

- A. Utility Relocation Allowance: This allowance will be utilized by the City if existing utilities are discovered within the proposed construction area. The allowance will cover all costs to relocate the utilities, whether by the Contractor or by the Utility Owner.
- B. FKEC Electrical Allowance: This allowance will be utilized by the City to pay for any fees associated with the construction of the electrical service for the pond fountains.
- C. Additive Alternate No. 1 - 7th Street & Golf Course Drainage Improvements: See Drawings for requirements.
- D. Additive Alternate No. 2 - Permeable Pavers: This work includes all requirements to prepare the locations shown on the Drawings to furnish and install permeable pavers as drawn and specified.
- E. Additive Alternate No. 3 - Observation Deck Allowance: The Contractor shall develop a proposal to provide an engineer to develop construction drawings for the Owner's review and approval. Upon Owner approval, the Contractor shall construct the improvements within the available allowance.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION

SECTION 01060

REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: The general provisions of the Contract, including General and Supplementary Conditions apply to the work specified in this section.

1.02 SPECIFIED CODES:

- A. The design of the work is based on the requirements of the latest editions of the Florida Building Code, Florida Fire Prevention Code, Florida Accessibility Code, NFPA 70 National Electric Code, NFPA 101 Life Safety Code and National Fire Protection Association Requirements, whichever is most stringent.
- B. The site work is based on the latest edition of the Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, hereinafter referred to as the Florida DOT Specifications or DOT Spec.
- C. The Contractor shall ensure the work complies to the aforementioned codes and regulations as they apply to the project whether or not specifically referenced elsewhere.

1.03 REFERENCE STANDARDS:

- A. Except as otherwise required by Paragraph 1.02 all products and workmanship shall conform to best quality materials and practices recognized by agencies, associations, councils, etc., specified in individual sections.
- B. In the absence of specified agencies, associations, councils, etc., the Contractor shall conform to the requirements of the most widely recognized standards for each particular portion of the work.

1.04 PERMITS:

- A. Florida Department of Environmental Protection (FDEP) Environmental Resource Permit (ERP) has been obtained and is included at the end of this section. Construction of the project shall be performed so as to allow the Owner to meet the requirements and stipulations of this permit.
- B. Building Permit: Contractor shall apply for and obtain a City of Key Colony Beach Building Permit. All application fees for this permit will be borne by the Owner.

- C. FDEP NPDES: Contractor shall apply for and obtain an NPDES permit for Stormwater Discharge from Large and Small Construction Activity. Application shall include Stormwater Pollution Prevention Plan. See Section 02370.

1.05 FEES: Unless otherwise noted above, Contractor shall be responsible for all fees associated with the permit for which he applies.

1.06 SUBMITTALS:

- A. Copy of Application
- B. Copy of Approved Permit
- C. Copy of Notice of Termination (if required)

END OF SECTION



FLORIDA DEPARTMENT OF Environmental Protection

Southeast District
2796 Overseas Highway, Suite 221
Marathon, FL 33050
305-289-7072

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Alexis A. Lambert
Secretary

Project Name: KCB 7th and 8th St Stormwater

Permittee/Authorized Entity:

Key Colony Beach
c/o Freddie Foster
600 W Ocean Dr
Key Colon Beach, FL 33051
Email: kcbffoster@gmail.com

Authorized Agent:

Mittauer & Associates, Inc.
c/o Jason Shepler & Michael Tibble
Email: jshepler@mittauer.com & mtibble@mittauer.com

Environmental Resource Permit - Granted

State-owned Submerged Lands Authorization – Not Applicable

U.S. Army Corps of Engineers – Separate Authorization Required

Permit No.: 44-0454572-001-EI

Permit Issuance Date: February 3, 2025

Permit Construction Phase Expiration Date: February 3, 2030

Environmental Resource Permit

Permit No.: 44-0454572-001-EI

PROJECT LOCATION

The activities authorized by this Permit are located within an existing stormwater system, Class III Waters, adjacent to 7th and 8th Street, Key Colony Beach (Section 05, Township 66 South, Range 33 East), in Monroe County (Latitude N 24° 43' 30", Longitude W -81° 01' 18").

PROJECT DESCRIPTION

This permit authorizes the modification and improvement of the current stormwater management system.

This permit authorizes 1.16 acres of work within wetlands or other surface waters. Wetlands are located within the project boundaries but there will be no adverse impacts to these resources. Additionally, the applicant has elected to plant native wetland plants along the shoreline. Mitigation is not required.

SURFACE WATER MANAGEMENT SYSTEM DESIGN

The project will improve an existing open drainage system and pond which serve approximately a total of 21.6 acres, from which 6.9 acres are residential, and 14.7 acres are recreational. The project will not add impervious area or modify existing flow patterns and intends to convert the existing dry detention pond into a conventional wet detention system. Additionally, establishing a reliable outfall for the pond. The pond primary outfall will remain the gravity wells but will be supplemented with pipes controlled by a weir in case the storm events exceed the capacity of the well. These pipes are currently in existence and will be maintained or repaired if necessary prior to being placed back into service.

AUTHORIZATIONS

Environmental Resource Permit

The Department has determined that the activity qualifies for an Environmental Resource Permit. Therefore, the Environmental Resource Permit is hereby granted, pursuant to Part IV of Chapter 373, Florida Statutes (F.S.), and Chapter 62-330, Florida Administrative Code (F.A.C.).

Sovereignty Submerged Lands Authorization

As staff to the Board of Trustees of the Internal Improvement Trust Fund (Board of Trustees), the Department has determined the activity does not require further authorization under chapter 253 of the Florida Statutes, or chapters 18-20 or 18-21 of the Florida Administrative Code.

Federal Authorization

Your proposed activity as outlined on your application and attached drawings **does not qualify** for Federal authorization pursuant to the State Programmatic General Permit and a **SEPARATE permit** or authorization **shall be required** from the Corps. You must apply separately to the Corps using their APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT, ENG FORM 4345, or alternative as allowed by their regulations. More information on Corps permitting may be found online in the Jacksonville District Regulatory Division Source Book at: <https://www.saj.usace.army.mil/Missions/Regulatory/Source-Book>.

Authority for review - an agreement with the USACOE entitled “Coordination Agreement Between the U. S. Army Corps of Engineers (Jacksonville District) and the Florida Department of Environmental Protection (or Duly Authorized Designee), State Programmatic General Permit”, Section 10 of the Rivers and Harbor Act of 1899, and Section 404 of the Clean Water Act.

Coastal Zone Management

Issuance of this authorization also constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Zone Management Act.

Water Quality Certification

This permit also constitutes a water quality certification under Section 401 of the Clean Water Act, 33 U.S.C. 1341.

Other Authorizations

You are advised that authorizations or permits for this activity may be required by other federal, state, regional, or local entities including but not limited to local governments or municipalities. This permit does not relieve you from the requirements to obtain all other required permits or authorizations.

The activity described may be conducted only in accordance with the terms, conditions and attachments contained in this document. Issuance and granting of the permit and authorizations herein do not infer, nor guarantee, nor imply that future permits, authorizations, or modifications will be granted by the Department.

PERMIT CONDITIONS

The activities described must be conducted in accordance with:

- 1. The Specific Conditions**
- 2. The General Conditions**
- 3. The limits, conditions and locations of work shown in the attached drawings**
- 4. The term limits of this authorization**

You are advised to read and understand these conditions and drawings prior to beginning the authorized activities, and to ensure the work is conducted in conformance with all the terms, conditions, and drawings herein. If you are using a contractor, the contractor also should read and understand these conditions and drawings prior to beginning any activity. Failure to comply with these conditions, including any mitigation requirements, shall be grounds for the Department to revoke the permit and authorization and to take appropriate enforcement action.

Operation of the facility is not authorized except when determined to be in conformance with all applicable rules and this permit as described.

SPECIFIC CONDITIONS- PROJECT FORMS & ATTACHMENTS

(1) The attached project drawings (sheets 1 through 18); the “Florida EPPC's 2015 Invasive Plant Species List” which can be downloaded at

<http://www.fleppc.org/list/2015FLEPPCLIST-LARGEFORMAT-FINAL.pdf>; and DEP forms, 62-330.310(1); 62-330.310(2); 62-330.340(1); and 62-330.350(1), which may be downloaded at <http://www.dep.state.fl.us/water/wetlands/erp/forms.htm> become part of this permit. If the permittee does not have access to the Internet, please contact the Department at (561) 681-6600 to request the aforementioned forms and/or document(s).

SPECIFIC CONDITIONS - PRIOR TO CONSTRUCTION

(2) After selection of the contractor to perform the authorized activities and prior to the initiation of any work authorized by this permit, the permittee (or authorized agent) and the contractor shall attend a pre-construction conference with a representative of the Department. It shall be the responsibility of the permittee to contact the Department's Compliance Assistance Program, by email SED_Compliance@FloridaDEP.gov, or by phone (561) 681-6600, to schedule the pre-construction conference.

(3) If the attached permit drawings conflict with the specific conditions, then the specific conditions shall prevail.

(4) Prior to initiation of any work authorized by this permit, all wetlands, surface waters, and storm drains, outside the specific limits of construction authorized by this permit shall be protected from erosion, siltation, sedimentation, and/or scouring, including the placement of staked erosion control devices around the project area and staging area(s) that are located outside of any authorized impact areas. The limits of impact shall be clearly marked during construction in a way which is visible and obvious to anyone performing work on-site, including someone operating heavy equipment. Orange construction fence or tall flagged stakes along the barriers are possible methods.

(5) The permittee shall ensure that the permit conditions are explained to all construction personnel working on the project and for providing each contractor and subcontractor with a copy of this permit before the authorized work begins.

(6) Best management practices for erosion control shall be implemented prior to construction commencement and shall be maintained at all times during construction to prevent siltation and turbid discharges in excess of State water quality standards (>29 NTU's) above background, pursuant to Rule 62-302, F.A.C. Methods may include but are not limited to the use of staked filter cloth, sodding, seeding, staged construction and the installation of turbidity screens around the immediate project site.

(7) At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.

SPECIFIC CONDITIONS – CONSTRUCTION ACTIVITIES

(8) There shall be no storage or stockpiling of tools and materials (i.e., lumber, pilings, debris), along the shoreline adjacent to waters of the state. All excess lumber, scrap wood, trash, garbage, and any other type of debris shall be removed from wetlands/waters of the state within 14 days of completion of the work authorized in this permit. All construction equipment/tools and materials shall be transported to and from the site via upland roadways and barges and all equipment/tools and materials shall be stored on the uplands.

(9) The surrounding waterbody and marine resources located outside of the specific limits of construction, authorized by this permit, shall be protected from siltation, sedimentation, and/or scouring. Best management practices for turbidity and erosion control shall be implemented and maintained at all times during to prevent siltation and turbid discharges into the surface waters surrounding the project site.

(10) The surface water management system shall be constructed as depicted in the attached Exhibits and described herein.

(11) This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

SPECIFIC CONDITIONS – MONITORING/REPORTING REQUIREMENTS

(12) The operation and maintenance entity shall have a qualified inspector conduct and report inspections of the stormwater management system, and each component thereof.

(13) The inspector shall use either Form 62-330.311(3) "Inspection Checklists" or another format, as long as all required information is present

(14) The operation and maintenance entity shall maintain a record of each inspection, including the date of inspection, the name and contact information of the inspector, whether the system was functioning as designed and permitted, and make such record available upon request of the Agency.

(15) The minimum inspection frequency shall be adhered to in accordance with Table 12-1 of the Applicant's Handbook Volume I.

(16) Within 30 days of any failure of a stormwater management system or deviation from the permit, a report shall be submitted to the Agency using Form 62-330.311(1), "Operation and Maintenance Inspection Certification," describing the remedial actions taken to resolve the failure or deviation.

(17) Turbidity levels outside the construction area shall not exceed 29 NTU's above background levels. The following measures shall be taken immediately by the permittee whenever

turbidity levels within waters of the State surrounding the project site exceed 29 NTU's above background:

- a. Notify the Department at (561) 681-6600 at the time the violation is first detected.
- b. Immediately cease all work contributing to the water quality violation.
- c. Stabilize all exposed soils contributing to the violation. Modify the work procedures that were responsible for the violation, install more turbidity containment devices, and repair any non-functional turbidity containment devices.
- d. As required, perform turbidity monitoring per Specific Conditions below.
- e. Resume construction activities once turbidity levels outside turbidity curtains fall below background levels.

(18) Water turbidity levels shall be monitored if a turbidity plume is observed outside the limits of the required turbidity control devices. Samples shall be taken every four hours until turbidity subsides at one foot above the bottom, mid-depth, and one-foot below the surface at monitoring stations located as follows:

- a. Approximately 100 feet up-current of the work sites and clearly outside the influence of construction activities. (This shall serve as the natural background sample against which other turbidity readings shall be compared.)
- b. Directly outside the turbidity curtains surrounding the work sites and within the densest portion of any visible turbidity plume. (This sample shall serve as the compliance sample.)

(19) During construction activities, the permittee or permittee's contractor shall collect the following turbidity monitoring data at the frequency and water depths directed by the Specific Condition above:

- a. Date and time of sampling event
- b. Turbidity sampling results (background NTUs, compliance NTUs, and the difference between them)
- c. Description of data collection methods
- d. An aerial map indicating the sampling locations
- e. Depth of sample(s)
- f. Weather conditions at times of sampling
- g. Tidal stage and direction of flow

Data shall be collected in a turbidity log and shall include a statement by the individual responsible for implementation of the sampling program attesting to the authenticity, precision, limits of detection, and accuracy of the data. The turbidity log shall be scanned and sent on a weekly basis to the Department's Compliance Assistance Program by email at SED_Compliance@floridadep.gov. The subject line of the email shall include the project name, permit number, and the title "Turbidity Monitoring Reports."

SPECIFIC CONDITIONS- OPERATION & MAINTENANCE

(20) The city of Key Colony Beach shall be responsible for the operation and maintenance of the stormwater management system.

(21) The operation and maintenance entity shall maintain the stormwater management system to function as intended in perpetuity

(22) The operation and maintenance entity shall maintain a copy of the operation and maintenance plan (O&M Plan).

(23) The operation and maintenance entity shall maintain a copy of the operation and maintenance plan (O&M Plan).

(24) The operation and maintenance entity shall periodically review the O&M Plan, and at least at the time of inspections required by this permit, to identify any new or additional required operation and maintenance activities

(25) Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

(26) Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

(27) The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

SPECIFIC CONDITIONS – LISTED SPECIES

(28) This permit does not authorize the permittee to cause any adverse impact to or “take” of state listed species and other regulated species of fish and wildlife. Compliance with state laws regulating the take of fish and wildlife is the responsibility of the owner or applicant associated with this project. Please refer to Chapter 68A-27 of the Florida Administrative Code for definitions of “take” and a list of fish and wildlife species. If listed species are observed onsite, FWC staff are available to provide decision support information or assist in obtaining the appropriate FWC permits. Most marine endangered and threatened species are statutorily protected and a “take” permit cannot be issued. Requests for further information or review can be sent to FWCConservationPlanningServices@MyFWC.com.

GENERAL CONDITIONS FOR INDIVIDUAL PERMITS

The following general conditions are binding on all individual permits issued under chapter 62-330, F.A.C., except where the conditions are not applicable to the authorized activity, or where the conditions must be modified to accommodate project-specific conditions.

(1) All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized

may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

(2) A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.

(3) Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007), and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), which are both incorporated by reference in subparagraph 62-330.050(9)(b)5., F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.

(4) At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," [October 1, 2013], which is incorporated by reference in paragraph 62-330.350(1)(d), F.A.C., indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.

(5) Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.

(6) Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:

- a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex – "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or
 - b. For all other activities – "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
 - c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.
- (7) If the final operation and maintenance entity is a third party:
- a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as-built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance

documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.

- b. Within 30 days of submittal of the as-built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.

(8) The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

(9) This permit does not:

- a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
- b. Convey to the permittee or create in the permittee any interest in real property;
- c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
- d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.

(10) Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.

(11) The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.

(12) The permittee shall notify the Agency in writing:

- a. Immediately if any previously submitted information is discovered to be inaccurate; and
- b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.

(13) Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.

(14) If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.

(15) Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.

(16) The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.

(17) This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.

(18) A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with subsection 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

SPECIAL CONSENT CONDITIONS

(1) The applicant agrees to indemnify, defend and hold harmless the Board of Trustees and the State of Florida from all claims, actions, lawsuits and demands in any form arising out of the authorization to use sovereignty submerged lands or the applicant's use and construction of structures on sovereignty submerged lands. This duty to indemnify and hold harmless will include any and all liabilities that are associated with the structure or activity including special assessments or taxes that are now or in the future assessed against the structure or activity during the period of the authorization.

(2) Failure by the Board of Trustees to enforce any violation of a provision of the authorization or waiver by the Board of Trustees of any provision of the authorization will not invalidate the provision not enforced or waived, nor will the failure to enforce or a waiver prevent the Board of Trustees from enforcing the unenforced or waived provision in the event of a violation of that provision.

(3) Applicant binds itself and its successors and assigns to abide by the provisions and conditions set forth in the authorization. If the applicant or its successors or assigns fails or refuses to comply with the provisions and conditions of the authorization, the authorization may be terminated by the Board of Trustees after written notice to the applicant or its successors or assigns. Upon receipt of such notice, the applicant or its successors or assigns will have thirty (30) days in which to correct the violations. Failure to correct the violations within this period will result in the automatic revocation of this authorization.

(4) All costs incurred by the Board of Trustees in enforcing the terms and conditions of the authorization will be paid by the applicant. Any notice required by law will be made by certified mail at the address shown on page one of the authorization. The applicant will notify the Board of Trustees in writing of any change of address at least ten days before the change becomes effective.

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

NOTICE OF RIGHTS

This action is final and effective on the date filed with the Clerk of the Department unless a petition for an administrative hearing is timely filed under Sections 120.569 and 120.57, F.S., before the deadline for filing a petition. On the filing of a timely and sufficient petition, this action will not be final and effective until a subsequent order of the Department. Because the administrative hearing process is designed to formulate final agency action, the subsequent order may modify or take a different position than this action.

Petition for Administrative Hearing

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

- a. The name and address of each agency affected and each agency's file or identification number, if known;
- b. The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;
- c. A statement of when and how the petitioner received notice of the agency decision;
- d. A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- e. A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;

- f. A statement of the specific rules or statutes that the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
- g. A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

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

Time Period for Filing a Petition

In accordance with Rule 62-110.106(3), F.A.C., petitions for an administrative hearing by the applicant and persons entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than the applicant, and other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first. You cannot justifiably rely on the finality of this decision unless notice of this decision and the right of substantially affected persons to challenge this decision has been duly published or otherwise provided to all persons substantially affected by the decision. While you are not required to publish notice of this action, you may elect to do so pursuant Rule 62-110.106(10)(a).

The failure to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C. If you do not publish notice of this action, this waiver may not apply to persons who have not received a clear point of entry.

Extension of Time

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

Mediation

Mediation is not available in this proceeding.

FLAWAC Review

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

Judicial Review

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

Executed in Palm Beach County, Florida.

STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Norva Blandin, MSEM
Permitting Program Administrator
Southeast District

CERTIFICATE OF SERVICE

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

FDEP – Norva Blandin, John Tracey, Haley Kilgour, David Maldonado, Bailey Harding
Jason Shepler, Mittauer & Associates, Inc., jshepler@mittauer.com
Michael Tibble, Mittauer & Associates, Inc., mtibble@mittauer.com

FILING AND ACKNOWLEDGMENT

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

Vanessa Osborne

02-03-2025

Clerk

Date

Attachments:

Project Drawings and Design Specs., 18 pages

Florida EPPC's 2015 Invasive Plant Species List, 6 pages, can be downloaded at

<http://www.fleppc.org/list/2015FLEPPCLIST-LARGEFORMAT-FINAL.pdf>

As-built Certification and Request for Conversion to Operational Phase Form 62-330.310(1)*

Request for Transfer to the Perpetual Operation Entity Form 62-330.310(2)*

Request to Transfer Permit Form 62-330.340(1)*

Commencement Notice Form 62-330.350(1)*

*Can be downloaded at: <https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/forms-environmental-resource>

7TH AND SHELTER BAY DRIVE DRAINAGE IMPROVEMENTS

FOR

CITY OF KEY COLONY BEACH, FLORIDA

M & A Project No. 0604-20-1



JOEY RASPE

MAYOR

FREDDIE FOSTER

VICE-MAYOR

THOMAS HARDING

COMMISSIONER/SECRETARY/TREASURER

TOM DIFRANCISCO

COMMISSIONER

DOUG COLONELL

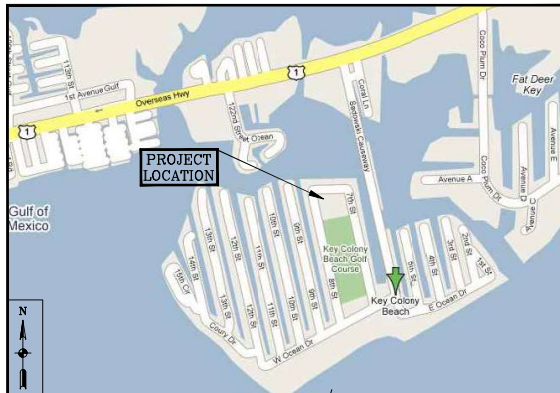
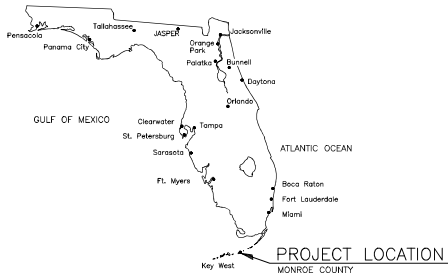
COMMISSIONER

SILVIA GRANSEE

CITY CLERK

D R A W I N G I N D E X

SHEET NO.	SHEET TITLE
1	COVER SHEET
2	GENERAL NOTES, ABBREVIATIONS & LEGEND
3	KEY MAP
4	PRE-DEVELOPMENT PLAN
5	POST-DEVELOPMENT PLAN
6	SITE DEMOLITION PLAN
7	8TH STREET DRAINAGE PLAN
8	SHELTER BAY DRIVE & 7TH STREET DRAINAGE PLAN
9	7TH STREET DRAINAGE PLAN
10	7TH STREET DRAINAGE PLAN
11	WET DETENTION POND - GRADING PLAN
12	WET DETENTION POND - GRADING PLAN
13	WET DETENTION POND - PLANTING PLAN
14	WET DETENTION POND - SECTIONS
15	TYPICAL DETAILS
16	TYPICAL DETAILS
17	SWPPP DETAILS
18	SWPPP DETAILS
19	SWPPP DETAILS



VICINITY MAP

Permit Number

44-0454572-001-EI

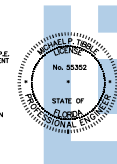
Southeast District



MITTAUER
& ASSOCIATES, INC.
CONSULTING ENGINEERS

580-1 WELLS ROAD, ORANGE PARK, FLORIDA 32067
TEL. (904) 278-0030 FAX. (904) 278-0840 FLORIDA LICENSE RY-6569

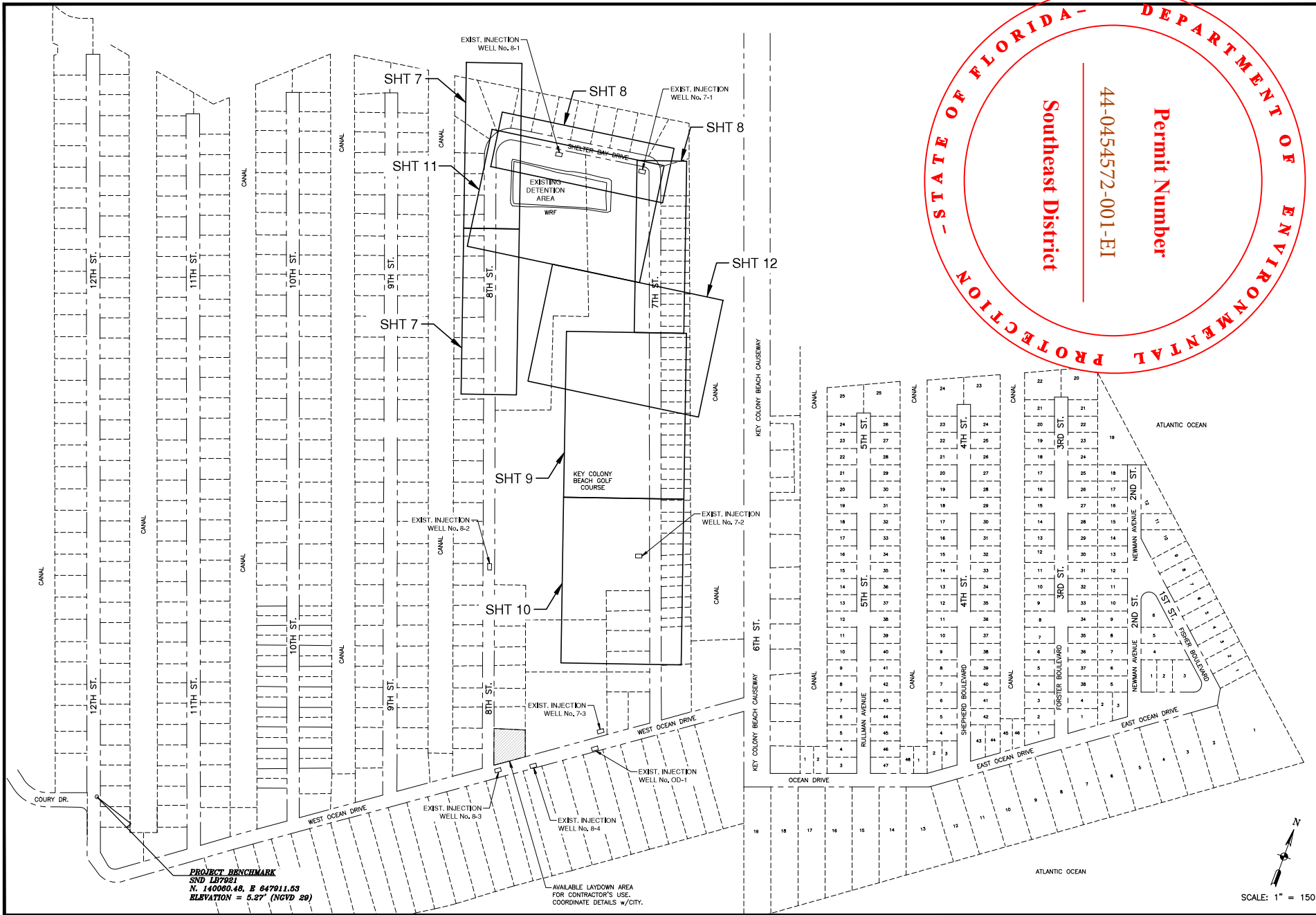
THIS ITEM HAS BEEN
DIGITALLY SIGNED BY
MICHAEL P. TIBBLE, P.E.
ON THE DATE ADJACENT
TO THE SEAL.



Digitally signed by
Michael Tibble
Location: Orange
Park, FL
Date: 2024.12.06
10:20:39-05'00'

PERMIT SET

12/06/24



DEPARTMENT OF ENVIRONMENTAL PROTECTION
 STATE OF FLORIDA
 Permit Number
 44-0454572-001-EI
 Southeast District

DESIGN - MPT		NO.		DATE		BY		REVISION DESCRIPTION	
DESIGN	MPT	NO.	DATE	BY	REVISION	DESCRIPTION			
DRAWN	MPT	NO.	DATE	BY	REVISION	DESCRIPTION			
CHECKED	MPT	NO.	DATE	BY	REVISION	DESCRIPTION			
MITTALDER & ASSOCIATES, INC. CONSULTING ENGINEERS, INC. 5801 N. W. 11TH AVENUE, SUITE 200 MIAMI, FLORIDA 33150 TEL: 305.441.1111 FAX: 305.441.1112									
CITY OF KEY COLONY BEACH 7th and Shelter Bay Drive Drainage Improvements Key Map Monroe County, Florida									
JOB NO. 0604-20-1 SHEET NO. 3									



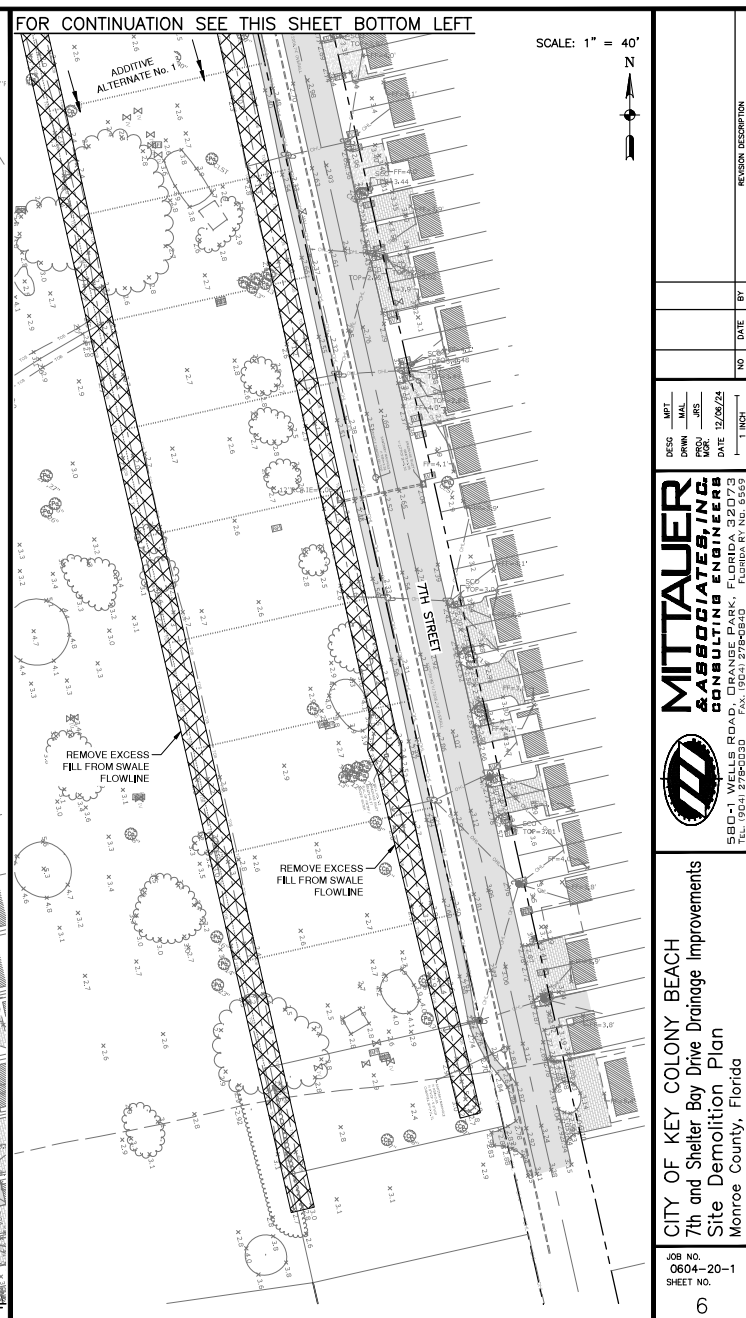
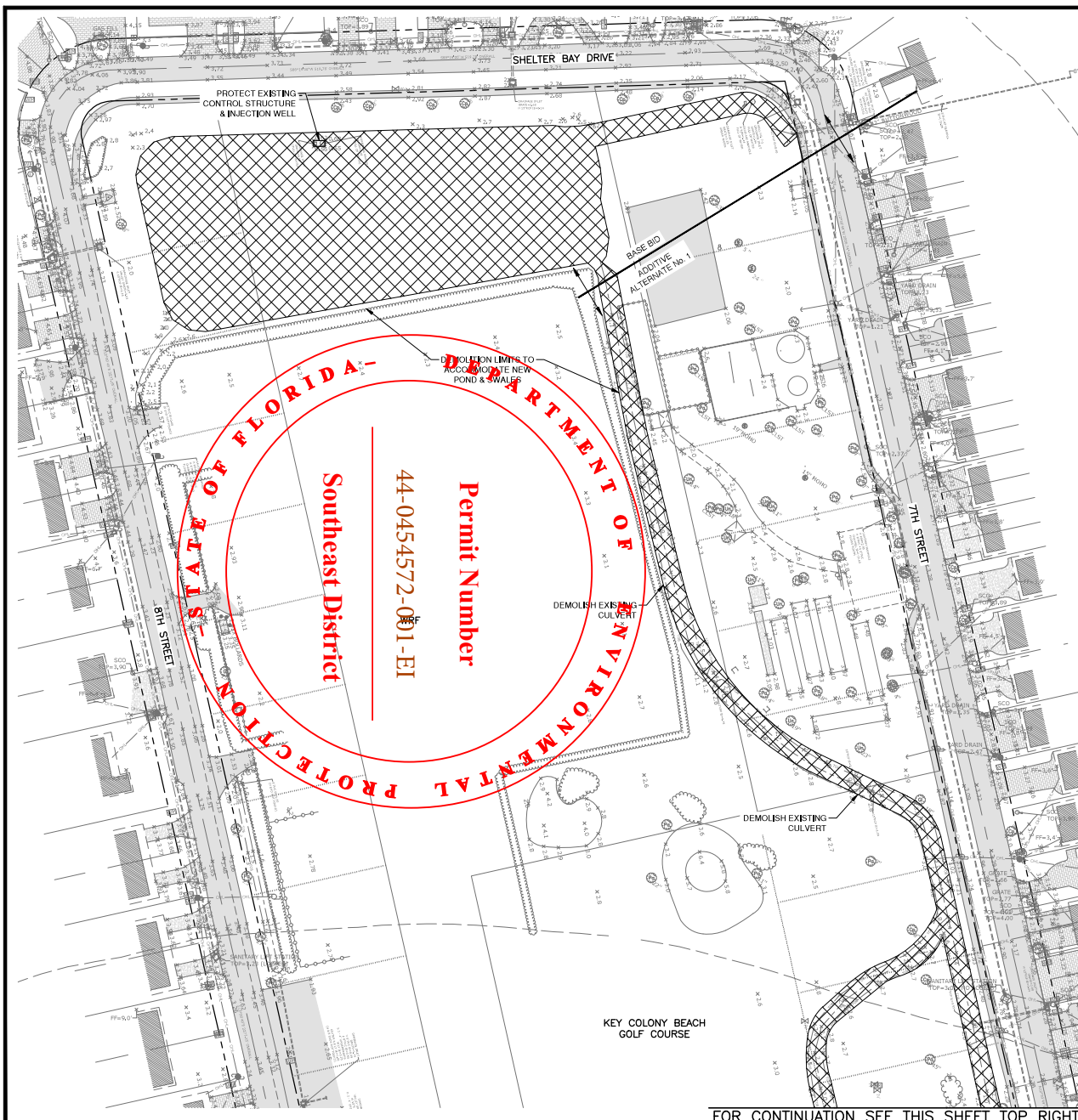
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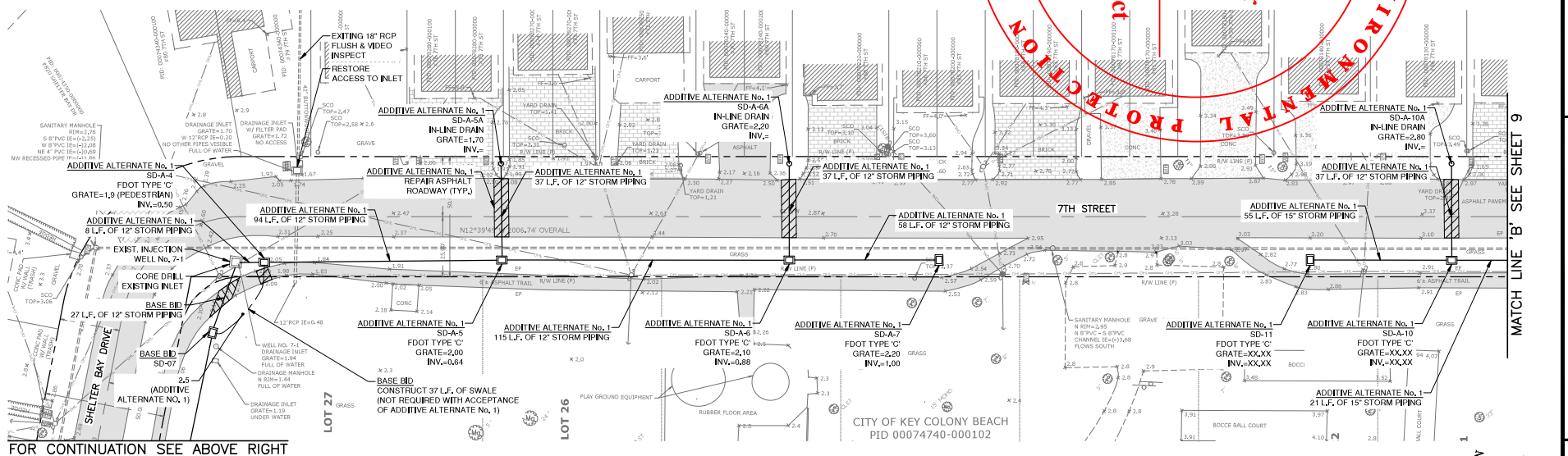
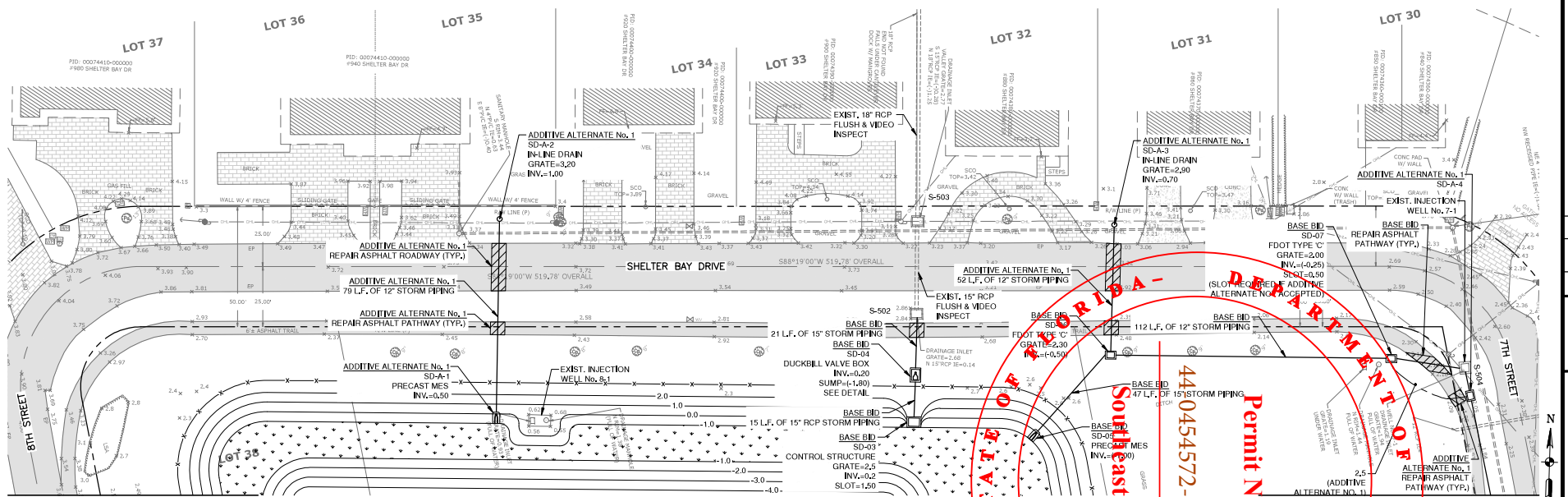
LEGEND
DRAINAGE FLOW PATTERN →

JOB NO. 0604-20-1		SHEET NO. 4		CITY OF KEY COLONY BEACH 7th and Shelter Bay Drive Drainage Improvements Pre-Development Plan Monroe County, Florida	
DESIGNER MITTALDER & ASSOCIATES, INC. 1580 N. W. 11TH STREET, SUITE 100 FORT LAUDERDALE, FL 33304		DATE 12/26/24		PROJECT NO. 0604-20-1	
DESIGNER MITTALDER & ASSOCIATES, INC.	DATE 12/26/24	PROJECT NO. 0604-20-1	PROJECT NAME 7th and Shelter Bay Drive Drainage Improvements	PROJECT LOCATION Monroe County, Florida	PROJECT DESCRIPTION Pre-Development Plan



MITTALDER & ASSOCIATES, INC. CONSULTING ENGINEERS, INC. 5601 N. W. 11th Street, Suite 100, Fort Lauderdale, FL 33304 TEL: 954.275.0000 FAX: 954.275.0000		DESIGNED BY: [Signature] DRAWN BY: [Signature] CHECKED BY: [Signature] DATE: 12/26/24 SCALE: 1" = 120' SHEET NO.: 05
CITY OF KEY COLONY BEACH 7th and Shelter Bay Drive Drainage Improvements Post-Development Plan Monroe County, Florida		JOB NO.: 0604-20-1 SHEET NO.: 05



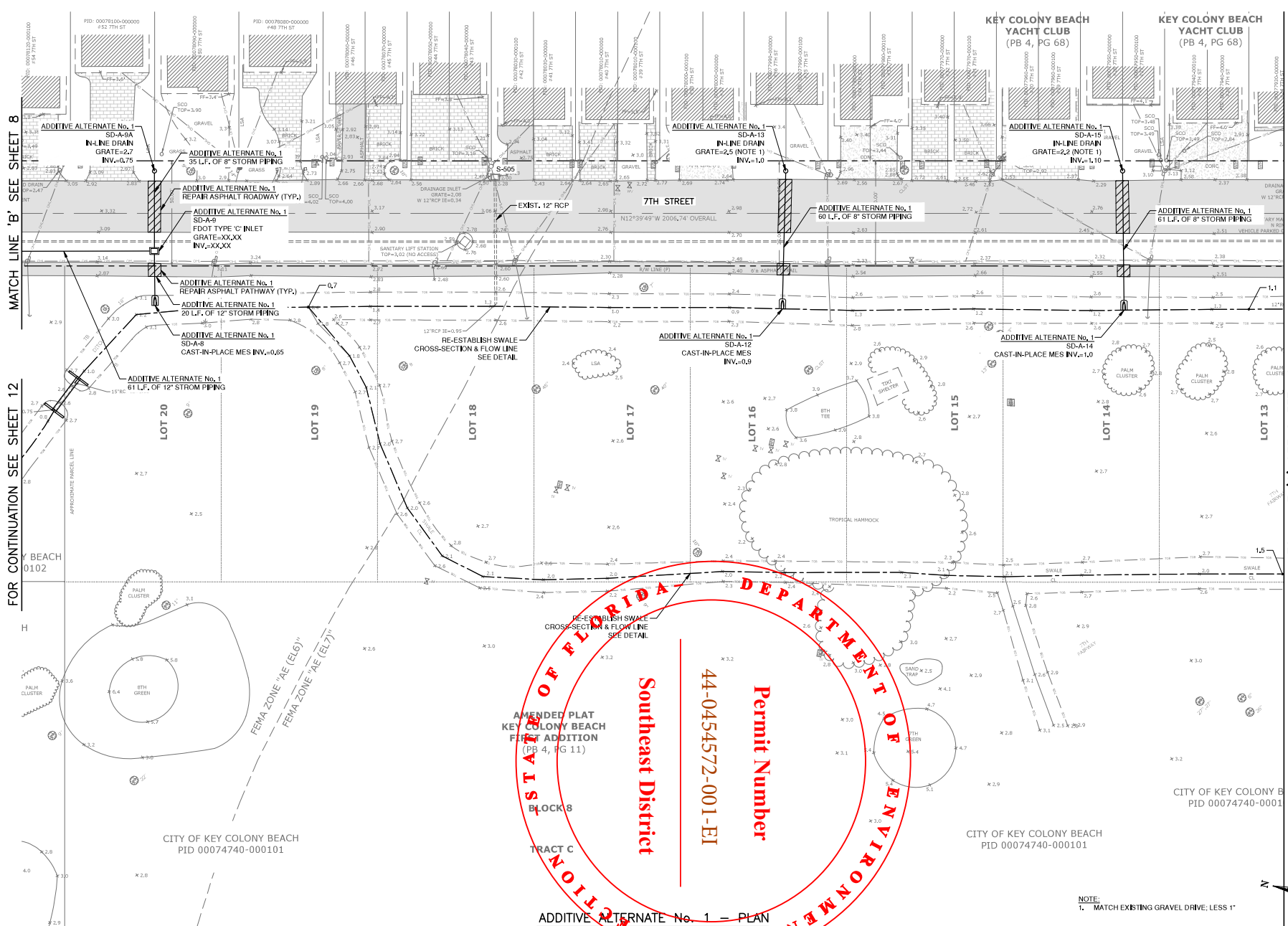


NO.	DATE	BY	DESCRIPTION
1	02/26/20	MS	ISSUED FOR PERMIT
2	02/26/20	MS	REVISION
3	02/26/20	MS	REVISION
4	02/26/20	MS	REVISION
5	02/26/20	MS	REVISION
6	02/26/20	MS	REVISION
7	02/26/20	MS	REVISION
8	02/26/20	MS	REVISION
9	02/26/20	MS	REVISION
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11	02/26/20	MS	REVISION
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14	02/26/20	MS	REVISION
15	02/26/20	MS	REVISION
16	02/26/20	MS	REVISION
17	02/26/20	MS	REVISION
18	02/26/20	MS	REVISION
19	02/26/20	MS	REVISION
20	02/26/20	MS	REVISION

MITTALDER & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 5801 W. WILSON ROAD, SUITE 100, FORT MYERS, FLORIDA 33901
 TEL: 888.333.3333 FAX: 888.333.3333
 WWW.MITTALDER.COM

CITY OF KEY COLONY BEACH
 7th and Shelter Bay Drive Drainage Improvements
 Shelter Bay Drive & 7th Street Drainage Plan
 Monroe County, Florida

JOB NO. 0604-20-1
 SHEET NO. 8



MATCH LINE 'B' SEE SHEET 8

FOR CONTINUATION SEE SHEET 12

101 MATCH LINE 'C' SEE SHEET 13

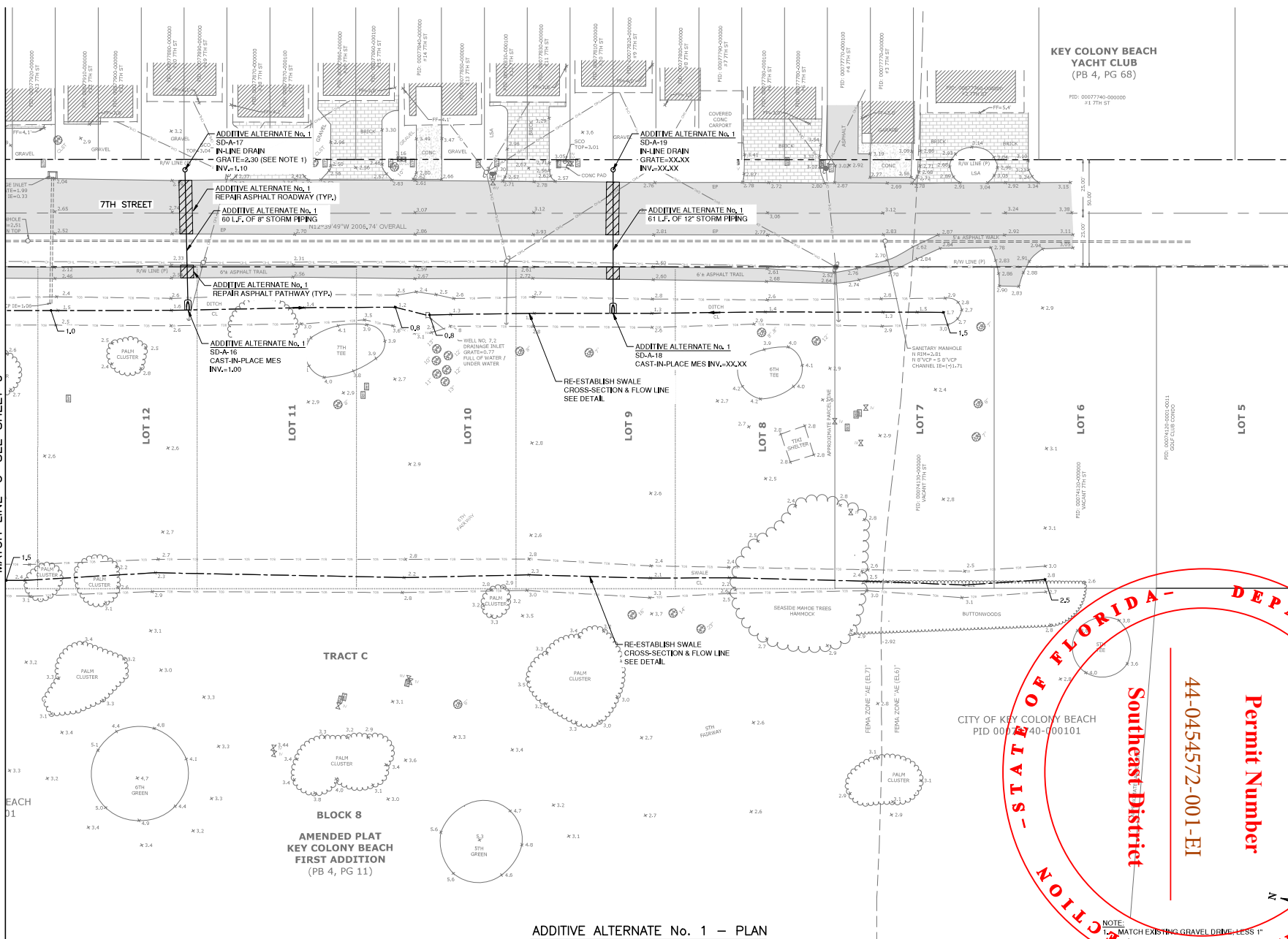
PERMIT INFORMATION
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 Permit Number
 44-0454572-001-EI
 Southeast District
 AMENDED PLAT
 KEY COLONY BEACH
 FIRST ADDITION
 (PB 4, PG 11)
 BLOCK 8
 TRACT C
 ADDITIVE ALTERNATE No. 1 - PLAN

NOTE:
1. MATCH EXISTING GRAVEL DRIVE; LESS 1"

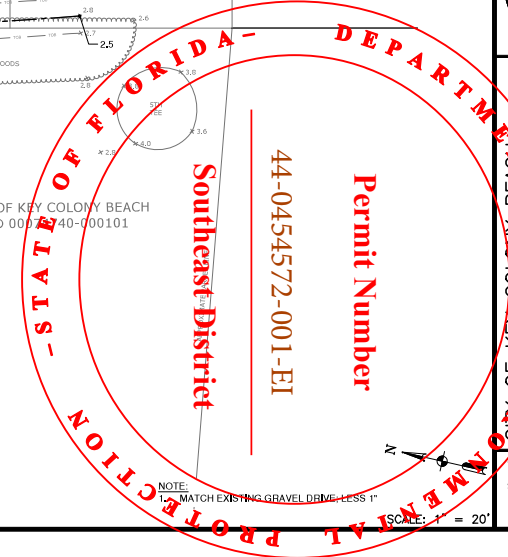
SCALE: 1" = 20'

 MITTALDER & ASSOCIATES, INC. CONSULTING ENGINEERS, INC. 5801 N. W. 10TH AVENUE, SUITE 200 MIAMI, FLORIDA 33150 TEL: 305-441-2222 FAX: 305-441-2222		DESIGNED BY: DRAWN BY: CHECKED BY: DATE: 12/29/24 SCALE: 1" = 20'
CITY OF KEY COLONY BEACH 7th and Shelter Bay Drive Drainage Improvements 7th Street Drainage Plan Monroe County, Florida	JOB NO.: 0604-20-1 SHEET NO.: 9	REVISION DESCRIPTION NO. DATE BY

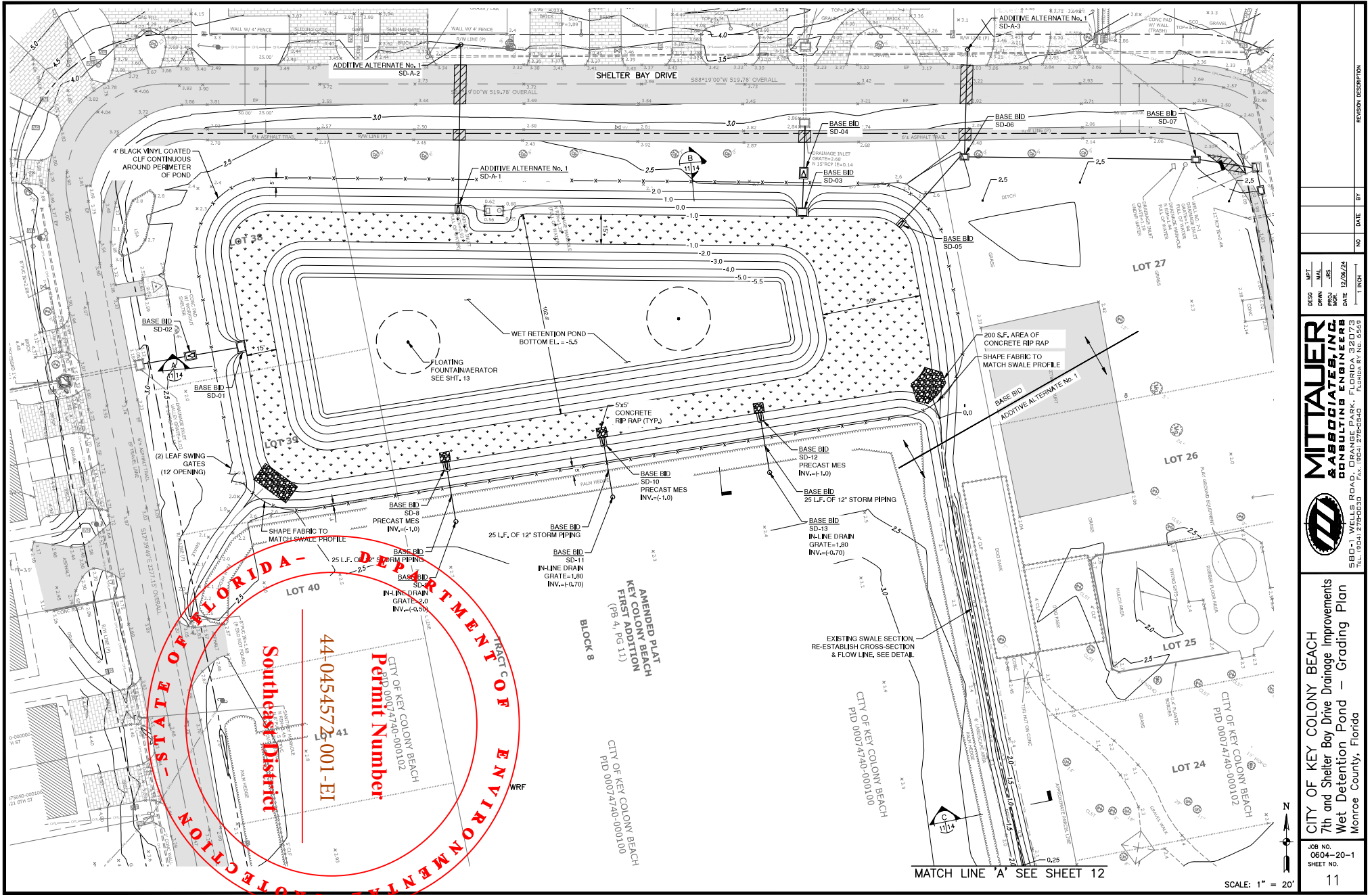
MATCH LINE 'C', SEE SHEET 9



ADDITIVE ALTERNATE No. 1 - PLAN



DESIGN	DATE	BY	NO.	DATE	BY	REVISION DESCRIPTION
MITTALDER & ASSOCIATES, INC.	12/29/24					
CONTRACT NO. 0604-20-1						
SHEET NO. 10						



FLORIDA -
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Southeast District
44-0454572-001-EI
Permit Number
CITY OF KEY COLONY BEACH
PID 00074740-000102

DESIGN	DRAWN	CHECKED	DATE	NO.	DATE	BY	1 INCH
MITTALDER & ASSOCIATES, INC.			12/26/24				
CITY OF KEY COLONY BEACH 7th and Shelter Bay Drive Drainage Improvements Wet Detention Pond - Grading Plan Monroe County, Florida							
JOB NO. 0604-20-1 SHEET NO. 11							

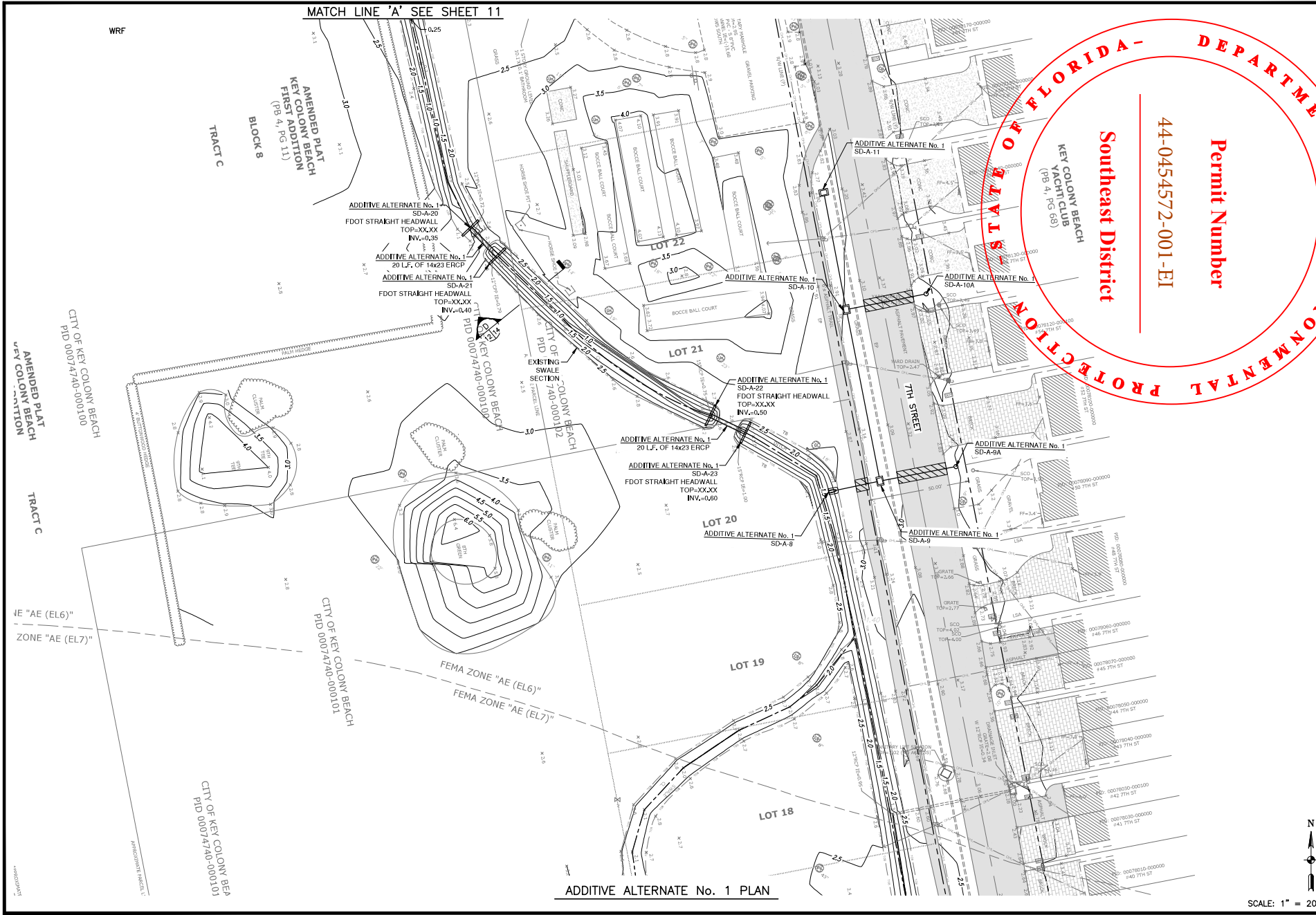
MITTALDER & ASSOCIATES, INC.
5601 W. STATE ROAD 11, SUITE 100, FORT MYERS, FLORIDA 33907
TEL: 941.272.6600 FAX: 941.272.6601

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Permit Number
44-0454572-001-EI

Southeast District

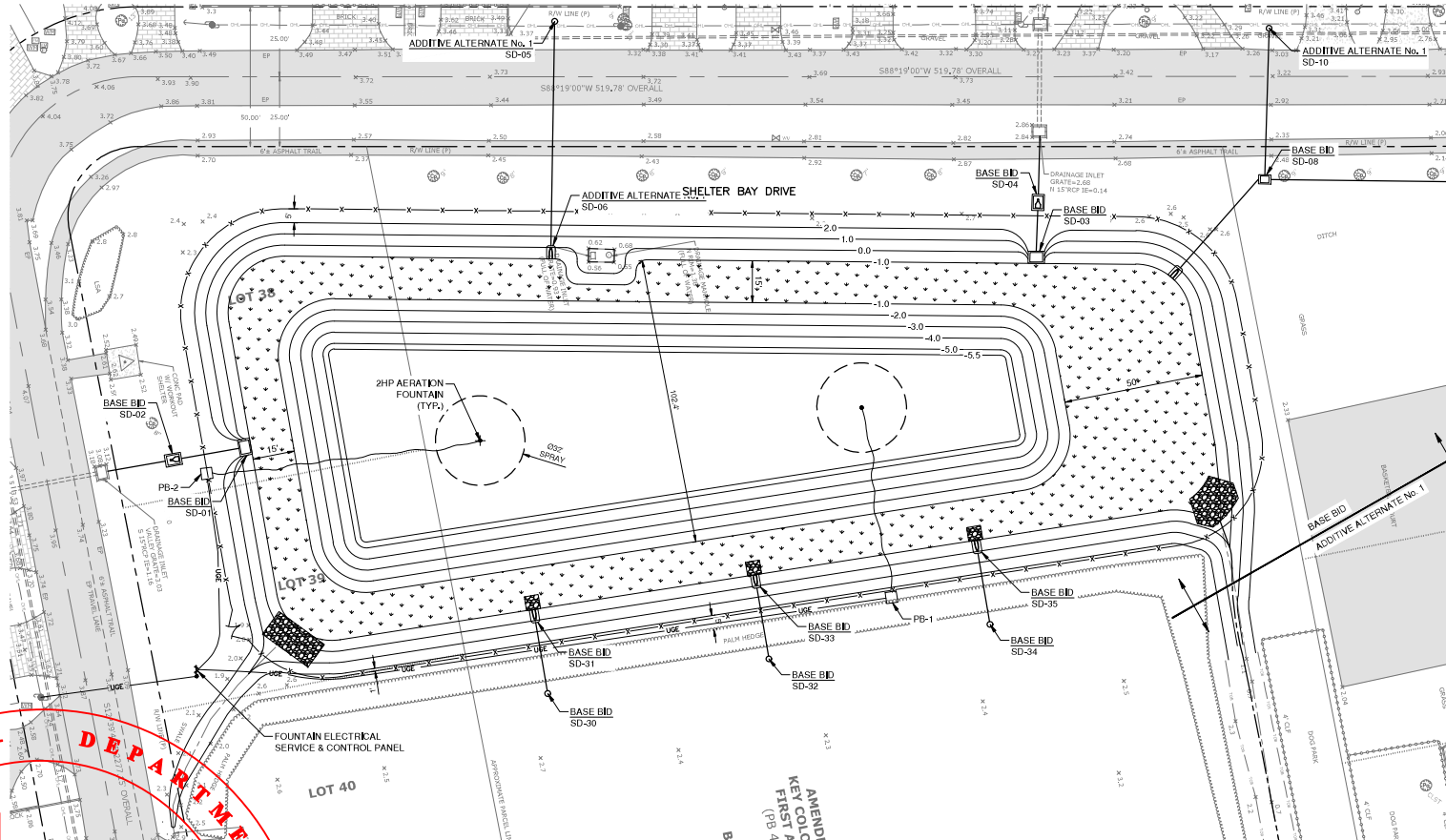
KEY COLONY BEACH
YACHT CLUB
(PB 4, PG 68)



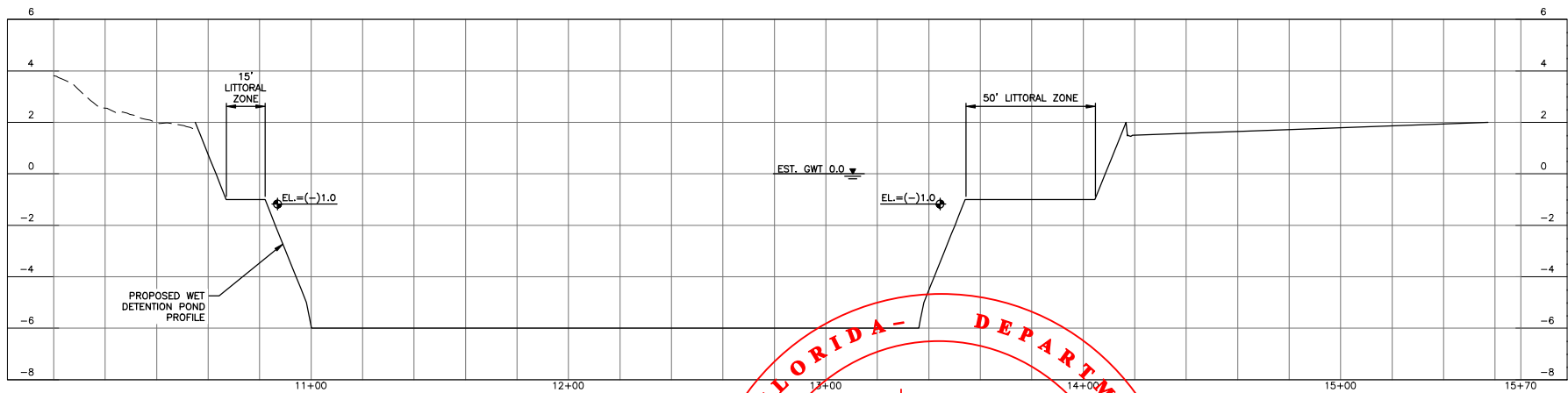
ADDITIVE ALTERNATE No. 1 PLAN

SCALE: 1" = 20'

DEPARTMENT OF ENVIRONMENTAL PROTECTION
 STATE OF FLORIDA
 Permit Number
 44-0454572-001-EI
 Southeast District



PLANT LIST										
QTY	PCT*	ABV	BOTANICAL NAME	COMMON NAME	CAL IN/CONT	HT/SPD	SPACING/OC	CANOPY	ORIGIN	INCHES/AREA SF
TREES										
		IC	Ilex cassine	Dahoon Holly	3	20'-30' / 8-12'	As shown	Yes	Native	
										TOTALS
SHRUBS AND GRASSES										
		GCS	Eleocharis cellulosa	Gulf Coast Spikerush	3 gal	2'-3' / 2'-3'	4' OC		Native	
		DF	Tripsacum floridanum	Dwarf Foxglove	3 gal	2'-3' / 2'-3'	4' OC		Native	
		SC	Sporobolus bakeri	Sand Cord Grass	3 gal	2'-3' / 2'-3'	4' OC		Native	
		PM	Muhlenbergia capillaris	Pink Muhly Grass	3 gal	2'-3' / 2'-3'	4' OC		Native	
		MH	Sporobolus pumilus	Marsh Hay Cord Grass	3 gal	2'-3' / 2'-3'	4' OC		Native	
		SL	Crinum asiaticum	Swamp Lily	3 gal	2'-3' / 2'-3'	4' OC		Native	
		SO	Borrchia frutescens	Sea Ox-Eye Daisy	3 gal	2'-3' / 2'-3'	4' OC		Native	
		SB	Fourwing saltbush	Salt Bush	3 gal	2'-3' / 2'-3'	4' OC		Native	
		SP	Sesuvium portulacastrum	Sea Purslane	3 gal	2'-3' / 2'-3'	4' OC		Native	
		DI	Iris hexagona	Dixie Iris	3 gal	2'-3' / 2'-3'	4' OC		Native	
		S	Salicornia europaea	Samphire	3 gal	2'-3' / 2'-3'	4' OC		Native	
		SOE	Borrchia frutescens	Sea Ox-Eye Daisy	3 gal	2'-3' / 2'-3'	4' OC		Native	
SOD										
		SOD	Paspalum notatum	Bahia grass		Certified solid sod	SF		Non-native	
										TOTALS

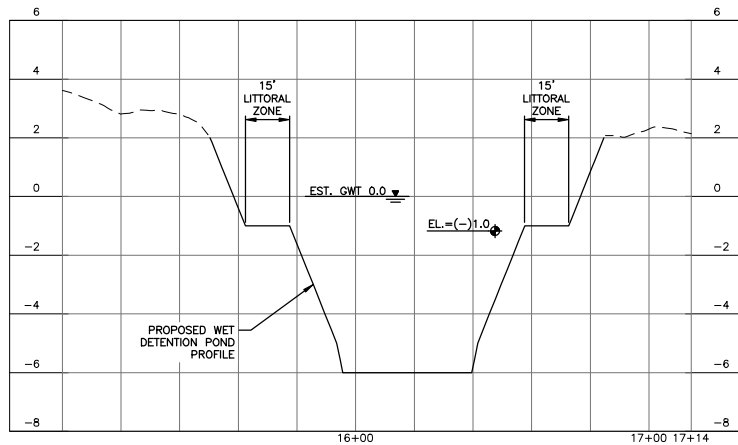


A
11/14

POND PROFILE
SCALE: 1"=20' H
1"=2' V

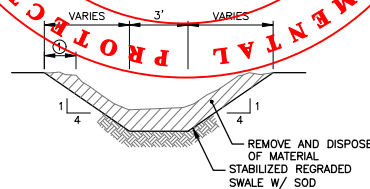
Permit Number
44-0454572-001-EI

Southeast District



B
11/14

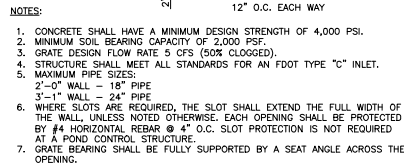
POND PROFILE
SCALE: 1"=20' H
1"=2' V



NOTES:
1. IF CONSTRUCTION OF NEW SIDE SLOPES.

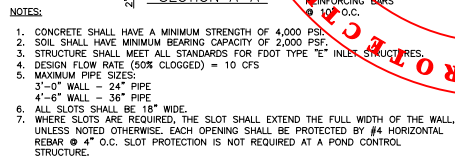
C
11/14

SWALE SECTION
SCALE: NTS



Technical drawing of a manhole structure showing front and top views.

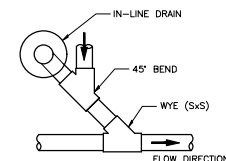
FRONT VIEW: Shows a trapezoidal structure with a circular opening. Dimensions include a top width of 3'-6", a bottom width of 6", and a height of 1 1/2'. The top view shows a circular structure with a central opening. A note indicates "CLEAN, WELL COMPACTED SOIL".



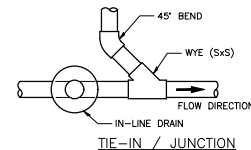
NOTES:

1. ENDWALLS MAY BE CAST IN PLACE OR PRECAST CONCRETE. REINFORCING STEEL SHALL BE GRADE 60. ADDITIONAL STEEL FOR THE HANDLING OF PRECAST UNITS SHALL BE DETERMINED BY THE CONTRACTOR OR THE SUPPLIER.
2. ALL EXPOSED CORNERS AND EDGES OF CONCRETE ARE TO BE CHAMFERED 3/4".
3. CONCRETE SHALL MEET THE REQUIREMENTS OF ASTM C-478 FOR PRECAST UNITS AND HAVE A MINIMUM STRENGTH OF 4,000 PSI REGARDLESS OF CONSTRUCTION TYPE.

DIA.	OPENING AREA	DIMENSIONS											
		NUMBER OF PIPES											
		1	2	3	4	5	6	7	8	9	10	12	15
15"	1.23	2.46	3.69	4.92	1"-11"	1"-2"	4"-0"	1"-10"	1"-2"	0"-6"	2"-7"	2"-2"	2"-2"
18"	1.77	3.54	5.31	7.08	2"-2"	1"-3"	4"-6"	1"-11"	1"-5"	1"-0"	2"-10"	2"-2"	2"-2"
24"	3.14	6.28	9.42	12.56	2"-8"	1"-4"	5"-6"	2"-0"	1"-4"	2"-0"	3"-5"	3"-5"	3"-5"
36"	7.07	14.14	21.21	28.28	3"-8"	1"-6"	7"-6"	2"-4"	1"-8"	4"-0"	5"-1"	5"-1"	5"-1"
42"	9.62	19.24	28.86	38.48	4"-2"	1"-10"	8"-6"	2"-6"	2"-0"	6"-0"	6"-0"	6"-0"	6"-0"



TIE-IN / JUNCTION



TIE-IN / JUNCTION

Technical drawing showing a cross-section of a 12" riser assembly. The drawing includes labels for materials and dimensions:

- MATCH SLOPE OF SURROUNDING AREA
- SOD OR MULCH SEE LANDSCAPE PLANS
- 12" MIN. RISER W/ DUCTILE IRON, 18" DIA. LOCKABLE PEDESTRIAN GRATE
- SOD OR MULCH SEE LANDSCAPE PLANS
- 6" THICK CONCRETE COLLAR
- 12" MIN.
- TEE
- SEE PLAN FOR DRAIN SIZE
- 12" LAYER NO. 57 STONE
- MATCH SLOPE OF SURROUNDING AREA
- SOD OR MULCH SEE LANDSCAPE PLANS
- DUCTILE IRON, 18" DIA. LOCKABLE PEDESTRIAN GRATE
- SOD OR MULCH SEE LANDSCAPE PLANS
- 6" THICK CONCRETE COLLAR
- 12" MIN.
- STARTING RUN RISER SHALL MATCH MAIN LINE PIPE DIAMETER BUT BE 8" MIN.
- 90° ELBOW
- 12" LAYER NO. 57 STONE

REVISION	DESCRIPTION

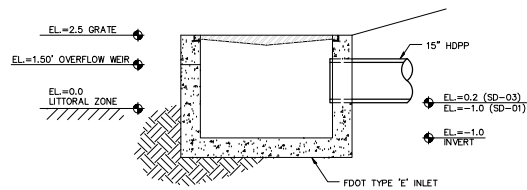
DESIG	MPT				
DRWN	S.J.L.				
PROJ	JRS				
DATE	12/30/24				
1 INCH					

**MITTAUER
& ASSOCIATES, INC.**
CONSULTING ENGINEERS

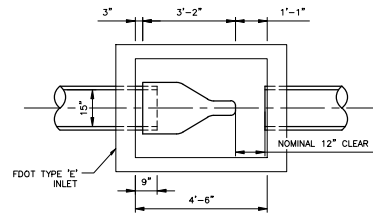
580-1 WELLS ROAD, ORANGE PARK, FLORIDA 32073
TEL. (904) 279-0030 FAX. (904) 279-0840

CITY OF KEY COLONY BEACH
7th and Shelter Bay Drive Drainage Improvements
Typical Details
Monroe County, Florida

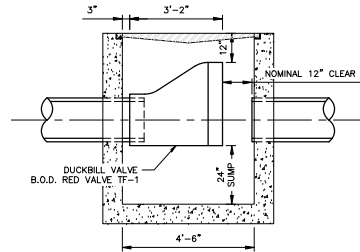
JOB NO.
0604-20-1
SHEET NO.
15



A POND OVERFLOW STRUCTURE DETAIL
1/2" = 1'-0"

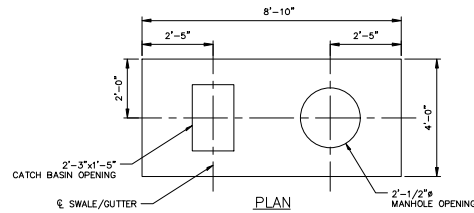


PLAN

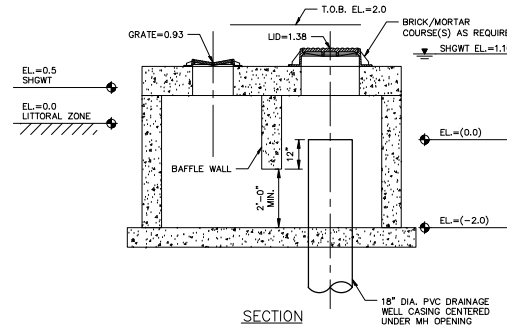


SECTION

B DUCK BILL VALVE BOX DETAIL
1/2" = 1'-0"

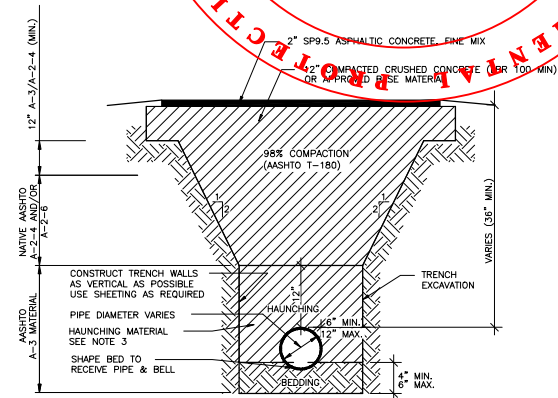


PLAN



SECTION

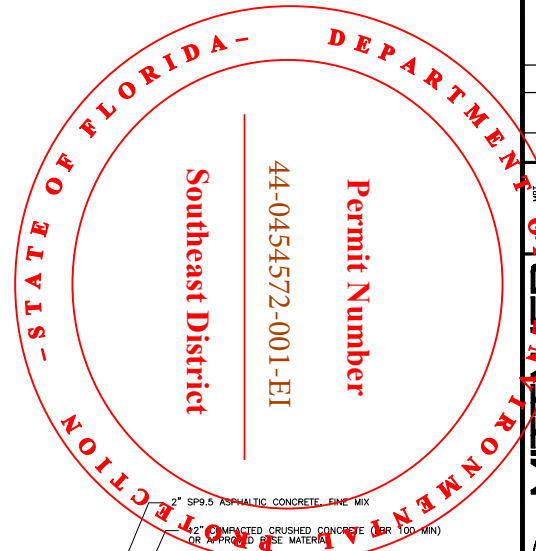
D EXISTING POND CONTROL STRUCTURE DETAIL
1/2" = 1'-0"



NOTES:

1. DEWATERING SHALL CONTINUE UNTIL BACKFILL IS COMPACTED AT LEAST 2 FEET ABOVE WATER TABLE.
2. PIPE INSTALLATION SHALL MEET THE REQUIREMENTS OF AWWA C-600 TYPE 4 LAYING CONDITION AND AS MODIFIED BY THIS DETAIL.
3. COMPACT HAUNCHING MATERIAL IN 12\"/>

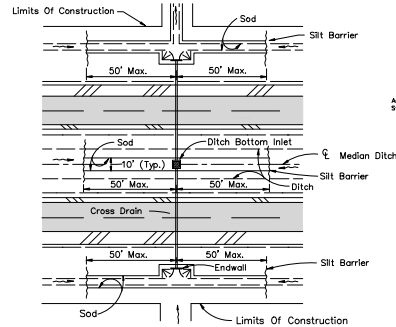
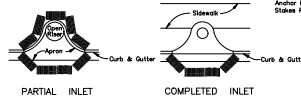
E TYPICAL TRENCH DETAIL
NTS



DESIGNED BY	CHECKED BY	DATE	NO.	BY	DATE	NO.	DESCRIPTION
MITCHELL VALERIO	MITCHELL VALERIO	12/26/20	0604-20-1				
MITCHELL VALERIO & ASSOCIATES, INC. CONSULTING ENGINEERS 6600 S. W. 11th Ave., Suite 100, Fort Lauderdale, FL 33304 TEL: 954.278.8888 FAX: 954.278.8888							
CITY OF KEY COLONY BEACH 7th and Shelter Bay Drive Drainage Improvements Typical Details Monroe County, Florida							
JOB NO.	0604-20-1						
SHEET NO.	16						

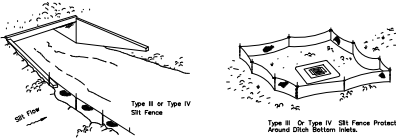
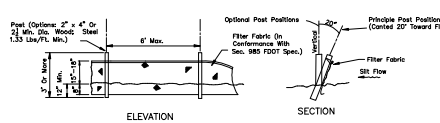
EROSION AND SEDIMENT CONTROL NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REMOVED ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.
- THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
- ADDITIONAL PROTECTION - ON-SITE PROTECTION IN ADDITION TO THAT SHOWN ON THESE PLANS MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.
- CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
- WIRE MESH SHALL BE LAID OVER EACH DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPANIBLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.
- FOOT NO. 1 CORROS AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED IN D-903. THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.
- IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.
- BALES SHALL BE EITHER WIRE-ROD OR STYNG-TIED WITH THE BINDINGS ORIENTED AROUND THE SIDES RATHER THAN OVER AND UNDER THE BALES.
- BALES SHALL BE PLACED LENGTHWISE IN A SINGLE ROW SURROUNDING THE INLET, WITH THE ENDS OF ADJACENT BALES PRESSED TOGETHER.
- THE FILTER BARRIER SHALL BE EXTENDED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 18 INCHES. AFTER THE BALES ARE STAKED, THE EXCAVATED SOIL SHALL BE BACKFILLED AND COMPACTED AGAINST THE FILTER BARRIER.
- EACH BALE SHALL BE SECURELY ANCHORED AND HELD IN PLACE BY AT LEAST TWO STAKES OR REBARS DRIVEN THROUGH THE BALE.
- LOOSE STRAW SHOULD BE WEDGED BETWEEN BALES TO PREVENT WATER FROM ENTERING BETWEEN BALES.
- STRAW BALE BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
- CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS AND UNDERCUTTING BENEATH BALES.
- NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
- ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDS.
- SILT FENCES AND FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- SHOULD THE FABRIC ON A SILT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USEFUL LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
- SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
- ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDS.
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
- SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
- FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO STATE OF FLORIDA EROSION & SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, JULY 2013.
- EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
- ALL DISTURBED AREAS SHALL BE GRASSSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
- SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO INSURE WATER QUALITY STANDARDS ARE MAINTAINED.
- ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.
- DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
- ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES, AND GRASSING.
- ALL DEWATERING, EROSION, AND SEDIMENT CONTROL TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE BEEN STABILIZED.
- THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
- THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL GOVERNING AGENCY INQUIRIES, RELATIVE TO COMPLIANCE OF THIS PROJECT FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.



HAY BALE LOCATION

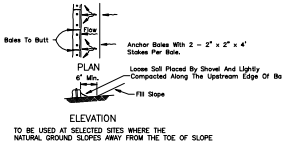
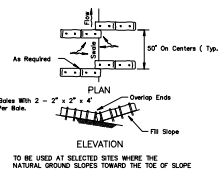
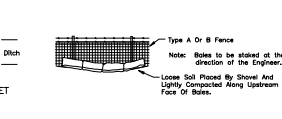
(D-901)
N.T.S.



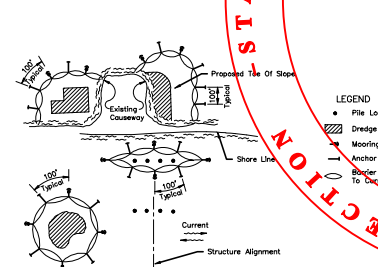
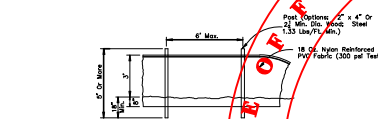
Do not display in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used as upland locations and turbidity barriers used in permanent bodies of water.

SILT FENCE TYPE III & IV

(D-908) SEE NOTE 17-20
N.T.S.



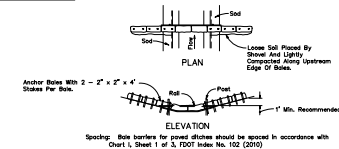
TO BE USED AT SELECTED SITES WHERE THE NATURAL GROUND SLOPES AWAY FROM THE TOE OF SLOPE



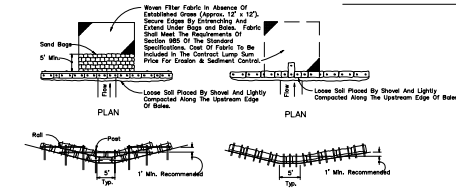
- NOTES:
- Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
 - Number and spacing of anchors dependent on current velocities.
 - Deployment of barrier around pile locations may vary to accommodate construction operations.
 - Navigation may require segmenting barrier during construction operations.
 - For additional information see Section 104 of the FDOT Standard Specifications.

TURBIDITY BARRIERS

(D-907)
N.T.S.



Spacing: Turbidity barriers for gravel slopes should be spaced in accordance with Chart 1, Sheet 1 of 3, FDOT Index No. 102 (2010)



Anchor Lower Bales With 2 - 2' x 2' x 4' Stakes Per Bale. Anchor Top Bales To Lower Bales With 2 - 2' x 2' x 4' Stakes Per Bale. Anchor Bales With 2 - 2' x 2' x 4' Stakes Per Bale.

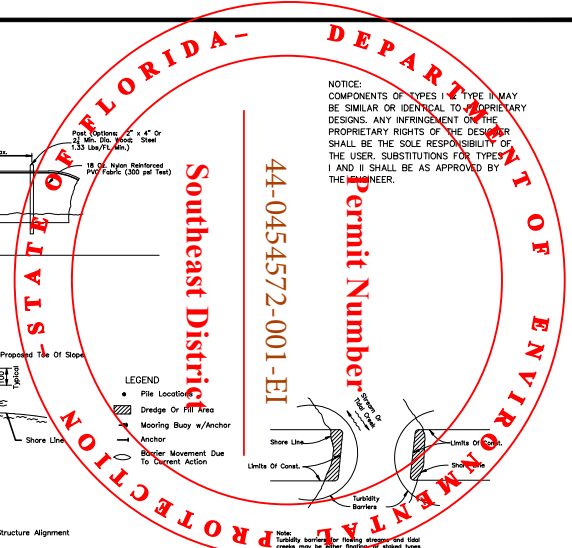
Application and Spacing: The use of Type I & II bales barriers should be limited to the conditions outlined in Chart 1, Sheet 1 of 3, FDOT Index No. 102 (2010)

TYPE II
BARRIER FOR UNPAVED TYPES

HAY BALE BARRIERS TYPE I & II

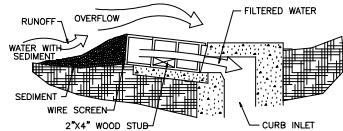
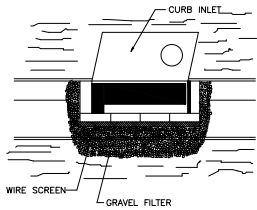
(D-912) SEE NOTE 8-16
N.T.S.

NOTE:
WHERE FDOT SPECS AND INDEX ARE REFERENCED, PLEASE REFER TO FDOT ROADWAY & TRAFFIC DESIGN STANDARDS, AND FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.



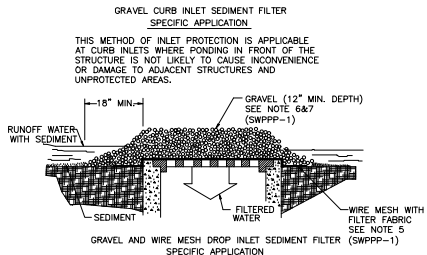
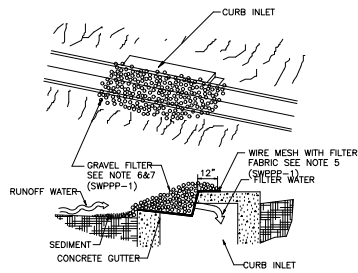
CITY OF KEY COLONY BEACH
7th and Shelter Bay Drive Drainage Improvements
SWPPP Details
Monroe County, Florida

JOB NO.
0604-20-1
SHEET NO.

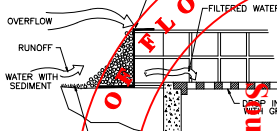
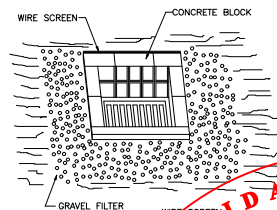


BLOCK & GRAVEL CURB INLET SEDIMENT FILTER
(D-902)
N.T.S.

BLOCK & GRAVEL DROP INLET SEDIMENT FILTER
(D-904)
N.T.S.

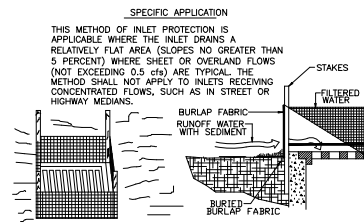
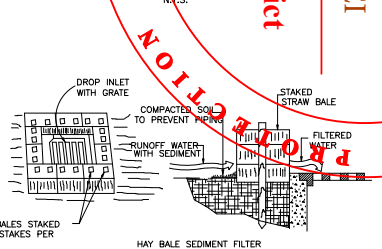


GRAVEL INLET SEDIMENT TRAP
(D-903)
N.T.S.

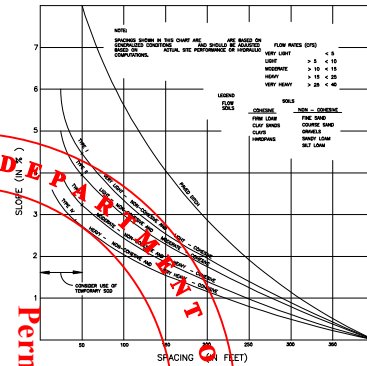


BLOCK & GRAVEL CURB INLET SEDIMENT FILTER
(D-902)
N.T.S.

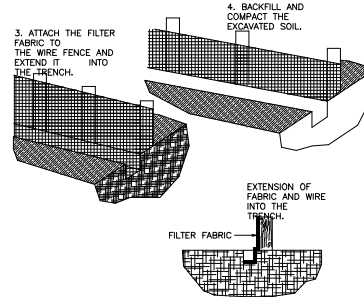
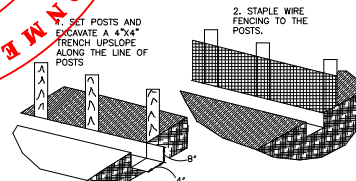
BLOCK & GRAVEL DROP INLET SEDIMENT FILTER
(D-904)
N.T.S.



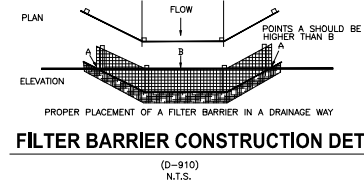
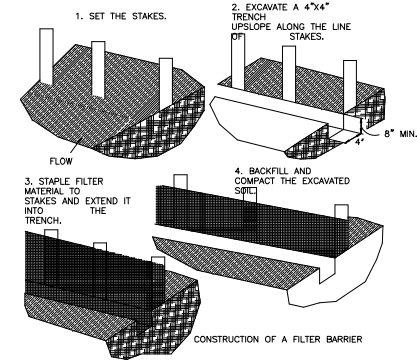
DROP INLET SEDIMENT TRAP
(D-905)
N.T.S.



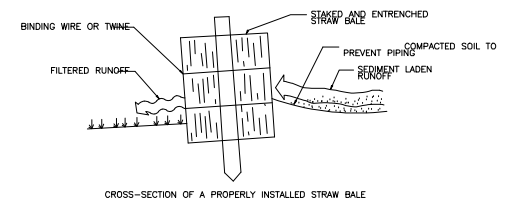
SPACING RECOMMENDATION FOR SILT FENCES & HAY BALES
(D-906)
N.T.S.



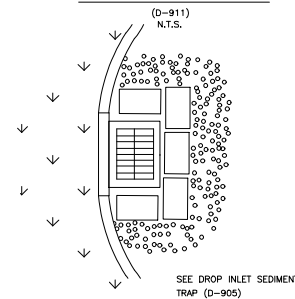
CONSTRUCTION DETAILS FOR SILT FENCES
(D-909)
N.T.S.



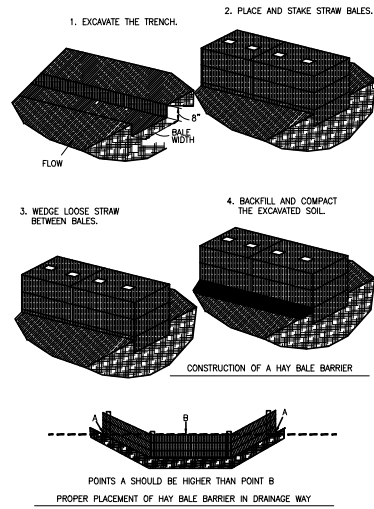
FILTER BARRIER CONSTRUCTION DETAIL
(D-910)
N.T.S.



CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

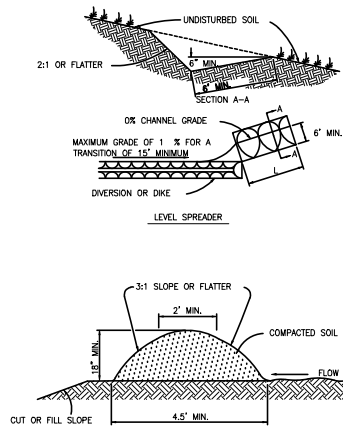


ERECT SEDIMENT BARRIERS AT CATCH BASINS
(TYPICAL)
N.T.S.



HAY BALE BARRIER CONSTRUCTION DETAILS

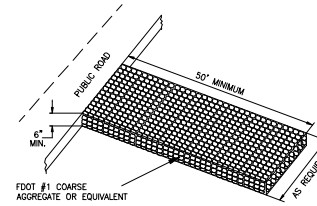
(D-913)
N.T.S.



TEMPORARY DIVERSION DIKE

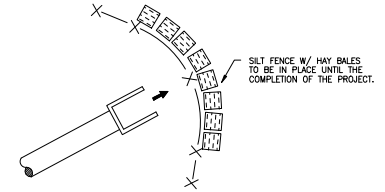
DIVERSION DIKE

(D-914)
N.T.S.



STABILIZED CONSTRUCTION ENTRANCE

N.T.S.



OUTLET PROTECTION

N.T.S.



DESIGN - MPT
DRAWN - SEL
CHECKED - JES
DATE 12/26/24
SCALE 1"=100'

MITTALDER & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 1000
TALLAHASSEE, FLORIDA 32304-1000
TEL 904-277-0000 FAX 904-277-0000

CITY OF KEY COLONY BEACH
7th and Shelter Bay Drive Drainage Improvements
SWPPP Details
Monroe County, Florida

JOB NO.
0604-20-1
SHEET NO.

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 TYPES OF SUBMITTALS:

- A. Construction Schedules: The Contractor shall prepare and submit to the Owner and Engineer within two weeks of the "Notice to Proceed" a construction schedule showing the proposed dates for starting and completing each of the various branches of work. The schedule shall be in the form of a bar graph with a representation of the schedule of costs by months.
- B. Manufacturer's data shall include all standard published information describing products, systems, methods and performance. Include manufacturer's name and address, and associations with which manufacturer of his products comply.
- C. Shop drawings and schedules shall include items, products, materials, methods, anchorages, details, or any other information required to fabricate items of the work and complete the installation which is not specifically stated or described on manufacturer's data.
- D. Installation instructions shall include all information required from a manufacturer or fabricator to have his product installed. This may be included as a shop drawing if such are required.
- E. Warranties and Guarantees required by the Contract Documents shall begin on the official date of substantial completion of the project or any portion thereof, into which the warranted or guaranteed item was installed, constructed, or otherwise made operational. All warranties and guarantees shall be in effect for a minimum of one year unless specified for a longer period. Include all specific items covered, company names and addresses and names of persons authorized to warrant or guarantee item(s) if not a blanket coverage.
- F. Certifications and test reports of products, materials, and performance for compliance with specified requirements shall specifically address the work and shall contain the name and signature and address of persons authorized to make such certifications.
- G. Evidence of compliance to instructions shall be copies of transmittal letters or letter of verification duly signed by authorized persons.

- H. Operation and Maintenance Manuals shall include all literature required to properly operate and maintain any equipment installed in the work and shall include names and addresses of manufacturers and authorized service and/or parts representatives, and dealers and shall be delivered on or before data of beneficial occupancy.
- I. Samples required shall be as specified and shall include identifications of the specific item and specification section to which the sample applies.

1.02 COPIES OF SUBMITTALS:

- A. All submittals shall be made electronically via email.
- B. Operation and Maintenance Manuals may be submitted electronically for preliminary review. Upon approval of the Engineer, three (3) paper copies shall be submitted.
- C. If electronic submittal is not available, or specifically requested by Owner, the minimum number of copies of submittals shall be submitted as follows and does not include numbers of copies required by the Contractor for his distribution purposes.

1.	Manufacturers Data:	4
2.	Shop Drawings and Schedules:	4
3.	Installation Instructions:	4
4.	Warranties and Guarantees:	4
5.	Certifications and Test Reports:	4
6.	Evidences:	4
7.	Operation and Maintenance Manuals:	3
8.	Samples:	3
9.	Progress Schedule:	4 Monthly

- B. As soon as practical, after the date of execution of the Owner/Contractor Agreement and within 30 days, the Contractor will make all required submittals.

1.03 REVIEW OF SUBMITTALS:

- A. All submittals required by the Contract Documents shall be sent to the Engineer.
- B. Copies of submittals to be returned for the Contractor's use will be processed and emailed/mailed to the Contractor within 14 days of receipt of each submittal by the Engineer.
- C. Review of submittals is only for conformance with the design concept of the project or work and does not relieve the Contractor of responsibility for any

deviation from the requirements of the Contract Documents nor from responsibility for errors and omissions in the submittals.

- D. Submittals received without the Contractor's signed "Checked and Approved" stamp on each copy will be returned without action and noted as such or "RWA".
- E. Any submittals or portions thereof which are processed and returned to the Contractor will be marked "Approved", "Approved as Noted", "Revise and Resubmit", or "Not Approved".
- F. Submittals which refer to information or data not included in the submittal (excluding the Contract Documents) will not be checked.

1.04 DOCUMENTS:

- A. All documents including letters, letters of transmittal and requests, generated by the Contractor shall be on standard letter or legal size paper and include Contractor's name, the Owner's project number, Engineer's project number, date and be signed by authorized personnel.
- B. Letters of transmittal shall also clearly identify each part of the submittal with specification section number and indicate the number of copies of each part. Letter requesting substitutions shall contain the same information.
- C. All submittals for approval shall be individually numbered by the Contractor in sequence of order of submission. Resubmittal of revised submittals shall bear the same numbers and be clearly marked "Resubmittal No. _____".

1.05 COLORS:

- A. The Engineer, in noting and marking submittals, shall use the color green.
- B. The Contractor, in noting and marking submittals, shall use the color red.
- C. Marks or notations of any other color on submittals shall be disregarded.

1.06 ON-SITE RECORDS: The Contractor shall have at least one set of complete, approved submittals and shop drawings on the job site at all times when such work is in progress.

END OF SECTION

SECTION 01301

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Preconstruction meeting
- B. Progress meetings
- C. Construction progress schedule
- D. Progress photographs

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 PRECONSTRUCTION MEETING:

- A. Engineer will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. City of Key Colony Beach, Florida
 - 2. Mittauer & Associates, Inc.
 - 3. Contractor
- C. Agenda:
 - 1. Execution of City of Key Colony Beach - Contractor Agreement, if not already completed.
 - 2. Submission of executed bonds and insurance certificates, if not already completed.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, schedule of values, and progress schedule.
 - 5. Designation of personnel representing the parties to Contract
 - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, change orders, and Contract closeout procedures.
 - 7. Scheduling.

- D. Contractor shall record minutes and distribute copies within two days after meeting to participants, with two copies to Engineer, City of Key Colony Beach, FL, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS:

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job Superintendent, major Subcontractors and Suppliers, Owner Representative, as appropriate to agenda topics for each meeting. Engineer shall make himself available via teleconference, if requested.
- D. Agenda:
 - 1. Review minutes of previous meeting
 - 2. Review of Work progress
 - 3. Field observations, problems, and decisions
 - 4. Identification of problems that impede, or will impede, planned progress
 - 5. Review of submittals schedule and status of submittals
 - 6. Review of off-site fabrication and delivery schedules
 - 7. Maintenance of progress schedule
 - 8. Corrective measures to regain projected schedules
 - 9. Planned progress during succeeding work period
 - 10. Coordination of projected progress
 - 11. Maintenance of quality and work standards
 - 12. Effect of proposed changes on progress schedule and coordination
 - 13. Other business relating to Work.
- E. Contractor shall record minutes and distribute copies within two days after meeting to participants, with copies to Engineer, City of Key Colony Beach, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE:

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

END OF SECTION

SECTION 01370
SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Work Included: Provide a detailed breakdown of the agreed Contract Sum showing values allocated to each of the various parts of the work as specified herein and in other provisions of the Contract Documents.
- B. Related Work: Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and sections in Division 1 of these Specifications.

1.02 QUALITY ASSURANCE:

- A. Use required means to assure arithmetical accuracy of the sum described.
- B. When requested by the Engineer, provide copies of the subcontracts or other data acceptable to the Engineer for substantiating the sums described.

1.03 SUBMITTALS:

- A. Prior to first application for payment, submit a proposed schedule of values in the form of a Shop Drawing Submittal to the Engineer.
 - 1. Meet with the Engineer and determine data, if any, required to be submitted.
 - 2. Secure the Engineer's approval of the values prior to submitting first application for payment.

END OF SECTION

SECTION 01391

VISUAL DOCUMENTATION

PART 1 - GENERAL

- 1.01 DESCRIPTION OF WORK:** Prior to commencing the Work, the Contractor shall perform a comprehensive photographic study of the Project to serve as a record of preconstruction conditions.
- 1.02 QUALITY ASSURANCE:** The color photographs shall be prepared by a responsible commercial firm or Contractor personnel known to be skilled and regularly engaged in the business of preconstruction color photographic documentation. Nothing in this section shall be considered an impediment to the Contractor exceeding these requirements in recording the preconstruction conditions of the project.

PART 2 - PRODUCTS

- 2.01 GENERAL:** All equipment, accessories, materials, and labor to perform this service shall be furnished by the Contractor.
- 2.02 QUALITY:** The total photography system shall reproduce bright, sharp, clear pictures with accurate colors.
- 2.03 FLASH DRIVE:** Provide photographic evidence on a standard flash drive.

PART 3 - EXECUTION

3.01 PROCEDURES:

- A. All photography shall be done during times of good visibility. No photography shall be done during precipitation, mist, or fog. The photography shall be done only when sufficient sunlight is present to properly illuminate the subjects of recording and to produce bright, sharp pictures of those subjects.
- B. Photos shall include all surface features located within the zone of influence of construction. Such coverage shall include, but not be limited to, existing valves, meter boxes, fire hydrants, driveways, sidewalks, curbs, pavements, striping, ditches, mailboxes, landscaping, culverts, fences, signs, walls, etc., within the area covered.

- 3.02 PROGRESS MEETINGS:** At each progress meeting, the Contractor shall provide additional photographic evidence of the construction at various stages of completeness.

END OF SECTION

SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS: Definitions: Specified quality control requirements for the work are indicated throughout the Contract Documents and are not repeated herein. The requirements of this Section are primarily related to performance of the work beyond furnishing of manufactured products. The term "Quality Control" includes, but is not necessarily limited to, inspection and testing and associated requirements. This Section does not specify or modify Engineer's duties relating to quality control and Contract enforcement.

1.02 RESPONSIBILITY FOR INSPECTIONS AND TESTS:

- A. Unless otherwise noted all testing and inspections required by these specifications shall be performed by a properly certified entity. All cost associated with the testing and inspections shall be the Contractor's responsibility. The Contractor shall also be responsible for all tests or inspections required by any entity having jurisdictional control over the work.
- B. Costs for those required services by independent testing laboratories are recognized to be included in the Contract Sum.
- C. No failure of test agencies, whether engaged by Owner or Contractor, to perform adequate inspections or tests or to properly analyze or report results, shall relieve the Contractor of responsibility for fulfillment or requirements of Contract Documents. It is recognized that required inspection and testing programs are intended to assist the Contractor, Owner, Engineer and governing authorities in nominal determination of probable compliance with requirements for certain elements of work. The program is not intended to limit the Contractor's regular quality control program as needed for general assurance of compliances.

1.03 QUALITY ASSURANCE:

- A. General Workmanship Standards: Except as more definitively specified, the Contractor shall comply with recognized workmanship quality standards within the industry as applicable to each unit of work, including ANSI Standards where applicable. It is a requirement that each category of trades person or installer performing the work is prequalified, to the extent of being familiar with applicable and recognized quality standards for that category of work, and being capable of workmanship complying with those standards.

- B. Qualification of Quality-Control Agencies: Except where another qualification standard is indicated, and except where it is specifically indicated that use of prime product manufacturer's test facilities is acceptable, engage independent testing laboratories complying with "Recommended Requirements for Independent Laboratory Qualification" as published by American Council of Independent Laboratories, and specializing in type(s) of inspections and tests required.
- C. When requested by the Engineer, submit proof of qualification for agency(s) engaged or to be engaged to perform inspection and testing services. If, after review of the submitted information, the Engineer determines that the agency's qualifications are unsatisfactory, the Contractor shall engage an alternate agency at no additional cost to the Owner.

1.04 PRODUCT DELIVERY - STORAGE - HANDLING: Handle, store and protect materials and products, including fabricated components, by methods and means which will prevent damage, deterioration, and losses including theft (and resulting delays), thereby ensuring highest quality results as the performance of the work progresses. Control delivery schedules so as to minimize unnecessary long-term storage at project site prior to installation. Contractor shall provide covered storage for all new equipment on the site which is not intended for outside installation. Electrical, hydraulic and pneumatic connections on all equipment shall be protected from the elements.

1.05 CODES AND STANDARDS:

- A. Work of this Project shall comply with all applicable Codes, Standards, and governing organizations in effect at the time of performance of the Work of this Project (editions and updates as current). Codes, Standards and Governing Organizations include, but are not necessarily limited to, the following:
 - 1. Florida Building Code
 - 2. Florida Accessibility Code
 - 3. Florida Fire Prevention Code
 - 4. Florida Administrative Code
 - 5. NFPA - 70 National Electrical Code
 - 6. NFPA - 101 Life Safety Code
 - 7. American Society of Civil Engineers (ASCE)
 - 8. Underwriter's Laboratory (UL) Assembly Requirements
 - 9. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, Latest Edition
 - 10. American Concrete Institute (ACI) 318, Latest Edition
 - 11. American Institute of Steel Construction (AISC) Steel Construction Manual, Latest Edition
 - 12. Occupational Safety and Health Administration (OSHA) CFR 29, Parts 1926 and 1910

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 PREPARATION FOR INSTALLATION:

- A. Preinstallation Conferences: Well in advance of installation of every major unit of work which requires coordination with other work, the Contractor shall meet at project site with installers and representatives of manufacturers and fabricators who are involved in or affected by the unit of work, and in its coordination or integration with other work which has preceded or will follow.
- B. The Contractor shall advise the Engineer of scheduled meeting dates. At each meeting the Contractor shall review the progress of other work and preparations for the particular work under consideration, including requirements of Contract Documents, product data, quality control samples, possible conflicts, compatibility problems, time schedules, weather limitations, structural limitation, governing regulations, safety, inspection and testing requirements, required performance results, recording requirements, and protection. Record significant discussion of each conference, and agreements and disagreements, along with final plan of action. Distribute a record of the meeting promptly to everyone concerned, including the Engineer.
- C. The Contractor shall not proceed with the work if associated preinstallation conference cannot be concluded successfully. The Contractor shall instigate actions to resolve impediments to performance of the work, and meet at earliest date feasible.
- D. Installer's Inspection of Conditions: The Contractor shall require the fabricator and installer of each major unit of work to inspect substrate to receive the work, and conditions under which the work will be performed, and to report (in writing to the Contractor and the Engineer) unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the fabricator and installer.

3.02 INSTALLATION QUALITY CONTROL:

- A. Manufacturer's Instructions: Where installation includes manufactured products, comply with manufacturer's applicable instructions and recommendations for installation, to whatever extent these are more explicit or more stringent than applicable requirements indicated in the Contract Documents.
- B. The Contractor shall inspect each item of materials or equipment immediately prior to installation and reject damaged and defective items.

- C. Provide attachment and connection devices and methods for securing work properly as it is installed; true to line and level, and within recognized industry tolerances if not otherwise indicated. Allow for expansions and building movements. Provide uniform joint widths in exposed work, organized for best possible visual effect. Refer questionable visual effect choices to Engineer for final decision.
- D. The Contractor shall recheck measurements and dimensions of the work as an integral step of starting each installation.
- E. Install work during conditions of temperature, humidity, exposure, forecasted weather, and status of project completion which will ensure best possible results for each unit of work, in coordination with entire work. Isolate each unit of work for noncompatible work as required to prevent deterioration.
- F. Coordinate enclosure (closing-in) of work with required inspections and tests, so as to avoid necessity of uncovering work for that purpose.
- G. Mounting Heights: Except as otherwise indicated, mount individual units of work at industry-recognized standard mounting heights, for applications indicated. Refer questionable mounting height choices to Engineer for final decision.
- H. Adjust, clean, lubricate restore marred finishes, and protect newly installed work, to ensure that it will remain without damage or deterioration during the remainder of the construction period.

END OF SECTION

SECTION 01500

CONSTRUCTION FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION: The following criteria shall govern the furnishing of and paying for temporary construction and service items. Such items shall be instituted at the beginning and maintained for the life of the work or until removal or termination is approved by the Engineer.

1.02 TEMPORARY FACILITIES:

- A. Drinking Water: The Contractor shall maintain on-site, cool water with dispensing utilities for the duration of the Project.
- B. Construction Water: Temporary water for construction is available through the local utility (FKAA) via existing outlets at the project site. Water must be metered and the utility compensated by the Contractor at its standard rates.
- C. It shall be the Contractor's responsibility to provide temporary electrical power for all construction requirements.
- D. Toilet Facilities: The Contractor shall furnish a portable, job-site toilet enclosure facility through a local company specializing and licensed in this business. The toilet enclosure shall be located on the project site at a point approved by the Owner. It shall be maintained daily by the supplying company and removed from the project site upon completion of the project.
- E. First Aid: A complete first aid kit, suitable for a project of this size, shall be kept on-site and fully maintained for the duration of this project.

1.03 SECURITY:

- A. General: The Contractor shall provide security, as necessary or required, to protect work and property at all times.
- B. Rodents and Other Pests: The Contractor, through debris removal, etc., shall control the creation of rodent or pest problems. Should such develop, the Contractor shall secure services of exterminator to control.
- C. Debris Control: Keep premises clean and free from accumulation of debris and rubbish. Provide trash and debris receptacles and require use. Remove from site at least weekly.

- D. Cleaning: As work is completed by trades, areas of work shall be cleaned in preparation for next trade, inspections or general safety of property and person.
- E. Project Safety: The Contractor shall comply with all applicable governmental and insuring company requirements relative to construction and project safety. Either the superintendent or another company representative on the site during all working hours, shall be trained in project safety and designated as Contractor's Safety Director.

END OF SECTION

SECTION 01570
TRAFFIC REGULATION

PART 1 - GENERAL

- 1.01 DESCRIPTION:** The work to be performed under this Section shall include furnishing all materials and labor necessary to regulate vehicular and pedestrian traffic in accordance with the requirements set forth and as shown on the drawings.
- 1.02 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:** The work under this Contract shall be in strict accordance with the following codes and standards.
- A. Local, County, Municipal and Federal Codes and Ordinances.
 - B. Florida Department of Transportation (DOT) Specifications.
- 1.03 SUBMITTALS:** Provide record copy of proposed project M.O.T. including location of detours, signage, barricades, and personnel.

PART 2 - PRODUCTS
(Not Applicable)

PART 3 - EXECUTION

3.01 TRAFFIC AND VEHICULAR ACCESS:

- A. Emergency Vehicles: No multi-family residence, apartment, commercial building or place of employment shall be without access to emergency vehicles for a period longer than three hours. The Contractor shall notify in writing the Engineer, the police, fire and other emergency departments and agencies when and where work is to be accomplished that will affect their operations at least two days in advance of such work.
- B. Major Roads and Streets: No major roads or streets shall be blocked to traffic without adequate detour facilities for a period of more than 30 minutes or as directed by the governing authority.
- C. Commercial Properties: Access to commercial property shall not be blocked for a period of more than 30 minutes during the time such properties are open for business.
- D. Residential Property: Access to residential property shall not be blocked for a period of more than 8 hours.

E. Detours:

1. Lighted message boards shall be in place a minimum of one week prior to any proposed detours.
2. Proposed route must be approved by the authority having jurisdiction and forwarded to all local emergency services facilities (police, fire, rescue, etc.)

3.02 CONSTRUCTION IN STATE HIGHWAY RIGHT-OF-WAY:

- A. Construction within all State Highway Right-of-Way shall be made in full compliance with all requirements and to the satisfaction of the Florida Department of Transportation.
- B. All necessary barricades, flagmen, detours, lights and other protective measures shall be provided for the protection of both pedestrian and vehicular traffic.

3.03 CONSTRUCTION IN OTHER THAN STATE HIGHWAY RIGHT-OF-WAY:

- A. Construction within right-of-way other than State Highways shall be made in full compliance with all requirements of the Florida Department of Transportation and to the satisfaction of the local governing bodies.
- B. All necessary barricades, flagmen, detours, message signs, lights, and other protective measures shall be provided for the protection of both pedestrian and vehicular traffic.
- C. Detours and road closures lasting more than 8 hours shall be advertised a minimum of one (1) week in advance with lighted message boards in each direction of traffic.

END OF SECTION

SECTION 01700
PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. Summary of Work: The Contractor shall provide all final paperwork and perform all punch list work necessary to complete the project.

1.02 SUBMITTALS:

- A. One (1) copy of Redline Construction Drawings, for Engineer's review and comment.
- B. One (1) copy of the As-built Drawings in 24" x 36" sheet format, signed and sealed by Florida Registered Land Surveyor or Professional Engineer and certified by the Contractor with Contractor's original signature.
- C. Three (3) copies of the following Items:
 - 1. Final Request for Payment
 - 2. Final Release of Lien (Prime and Subprime)
 - 3. Consent of Surety
 - 4. Warranties and Bonds
 - 5. Inspection Certificates (Electrical, Plumbing, Equipment, etc.)
 - 6. Regulatory Testing Requirements (Hydrostatic, Leakage, Disinfection, etc.)
- D. Three (3) Copies of Operation and Maintenance Manual Data.

PART 2 - PRODUCTS

2.01 AS-BUILT DRAWINGS:

- A. General:
 - 1. The following definitions shall apply to this section:
 - a. Redline Drawing(s):
 - 1) Applies to Work that is ongoing and documents the current installation progress of planned Work, or applies to field observations and/or findings that represent a deviation, discovery, or change from expected conditions.

- 2) These drawings do not require certification by a Professional Land Surveyor or Professional Engineer.
 - 3) They represent and document the current materials and location of installed work.
- b. As-built(s):
 - 1) Applies to Work involving new construction or replacement construction.
 - 2) They are a revised set of construction drawings that represent and document the final materials and location of installed Work. They reflect all changes made by addendum, change order, or work directives during the construction process and show the exact dimensions, geometry, and location of all elements of the Work completed by a Contractor under the contract.
 - 3) They are submitted by the Contractor and certified by a Professional Land Surveyor in the employ of the Contractor or by a Professional Engineer in the employ of the Contractor upon completion of a project or of a phase of a project.
2. As-built drawings are required for all roadways, stormwater treatment systems, civil site improvements, vertical construction, potable water, wastewater, and reclaimed water pipelines, pump stations, treatment plants and facilities. Upon completion of the Work and prior to final payment, the Contractor shall furnish to Engineer As-built Drawings which indicate final as-built data and in accordance with all addenda, change orders, verbal field changes, work directives, and all requirements with respect to the drawings specified herein. Engineer's field representative shall verify that as-built information is consistent with observable field conditions.
3. An electronic file of the original Project drawings will be furnished to Contractor for the purpose of recording and preparing As-built Drawings. As-built information shall be recorded daily and kept current during the progress of the work by the Contractor. The daily recordings may be verified by Engineer's field representative. All measurements are to be made by the certifying surveyor, professional engineer, or their employee. The Contractor shall provide access to buried facilities to allow for accurate horizontal and vertical measurements to be acquired by his surveyor or Engineer as needed. Should discrepancies exist, the Contractor shall verify buried facilities.
4. The cover page of the As-built Drawings shall bear the printed name and the signed as-built certification of the general contractor and the signed and sealed as-built certification of the professional surveyor and mapper (PSM) or registered professional engineer (PE) who provided the horizontal and vertical dimensions and elevations on the

As-built Drawings. The signatures shall certify that the As-built Drawings do, in fact, reflect the true as-built conditions as located under the direct supervision of the registered surveyor and/or professional engineer.

5. Upon completion of the work, Contractor shall deliver to the Engineer As-built Drawings in a .dwg (AutoCAD) format, including all xref files and in PDF format.
 6. Engineer will review the submittal for correctness and completeness and will return either an approval stamp or list of required changes for resubmission. Resubmittal of the As-built Drawings, with completed revisions, shall be accompanied by the Engineer's marked-up set of revision requirements.
- B. Drawing Requirements: When making changes to the AutoCAD drawing for as-built purposes, originally designed utility lines that were installed differently in the field shall be deleted with the applicable notes and the correct location, notes, and coordinates should be drawn in and/or added in to accurately portray the as-built conditions. Simply changing the coordinates, notes, or just adding notes is not acceptable. Do not strike through notes or elevation call-outs; change them in the drawing to reflect as-built conditions. As-built drawings should use the same line format and conventions as the original construction drawings.

Legibly mark the drawings to record the following:

1. Each document shall be labeled "AS-BUILT" in approximately 1" high printed letters and shall be submitted on 24" X 36" sheets.
2. Each document shall contain a graphic scale accurately representing the scale of the drawings.
3. Each document shall contain a north arrow.
4. As-builts shall utilize the State Plane Coordinate System using the Florida East Zone and the North American Datum of 1983 preferred for horizontal data; North American Vertical Datum (NAVD) 1988 Datum is preferred for elevation data. Benchmarks used must be shown and verified on the drawings.
5. Deflections that result in a change of more than one foot from the designed alignment shall be located and recorded regardless of the presence of a fitting.
6. The positional accuracy relative to the referenced published control points used shall not exceed 0.5' horizontally and 0.1' vertically. Elevations relative to the site facilities must be within 0.1' of each other.

7. Special detail drawings will be required where needed for clarity. Clarity is defined as pipe, fittings, valves, meter boxes, etc. clearly visible when printed to scale and when zoomed and viewed electronically.

C. Specific System Requirements:

1. Storm Drain Systems:

- a. The location of all piping, manholes, and inlets shall be referenced by coordinates.
- b. The positional accuracy relative to the referenced published control points used shall not exceed 0.5' horizontally and 0.1' vertically. Elevations relative to the site facilities must be within 0.1' of each other.
- c. Runs of storm wastewaters shall be identified (i.e., 300' of 15" RCP at $S=.004$).
- d. Elevations shall be given for the north rim of the top of all manhole covers and inlets and catch basins and all manhole, inlet, and catch basin inverts.
- e. Storm drain, manhole, inlet, and catch basin types shall be identified.

2. Street and Site Improvements:

- a. Locate and describe all vehicular use pavement including asphalt, concrete, limerock, gravel/stone, millings and dirt surfaces.
- b. Locate and describe all pedestrian use pavement including sidewalks, trails and paths of all materials.
- c. Locate and describe all curbing, ramps, wheel stops, bollards and ADA tactile warnings.
- d. Locate and describe all signage and striping.
- e. Locate and describe all fencing and gates.
- f. Locate and describe stormwater ponds, swales, permanent erosion control features, ditch blocks and overflow control structures.

- g. Locate and describe all street and site lighting including conduit and pull boxes.
- h. Locate and describe athletic fields, athletic equipment, bleachers, park equipment, exercise stations, gazebos, benches and other permanently installed elements.
- i. Locate and describe irrigation system elements.
- j. Locate and describe landscaping elements not including grass.

2.02 INSPECTION CERTIFICATES, BONDS, WARRANTIES, AND GUARANTEES:

Upon completion of project and prior to submission of certificate for final payment, the Contractor shall have the electrical, plumbing, and other work, as applicable, inspected by proper authorities as required by the Specifications and all applicable codes, laws, and ordinances. Before final payment will be made, the Contractor shall submit copies of all bonds and guarantees as required.

2.03 REGULATORY REQUIREMENTS: Aside from the testing of equipment, the facility cannot be started up and placed into operation without regulatory clearance. Regulatory clearance is a prerequisite for Substantial Completion.

- 1. Satisfactory hydrostatic test reports of all piping.
- 2. Satisfactory bacteriological test reports (as applicable).
- 3. Chemical clearances (if applicable).
- 4. As-built Drawings.

Upon regulatory clearance, startup of the facility and placement into satisfactory operation can be performed.

PART 3 - EXECUTION

3.01 SUBMITTAL: The Project shall not be considered to be in substantial completion until Final As-built Drawings have been submitted and accepted by the Engineer. Prior to final payment, the Final As-built Drawings shall be revised by the Contractor to reflect any changes which have occurred since the substantial completion submittal.

3.02 FINAL INSPECTION:

- A. Final inspection will be held upon completion of the project. The Contractor shall notify the Owner, upon completion, to arrange an inspection tour of the completed project.
- B. The Contractor and the Owner's Representative shall be present for the inspection.

3.03 RELEASE OF LIEN STATEMENT: The Contractor shall submit with his request for final payment sworn statements from himself and each subcontractor, material, or labor suppliers who have filed a "Notice to Owner", that all work has been completed and that all bills for labor, materials, and subcontractors' work on the project have been paid in full.

3.04 CONSENT OF SURETY: The Contractor shall submit, with his request for final payment, a consent of Contractor's Surety to final payment.

3.05 WARRANTIES AND BONDS:

A. Warranties and bonds shall begin on the official date of Substantial Completion and shall be in effect for a minimum of one year from that date, unless a longer period is stated in the product technical specification.

B. Warranties and bonds shall include, at a minimum, all labor, materials, and equipment necessary to restore the installed product to a fully functional and satisfactory condition for a period of one year past Substantial Completion.

3.06 CLEANING: The Contractor shall remove all stains, spots, marks, and dirt from all finished surfaces caused by this work. All items shall be cleansed in accordance with the manufacturers' written instructions.

END OF SECTION

SECTION 02210

SOIL BORINGS

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. The soil boring logs contained in the Geotechnical Report are provided for the Contractor's information only. The logs are only intended to provide a general indication of the soils in the vicinity of the site and may vary away from the boring location. The Contractor shall satisfy himself as to the character and amount of different soil materials, groundwater and subsurface conditions to be encountered in the work to be performed. Subsurface information included in these specifications is the result of borings made at the exact locations shown only. While the borings show the subsurface conditions at their respective exact locations, local variations in soils and groundwater conditions will be encountered.
- B. It is to be expressly understood that the Owner or Engineer will not be responsible for any interpretation or conclusion drawn therefrom.

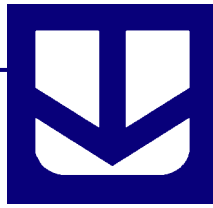
PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

(Not Applicable)

END OF SECTION



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GEOTECHNICAL DATA LETTER REPORT

**KEY COLONY BEACH WWTP
DRY RETENTION HAND AUGERS AND
DOUBLE RING TEST**

**480 8th STREET
CITY OF KEY COLONY BEACH,
MONROE COUNTY, FLORIDA**

**UES PROJECT NO. 2130.2000012
UES REPORT NO. 1749189**

Prepared For:

Mr. Joe Mittauer
Mittauer & Associates, Inc.
580-1 Wells Road
Orange Park, FL 32073

Prepared By:

Universal Engineering Sciences
9960 NW 116th Way, Suite 8
Miami, Florida 33178
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- West Palm Beach

February 26, 2020

Mittauer & Associates, Inc.
580-1 Wells Road
Orange Park, FL 32073

Attention: Mr. Joe Mittauer
Owner

Reference: **Geotechnical Data Letter Report**
Key Colony Beach WWTP – Dry Retention Hand Augers and Double Ring Tests
480 8th Street
City of Key Colony Beach, Monroe County, FL
UES Report No. 1749189
UES Project No.: 2130.2000012

Dear Mr. Shepler:

Universal Engineering Sciences, Inc. (UES) has completed a subsurface exploration for the above-referenced project in Monroe County, Florida. The scope of this exploration was conducted in general accordance by means of an email on February 13, 2020 and executed proposal on February 20, 2020. This exploration was performed in accordance with generally accepted soil and foundation engineering practices. No other warranty, expressed or implied, is made.

INTRODUCTION

Based on information you provided to us on February 10, 2020, we understand that limited subsurface infiltration rates are needed at an existing dry retention area in the City of Key Colony Beach, Monroe County, FL. No conceptual plans have been developed at this time. A limited geotechnical exploration was performed to obtain subsurface data in order to determine suitability of land for future use. A total of two (2) double ring infiltration (DRI) tests and six (6) hand auger borings were performed at the provided test locations. The test locations were provided by Jason Shepler on February 10, 2020.

PURPOSE

The purpose of this geotechnical exploration was:

- to estimate the infiltration rate of the near surface soils,
- to record the existing groundwater level,
- visual classification of soil samples.

This report presents an evaluation of site conditions on the basis of traditional geotechnical procedures for site characterization. The recovered samples were examined visually by our field representative, and groundwater levels were obtained from each hand auger location performed. The scope of services does not include soil/groundwater assessment, contamination delineation, radon, vapor intrusion, wetlands, lead in drinking water, lead-based paint survey, environmental compliance or construction materials testing; therefore, the recovered samples were not examined analytically, for chemical composition or environmental hazards. UES would be pleased to perform these services, if you desire.



FIELD EXPLORATION

The subsurface conditions at the site were explored with the performance of two (2) double ring infiltration (DRI) tests (designated as DRI-1 and DRI-2) to estimate the infiltration rate of the near surface soils, and six (6) hand auger borings (designated as HA-1 to HA-6) to determine the groundwater level. The hand augers were completed by advancing a steel auger through the surface of the existing soil until the groundwater was found. The approximate locations of the DRI tests and hand auger borings are presented in the Test Location Plan presented in Sheet 2 included in this letter report.

A representative of UES located the test locations in the field based upon estimated distances and relationships to obvious landmarks. Therefore, consider the indicated test locations and depths to be approximate. All field testing was performed in areas accessible on foot within the subject property. No trees or vegetation were damaged and/or harmed during our field exploration.

FINDINGS

Surface Conditions

At the time of exploration, the surface of the site was generally an open grass area. The visible surface soils consisted of very soft organic and silt materials.

Subsurface Conditions

The results of our field exploration together with pertinent information obtained from the hand auger borings and double ring infiltration tests, such as groundwater level and infiltration rates, are included in this report. A generalized profile of the soils/rock found at our boring locations is presented in Table 1 of this report. The subsurface profile was prepared from field logs after the recovered soil/rock samples were visually classified by a member of our geotechnical staff.

TABLE 1: GENERAL SOIL PROFILE	
Typical Depths Below Grade (Inches)	Soil Description
0 – 2	Dark Brown, Fine to Medium, Silty Organic SAND with Some Grass Fragments (OL)
2 – 23*	Light Gray, Fine to Medium, Sandy SILT (ML)
* Hand Auger Termination depth	



We measured the water levels in the hand auger on February 20, 2020 during our hand auger operations. The groundwater level depths at the boring locations ranged from approximately 18 to 23 inches below surface at the time of our exploration. Fluctuations in groundwater levels should be anticipated throughout the year, primarily due to seasonal variations in rainfall, surface runoff, and other factors that may vary from the time the hand augers were conducted.

LIMITATIONS

Our field exploration encountered unsuitable materials up to depths of 23 inches below existing grade. The hand augers completed for this report were widely spaced and are not considered sufficient for reliably detecting the presence of isolated, anomalous surface or subsurface conditions, or reliably estimating unsuitable or suitable material quantities. The data obtained and presented in this report is for information purposes only. No evaluation or recommendations can be provided at this time. Accordingly, UES does not recommend relying on our subsoil exploration to negate the presence of anomalous materials or for estimation of material quantities. Therefore, UES will not be responsible for any extrapolation or use of our data by others beyond the purpose(s) for which it is applicable or intended.

During the early stages of this construction project, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. An (ASFE) publication, "Important Information About Your Geotechnical Engineering Report" is attached, and will help explain the nature of geotechnical issues.

Further, we present Constraints and Restrictions, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.

We greatly appreciate the opportunity to assist you on this project. If you have any questions, or require additional information, please do not hesitate to contact the undersigned.

Sincerely,
Universal Engineering Sciences, Inc.
Certificate of Authorization No. 549


Courtlyn A. Hisey, EI
Geotechnical Staff Engineer

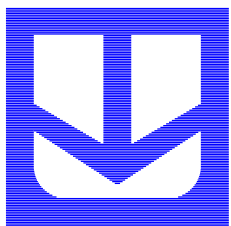


ATTACHMENTS

Sheet 1: Site Vicinity Map
Sheet 2: Test Location Plan
Sheet 3: Double Ring Infiltration Test Results
Sheet 4 to 7: General Terms and Conditions



APPROXIMATE SITE LOCATION

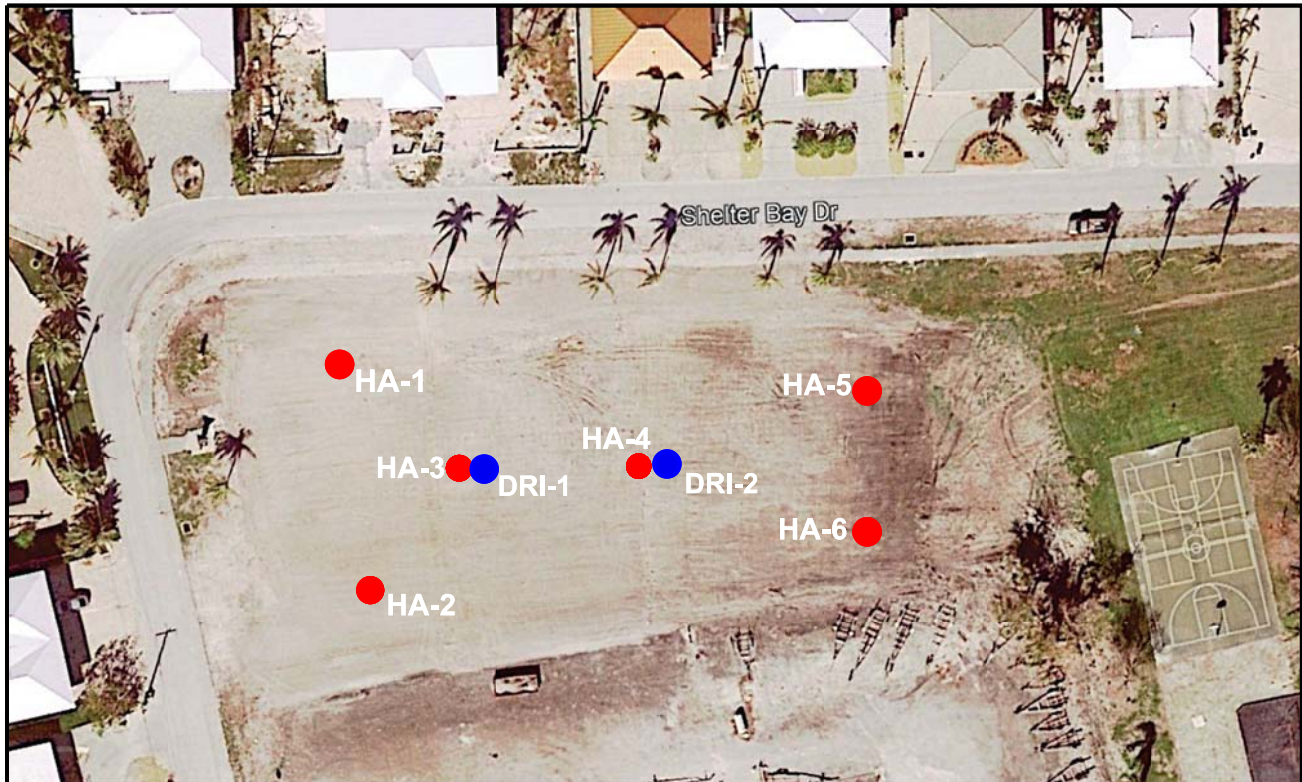


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SITE VICINITY MAP

KEY COLONY BEACH WWTP
480 8TH STREET

REFERENCE GOOGLE EARTH, 2020		DATE FEBRUARY, 2020		PROJECT NO. 2130.2000012		REPORT NO. 1749189	
SCALE N.T.S.	DRAWN BY MDA	CHECKED BY CH	COUNTY MONROE	CITY KEY COLONY BEACH		SHEET NO. 1	



LEGEND

- APPROXIMATE TEST BORING LOCATION
- APPROXIMATE DOUBLE RING INFILTRATION TEST LOCATION



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TEST LOCATION PLAN

KEY COLONY BEACH WWTP
480 8TH STREET

REFERENCE GOOGLE EARTH, 2020		DATE FEBURARY, 2020		PROJECT NO. 2130.2000012		REPORT NO. 1749189	
SCALE N.T.S.	DRAWN BY MDA	CHECKED BY CH	COUNTY MONROE	CITY KEY COLONY BEACH		SHEET NO. 2	

DOUBLE RING INFILTRATION TEST RESULTS

ASTM D-3385



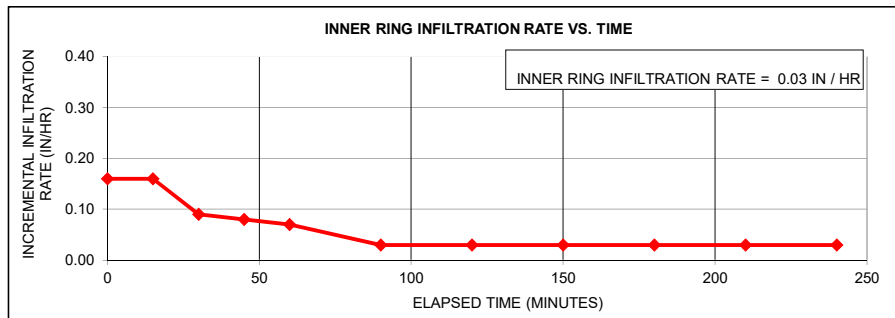
PROJECT NAME: Key Colony Beach WWTP - Dry Retention Hand Augers and Double Ring Test
 TEST No.: DRI-1
 DATE: 02/20/20
 PROJECT No.: 2130.20000120
 REPORT No.: 1749189
 LOCATION: See Test Location Plan

LIQUID USED: POTABLE WATER
 DEPTH TO WATER TABLE (ft): N/A
 GROUND ELEVATION: N/A
 PENETRATION OF RINGS INTO GROUND (in): INNER: 6.0 OUTER: 6.0
 INTERNAL DIAMETER OF RINGS (in): INNER: 12.9 OUTER: 24.0
 THICKNESS OF RING WALLS (INCHES): INNER: 0.25 OUTER: 0.25
 AREA OF RINGS (in²): INNER: 130.19 ANNULAR: 317.09

TEST INFORMATION

INCREMENT No.	TIME INTERVAL (min.)	TOTAL TIME (min.)	INNER RING FLOW READINGS		LIQUID TEMPERATURE (°F)	INCREMENTAL INFILTRATION RATE INNER RING (in / hr)
			READING (in)	VOLUME (in ³)		
0	-	0	-	-	-	0.16
1	15	15	0.04	5.3	70	0.16
2	15	30	0.02	3.0	70	0.09
3	15	45	0.02	2.5	70	0.08
4	15	60	0.02	2.3	70	0.07
5	30	90	0.02	2.1	70	0.03
6	30	120	0.02	2.1	70	0.03
7	30	150	0.02	2.1	70	0.03
8	30	180	0.02	2.1	70	0.03
9	30	210	0.02	2.1	70	0.03
10	30	240	0.02	2.1	70	0.03

DOUBLE RING INFILTRATION TEST RESULTS



DOUBLE RING INFILTRATION TEST RESULTS

ASTM D-3385



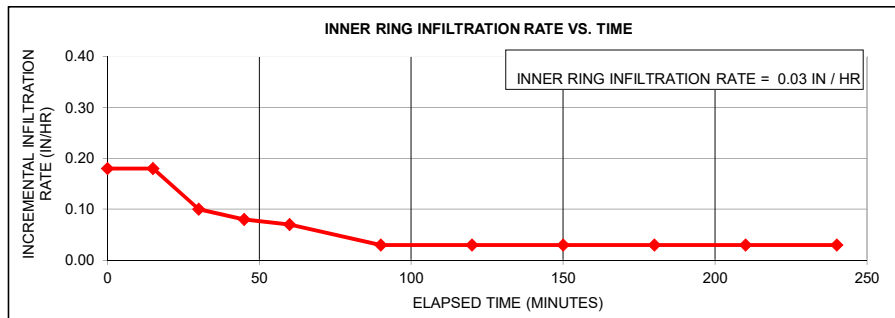
PROJECT NAME: Key Colony Beach WWTP - Dry Retention Hand Augers and Double Ring Test
 TEST No.: DRI-2
 DATE: 02/20/20
 PROJECT No.: 2130.20000120
 REPORT No.: 1749189
 LOCATION: See Test Location Plan

LIQUID USED: POTABLE WATER
 DEPTH TO WATER TABLE (ft): N/A
 GROUND ELEVATION: N/A
 PENETRATION OF RINGS INTO GROUND (in): INNER: 6.0 OUTER: 6.0
 INTERNAL DIAMETER OF RINGS (in): INNER: 12.9 OUTER: 24.0
 THICKNESS OF RING WALLS (INCHES): INNER: 0.25 OUTER: 0.25
 AREA OF RINGS (in²): INNER: 130.19 ANNULAR: 317.09

TEST INFORMATION

INCREMENT No.	TIME INTERVAL (min.)	TOTAL TIME (min.)	INNER RING FLOW READINGS		LIQUID TEMPERATURE (°F)	INCREMENTAL INFILTRATION RATE INNER RING (in / hr)
			READING (in)	VOLUME (in ³)		
0	-	0	-	-	-	0.18
1	15	15	0.04	5.8	70	0.18
2	15	30	0.02	3.2	70	0.10
3	15	45	0.02	2.5	70	0.08
4	15	60	0.02	2.3	70	0.07
5	30	90	0.01	1.9	70	0.03
6	30	120	0.01	1.7	70	0.03
7	30	150	0.01	1.9	70	0.03
8	30	180	0.01	1.9	70	0.03
9	30	210	0.01	1.9	70	0.03
10	30	240	0.01	1.9	70	0.03

DOUBLE RING INFILTRATION TEST RESULTS



CONSTRAINTS AND RESTRICTIONS

WARRANTY

UES has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and UES of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of UES to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

UES is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of UES.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by UES.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations. Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. UES cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for UES to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by UES to locate any such buried objects. UES cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of investigation. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

Universal Engineering Sciences, Inc.
GENERAL CONDITIONS

SECTION 1: RESPONSIBILITIES

- 1.1 *Universal Engineering Sciences, Inc.*, ("UES"), has the responsibility for providing the services described under the Scope of Services section. The work is to be performed according to accepted standards of care and is to be completed in a timely manner. The term "UES" as used herein includes all of *Universal Engineering Sciences, Inc.*'s agents, employees, professional staff, and subcontractors.
- 1.2 The Client or a duly authorized representative is responsible for providing UES with a clear understanding of the project nature and scope. The Client shall supply UES with sufficient and adequate information, including, but not limited to, maps, site plans, reports, surveys and designs, to allow UES to properly complete the specified services. The Client shall also communicate changes in the nature and scope of the project as soon as possible during performance of the work so that the changes can be incorporated into the work product.
- 1.3 The Client acknowledges that UES's responsibilities in providing the services described under the Scope of Services section is limited to those services described therein, and the Client hereby assumes any collateral or affiliated duties necessitated by or for those services. Such duties may include, but are not limited to, reporting requirements imposed by any third party such as federal, state, or local entities, the provision of any required notices to any third party, or the securing of necessary permits or permissions from any third parties required for UES's provision of the services so described, unless otherwise agreed upon by both parties.
- 1.4 Universal will not be responsible for scheduling our services and will not be responsible for tests or inspections that are not performed due to a failure to schedule our services on the project or any resulting damages.

1.5 **PURSUANT TO FLORIDA STATUTES §558.0035, ANY INDIVIDUAL EMPLOYEE OR AGENT OF UES MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.**

SECTION 2: STANDARD OF CARE

- 2.1 Services performed by UES under this Agreement will be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of UES's profession practicing contemporaneously under similar conditions in the locality of the project. No other warranty, express or implied, is made.
- 2.2 The Client recognizes that subsurface conditions may vary from those observed at locations where borings, surveys, or other explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by UES will be based solely on information available to UES at the time of service. UES is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed.
- 2.3 Execution of this document by UES is not a representation that UES has visited the site, become generally familiar with local conditions under which the services are to be performed, or correlated personal observations with the requirements of the Scope of Services. It is the Client's responsibility to provide UES with all information necessary for UES to provide the services described under the Scope of Services, and the Client assumes all liability for information not provided to UES that may affect the quality or sufficiency of the services so described.
- 2.4 Should UES be retained to provide threshold inspection services under Florida Statutes §553.79, Client acknowledges that UES's services thereunder do not constitute a guarantee that the construction in question has been properly designed or constructed, and UES's services do not replace any of the obligations or liabilities associated with any architect, contractor, or structural engineer. Therefore it is explicitly agreed that the Client will not hold UES responsible for the proper performance of service by any architect, contractor, structural engineer or any other entity associated with the project.

SECTION 3: SITE ACCESS AND SITE CONDITIONS

- 3.1 Client will grant or obtain free access to the site for all equipment and personnel necessary for UES to perform the work set forth in this Agreement. The Client will notify any and all possessors of the project site that Client has granted UES free access to the site. UES will take reasonable precautions to minimize damage to the site, but it is understood by Client that, in the normal course of work, some damage may occur, and the correction of such damage is not part of this Agreement unless so specified in the Proposal.
- 3.2 The Client is responsible for the accuracy of locations for all subterranean structures and utilities. UES will take reasonable precautions to avoid known subterranean structures, and the Client waives any claim against UES, and agrees to defend, indemnify, and hold UES harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, Client agrees to compensate UES for any time spent or expenses incurred by UES in defense of any such claim with compensation to be based upon UES's prevailing fee schedule and expense reimbursement policy.

SECTION 4: SAMPLE OWNERSHIP AND DISPOSAL

- 4.1 Soil or water samples obtained from the project during performance of the work shall remain the property of the Client.
- 4.2 UES will dispose of or return to Client all remaining soils and rock samples 60 days after submission of report covering those samples. Further storage or transfer of samples can be made at Client's expense upon Client's prior written request.
- 4.3 Samples which are contaminated by petroleum products or other chemical waste will be returned to Client for treatment or disposal, consistent with all appropriate federal, state, or local regulations.

SECTION 5: BILLING AND PAYMENT

- 5.1 UES will submit invoices to Client monthly or upon completion of services. Invoices will show charges for different personnel and expense classifications.
- 5.2 Payment is due 30 days after presentation of invoice and is past due 31 days from invoice date. Client agrees to pay a finance charge of one and one-half percent (1 ½ %) per month, or the maximum rate allowed by law, on past due accounts.
- 5.3 If UES incurs any expenses to collect overdue billings on invoices, the sums paid by UES for reasonable attorneys' fees, court costs, UES's time, UES's expenses, and interest will be due and owing by the Client.

SECTION 6: OWNERSHIP AND USE OF DOCUMENTS

- 6.1 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, as instruments of service, shall remain the property of UES.
- 6.2 Client agrees that all reports and other work furnished to the Client or his agents, which are not paid for, will be returned upon demand and will not be used by the Client for any purpose.
- 6.3 UES will retain all pertinent records relating to the services performed for a period of five years following submission of the report, during which period the records will be made available to the Client at all reasonable times.
- 6.4 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, are prepared for the sole and exclusive use of Client, and may not be given to any other party or used or relied upon by any such party without the express written consent of UES.

SECTION 7: DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS

- 7.1 Client warrants that a reasonable effort has been made to inform UES of known or suspected hazardous materials on or near the project site.
- 7.2 Under this agreement, the term hazardous materials include hazardous materials (40 CFR 172.01), hazardous wastes (40 CFR 261.2), hazardous substances (40 CFR 300.6), petroleum products, polychlorinated biphenyls, and asbestos.
- 7.3 Hazardous materials may exist at a site where there is no reason to believe they could or should be present. UES and Client agree that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. UES and Client also agree that the discovery of unanticipated hazardous materials may make it necessary for UES to take immediate measures to protect health and safety. Client agrees to compensate UES for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous waste.
- 7.4 UES agrees to notify Client when unanticipated hazardous materials or suspected hazardous materials are encountered. Client agrees to make any disclosures required by law to the appropriate governing agencies. Client also agrees to hold UES harmless for any and all consequences of disclosures made by UES which are required by governing law. In the event the project site is not owned by Client, Client recognizes that it is the Client's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials.
- 7.5 Notwithstanding any other provision of the Agreement, Client waives any claim against UES, and to the maximum extent permitted by law, agrees to defend, indemnify, and save UES harmless from any claim, liability, and/or defense costs for injury or loss arising from UES's discovery of unanticipated hazardous materials or suspected hazardous materials including any costs created by delay of the project and any cost associated with possible reduction of the property's value. Client will be responsible for ultimate disposal of any samples secured by UES which are found to be contaminated.

SECTION 8: RISK ALLOCATION

- 8.1 Client agrees that UES's liability for any damage on account of any breach of contract, error, omission or other professional negligence will be limited to a sum not to exceed \$50,000 or UES's fee, whichever is greater. If Client prefers to have higher limits on contractual or professional liability, UES agrees to increase the limits up to a maximum of \$1,000,000.00 upon Client's written request at the time of accepting our proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or \$400.00, whichever is greater. The additional charge for the higher liability limits is because of the greater risk assumed and is not strictly a charge for additional professional liability insurance.

SECTION 9: INSURANCE

- 9.1 UES represents and warrants that it and its agents, staff and consultants employed by it, is and are protected by worker's compensation insurance and that UES has such coverage under public liability and property damage insurance policies which UES deems to be adequate. Certificates for all such policies of insurance shall be provided to Client upon request in writing. Within the limits and conditions of such insurance, UES agrees to indemnify and save Client harmless from and against loss, damage, or liability arising from negligent acts by UES, its agents, staff, and consultants employed by it. UES shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance or the limits described in Section 8, whichever is less. The Client agrees to defend, indemnify and save UES harmless for loss, damage or liability arising from acts by Client, Client's agent, staff, and other UESs employed by Client.

SECTION 10: DISPUTE RESOLUTION

- 10.1 All claims, disputes, and other matters in controversy between UES and Client arising out of or in any way related to this Agreement will be submitted to alternative dispute resolution (ADR) such as mediation or arbitration, before and as a condition precedent to other remedies provided by law, including the commencement of litigation.
- 10.2 If a dispute arises related to the services provided under this Agreement and that dispute requires litigation instead of ADR as provided above, then:
- (a) the claim will be brought and tried in judicial jurisdiction of the court of the county where UES's principal place of business is located and Client waives the right to remove the action to any other county or judicial jurisdiction, and
 - (b) The prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorneys' fees, and other claim related expenses.

SECTION 11: TERMINATION

- 11.1 This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof. Such termination shall not be effective if that substantial failure has been remedied before expiration of the period specified in the written notice. In the event of termination, UES shall be paid for services performed to the termination notice date plus reasonable termination expenses.
- 11.2 In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by the Agreement, UES may complete such analyses and records as are necessary to complete its files and may also complete a report on the services performed to the date of notice of termination or suspension. The expense of termination or suspension shall include all direct costs of UES in completing such analyses, records and reports.

SECTION 12: ASSIGNS

- 12.1 Neither the Client nor UES may delegate, assign, sublet or transfer their duties or interest in this Agreement without the written consent of the other party.

SECTION 13. GOVERNING LAW AND SURVIVAL

- 13.1 The laws of the State of Florida will govern the validity of these Terms, their interpretation and performance.
- 13.2 If any of the provisions contained in this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired. Limitations of liability and indemnities will survive termination of this Agreement for any cause.

SECTION 14. INTEGRATION CLAUSE

- 14.1 This Agreement represents and contains the entire and only agreement and understanding among the parties with respect to the subject matter of this Agreement, and supersedes any and all prior and contemporaneous oral and written agreements, understandings, representations, inducements, promises, warranties, and conditions among the parties. No agreement, understanding, representation, inducement, promise, warranty, or condition of any kind with respect to the subject matter of this Agreement shall be relied upon by the parties unless expressly incorporated herein.
- 14.2 This Agreement may not be amended or modified except by an agreement in writing signed by the party against whom the enforcement of any modification or amendment is sought.



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GEOTECHNICAL ENGINEERING REPORT

**CITY OF KEY COLONY BEACH
WWTP IMPROVEMENTS**

**600 8TH STREET
CITY OF KEY COLONY BEACH, FL**

**UES PROJECT NO. 2130.1500086
UES REPORT NO. G00186**

Prepared For:

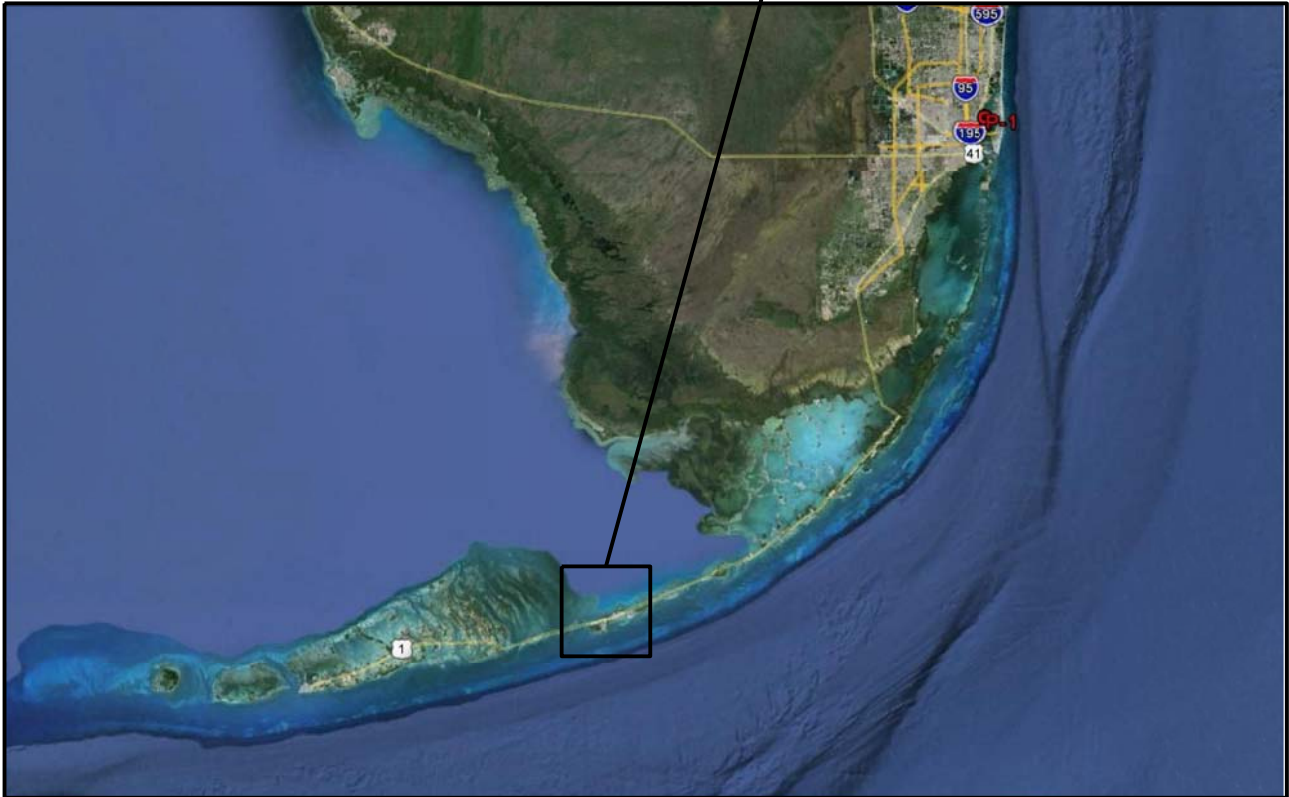
Mr. Joe Mittauer
President
Mittauer & Associates, Inc.
580-1 Wells Road
Orange Park, FL 32073

Prepared By:

Universal Engineering Sciences, Inc.
9960 NW 116th Way, Suite 8
Miami, Florida 33178
(305) 249-8434

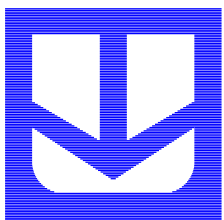


APPROXIMATE SITE LOCATION



SITE VICINITY MAP

CITY OF KEY COLONY BEACH WWTP IMPROVEMENTS
600 8TH ST, KEY COLONY BEACH



UNIVERSAL
ENGINEERING SCIENCES

REFERENCE
GOOGLE EARTH, 2016

DATE
FEBRUARY, 2016

PROJECT NO.
2130.1500086

REPORT NO.
G00186

SCALE
N.T.S.

DRAWN BY
SJ

CHECKED BY
RV

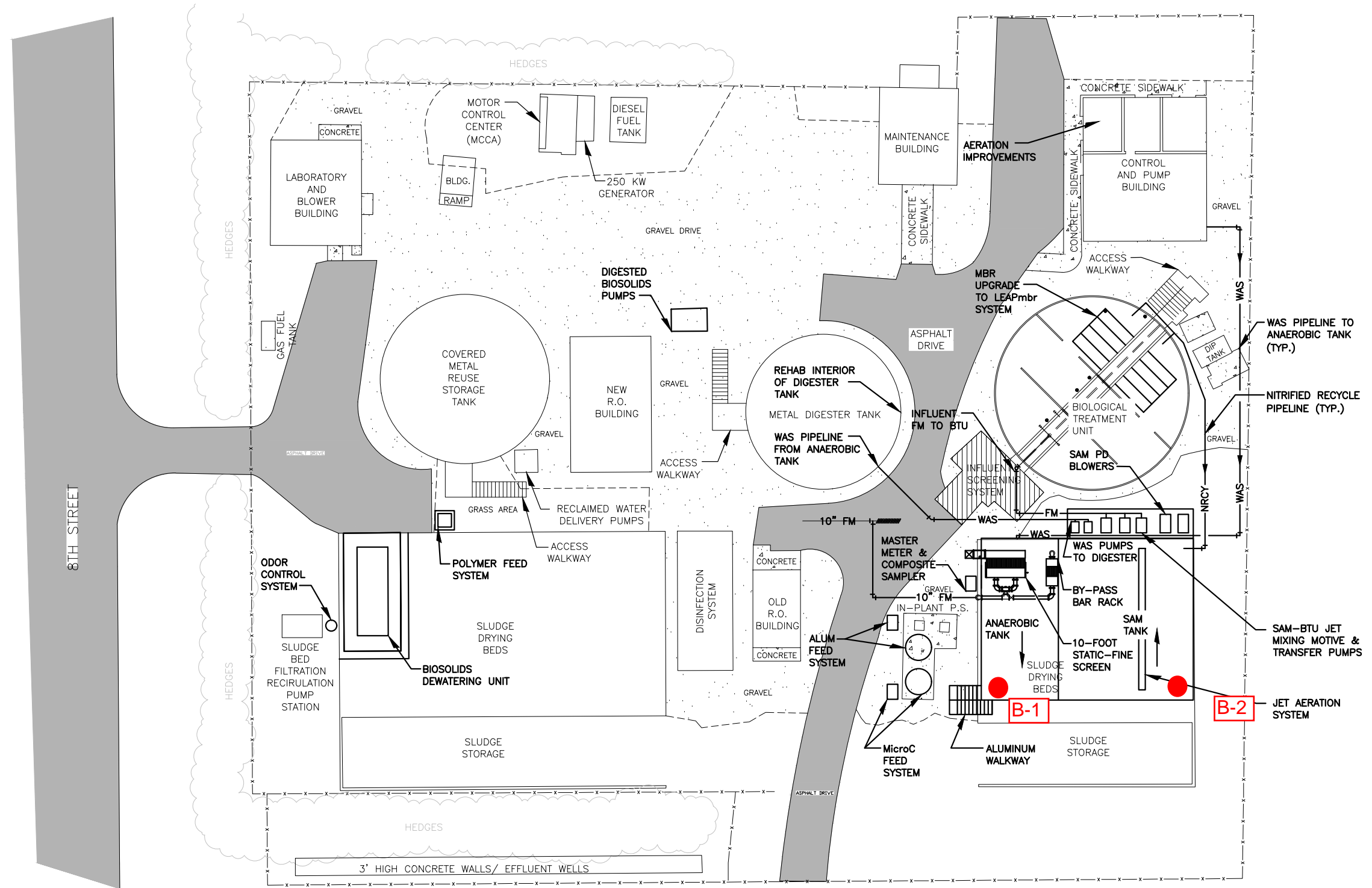
COUNTY
MONROE , FL

CITY
KEY
COLONY BEACH

SHEET NO.
A-1



TEST LOCATION PLAN



LEGEND:

● APPROXIMATE SPT BORING LOCATION



UNIVERSAL ENGINEERING SCIENCES BORING LOGS

PROJECT NO.: 2130.1500086

REPORT NO.: G00186

PAGE: 1

PROJECT: City of Key Colony Beach WWTP Improvements
600 8th St Key Colony Beach
Key Colony Beach, FL

CLIENT: Mittauer & Associates, Inc.

LOCATION: See Test Location Plan

REMARKS: B-57 (Automatic Hammer)

BORING DESIGNATION:

B-1SHEET: **1 of 1**

NORTHING (ft):

EASTING (ft):

G.S. ELEVATION (ft): N/A

SPT DATE: 1/21/16

WATER TABLE (ft): 3.2

CORING DATE: 1/21/16

DATE OF READING: 1/21/2016

DRILLED BY: LT

EST. W.S.W.T. (ft): 1.2

TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ORG. CONTENT (%)	ROCK CORING DATA			
										REC (%)	RQD (%)	DOWN PRESSURE (PSI)	TIME (s.)
0													
		2-3-3-4	6			Gray Sandy SILT with Trace of Shell and Limerock Fragments (FILL; ML)							
		1-1-1-1	2			Gray SILT (FILL; ML)	93	44					
5		WOH/24"	WOH										
		WOH/24"	WOH			Gray Sandy SILT (FILL; ML)	65	55					
10		WOH/24"	WOH										
		WOH/24"	WOH										
15		16-14-24-30	38			Light Brown Sandy LIMESTONE (KEY LARGO LIMESTONE FORMATION)							
20		9-10-18-19	28										
25		12-21-10-8	31										
30		9-10-10-12	20										
35		9-10-11-10	21										
40		3-5-5-4	10										
45		10-10-10-10	20										
						SPT Boring Terminated at Depth of 45 Feet. Borehole Backfilled.							



UNIVERSAL ENGINEERING SCIENCES BORING LOGS

PROJECT NO.: 2130.1500086

REPORT NO.: G00186

PAGE: 2

PROJECT: City of Key Colony Beach WWTP Improvements
600 8th St Key Colony Beach
Key Colony Beach, FL

BORING DESIGNATION:

B-2SHEET: **1 of 1**

CLIENT: Mittauer & Associates, Inc.

NORTHING (ft):

EASTING (ft):

LOCATION: See Test Location Plan

G.S. ELEVATION (ft): N/A

SPT DATE: 1/21/16

REMARKS: B-57 (Automatic Hammer)

WATER TABLE (ft): 3

CORING DATE: 1/21/16

DATE OF READING: 1/21/2016

DRILLED BY: LT

EST. W.S.W.T. (ft): 1

TYPE OF SAMPLING: SPT

DEPTH (FT.)	S A M P L E	BLOWS PER 6" INCREMENT	N (BLOWS/ FT.)	W.T.	S Y M B O L	DESCRIPTION	-200 (%)	MC (%)	ORG. CONTENT (%)	ROCK CORING DATA			
										REC (%)	RQD (%)	DOWN PRESSURE (PSI)	TIME (s.)
0						Gray Sandy SILT with Trace of Shell and Limerock Fragments (FILL; ML)							
		4-18-9-7	27			Gray SILT (FILL; ML)							
		4-3-3-3	6										
5		3-2-1-1	3			Gray Sandy SILT (FILL; ML)	85	58					
		WOH/24"	WOH				60	44					
10		WOH/24"	WOH										
		WOH/24"	WOH										
15		48-10-12-24	22			Light Brown Sandy LIMESTONE (KEY LARGO LIMESTONE FORMATION)							
20		20-25-19-36	44										
25		11-11-10-14	21										
30		8-13-9-14	22										
35		8-8-9-9	17										
40		7-6-5-8	11										
45		16-10-11-12	21			SPT Boring Terminated at Depth of 45 Feet. Borehole Backfilled.							

NOTES RELATED TO BORING LOGS

General Notes

- The Groundwater level was encountered and recorded (if shown) following the completion of the soil test borings on the date indicated. Fluctuations in groundwater levels are common; refer to report text for a discussion.
- The boring location on land was identified in the field utilizing standard taping procedures and existing land marks.
- The Boring Logs represent our interpretation of field conditions based on engineering examination of the soil/rock samples.
- The Boring Logs are subject to limitations, conclusions and recommendations presented in the report text.
- The N-values shown in the Boring Logs indicated as 50/1" refers to the Standard Penetration Test (SPT) and means 50 blows per 1 inch of sampler penetration. The SPT uses a 140-pound hammer falling 30 inches (ASTM D-1583).
- The N-value from the SPT is the sum of the hammer blows required to drive the sampler the second and third 6-inch increments.
- The soil/rock strata interfaces shown on the Boring Logs are approximate and may vary from those shown. The soil/rock conditions shown on the Boring Logs refer to conditions at the specific location tested; soil/rock conditions may vary between test locations.
- W.O.H. denotes fell under weight of hammer.

General Descriptors

- The grain-size descriptions are as follows:

Name

Size Limits

Boulder	12 inches or more
Cobbles	3 to 12 inches
Coarse Gravel	$\frac{3}{4}$ to 3 inches
Fine Gravel	No. 4 sieve to $\frac{3}{4}$ inch
Coarse Sand	No. 10 to No. 4 sieve
Medium Sand	No. 40 to No. 10 sieve
Fine Sand	No. 200 to No. 40 sieve
Fines	Smaller than No. 200 sieve

- Definitions related to adjectives used in soil/rock descriptions:

Proportion

Adjective

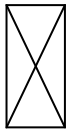
About 0 to 10 %	trace
About 10% to 25%	little
About 25% to 35%	some
About 35% to 50%	and

NOTES RELATED TO BORING LOGS

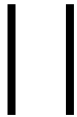
- Relative density of sands/gravels and consistency of silts/clays:

Granular Soils		
Relative Density	Safety Hammer SPT (Blows/Foot)	Automatic Hammer SPT (Blows/Foot)
Very Loose	0-4	0-3
Loose	4-10	3-8
Medium Dense	10-30	8-24
Dense	30-50	24-40
Very Dense	Greater than 50	Greater than 40
Silts and Clays		
Consistency	Safety Hammer SPT (Blows/Foot)	Automatic Hammer SPT (Blows/Foot)
Very Soft	0-2	0-1
Soft	3-4	1-3
Firm	5-8	3-6
Stiff	9-15	6-12
Very Stiff	16-30	12-24
Hard	Greater than 30	Greater than 24

- Boring Log Symbols



Split spoon sample



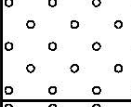
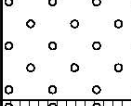
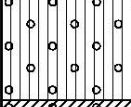
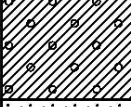
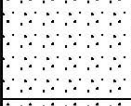
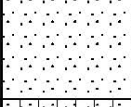
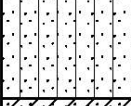
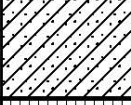
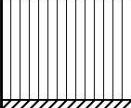
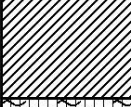

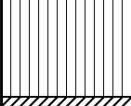
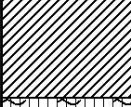


Rock core specimen



Groundwater table

NOTES RELATED TO BORING LOGS

Soil Classification Chart

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

USCS, LEGEND 7/18/14

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SECTION 02230

SITE CLEARING, STRIPPING AND GRUBBING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. The General Requirements are made a part of this section as fully as if repeated herein.
- B. Work includes but is not limited to:
 - 1. Site clearing.
 - 2. Stripping and removal or stockpiling topsoil.
 - 3. Grubbing and removal of vegetation within site boundaries or within limits shown on drawings.
 - 4. Tree removal within limits of work and as indicated.
 - 5. Protection of existing trees to remain.
 - 6. Protection of streets, roads, adjacent property, and other facilities to remain.
 - 7. Disposal of all cleared materials.
 - 8. Disposal of all grubbed materials.

1.02 SUBMITTALS:

- A. Permit for transportation and disposal of debris.
- B. Disposal tickets from landfill.

1.03 DISPOSITION OF MATERIAL: Remove all cleared and grubbed materials from project site.

1.04 REGULATORY REQUIREMENTS:

- A. See Section 02370 for FDEP NPDES Permit requirements.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 GENERAL:

- A. Segregation of Materials: Contractor shall be responsible for segregating dissimilar materials. Suitable fill, unsuitable fill, organics and/or trash shall not be mixed. Contractor shall stockpile material types independent of each other.
- B. Safety Procedures: The performance of the work shall be in strict compliance with all Local, State and Federal Regulations. This shall include, but not be limited to, Florida Trench Safety Act (F.S. 553.6) and OSHA 29 CFR 1926.651 and 1926.652.
- C. Trench excavations over 5 feet deep must provide a protective system for all personnel in the hole. Trench excavations over 20 feet in depth must provide a protective system designed by a Florida Registered Professional Engineer.

3.02 CLEARING:

- A. Limits of Clearing: Remove trees and other vegetative matter only as required for construction of the project.
- B. Remove all trees and shrubs to ground level and grub as described below.
- C. Remove all dead trees, dead shrubs, rubbish, debris, weeds, vines and undergrowth to ground level.
- D. Remove all other obstructions resting on or protruding through surface of existing ground.
- E. Do not pull up or rip out roots of trees and shrubs that are to remain. If excavation through roots is required, excavate by hand and cut roots with fine tooth saw.

3.03 STRIPPING TOPSOIL:

- A. Strip existing vegetation layer from areas of site to receive improvements and remove from site prior to stripping topsoil for storage and reuse.

- B. After stripping vegetation layer, remove existing topsoil 6-inches deep minimum from areas of site to receive fill and store for later use. Coordinate with Owner for temporary storage location.
 - 1. Existing topsoil is property of Contractor (unless claimed by Owner) with restriction that topsoil is to be used first for Project landscape topsoil requirements and second for fill and backfill.
 - 2. After Project fill, backfill, and landscape topsoil requirements are satisfied, remove excess existing topsoil from site. Do not remove existing topsoil from site without Owner's prior approval.
- C. Do not include clay, stones larger than 3/4", weeds, roots, rubbish or any other foreign material in the stock piled topsoil.

3.04 GRUBBING:

- A. All areas to receive improvements shall be root raked; minimum of two (2) passes perpendicular to each other.
- B. Remove all stumps, roots over 1 inch in diameter, and matted roots to the following depths:
 - 1. Footings, slabs on grade, bottom slabs of structures: Completely.
 - 2. Walks: 24 inches.
 - 3. Roads and parking areas: 36 inches.
 - 4. Areas to be grassed or landscaped: 12 inches.
- C. In case of footings, slabs on grade, bottom slabs of structures, roads and parking areas, or other construction on fills, greater depth shall apply.
- D. Unless further cut is required, fill depressions made by grubbing and compact to density of surrounding soil.

3.05 PROTECTION OF TREES:

- A. A visible barrier shall be constructed of 2x4 lumber standing 48" high and placed continuously 6 feet from the trunk of the tree or plant to remain.
- B. Barrier shall be secured in place and covered in safety orange netting.
- C. Barriers shall be completely removed at the conclusion of construction activities.

- D. Protect root systems from damage due to materials in solution caused by runoff or spillage during mixing and placement of construction materials or drainage from stored materials. Protect root systems from flooding, erosion or excessive wetting resulting from dewatering operations.
- E. Repair and Replacement of Trees to Remain:
 - 1. Repair trees or plants damaged by construction operations in a manner acceptable to the Engineer. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees.
 - 2. If trees die during the course of the project or within the warranty period, the Contractor shall remove them, and grind the stumps if the Owner so wishes, at no charge to the Owner.
 - 3. Trees that die during construction shall be replaced with same species, Grade A and 3" DBH. Trees shall be furnished and planted by the Contractor at no cost to the Owner.

3.06 CLEAN-UP:

- A. Remove from site trees, shrubs, uprooted stumps, vegetative layer, and surface debris. All material shall be disposed of legally.
- B. Remove and dispose of all stockpiled topsoil not claimed by Owner.
- C. Do not bury cuttings, stumps, roots, and other vegetative matter or burn waste material on site without prior authorization from Owner.
- D. Clean pavement, sidewalks and drainage features of debris and dirt.

END OF SECTION

SECTION 02300

EARTHWORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions, along with the General Requirements, apply to the work specified in this Section.

1.02 DESCRIPTION:

A. Work Included:

1. Notification of Utility Companies.
2. Protection.
3. Stripping and Stockpiling Topsoil.
4. Overexcavation & Removal of Unsuitable Soils.
5. Slope Restrictions, Shoring & Bracing of Excavations.
6. Existing Soil Compaction & Preparation.
7. Fill Placement.
8. Layout & Establishment of Grades.
9. Grading and Reshaping Site.
10. Construction of Stormwater Ponds, Ditches & Swales.
11. Spreading of Topsoil.
12. Repair & Restoration.
13. Clean Up.

B. Related Work Specified Elsewhere:

1. Site Clearing, Grubbing and Stripping: Section 02230.

1.03 REFERENCES:

A. American Society for Testing and Materials (Latest Edition):

1. ASTM D698, 'Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort'
2. ASTM D1140, 'Standard Test Methods for Amount of Material in Soils Finer Than the No. 200 Sieve'
3. ASTM D1557, 'Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort'
4. ASTM D2216, 'Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock'
5. ASTM D2487, 'Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)'

6. ASTM D2922, 'Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)'
 7. ASTM D2974, 'Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils'
 8. ASTM D3017, 'Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)'
 9. ASTM D4318, 'Standard Test Method for Liquid Limit, Plastic Limit and Plasticity Index of Soils'
 10. ASTM D5268, 'Standard Specification for Topsoil Used for Landscaping Purposes'
 11. ASTM D6913, 'Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis'
 12. ASTM D448, 'Standard Classification for Sizes of Aggregate for Road and Bridge Construction'
- B. Florida Department of Transportation (FDOT):
1. Standard Specifications for Roadway & Bridge Construction.
- C. Florida Statutes (F.S.):
1. Chapter 556: Underground Facility Damage Prevention and Safety.

1.04 JOB CONDITIONS:

- A. Inspection of the Site: It is the Contractor's responsibility to have carefully inspected the Site during the bidding period to determine the extent and nature of the site work and the conditions under which it must be performed.
- B. Subsurface investigations have been completed. A copy of the Geotechnical Investigation can be found in Section 02210.
- C. Lines, Grades, Etc.: Verify all grades, lines and dimensions shown on Drawings and report any errors or inconsistencies to the Engineer before commencing work.
- D. Should any unusual conditions arise, contact the Engineer for instructions prior to continuation of clearing and grading operations.

1.05 QUALITY ASSURANCE:

- A. Work specified herein will be subject to inspection and testing by an independent testing laboratory selected and compensated by the Contractor. Selection of the testing laboratory is subject to the approval of the Engineer.

- B. Testing: Contractor shall employ (at the Contractor's expense) a geotechnical firm capable of performing the below compliance testing at the indicated intervals. Geotechnical firm subject to Engineer's approval.
1. The minimum compaction testing (ASTM D1557) shall be as follows for each lift of fill:
 - a. One (1) test per 5,000 SF under pavement area. See also Section 02740 Asphaltic Concrete Pavement.
 - b. One (1) test per 10,000 SF of all other areas.

In the event an above item is not constructed on fill, the areas shall be tested as if one (1) lift of fill had been put in place. Compliance testing shall be in accordance with ASTM D-2922.
 2. Additionally, the following elements shall be tested (ASTM D1557) for compliance with the compaction requirements to a depth of 12" below the bearing elevation of each element. Field compliance testing shall be in accordance with ASTM D2922.
 - a. One (1) test per 300 LF of utility trench.
 - b. One (1) test at each utility structure.

1.06 SUBMITTALS:

- A. Copies of all soils testing showing compliance with this section. Copies of all retests as required.
- B. Shoring and bracing plans for excavations if required. Signed and sealed by a Florida Registered Professional Engineer.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Suitable On-Site or Imported Fill/Backfill:
 1. Well graded material conforming to AASHTO A-3 sand, or AASHTO A-2-4 sand free from debris, organic material, fat clays, brick, lime, concrete, and other material which would prevent adequate performance of the backfill. Strict conditions regarding the use of certain fill types within the trench excavation apply. Contractor shall refer to the Drawings and Sections 02630 and 02740 for further requirements.

2. Fill shall consist of an inorganic, non-plastic, granular soil containing less than 15 percent material passing the No. 200 mesh sieve.
 3. All fill proposed for use at the site whether from on-site grading operations or an off-site source shall be tested as required by this section.
- B. Topsoil:
1. Well graded sandy material with composted organic content in accordance with ASTM D5268.
 2. Material shall be friable, free draining, surface soil reasonably free of grass, roots, weeds, sticks and trash.
 3. Material shall be free of odors.
 4. Material shall have a pH between 5.9 and 7.0 unless otherwise required by the sod supplier or landscaper.
- C. Crushed Stone: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2 inch sieve and 0 to 5 percent passing No. 8 sieve.
- D. Pipe Bedding and Haunching Material: Natural subgrade or backfilled material shall meet the requirements of the Unified Soil Classification for SW or SP material or AASHTO Soil Classification for A-3 material.

PART 3 - EXECUTION

3.01 NOTIFICATION OF UTILITY COMPANIES:

- A. Notify all utility companies that may have lines or services on or around the site prior to starting any work. Have the utility identify and locate their underground lines.
- B. Active utilities shall be adequately protected from damage and removed or relocated only as indicated or specified. The work shall be adequately protected, supported or relocated as directed by the Engineer. Take responsibility for the repair or replacement of any lines or services damaged during the course of this work.
- C. Remove, plug or cap all abandoned lines, meters, boxes, obstructions or piping in accordance with the requirements and approval of the agencies affected or as directed by the Engineer. Use licensed electricians or plumbers for this work.

3.02 PROTECTION:

- A. The Contractor shall design, furnish, install and maintain all support, shoring and sheet piling which may be required for the protection of site personnel and adjacent existing improvements.
- B. Maintain all bench marks, monuments and other reference points furnished by others and replace any that are disturbed or destroyed during the course of the work.
- C. Protect any trees or shrubs remaining within the vicinity of the work, or as indicated to remain on drawings. Refer to Section 02230 for related requirements.

3.03 STRIPPING AND STOCKPILING OF TOPSOIL:

- A. Strip all topsoil from the excavation areas and stockpile it on the site in a segregated pile as directed by the Engineer or Owner and as described in Section 02230.
- B. Where additional topsoil is required for finish grading, it shall be equal to the topsoil of the surrounding area. All topsoil shall be kept clean and free of weeds and refuse.
- C. Any additional topsoil shall be provided at the Contractor's expense.
- D. Topsoil not used in final grading shall be removed from the site.

3.04 UTILITY STRUCTURES AND PIPE BEDDING

- A. All utility structures (manholes, wetwells, precast units) shall be underlain by 12" of crushed stone (No. 57) or gravel extending 12" beyond the base. See Drawings for additional requirements.
- B. All solid (unperforated) utility pipe shall be bedded with 6" of A-3 sand.

3.05 SLOPE RESTRICTIONS, SHORING & BRACING OF EXCAVATIONS:

- A. Excavations exceeding 5 feet in depth shall comply with the Trench Safety Act (F.S. 553.60-64) and shall employ the requirements of 3.05 (B) or 3.05 (C) as applicable.
- B. Excavation walls adjacent to existing structures and pavements, such that foundations or bearing elements could be undermined, shall be laterally supported by sheet piles.
 - 1. Contractor shall at his expense design, furnish, and install sheet piles.

2. System shall use walers, tie-backs or deadman as necessary to prevent movement of soils under or adjacent to existing structures.
 3. System shall be designed under the supervision of a Florida Registered Professional Engineer.
 4. The use of jetting to install sheet piles is not allowed.
 5. Refer to the Geotechnical Report for design soil pressures.
 6. Upon completion of excavation activities all shoring & bracing materials shall be removed.
- C. Excavations not adjacent to existing structures may be open cut.
1. Excavation walls greater than 5 feet in depth shall not exceed 2:1 (H:V).
 2. Limits of excavation shall not advance beyond the property or right-of-way line.
 3. Slopes shall be protected from erosion.
 - a. Construct a perimeter berm redirecting stormwater.
 - b. Apply an impervious sheeting covering slopes during rain events as necessary.
 4. Excavation slopes shall be terraced every 5 feet vertically with a 4 foot wide continuous terrace. A shallow drainage ditch, 8-inches deep, shall be cut at the toe of each slope to collect stormwater.
 5. In lieu of 2:1 (H:V) sideslopes the Contractor may utilize a steel trench box and ladder designed for the purpose of protecting workers in steep wall excavations.
- D. All utilities exposed by the excavation shall be supported or redirected as required to remain in service.
- E. Differing materials removed from the excavation shall be segregated into separate piles. Suitable fill, unsuitable fill, organics and trash shall not be combined into a single pile.

3.06 EXISTING SOIL COMPACTION AND PREPARATION:

- A. Subsequent to clearing and stripping, compact the upper 12 inches of exposed surficial sandy soils to the requirements of Paragraph B of this section.

1. Use non-vibratory or vibratory equipment (3 to 4 ton static weight roller) as allowed by groundwater levels and proximity to existing structures.
 2. Provide a minimum of 4 passes.
 - a. Provide an equal number of passes in directions perpendicular to each other.
- B. Minimum compaction requirements (per ASTM D1557) for excavations in or activities on existing soils shall be as follows:
- | | |
|--|-----|
| 1. Foundations, slabs and sidewalks | 95% |
| 2. Paving areas | 98% |
| 3. Utility trenches/pipelines and structures | 98% |
| 4. Landscaping and athletic fields | 90% |
| 5. All other areas | 85% |
- C. If encountered, surficial exposed clayey soils should not be compacted.
1. Clayey soils beneath proposed improvements are unsuitable and shall be removed as described elsewhere in this Section.
 2. Elsewhere, cover exposed clayey soils as soon as possible with suitable fill, limit access to area until soil has been covered and protected from further disturbances.
- D. After completion of compaction activities, proofroll existing surface with a heavy, pneumatic tired vehicle such as a fully loaded dump truck.
1. Remove and replace soft soils with suitable fill.
 2. Recompact and retest area.
 3. Proofrolling shall consist of (2) two complete passes of the vehicle in opposite directions.

3.07 FILL PLACEMENT:

- A. Backfill Placement:
1. Within 50 feet of existing structures:
 - a. Compact soils with light (2,000 pounds or less) walk behind vibratory rollers or sleds.
 - b. Heavy (2 tons or greater) vibratory equipment shall not be allowed.
 - c. Place loose lifts not exceeding 6 inches.

2. With 24" or less separation between compaction surface and groundwater table:
 - a. Place loose lifts not exceeding 6 inches in depth.
 - b. Compact each lift using non-vibratory equipment.
 3. With greater than 24" separation between compaction surface and groundwater table:
 - a. Place loose lifts not exceeding 12 inches in depth.
 - b. Compact each lift using vibratory equipment.
 4. Regardless of compaction achieved all lifts shall receive a minimum of 8 passes of the compaction equipment. Provide an equal number of passes in directions perpendicular to each other.
- B. Compact each lift with 3 to 4 ton static weight roller until the following % of the maximum dry density (per modified proctor max. dry density, ASTM D 1557) is obtained.
- | | |
|--|-----|
| 1. Foundations, Slabs & Equipment Pads | 95% |
| 2. Paving Areas, Utility Trenches & Structures | 98% |
| 3. Landscaping | 90% |
| 4. All Other Areas | 85% |
- Recompact areas which fail to meet the compaction requirements until passing results are achieved.
- C. Compaction of utility trenches may be accomplished with a small walk behind jumping jack, until sufficient fill is in place to allow larger equipment to safely operate.
- D. Fill shall be moisture conditioned within 2 percent of optimum moisture content. Based on ASTM D-1557.
- E. After completion of compaction activities, proofroll each lift with a heavy, pneumatic tired vehicle such as a fully loaded dump truck.
1. Remove and replace soft soils.
 2. Recompact and retest area.
 3. Proofrolling shall consist of (2) two complete passes of the vehicle.
- F. Differing materials removed from any excavation shall be segregated into separate piles. Suitable fill, unsuitable fill, organics and trash shall not be combined into a single pile.

3.08 LAYOUT AND ESTABLISHMENT OF GRADES:

- A. The Owner has established the lot line bearings and project benchmark elevation.
- B. The Contractor shall employ and pay for the services of a Florida licensed surveyor who shall make all required surveys for establishing all points, lines, grades and levels, and otherwise fully and completely lay out all the work required by the Contract.

3.09 GRADING AND RESHAPING SITE:

- A. Cut, fill, backfill, and rough grade as necessary to bring entire site level with elevations of undersides of concrete slabs, walks, paving and finished landscaping as indicated on Drawings or in Specifications.
- B. Grade areas to receive future topsoil and sod to allow for such material. Leave finished surfaces and surfaces to receive paving smooth, compacted and free from irregular surface drainage.
 - 1. For areas receiving top soil set rough grades 4" below finish grades.
 - 2. For areas receiving sod set finish grades 1" below final grade.
 - 3. For areas receiving seed set grades at finish grades
 - 4. It is the intent of these grade offsets for the finish surface to be a flush condition with the adjacent hardscape. Differences in sod thickness may require the Contractor to adjust these requirements to suit.
- C. Surfaces and grade lines shall not vary from the established grades and slopes by more than the following tolerances:

1. Landscaped Surfaces	0.15 feet
2. Drainage Features	0.10 feet
3. Areas Under Paving and Structures	0.05 feet
4. Athletic Fields and other Playing Surfaces	0.05 feet
5. All Other Areas	0.10 feet
- D. Where elevations are indicated on the Drawings obtain such finish elevations and establish uniform slopes of finish grades between indicated elevations. Grade lines between any given elevations shall conform to the above tolerances.
- E. Where elevations are not indicated, establish and obtain uniform slope from finished spot elevations at the exterior face of the building or other vertically described site element out to the nearest indicated elevations for finished grades as shown on the Drawings.

- F. The Contractor shall provide suitable fill as necessary to achieve all proposed grades.

3.10 CONSTRUCTION OF STORMWATER DITCHES, PONDS AND SWALES:

- A. Construct ponds, drainage ditches and swales as shown on the Drawings and finish to permit proper surface drainage.
- B. Unless otherwise noted swales shall be graded with a minimum slope of 0.0025 ft/ft in the direction of flow.
- C. All swales shall be stabilized with sod.
- D. Sideslopes exceeding 2 :1 shall be stabilized with sod which is staked in place to prevent movement.
- E. Excavated soil shall be temporarily stockpiled in an area coordinated with the Owner.
- F. Offsite swales receiving discharge from project site shall be regraded to drain as necessary.

3.11 SPREADING TOPSOIL:

- A. Transport topsoil from the stockpile on the site and spread uniformly on all disturbed areas that are to receive topsoil. Remove any clay, stones larger than 3/4 inch in diameter, weeds, roots, rubbish and all other foreign matter from the topsoil.
- B. Upon completion of the work, any surplus topsoil shall be removed from the project site and disposed of by the Contractor, unless otherwise directed by the owner.
- C. Any deficit in top soil shall be made up by the Contractor with an approved soil.
- D. Unless otherwise noted on the drawings restored topsoil shall be a minimum of 3" deep.

3.12 REPAIR/RESTORATION:

- A. Repair damage to other portions of the Work resulting from work of this Section at no additional cost to Owner. On new work, arrange for damage to be repaired by original installer.
- B. Disturbed areas shall be sodded or seeded and mulched as described on the Drawings or elsewhere in these Specifications.

3.13 CLEAN-UP:

- A. Minimize the transmission of dirt or debris by equipment or personnel to any property, public or private, outside the project Site. Immediately remove any such debris or dirt transmitted.
- B. Any excess materials left over at the conclusion of construction activities is first the property of the Owner. If not claimed by the Owner, then excess materials shall become the property of the Contractor and shall be disposed of legally at his expense.
- C. All streets, sidewalks, and paved driveways adjacent to or within the construction limits shall be swept clean of debris.

END OF SECTION

SECTION 02370

EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: The General Provisions of the contract, including the General Conditions, Supplementary Conditions and Special Conditions, along with the General Requirements, apply to the work specified in this Section.

1.02 SUMMARY:

- A. Includes But Not Limited To: Provide, install, maintain, and remove erosion and sedimentation controls as described in Contract Documents and as required by Contractors Pollution Prevention Plan.
- B. Related Sections:
 - 1. Section 02230 - Site Clearing, Stripping and Grubbing
 - 2. Section 02300 - Earthwork

1.03 REFERENCES:

- A. Florida Department of Transportation (Latest Editions):
 - 1. Standard Specification for Road & Bridge Construction.
 - 2. Design Standards for Design, Construction, Maintenance and Utility Operations on the State Highway System.
- B. Florida Department of Environmental Protection:
 - 1. Rule 62-621 Generic Permits
- C. Environmental Protection Agency (EPA)
 - 1. National Manual of Stormwater Best Management Practices.

1.04 QUALITY ASSURANCE: Contractor shall be certified by the Florida Department of Environmental Protection as an Erosion and Sedimentation Control Professional.

1.05 SUBMITTALS:

- A. Provide copy of application and stormwater pollution prevention plan as submitted to Florida Department of Environmental Protection as required by Section 02370 3.02 A.

- B. Provide a copy of Notice of Termination (NOT) of coverage under FDEP Generic Permit for Large and Small Construction Activities.
- C. Name of Certified FDEP Professional and a copy of the page of the permit application identifying the FDEP individual and their contact information.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Filter Fabric: Florida Department of Transportation Class D-3 material.
- B. Sand Cement Bags:
 - 1. Portland Cement: ASTM C150 Type I/II material.
 - 2. Fine Aggregate: Clean silica sand or other inert natural material of similar characteristics.
 - a. 97% material passing No.4 sieve
 - b. 20% material passing No.100 sieve
 - c. 5% material passing No. 200 sieve
 - 3. Sacks: Provide sacks of uniform size made of jute, cotton or scrim reinforced paper capable of holding the sand cement mixture without leakage. Sacks shall provide a finished unit approximately 12x18x6 inches in measurement. Material shall be permeable and absorptive enough to permit passage of water to provide for hydration of cement. Materials shall be biodegradable and contain no asphalt, oil or plastic lamination.
- C. Rubble:
 - 1. Provide clean, hard, durable rubble free of pollutants consisting of broken stone, concrete or masonry. Material shall be free of reinforcing wire or steel rebar.
 - 2. Material shall have a minimum nominal dimension of 3 inches for any given piece of rubble.
- D. Fiber Rolls:
 - 1. Tube shaped rolls of straw, flax, rice, coconut fiber, or compost.
 - 2. Rolls shall be wrapped with UV degradable polypropylene netting or biodegradable netting.

- E. Silt Fence: Florida Department of Transportation Type III silt fence meeting all requirements of FDOT Index 103.
- F. Seed for Temporary Erosion Control:
 - 1. Winter Months (October to March): Annual Rye Grass
 - 2. Summer Months (April to September): Millet Grass
- G. Water: Clean and potable.

PART 3 - EXECUTION

3.01 PERFORMANCE:

- A. General:
 - 1. Provide and maintain temporary erosion and sedimentation control measures from time site is disturbed to time permanent controls, paving, landscaping, and site restoration measures are able to perform erosion and sedimentation control functions.
 - 2. Clean-out, repair, and maintain control structures as necessary to enable them to perform properly.
 - 3. Prevent pollution of streams, water impoundments, and channels leading to them with chemicals, fuels, lubricants, bitumens, raw sewage, and other harmful waste.
- B. Sediment Barriers/Silt Fence:
 - 1. Place fence as shown on Drawings and as necessary to maintain regulatory compliance with Contractor's Pollution Prevention Plan.
 - 2. As a minimum, Silt Fence shall be installed along all downstream project property lines and between any construction activity and all waterways, water bodies, sewer inlets and wetlands.
- C. Fiber Rolls: Place rolls as shown on Drawings and as necessary to maintain regulatory compliance with Contractor's Pollution Prevention Plan.
- D. Seed or Sod:
 - 1. All areas disturbed by construction, and to remain unpaved or outside the building envelope, shall be stabilized by permanent seed and mulch or sod, as described elsewhere in the contract documents. Refer to Section 02921 for permanent grassing requirements.

2. Areas that will be regraded or otherwise disturbed later during construction may be seeded with a temporary seed mix to obtain temporary erosion control.

E. Sand-Cement Bag Rip Rap:

1. Proportion sand and cement in the ratio of 5 cubic feet of sand to 94 lbs of cement.
2. Fill sacks to uniform size. Keep at least 6 inches of the sacks unfilled to allow for tying and closure.
3. Place sacks as shown on the drawings. Place sacks in a running bond type pattern. Align sacks/bags so that continuous joints are perpendicular to the primary flow and staggered joints are parallel to the primary flow.
4. Stake alternating bags in place with an 18" length of #3 rebar centered in bag. Set top of bar 1" below surface of bag.
5. After placement saturate bags with water.

F. Rubble:

1. Place rubble as required by drawings or specifications.
2. Dump rubble in place so as to provide a minimum depth of 18 inches.
3. Ensure that rubble does not segregate so that smaller pieces evenly fill the voids between the larger pieces.

3.02 REGULATORY REQUIREMENTS:

A. Florida Department of Environmental Protection (FDEP) - NPDES Program.

1. Contractor shall notify Florida Department of Environmental Protection of proposed construction and file Notice of Intent (NOI) to use Generic Permit for Stormwater Discharge from Large and Small Construction Activities with Florida Department of Environmental Protection.
2. Contractor shall be responsible for application fee and preparation of all attachments. Attachments shall include a Pollution Prevention Plan.
 - a. The minimum requirements for pollution prevention are described on the contract drawings and in these specifications.
 - b. The Contractor may use the pollution controls presented in these documents as the basis for his Pollution Prevention Plan.

- c. The Contractor shall supplement the contract drawings and specifications as necessary to satisfy the Contractor's permit application and the Contractor's means and methods of construction.
- 3. It shall be the Contractor's responsibility to familiarize himself with the permit conditions and maintain the site in a condition that will be compliant with the permit.
- 4. Any testing or other requirements required by the governing agency to remain compliant or in response to a non-compliance event shall be the financial and material burden of the Contractor.
- 5. Contractor shall notify FDEP of conclusion of project and submit a notice of termination (NOT) coverage.
- B. South Florida Water Management District (SRWMD): See Section 01060 for requirements.

3.03 DUST CONTROL:

- A. Contractor shall make every effort to limit the transport of windborne dust and particulates from the disturbed site.
- B. Soil erosion due to wind shall be controlled with the application of water to dampen soil.

3.04 REPAIR AND RESTORATION:

- A. If any seed is washed out before germination, repair damage, refertilize and reseed.
- B. Maintain silt fence in a functional condition. Repair any damage immediately. Implement a routine maintenance schedule for all erosion schedule. All erosion control features shall be inspected immediately following all storm events.

3.05 CLEANING:

- A. Remove temporary controls and accumulated sediments when permanent facilities are able to perform function and when approved by Engineer.
- B. Remove accumulations of silt and other erosion products from all permanent facilities.

END OF SECTION

SECTION 02538

UTILITY ADJUSTMENTS

PART 1 - GENERAL

- 1.01 DESCRIPTION OF WORK:** The work under this Section shall include the furnishing of all labor, materials, and equipment necessary for the adjustment of existing manholes, valve boxes, and meter boxes as called for on the Drawings or required during construction of the improvements.
- 1.02 PRODUCT DELIVERY AND HANDLING:** Handle and store materials to prevent damage and deterioration.

PART 2 - PRODUCTS

2.01 MANHOLE ADJUSTMENT MATERIALS:

- A. Concrete Adjustment Rings: Concrete adjustment rings shall be 4,000 psi (minimum) concrete, Type II cement. Minimum height of rings shall be 2 inches. Rings shall be grouted in place. Concrete mortar (1/2" thick) shall be applied to the interior and exterior surfaces of the concrete adjustment rings. The interior of the concrete ring shall be coated. In lieu of precast concrete rings, bricks may also be utilized (mortar in place) with 1/2" thick mortar layer on interior and exterior surfaces.
- B. High Density Polyethylene Rings: High Density polyethylene (HDPE) rings may be utilized for manholes located in non-traffic areas only (not in streets, parking areas, drive ways etc.). HDPE adjustment rings shall be stackable, have a minimum height of 2 inches, and be installed with silicone sealant as per the manufacturer's directions. Apply heavy amount (covering the entire joining surfaces) of silicone sealant between the manhole cone section and HDPE rings, between all stackable rings, and between HDPE ring and manhole frame (note: do not use concrete grout during the assembly of HDPE rings). During the installation of HDPE rings, the Contractor shall apply downward pressure on the rings to squeeze out the excess silicone (tight fit).

PART 3 - EXECUTION

- 3.01 WATER METER ASSEMBLY ADJUSTMENT:** Where the existing grade elevation at the water meter assembly is being modified, the Contractor shall adjust the existing water meter assembly by installing a meter adjustment-resetter. The resetter shall not exceed 12 inches in height; existing service shall not exceed

24 inches in depth from finish grade. Resetters shall not be placed in concrete or driveways. The Contractor shall provide all miscellaneous service connection fittings/gaskets; all necessary jointing; removing, adjusting, and resetting existing meter boxes; all required removal of grassing; excavation; dewatering; native soil backfill; furnishing and placing steel decking over excavations; all sheeting, shoring, and bracing required to maintain excavations in a safe condition; flushing, protecting existing structures, utilities, and property, both public and private; placing and removing all traffic signs and barriers and maintaining traffic; as-builts; cleaning up the site; installing silt fence and other erosion and sedimentation protection and control devices; furnishing all material, labor, tools, and equipment; and all incidental and related work to complete the item.

3.02 VALVE BOX AND COVER ADJUSTMENT: The Contractor shall complete removal of all existing materials; dewatering; native soil backfill; furnishing and placing steel decking over excavation; adjustment of existing valve jacket, or providing new valve box jacket extension if necessary; furnish and install concrete collar; pavement repair (where applicable); placing and removing all traffic signs and barriers and maintaining traffic; cleaning up the site; furnishing all materials, labor, tools, and all incidental and related work required. All adjustments shall be completed prior to the placement of the final surface. Valve box components that can be reused shall be carefully removed and the contact areas shall be cleaned of all mortar, concrete, grease, and sealing compounds. Any items broken in the process of removal and cleaning shall be replaced in kind by the Contractor at its own expense. If the adjustment involves slight lowering or raising a valve box, the outside shell of a slip or screw casing shall be excavated to its full length and adjusted to the proposed grade. Pipe castings shall be excavated to the depth required to cut from or weld a section to the casing as may be needed to adjust the ring to the proposed elevation. The ring shall be welded to the casing prior to pouring concrete around the casing.

3.03 MANHOLE ADJUSTMENT:

A. The Contractor shall physically adjust (vertically) to new finish grade at the locations shown on the Drawings or as required. Contractor shall complete: removal of grassing; pavement; excavation; dewatering; native soil backfill; furnishing and placing steel decking over excavation; adjusting manhole top to new finish grade, removing existing manhole frame and cover; grout; pavement repair (where applicable); placing and removing all traffic signs and barriers and maintaining traffic; cleaning up the site; furnishing all materials, labor, tools, and all incidental and related work required to complete the work of the item unless indicated otherwise on the contract documents. All work shall be completed prior to the placement of the roadway base course. Existing cone sections shall be carefully removed and properly disposed. The contact areas shall be cleaned of all mortar, concrete, grease and sealing compounds. No separate payment will be made for furnishing and installing new precast cone section.

- B. For grade adjustment in setting the manhole frame, adjustment rings shall be used on top of manhole slabs and manhole cones in accordance with the Drawings.
- C. Wastewater manhole frames and covers shall be set to conform accurately to the finished ground or pavement surface as established by the Contract Drawings, unless otherwise directed by the Engineer and approved by Owner. Frames on manhole cones shall be set concentric with the masonry and in a full bed of mortar so that the space between the top of the manhole and the bottom flanges of the frame shall be completely filled and made watertight. A ring of mortar at least 1-inch thick and pitched to shed water away from the frame shall be placed around the outside of the bottom flange. Mortar shall extend to the outer edge of the concrete adjustment rings and shall be finished smooth and flush with the top of the flange.
- D. The neoprene gasket on the underside of the manhole cover shall be protected from damage during the construction period. Should the gasket be damaged, it shall be repaired by the Contractor in accordance with the manufacturer's recommendation. The condition of all neoprene gaskets shall be inspected for damage during the final inspection of the project. Damaged gaskets/covers will not be accepted.

END OF SECTION

SECTION 02590

UNDERGROUND FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION: Work under this Section consists of furnishing all tools, equipment, and labor as described herein.

1.02 SUBMITTALS:

- A. Submit sketches of all conflicts and proposed resolution of conflicts.
- B. As-built Drawings shall depict all Underground Facilities encountered in the work.

PART 2 - PRODUCTS

(Not Applicable)

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. Location of Underground Facilities:
 - 1. Underground Facilities are underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any other encasements containing such facilities, including those which convey electricity, gases, compressed air, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
 - 2. Prior to excavation, the Contractor shall conduct an investigation into the location of all Underground Facilities. The objective of this investigation is to determine the locations of Underground Facilities in advance of actual construction in order to resolve ahead of time conflicts with the proposed work. Underground Facilities that are shown or indicated are based on limited information. The locations shown or indicated are only approximate and it is probable that there are Underground Facilities that are not shown or indicated.

3. The Contractor shall, by means of standard geophysical prospecting techniques, designate (to indicate by marking) the presence and approximate depths of Underground Facilities along the routes of proposed construction. All Underground Facilities within five (5) feet of the proposed work shall be designated.
4. The Contractor shall locate Underground Facilities to obtain accurate horizontal and vertical positions and may utilize any methods or procedures he deems appropriate for locating, but not damaging, the Underground Facilities. These methods may include, but not be limited to, careful hand excavation, pot-holing, and the use of ground penetrating radar (GPR). All Underground Facilities shall be located, both those shown or indicated and those that are not shown or indicated. The Contractor shall have full responsibility for the safety and protection of all Underground Facilities and repairing any damage thereto resulting from the work.
5. If an Underground Facility is uncovered or revealed which constitutes an unforeseen obstruction, the Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any work in connection therewith, give notice to the Engineer. The Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is needed in the Contract to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

END OF SECTION

SECTION 02630

STORM SEWER COLLECTION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION: Work under this Section consists of furnishing all materials, supplies, equipment and labor in accordance with the requirements set forth herein and as shown on the drawings.

1.02 RELATED DOCUMENTS: The General Provisions of the Contract, including the General Conditions, Supplementary Conditions and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.

1.03 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS:

A. The work under this Contract shall be in strict accordance with the following codes and standards.

1. All Local, County, Municipal and Federal Codes.
2. American National Standards Institute (ANSI).
3. American Society for Testing and Materials (ASTM).
4. American Water Works Association (AWWA).
5. American Association of State Highway and Transportation Officials (AASHTO).
6. Florida Department of Transportation Specifications (DOT).
7. St. Johns River Water Management District. (SJRWMD).
8. Florida Dept. of Environmental Protection. (FDEP).

1.04 REFERENCED CODES AND STANDARDS:

A. American Association of State Highway & Transportation Officials (AASHTO)/ American Society for Testing and Materials (ASTM):

1. ASTM C76/ AASHTO M170, Round Reinforced Concrete Pipe.
2. ASTM C443 / AASHTO M198, Joints for Circular Concrete Sewer and Culvert Pipe with Rubber Gaskets.
3. ASTM C497, Determining Physical Properties of Concrete Pipe or Tile.
4. ASTM C507 / AASHTO M207, Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer Pipe.
5. ASTM C655/ AASHTO M242, Reinforced Concrete D-Load Culvert, Storm Drain and Sewer Pipe.
6. ASTM D1248, Standard Specification for Polyethylene Plastics Molding and Extrusion Materials.

7. ASTM D2321, Standard Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe.
8. ASTM D3350, Standard Specification for Polyethylene Plastics Pipe and Fitting Materials.
9. AASHTO M252, Specification for Corrugated Polyethylene Drainage Tubing, 3 to 10 Inch Diameter.
10. AASHTO M294 Type S, Specification for Corrugated Polyethylene Pipe, 12 to 36 Inch Diameter.
11. ASTM F405, Standard Specification for Corrugated Polyethylene Tubing and Fittings, 4" to 8" diameter.
12. ASTM F667, Standard Specification for Large Diameter Corrugated Polyethylene Tubing and Fittings, 10" to 24" diameter.
13. ASTM F477, Standard Specification for Elastomeric Seals.
14. AASHTO M294, Standard Specification for Corrugated Polyethylene Pipe, 12" to 24" diameter.
15. AASHTO M190, Bituminous Coated Corrugated Metal Culvert Pipe and Pipe Arches.
16. ASTM A798, Installing Factory-Made Corrugated Steel Pipe for Sewers and Other Applications.
17. ASTM A760/ AASHTO M36, Metallic (zinc or aluminum) Coated Corrugated Steel Culverts.
18. AASHTO M196, Corrugated Aluminum Alloy Culverts and Underdrains.
19. ASTM A762, AASHTO M245, Precoated, Galvanized Steel Culverts and Underdrains.
20. ASTM C139, Concrete Masonry Units for Construction of Catch Basins and Manholes.
21. ASTM C150, Portland Cement.
22. ASTM C443, Joints for Concrete Pipe and Manholes, Using Rubber Gaskets.
23. ASTM C478, Precast Reinforced Concrete Manhole Sections.
24. ASTM C1433, Precast Reinforced Concrete Box Sections for Culverts, Storm Drains and Sewers.
25. ASTM C923, Resilient Connectors between Reinforced Concrete Manhole Structures, Pipes and Materials.
26. ASTM F2306/F2306M-07 Standard Specification for 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

- B. Manufacturer's name and model numbers are listed to establish a standard of quality. Equivalent items of other manufacturers are acceptable.

1.05 SUBMITTALS:

- A. Submit manufacturer's certification of materials' conformance to specifications.

- B. Submit manufacturer's literature, catalog data and installation instructions.
- C. Precasters shop drawings indicating all dimensions, finishes, reinforcement and accessories for each unit.
- D. As-built drawings in compliance with 01700. As-built drawings of the drainage system shall be provided prior to making permanent above pipe improvements.
- E. Comply with Section 01300, Submittals.

1.06 PRODUCT DELIVERY AND HANDLING:

- A. Exercise care to prevent damage of product during loading, transporting, unloading and storage.
- B. Do NOT drop pipe or fittings.
- C. Do not store directly on ground and assure that materials are kept clean.
- D. Store material in areas approved by the Owner.
- E. Store material in such a manner as to not create a nuisance or safety hazard.

1.07 QUALITY CONTROL:

- A. Contractor shall make a timely submittal of as-built drawings of the stormwater system and prior to making permanent above pipe improvements.
- B. Installed pipe slopes shall not deviate by more than 5% of the specified slope for each run.
- C. Structure inverts and control elevations shall not deviate by more than 0.10 feet from the specified elevation.
- D. Pipe slopes and inverts not meeting the standards of this section shall be relaid to the required slope or invert at the contractor's expense. Failure to correct a deficient item shall be cause for the contractor to forfeit payment for the materials and installation costs incurred for the item.

PART 2 - PRODUCTS

2.01 PIPE:

- A. General: Pipe shall be furnished free from defects impairing strength and durability and should be of best commercial quality for purpose specified. Structural properties shall be sufficient to safely sustain or withstand strains to which it is normally subjected.
- B. Pipe Materials:
 - 1. Reinforced Concrete Circular Pipe (RCP) and Elliptical Pipe (ERCP):
 - a. Specification: ASTM C76 (RCP), C-507 (ERCP).
 - b. Thickness: Class III
 - c. Reinforcing: 65 ksi: Steel mesh.
 - 2. Corrugated Solid PVC Pipe:
 - a. Specification: ASTM F949.
 - b. Contech A-2000 PVC Pipe or approved equal.
 - c. PVC Pipe with smooth interior and exterior corrugations.
 - 3. Corrugated Perforated PVC Pipe:
 - a. Specification: Corrugated Pipe (ASTM F949) with ASTM F405 underdrain slots (1.90 in²/LF).
 - b. Contech A-2000 PVC Pipe or approved equal.
 - c. Corrugated PVC pipe material with smooth interior.
- C. Pipe Joints:
 - 1. Reinforced Concrete Pipe (RCP & ERCP):
 - a. Bell & Spigot with Rubber Gaskets: ASTM C443.
 - 2. Corrugated PVC Pipe (CPP):
 - a. Couplings: ASTM D3212.
 - b. All joints shall be rated as Water Tight.
- D. Filter Fabric:
 - 1. Specification: FDOT Specification Section 985 (Geotextile Fabrics).
 - 2. Class D-3 Material.

2.02 PRECAST UNITS:

A. Manholes, Inlets and Catch Basins:

1. Manholes, inlets and catch basins shall be constructed of precast reinforced concrete rings, precast reinforced sections, or cast-in-place concrete. Manholes, inlets and catch basins shall be in accordance with State of Florida Department of Transportation standard details.
 - a. Precast Reinforced Concrete Rings: Rings or sections shall have an inside diameter as indicated on the drawings, and shall be not less than 48 inches in diameter. Wall thickness shall conform to requirements of ASTM C76, except that lengths of the sections may be shorter as conditions require. Tops shall conform to ASTM C478. Top section shall be eccentric cone type.
 - b. Precast Reinforced Concrete Manhole Risers and Tops: Design, material and installation shall conform to requirements of ASTM C478. Top sections shall be eccentric.
 - c. Flat top manhole tops shall be reinforced concrete as detailed on the drawings.
 - d. Precast Catch Basins: Concrete for precast sections shall have a minimum compressive strength of 4,000 psi at 28 days, ASTM A615, Grade 60 reinforcing steel, rated for AASHTO HS20-44 loading with 30 percent impact, and conform to ASTM C-857.
 - e. Brick Mortar: Precast Reinforced Concrete Ring and Riser Structures: By volume, 1 part of Portland cement and 2 parts sand. Water in mixture shall produce a stiff, workable mortar, but shall not exceed 5-1/2 gallons per sack of cement.
 - f. Frames and covers shall be cast iron conforming to ASTM A48.
 1. The frame and cover shall be rated for HS20-44 loading, have a studded pattern on the cover with the Owner's name and the words "storm sewer" stamped into the surface. The studs and the lettering shall be raised 5/16 inch.
 2. The cover shall be a minimum of 24 inches in diameter and shall have four 3/4 inch vent holes and two lifting slots. The bearing surface of the frame and cover shall

be machine finished. The cover shall fit firmly on the frame without movement when subject to traffic.

- g. Grates shall be cast grey iron conforming to ASTM A48 in accordance with Florida Department of Transportation standard details. The grate shall fit firmly on the frame without movement when subject to traffic.
 - 1. All grates shall be traffic rated for HS20-44 loading.
 - 2. All grates shall be fitted with an eyebolt and chain secured to the concrete to prevent unauthorized removal.
 - 3. The shape and size of waterway openings shall be as shown on the drawings
- h. Flexible sealing compound shall be packaged in extruded preformed shape, sized to completely fill the joint between precast sections, and form permanently flexible watertight seal. The sealing compound shall be non-shrink and meet AASHTO M-198B.

2. Adjusting Brick and Rings:

- a. Brick: Sound, hard and uniform shape. Comply with ASTM C32, Grade MM.
 - b. Rings: Pre-case unit complying with ASTM C478.
3. Mortar: Metallic non-shrink mortar applied and cured in conformance with the manufacturers recommendations. EMBECO 167, or equal.

B. Headwalls & Mitered End Sections:

- 1. Headwalls and mitered end sections shall be cast-in-place or precast concrete and in accordance with Florida Department of Transportation standard details.
- 2. Concrete shall be in accordance with State Department of Transportation standard specifications. Concrete shall have a minimum compressive strength of 4,000 psi at 28 days. The cement shall be Type II conforming to ASTM C150.

C. Reinforcing Steel: Reinforcing steel shall be deformed bars, ASTM A615, Grade 60 unless otherwise noted.

D. Stormwater Check Valve:

1. Duck bill check valve shall be as manufactured by Red Valve (Model Series TF-1), or equal.

PART 3 - EXECUTION

3.01 EXCAVATION:

- A. General: The Contractor shall perform all excavation of every description and of whatever substances encountered to the depths indicated on the Drawings or as necessary. This shall include all necessary clearing and grubbing of any foreign substance encountered within the structure or trench area. Excavated material suitable for backfill shall be piled in an orderly manner at a sufficient distance from the trench to prevent slides or cave-ins.
- B. Protection of Existing Facilities and Utilities: All existing improvements such as pavements, conduit, poles, pipes and other structures, shall be carefully supported and fully protected from injury and, in case of damage, they shall be restored by the Contractor without compensation. Existing utilities and other underground obstructions are shown on the plans, but the accuracy of the locations and depths is not guaranteed. The Contractor shall contact all utilities prior to construction and arrange for the necessary assistance in locating and protecting the existing utilities. The Contractor shall be responsible for damages to these existing utilities and shall, in case they are damaged, restore them to their original condition at no cost to the Owner.
- C. Trench Excavation: The minimum width of the trench shall be equal to the outside diameter of the pipe at the joint plus 8 in. each side of pipe for unsheeted or sheeted trench, with the maximum width of trench, measured at the top of the pipe, not to exceed the outside pipe diameter, plus 24 in., unless otherwise shown on the drawings. Trench walls shall be maintained vertical from the bottom of the trench to a line measured at the top of the pipe. From the top of the pipe to the surface of the trench walls shall be as vertical as possible under soil conditions.

No more than 150 linear feet of trench shall be open in advance of the completed pipe laying operation without prior approval of the Engineer. Pipe trenches across roadways and driveways shall be backfilled as soon as the pipe is installed. Where, in the opinion of the Engineer, adequate detour facilities are not available, no trench shall be left open across a roadway or commercial property driveway where adequate detour routes are not available for a period in excess of 30 minutes, or as directed by the governing authority. No trench shall be left open across any roadway or driveway for more than one daylight period. It shall be the Contractor's responsibility to provide traffic control and barricades as necessary.

- D. Shoring, Sheet piling and Bracing: The Contractor shall design, furnish, install, and maintain all shoring, sheet piling and bracing or provide other approved facilities required to perform and protect the excavation and as necessary for the safety of the public, the employees, and the preservation of existing roads, structures and other utilities. The top of such sheet piling left in place shall be cut off at a minimum elevation of 2.5 ft. below finished grade. All work shall be in accordance with the Florida Trench Safety Act. See Section 02300 for additional requirements.
- E. Boulder Removal: All rocks, stones, boulders or concrete, having any dimension larger than permitted to be used for backfill in the paragraph entitled "Backfilling" of these Specifications, shall be removed from the site and disposed of by the Contractor.
- F. Trash Removal: Non-hazardous waste material encountered within the trench section including, but not limited to, household solid waste, wood, tires, and plastic shall be removed from the site. Under no circumstances, shall this material be reburied.
- G. Disposal of Excess Materials: The Contractor shall dispose of the excavated materials not required or suitable for backfill. All surplus excavated material which is suitable for fill shall become property of the Contractor and shall be disposed of by the Contractor at his expense.
- H. Unsuitable Soil Conditions and Over Depth Excavation: Overexcavate and backfill as required by Section 02300.

3.02 INSTALLATION OF STORM SEWER PIPE:

- A. Manufacturer's Instructions: Storm sewer pipe shall be handled, stored and installed in strict accordance with the pipe manufacturer's instructions. A copy of the manufacturer's instructions shall be kept at the site of the work at all times by the Contractor.
- B. The trench shall be excavated as specified and the bottom of the trench shall be shaped to give sufficient uniform circumferential support to the lower, one-fourth of each pipe.
- C. Pipe laying shall proceed upgrade.
- D. Lay pipes true to line and grade. Gravity flow sewer shall be laid with bells facing upgrade.
- E. Do not lay pipe on unstable material, in wet trench or when trench and weather conditions are unsuitable for the work.

- F. Support pipe on compacted bedding material. Excavated bell holes only large enough to properly make the joint.
- G. Inspect pipes and fittings, for defects before installation. Defective materials shall be plainly marked and removed from the site. Cut pipe shall have smooth regular ends at right angles to axis of pipe.
- H. Clean interior of all pipe thoroughly before installation. When work is not in progress, open ends of pipe shall be closed securely to prevent entrance of storm water, dirt or other substances.
- I. Lower pipe into trench carefully and bring to proper line, grade, and joint. After jointing, interior of each pipe shall be thoroughly wiped or swabbed to remove any dirt, trash or excess jointing materials.
- J. Where cleaning of the pipe after laying is difficult because of the small diameter, the Contractor shall keep a suitable swab or drag in the pipe and shall pull the swab forward past each joint immediately after the jointing operation.
- K. Jointing: The bell and spigot surfaces shall be wiped free of dust, dirt, gravel or other foreign material before the application of the lubricant sealer. The resilient joint shall be connected by first brushing upon the mating surfaces, the proper lubricant sealer as recommended by the pipe manufacturers. The spigot end shall then be centered on grade into the bell end of the last downstream pipe length and shoved home and properly seated with the application of moderate force by a pry or lever device. The pipes shall be jointed no later than five minutes after the application of the lubricant sealer. Jointing for connections with existing mains, or other special joints, shall be approved by the Engineer before use.
 - 1. All joints shall be wrapped in a 30" wide layer of filter fabric. Fabric shall be centered on the joint and completely surround the pipe with a 18" lap.
- L. Do not lay sewer pipe in same trench with another pipe or other utility unless authorized by the engineer.
- M. Do not walk on pipe in trenches until covered by layers of fill to a depth of 12 inches over the crown of the pipe.
- N. Connections to Manholes or Inlets:
 - 1. Pipe connections to concrete manholes or inlets shall be made with resilient connectors.

2. Watertight gaskets shall be fitted to the pipe and embedded in the grouted annular space in accordance with the manufacturers requirements.
- O. It is the responsibility of the Contractor to install the stormsewer pipe as shown on the Drawings. The Contractor shall survey the newly installed line before backfilling to determine the actual invert elevations of the pipe. If the calculated slope is below the minimum acceptable requirements, the Contractor shall remove and relay the stormsewer pipe at his own expense before further installation continues. The Contractor shall submit the as-built information to the Engineer at the end of each work day. This information will be included in the daily inspection report. Constructed slopes shall not vary more than 5% from the design value.

3.03 PRECAST UNIT INSTALLATION:

- A. Installing Sections: Precast concrete sections shall be set so the manhole will be vertical and with sections in true alignment. Joint surfaces of the base of previously set section shall have an O-ring installed in the recess or shall be sealed with pre-molded plastic joint sealer "RAMNEK." If "RAMNEK" is used, joints shall be pre-primed.
- B. Non-Metallic Non-Shrink Grout: All holes in sections used for their handling, and the annular space between the wall and entering pipes shall be thoroughly plugged with Masterflow 713 Plus as manufactured by the BASF, or any approved equal non-shrinking mortar or grout, applied and cured in strict conformance with the manufacturer's recommendations, so that there will be zero leakage through openings and around pipes.
1. The mortar shall be finished smooth and flush with the adjoining interior and exterior manhole wall surfaces.
 2. Non-concrete pipe connections shall be fitted with a resilient connector to provide a watertight connection between the pipe and the manhole.
- C. Membrane Curing Compound: As soon as grout is hydrated to the point where it will not be marred by such application, and within two (2) hours after installing grout, the Contractor shall apply an approved membrane curing compound, conforming to ASTM C-309-74, Type 1, Class B, to the finished mortar surfaces both inside and outside the manhole. Submission of alternate mortars or grouts should include an alternate membrane curing compound or indicate which of the above approved products is proposed for use.

- D. Grade Adjustment: For grade adjustment in setting the man-hole frame, brick masonry shall be used on top of manhole slabs and precast concrete manhole cones in accordance with the drawings. Mortar shall be one part cement and two parts sand; lime shall not be used.
- E. Setting Manhole Frames: Manhole frames and covers shall be set to conform accurately to the finished ground or pavement surface as established by the Contract Drawings, unless otherwise directed by the Owner. Frames on manhole cones shall be set concentric with the masonry and in a full bed of mortar so that the space between the top of the manhole masonry and the bottom flanges of the frame shall be completely filled and made water tight. A ring of mortar at least one inch thick and pitched to shed water away from the frame shall be placed around the outside of the bottom flange. Mortar shall extend to the outer edge of the masonry and shall be finished smooth and flush with the top of the flange.
- F. Flow Channels: Flow Channels in manhole base shall be formed of Class "C" concrete and/or brick rubble and mortar, while the manholes are under construction. Cut off pipes at inside face of the manhole and construct the invert to the shape and sizes of pipe indicated. All inverts shall follow the grades of the pipe entering the manholes. Changes in direction of the sewer and entering branch or branches shall be laid out in smooth curves of the longest possible radius which is tangent to the centerlines of adjoining pipelines.

3.04 BACKFILLING:

- A. Material: All backfill shall be suitable fill as described in Section 02300 and as further described below:
 - 1. Bedding and Pipe Embedment: The material in the bedding, around the pipe and to a depth of 1 ft. over the pipe, shall be sand or a mixture of sand, shell or crushed stone properly graded and mixed so that fine grain material from the side walls of the trench or backfill above the embedment will not migrate into the backfill material. The backfill shall meet the following limitations.
 - a. Concrete Pipe: All material shall pass through a 3/4 in. square opening laboratory sieve.
 - b. Corrugated Metal and Plastic Pipe: All materials shall pass through a 1/2 in. square opening laboratory sieve.
 - 2. Above Pipe Embedment: The material shall be suitable fill as described in Section 02300.

3. Top of Backfill: The top 6 inches of the backfill shall be topsoil (as defined in 02300) in areas to be landscaped or grassed.
4. Additional Fill: If sufficient suitable backfill material is not available from the excavation, additional fill meeting the above requirements shall be provided by the Contractor at no expense to the Owner.

B. Placing and Compaction:

1. Bedding and Pipe Embedment: The backfill shall be placed by hand under and around the pipe to the springline and compacted. Particular care shall be taken to ensure that the backfill at the pipe haunch is free from voids and is properly compacted. The backfill shall be compacted to a density of not less than 98% of maximum as determined by AASHTO T-180.
 - a. Above Pipe Embedment in Areas of Permanent Pavement: The backfill shall be placed in layers having a depth that will permit proper compaction as described in Section 02300. The backfill shall be compacted to a density of not less than 98% of maximum as determined by AASHTO T-180.
 - b. Above Pipe Embedment In Areas Not Under Permanent Pavement: Within right-of-ways or other areas where permanent pavement does not exist or is not proposed the backfill material above 1 ft. over the pipe shall be compacted to a density of not less than 90% of the maximum density, as determined by AASHTO T-180.
2. In areas where unpaved, stabilized roads exist, the Contractor shall restore the road to its original grade and condition. The finished stabilized road shall have a minimum LBR value of 50 for the top 12" of the roadbed.
3. Miscellaneous: Backfilling around manholes, cleanouts and other structures shall be accomplished in the same manner as the connected pipe. Extreme care shall be used in backfilling wellpoint holes to prevent voids and settlement. If necessary, the holes should be plugged with a concrete slurry, such plugging to be at the expense of the Contractor.
4. Compaction: Shall be by hand or by mechanical tampers. Care shall be taken that the pipe is not struck by the tamper. Compaction by flooding may be allowed by written authorization of the Engineer although this will not release the Contractor of the responsibility to meet the required density.

5. The Contractor is to compact the backfill in such a manner to prevent settlement. Although the requirements of 3.03 may be met, nonsettlement is not assured and Contractor is not relieved of his responsibility by such compliance.
6. Pipe shall be laid and backfilled so that pipe deflection does not exceed five (5) percent.
7. All pipe shall laid to within 5% of the specified slope. Structure inverts shall be within 0.10 foot of the vertical elevation shown on the drawings.
8. The Contractor shall perform soil density tests as described in Section 02300.
9. All testing shall be paid for by the Contractor by a qualified testing laboratory of his choosing.

3.05 CULVERT REMOVAL AND REPLACEMENT:

- A. Culverts, catch basins and other drainage structures that are removed or damaged during construction shall be replaced with materials and structures equal and similar to those removed or damaged. Manhole covers and gratings shall be set at the original elevations unless otherwise directed.
- B. The Contractor shall take precautions against the entry of excavated and other loose material resulting from his operations from entering catch basins, culverts and other drainage structures in the vicinity of his operations. He shall maintain the cleanliness of these drainage structures in a condition equal to that prior to the commencement of his operations during the construction. The Contractor shall be responsible for all damage to persons, roads, buildings, vehicles and other property resulting from the failure of the Contractor to maintain these drainage structures.

3.06 SYSTEM TESTING:

- A. The Contractor shall furnish all necessary equipment and labor to perform testing of all gravity sewers as set forth in the following and shall conduct such tests in the presence of the Engineer and other authorized agencies, with five days advance written notice provided.
- B. The installed sewers shall be visually inspected by "lamping" between manholes, inlets, lampholes or other structures in order to ascertain that they are clear and to correct alignment. The concentricity of the lamp image received shall be such that the diameter of said image shall have no vertical or horizontal reduction from that of the pipe inside diameter.

- C. Should any of the tests fail, necessary repairs shall be accomplished by the Contractor and the test repeated until within the established limits. The Contractor shall furnish the necessary labor, and all other items required to conduct the required testing, and shall perform the necessary system repairs required to comply with the specified test.

3.07 RESTORATION OF DAMAGED SURFACES, STRUCTURES AND PROPERTY:

Where pavement, trees, shrubbery, fences or other property and surface structures not designated as pay items, have been damaged, removed or disturbed by the Contractor, whether deliberately or through failure to carry out the requirements of the contract documents, state laws, municipal ordinances or the specific direction of the Engineer, or through failure to employ usual and reasonable safeguards, such property and surface structures shall be replaced and repaired at the expense of the Contractor to a condition equal to that before work began within a time frame approved by the Engineer at no cost to the Owner.

- 3.08 CLEAN-UP:** The Contractor shall maintain the site of the work in a neat condition. The Contractor shall remove all excess materials, excess excavated materials and all debris resulting from his operations within a time frame approved by the Engineer.

END OF SECTION

SECTION 02740

ASPHALTIC CONCRETE PAVING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK: The extent of asphaltic concrete paving work is shown on the drawings.

1.02 SUBMITTALS:

- A. Material Certificates: Provide copies of material certificates including design mixes, signed by the Contractor, certifying that each specified material complies with, or exceeds requirements.
- B. Copies of all compliance testing, certifications and retests.
- C. Comply with Section 01300, Submittals.

1.03 JOB CONDITIONS:

- A. Weather Limitations: Apply prime and tack coats only when ambient temperature is above 50 degrees F and when temperature has not been below 35 degrees F for 12 hours immediately prior to application. Do not apply when base contains an excess of moisture.
- B. Construct asphalt concrete surface only when atmospheric temperature is above 50 degrees F and when base is dry. Base course may be placed when air temperature is above 30 degrees F and rising.
- C. Do not lay base or asphalt when free surface water is present on the material below.

1.04 RELATED DOCUMENTS: The General Requirements of the Contract, including the General Conditions, Supplementary Conditions, and Special Conditions (if any), along with the General Requirements, apply to the work specified in this Section.

1.05 REFERENCES:

- A. American Society For Testing And Materials (ASTM), latest edition:
 - 1. ASTM C131, 'Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.'
 - 2. ASTM D 977, 'Standard Specification for Emulsified Asphalt.'

3. ASTM D 1075, 'Standard Test Method for the Effect of Water on Compressive Strength of Compacted Bituminous Mixtures.'
 4. ASTM D 1188, 'Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens.'
 5. ASTM D 1559, 'Standard Test Method for Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus.'
 6. ASTM D 2027, 'Standard Specification for Cutback Asphalt (Medium-Curing Type).'
 7. ASTM D 2041, 'Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures.'
 8. ASTM D 2397, 'Standard Specification for Cationic-Emulsified Asphalt.'
 9. ASTM D 2939, 'Standard Test Methods for Emulsified Bitumens Used as protective Coatings'
 10. ASTM D 2726, 'Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens.'
 11. ASTM D 3381, 'Standard Specification for Viscosity-Graded Asphalt Cement for Use in Pavement Construction.'
 12. ASTM D 5167 Practice for Melting of Hot-Applied Joint and Crack Sealant and Filler for Evaluation.
 13. ASTM D 5329, 'Standard Test Methods for Sealants and Fillers, Hot-Applied, for Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements.'
 14. ASTM D 6690, 'Specification for Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.'
- B. American Association of Safety, Highway and Traffic Officials (AASHTO)
1. AASHTO M 173 Standard Specification for Concrete Joint-Sealer, Hot-Poured Elastic Type.
- C. Florida Department of Transportation (FDOT), latest edition:
1. FDOT 'Standard Specifications for Road and Bridge Construction.'
 2. FM – 5 – 515 'Florida Method of Test for Limerock Bearing Ratio.'

PART 2 - PRODUCTS

2.01 MATERIAL:

- A. Subgrade: All roadway stabilized subgrade, as required shall comply with Section 914, of FDOT Standard Specifications.

- B. Base Course - Crushed Concrete Base: Material shall be clean recycled concrete, free of reinforcing steel, dirt, oils, and other deleterious debris. Material shall conform to the gradation requirements of Section 204 Graded Aggregate Base of FDOT Standard Specifications for Road and Bridge Construction (Latest Edition) and achieve a minimum LBR of 100.
- C. Asphaltic Concrete Pavement: Asphalt pavement shall be Type SP, Fine, Traffic Level C. However, the wear course shall be Type SP-9.5 or 12.5 only. Materials shall conform to the following: Section 334, Superpave Asphalt Concrete; Section 901, Coarse Aggregate; Section 902, Fine Aggregate; Section 916, Bituminous Material; and Section 917, Mineral Filler of the FDOT Standard Specifications for Road and Bridge Construction (Latest Edition).
 - 1. Use of RAP (Recycled Asphalt Pavement) shall be limited to a maximum of 30% of mix by weight of total aggregate.
 - 2. If used, provide RAP with a minimum average asphalt content of 4.0% by weight.
 - 3. If used, RAP must be from a traceable source.
- D. Priming: Prime coat shall be emulsified asphalt of a grade applicable to the base used meeting the requirements of Section 916, Bituminous Material of the FDOT Standard Specifications. Cover material for prime coat shall be hot asphalt coated sand meeting the requirements of Section 902, Fine Aggregate of the FDOT Standard Specifications.
- E. Tack Coat: Use RA-500 material meeting the requirements of section 916-2 of FDOT Standard Specifications.
- F. Pavement Paints: Marking and striping shall utilize traffic paint meeting or exceeding requirements as specified below.
 - 1. Thermoplastic Pavement Marking materials shall comply with the following: Section 971-1, General Requirements; Section 971-5, Thermoplastic Materials for Traffic Stripes of the FDOT Standard Specifications.
 - 2. Painted Striping materials shall comply with the following: Section 971-1, General Requirements; Section 971-4, Fast Dry Solvent Traffic Paint; and Section 971-2, Glass Spheres of the FDOT Standard Specifications.
 - a. Parking stall striping shall be non reflective.
- G. Raised Pavement Markers: Shall be FDOT Type 911-4"x4".

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. Survey and stake surfaces to show grading required by Contract Documents. Use a Florida Registered Professional Land Surveyor to provide all horizontal and vertical layout.
- B. Subgrade: Unless otherwise noted, subgrade shall be a minimum of twelve (12) inch deep and extend 12 inches beyond the limits of base material and/or curbing. Contractor may, at his own discretion, increase the depth of the prepared subgrade as necessary to accommodate his equipment needs at no additional cost. Constructed stabilized subgrade shall be mixed, moisture conditioned and compacted to 98% of the maximum density (ASTM D 1557). Prepared material shall provide a limerock bearing ratio (LBR) of 40. The subgrade shall be constructed as specified in Section 160, Stabilizing of the FDOT Standard Specifications for Road & Bridge Construction (Latest Edition).
 - 1. Fine grade surface area to accommodate finish grades required by Contract Documents.
 - 2. Prepared surface shall be proof-rolled with a heavy pneumatic tired vehicle.
 - a. Proof-roll entire surface area a minimum of two passes in each direction.
 - b. Remove material from soft areas and replace with new material. Failing areas shall be reconstructed to the full depth of the material. If necessary, additional stabilizing material shall be added. Recompact and retest.
 - 3. Plasticity index shall not exceed 8 and liquid limit shall not exceed 30 in prepared material.
- C. Crushed Concrete Base: Crushed Concrete Base shall be moisture conditioned and compacted to achieve an LBR of 100. Thickness shall be as shown on the Drawings. Base shall be constructed as specified in Section 204, Graded Aggregate Base of FDOT Standard Specifications.
 - 1. Surface shall be uniform and free of birdbaths.
 - 2. Surface variations in prepared base material shall not exceed 1/4" when measured with a 12' straight edge.
 - 3. Base material shall extend a minimum of 6 inches beyond the limits of asphalt paving.

- D. Asphaltic Concrete Pavement: Thickness and Type shall be as shown on the drawings and shall be constructed as specified in Section 320, Hot Bituminous Mixtures-Plant, Methods, and Equipment; Section 330, Hot Bituminous Mixtures-Quality Assurance, General Construction Requirements and Acceptance Procedures; and Section 334, Superpave Asphaltic Concrete of the FDOT Standard Specifications for Road and Bridge Construction (Latest Edition).
1. Wear course shall be Type SP-9.5, SP-12.5 (Fine) only.
 2. Surface shall be uniform and free of birdbaths.
 3. Surface variations in wear surface shall not exceed 1/4" when measured with a 12' straight edge.
 4. Spreading:
 - a. Spread material in a manner that requires the least handling.
 - b. Where thickness of finished paving will be 3" or less, spread in one layer.
 5. Rolling:
 - a. After the material has been spread to the proper depth, roll until the surface is hard, smooth, unyielding, and true to the thickness and elevations shown on the drawings.
 - b. Roll in at least two directions until no roller marks are visible.
 6. Temperature: Asphalt mix shall be between 240 degrees Fahrenheit and 360 degrees Fahrenheit at time of placement
- E. Priming: All base material shall be primed. Prime coat shall be applied in accordance with Section 300, Prime and Tack Coats For Base Courses of the FDOT Standard Specifications. Cover material for prime coat shall be applied with approved distributor.
- F. Tack Coat: All base and any concrete surfaces that will be in contact with the asphalt course shall receive a tack coat. Tack coat shall be applied in accordance with Section 300 Prime and Tack Coats For Base Courses of the FDOT Standard Specifications.
- G. Paving shall not proceed if subgrade and base are too wet or too dry. Subgrade and Base materials shall be within their respective acceptable range of optimum moisture content. Under no circumstances shall pavement be installed if standing water is present on the base material or during a rain event.

3.02 STRIPING:

- A. Pavement Marking and striping shall be applied in accordance with Section 709, Traffic Stripes and Markings-Two Reactive Components; Section 710, Painted Pavement Marking; and Section 711, Thermoplastic Traffic Stripes and Markings of the FDOT Standard Specifications for Road and Bridge Construction (Latest Edition). Type and location of marking to be used shall be as follows unless otherwise described on the Drawings:
 - 1. Thermoplastic Stripes:
 - a. All striping to occur within federal, state or local right of way.
 - b. All striping on private property to be applied within a travel lane including:
 - 1. Stop Bars
 - 2. Directional Arrows
 - 3. Message Lettering
 - 4. Other Symbols applied within the travel lane.
 - 2. Painted Stripes:
 - a. Parking stalls and symbology.
 - b. Solid and Skip lane designation striping on private property.
 - c. Curb striping.
- B. Thermoplastic striping shall be applied to asphalt pavement that has cured for a minimum of 30 days.
- C. Contract shall include temporary striping for all striping, messages and symbols that will receive thermoplastic striping as the permanent marking.
- D. Temporary striping shall be completed prior to substantial completion.
- E. Temporary striping shall be in place within 24 hours of pavement installation.
- F. Existing pavement, with modified traffic patterns, shall receive temporary striping in the event permanent striping is delayed or unavailable when traffic is allowed to use said pavement.
- G. Contractor shall provide temporary striping as necessary for the duration of the work.
- H. Where new automotive or pedestrian traffic patterns are to occur on existing pavement, all existing striping marking the old pattern shall be removed.

- I. If requested by local AHJ, all thermoplastic striping shall be certified for thickness and retro reflectivity by the installer in accordance with FDOT requirements.

3.03 FIELD QUALITY CONTROL:

- A. All work shall meet the requirements of the FDOT.
- B. Surface of completed work shall not contain irregularities greater than 1/4" when checked with a 12 foot straight edge.

3.04 TESTING:

- A. Stabilized subgrade material tests shall be made as follows:
 1. Determine optimum moisture/density relationship of stabilized subgrade material in accordance with ASTM D1557. Verify moisture content of in-place material (ASTM D2216) is within 4% \pm of optimum.
 2. Perform in-place density tests (ASTM D1557) in the compacted stabilized subgrade material at the rate of one test for every 5,000 sf or fraction thereof. Recompact areas which fail to meet compaction requirements, then retest until passing results are obtained. Reference test locations to easily identified points on Site Plan.
 3. Contractor shall perform bearing value tests on samples of in-place material by the Limerock Bearing Ratio (LBR) Method. One (1) test shall be performed for each 10,000 SF, or fraction thereof. For areas failing to meet the minimum LBR, additional stabilizing material shall be spread, mixed and retested until satisfactory results are obtained.
- B. Base material tests shall be made as follows:
 1. Determine optimum moisture/density relationship of base material in accordance with ASTM D1557. Verify moisture content of in-place material (ASTM D2216) is within 2% (\pm) of optimum. Moisture content shall be verified within 24 hours prior to paving operations.
 2. Perform in-place density tests in the compacted base material at the rate of one test for every 5,000 SF or fraction thereof. Recompact areas which fail to meet compaction requirements, then retest until passing results are obtained. Reference test locations to easily identified points on Site Plan.
 3. Contractor shall perform bearing value tests on samples of in-place material by the Limerock Bearing Ratio (LBR) Method. One (1) test

shall be performed for each 10,000 SF, or fraction thereof. For areas failing to meet the minimum LBR, additional stabilizing material shall be spread, mixed and retested until satisfactory results are obtained.

- C. Asphalt tests shall be made as follows:
 - 1. Measure each asphalt core for thickness and test for bulk specific gravity. Compute the compaction percentage of each core, using the bulk specific gravity of the laboratory compacted specimen as the compaction standard.
 - 2. Asphalt thickness shall not be more than 1/4" thinner than the specified thickness.
- D. Copies of all testing shall be provided to the Owner and Engineer directly from the testing laboratory.
- E. All testing, retesting and remedial work shall be at the Contractor's expense.
- F. Failing results for any of the testing above shall be cause for rejection of all or part of the work performed. Contractor shall reconstruct deficient work at no additional cost to the Owner.

3.05 CLEAN-UP:

- A. Contractor shall remove excess and waste material and properly dispose of off-site.
- B. Subsequent to Substantial Completion, the Contractor shall perform a final sweeping of all newly paved areas and existing pavement immediately adjacent to the work area as necessary to provide a clean and neat appearance.

END OF SECTION

SECTION 02750

CONCRETE PAVING, SIDEWALK AND CURB

PART 1 - GENERAL

1.01 RELATED DOCUMENTS: The General Provisions of the contract, including the General Conditions, Supplementary Conditions and Special Conditions, along with the General Requirements, apply to the work specified in this Section.

1.02 REFERENCES: All work shall be in accordance with Section 522 Concrete Sidewalk, Section 350 Cement Concrete Pavement, and Section 520 Concrete Gutter, Curb Elements & Traffic Separator of the latest edition of the "Florida Department of Transportation Standard Specifications for Road and Bridge Construction" unless specifically stated or directed otherwise.

1.03 SUBMITTALS:

- A. Material Certificates: Provide copies of material certificates including design mixes, signed by the Contractor, certifying that each specified material complies with, or exceeds requirements.
- B. Provide manufacturer's literature and installation instructions for all concrete accessories such as joint filler and detectable warning textures.
- C. Copies of all compliance testing and retests.
- D. Comply with Section 01300, Submittals.

PART 2 - PRODUCTS

2.01 CONCRETE MIX, DESIGN AND TESTING:

- A. Comply with requirements of applicable FDOT Section 346 for Class I concrete mix design, sampling and testing, and quality control, and as herein specified.
- B. Design the mix to produce standard weight concrete consisting of portland cement, aggregate, air-entraining admixture and water to produce the following properties.
 - 1. Compressive Strength
 - a. Sidewalks: 3,000 psi @ 28 days
 - b. Pavement: 4,000 psi @ 28 days
 - c. Curb: 3,000 psi @ 28 days

2. Air Content: 3% to 6%

C. Concrete placement slump shall not exceed plus or minus 1 inch from approved design slump.

D. Aggregates: Aggregate shall be 3/8" round with the following sieve graduation:

<u>Size</u>	<u>% Passing</u>
1"	100
3/4"	100
3/8"	90-100
#4	40-60
#8	0-10

E. Water: Potable, clean, fresh, free from oil, acid, organic matter or other deleterious substances.

2.02 WELDED WIRE FABRIC: ASTM A185, welded steel wire fabric, 65 ksi, flat sheets only.

2.03 DEFORMED BARS: ASTM A615, carbon steel, Grade 60.

2.04 DETECTABLE WARNING TEXTURE: Prefabricated resin mat with embeds for attachment to wet concrete or predrilled for manufacturer recommended anchor system. Truncated dome surface shall conform to ADAAG 4.29.2. Color shall contrast with concrete surface. Provide federal yellow or brick red as appropriate.

2.05 JOINT MATERIAL: Closed cell expanded polyethylene foam of dimensions shown on Drawing.

2.06 FORM MATERIALS: Unless otherwise indicated, construct formwork with plywood, metal, metal framed plywood faced or other acceptable panel type materials to provide continuous, straight, smooth, exposed surfaces.

2.07 CHEMICAL HARDENER: Hardener shall be a colorless, aqueous solution of zinc or magnesium fluosilicate. Approved proprietary hardeners shall be delivered ready for use in the manufacturer's original containers.

PART 3 - EXECUTION

3.01 CONCRETE SIDEWALK & PAVEMENT INSTALLATION:

A. General: Sidewalk, Curb and Pavement shall be installed where indicated on the drawings. Width of surface shall be as called out on the drawings.

1. All sidewalk shall be a minimum of 4-inches thick and unreinforced.

2. All sidewalk at driveways or other areas subject to vehicular traffic shall be 6-inches thick with 6x6, W1.4xW1.4 welded wire fabric reinforcement. The length of 6-inch thick sidewalk shall extend 5' each side of gated entries.
3. All pavement shall be thickness described on drawings.

B. Surface Preparation:

1. Construct stabilized sub-grade within limits of proposed sidewalk or pavement and level with the underside of concrete. Stabilization material and procedures shall be as described in the FDOT Standard Specifications for Road and Bridge Construction.
 - a. Sidewalks: Construct 6" thick stabilized subgrade.
 - b. Pavement and Curb: Construct 12" thick stabilized subgrade.
2. Proof-roll prepared sub-grade surface to check for unstable areas and the need for additional compaction.
3. Remove loose material from the compacted sub-grade surface immediately before placing the concrete.
4. Sub-grade for sidewalks shall be compacted to a minimum of 98 percent of AASHTO T-180 density and achieve an LBR value of 40.
5. Density tests shall be required for every 300 LF of sidewalk installed, at a minimum.
6. Where failing density tests occur, Contractor shall be required to recompact and retest area in both directions from point of failure to insure proper compaction has been achieved.
7. Subgrade preparation and construction for a concrete pavement section shall be subject to the subgrade requirements described in Section 02740 Asphaltic Concrete Paving including all testing requirements.

C. Concrete Placement:

1. Do not place concrete until sub-base and forms have been checked for line and grade. Moisten if required to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around meter boxes or other structures until they are completed to required finish elevation and alignment.
2. Place concrete using methods which prevent segregation of the mix. Consolidate concrete along the face of forms and adjacent to

transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing, dowels and joint devices. Do not use vibrators to push or move concrete in forms or chute.

3. Deposit and spread concrete in a continuous operation between transverse joints as far as possible. If interrupted for more than $\frac{1}{2}$ hour place a construction joint.
4. Joints: Construct expansion, weakened-plane (contraction), and construction joints true-to-line with face perpendicular to surface of the concrete, unless otherwise indicated. Construct transverse joints at right angles to the centerline, unless otherwise indicated. When joining existing structures, place transverse joints to align with previously placed joints, unless otherwise indicated.
 - a. Weakened-Plane Joints: Construct weakened-plane joints for a depth equal to at least 1 1/4-inch thickness or 1/4 the pavement thickness whichever is greater, by sawing within six to eight hours of placement or formed during finishing operations. Place joints as described on drawings.
 - b. Construction Joints: Place construction joints at the end of all pours and at locations where placement operations are stopped for a period of more than $\frac{1}{2}$ hour, except where such pours terminate at expansion joints. Construction joints shall be standard metal keyway-section form of appropriate height.
 - c. Expansion Joints:
 - 1) Provide premolded joint filler for expansion joints abutting concrete curbs, catch basins, manholes, inlets, structures, walks and other fixed objects, unless otherwise indicated.
 - 2) Locate expansion joints as described on the drawings.
 - 3) Extend joint fillers full-width and depth of joint, and not less than $\frac{1}{2}$ " below finished surface where joint sealer is indicated. If no joint sealer, place top of joint filler flush with finished concrete surface.
 - 4) Furnish joint fillers in one-piece lengths for the full width being placed, wherever possible. Where more than one length is required, lace or clip joint filler sections together. Pieces shorter than 4' shall not be used unless specifically shown as such.
 - 5) Protect the top edge of the joint filler during concrete placement with a metal cap or other temporary material. Remove protection after concrete has been placed on both sides of joint.

- 6) Fillers and Sealants: Comply with the requirements of these specifications for preparation of joints, materials installation, and performance and as herein specified.

D. Concrete Finishing:

1. After striking-off and consolidating concrete, smooth the surface by screeding and floating. Use hand methods only where mechanical floating is not possible. Adjust the floating to compact the surface and produce a uniform texture.
2. All sidewalk surfaces shall be cross sloped (1.0%) to provide positive drainage towards curbing or grassed area.
3. All pavement surfaces shall be sloped to grades shown on the drawings.
4. After floating, test surface for trueness with a 20' straightedge. Variations exceeding 1/4" for any two points within 10' shall not be acceptable. Distribute concrete as required to remove surface irregularities, and refloat repaired areas to provide a continuous smooth finish.
5. Work edges of slabs, gutters, back top edge of curb, and formed joints with an edging tool, and round 10 1/2" radius, unless otherwise indicated. Eliminate any tool marks on concrete surface.
6. After completion of floating and when excess moisture or surface sheen has disappeared, broom finish surface by drawing a fine-hair broom across concrete surface, perpendicular to the line of traffic.
7. Do not remove forms for 24 hours after concrete has been placed. After form removal, clean up ends of joints and point-up any minor honeycombed areas.

E. Stamped Concrete:

1. Sawcut and remove existing concrete as described on the Contract Drawings.
2. Sawcut and remove material in a manner that will assist the installation of new stamped concrete.
3. Measure existing pattern and select mold that will closely approximate existing pattern.
4. Use color palettes to match existing concrete color and add appropriate integral concrete color additive to new concrete.

5. Prior to pour, review color and stamp pattern with Owner and receive approval to proceed.
 6. Pour colored concrete and stamp concrete in accordance with mold manufacturers recommendations.
- F. Curing: Protect and cure finished concrete paving and walks, as required. Use moist-curing methods for initial curing whenever possible or approved concrete curing compounds.
- G. Repairs and Protections:
1. Repair or replace broken or defective concrete as directed by the Engineer.
 2. Drill test cores where directed by the Engineer, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy resin grout.
 3. Protect concrete from damage until acceptance of work. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
 4. Sweep concrete pavement and wash free of stains and discolorations, dirt and other foreign material just prior to final inspection.

END OF SECTION

SECTION 02760
PERMEABLE PAVERS
(ADDITIVE ALTERNATE NO. 2)

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings, technical specifications, and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF THE WORK INCLUDED:

- A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings.
- B. Provide and install PowerBlock™ and all related products including base materials, geotextiles, and geogrids per the manufacturer's installation guidelines provided in this section.
- C. Perform post-installation testing.
- D. Protect PowerBlock™ system from contamination due to construction traffic and construction sedimentation after installation until the site is completely stabilized.

1.03 QUALITY ASSURANCE:

- A. Installation Contractor shall demonstrate the following experience:
 - 1. A minimum of three permeable pavement projects completed within the last 2 years of a similar or larger size and complexity.
 - 2. A minimum of 25,000 square feet of permeable pavement installed within the last 2 years.
 - 3. Installation Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
- B. Installation Personnel: Performed only by skilled workers with a satisfactory record of performance on permeable pavement construction projects of comparable size and complexity.
- C. Contractor must have the manufacturer's representative available for site review if requested by the Owner.

1.04 SUBMITTALS:

- A. Submit proposed PowerBlock™ layout drawings.
- B. Submit manufacturer's product data, including all requirements detailed in this specification.
- C. Submit material specifications for all geotextiles and geogrids.
- D. Submit material specification for base stone and aggregates.
- E. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to the bid opening. The review package should include third party performance data that meets or exceeds the criteria in Table 2.1A.

1.05 STORAGE AND HANDLING:

- A. Protect concrete pavers during shipment, storage, and installation against staining, chipping, cracking, and other damage.
- B. Coordinate delivery and paving schedule with other construction activities.

1.06 PRE-INSTALLATION CONFERENCE:

- A. Prior to the start of the installation, a pre-installation conference shall occur with Owner representatives, the general contractor, the installation contractor, and the manufacturer's representative.
- B. Coordinate installation for the PowerBlock™ system with other on-site activities to minimize sedimentation and contamination of the permeable pavement during construction. All non-installation related construction traffic, particularly equipment used for earthwork, should be routed around the permeable pavement. Stabilize denuded soils contributing runoff to the permeable pavement prior to commissioning the system.

PART 2 - PRODUCTS

2.01 PERMEABLE PAVER:

- A. Permeable pavement shall be constructed from pre-manufactured, interlocking concrete blocks that do not require stone or sand filler between the blocks, leaving the joints open to allow rapid infiltration of runoff through the joints. The blocks and completed permeable pavement shall meet the following properties:

Table 2.1A		
PROPERTY	DESCRIPTION	VALUE
Dimensions	Length x Width x Height	11.75" x 13.70" x 4.5" (+/- 1/8")
Block Weight	Pounds	44 lbs. Minimum
Loading Capability	Traffic Rating	HS-20/HS-25
Open Joint Width	Inches	0.25" (+/- 0.02")
Joint Filler Between Blocks	Material Used	NONE ALLOWED ¹
Post-Installation Field-Verified Surface Infiltration Rate ³	ASTM C1701/C1701-M09/ ASTM C1781/C140	1,000 Inches/Hour Average (Minimum 3 Tests)
Compressive Strength	ASTM D6684/C140	4,000 psi (Average) 3,500 psi (Minimum)
Freeze/Thaw Resistance ²	ASTM C67/C1645/C936	COMPLIANT
Abrasion Resistance ²	C418 ²	COMPLIANT

Note 1: No filler material is allowed to be used between the blocks. Use ONLY blocks that do not require stabilizing stone/sand between the units.

Note 2: Testing by the National Concrete Masonry Association (NCMA) will be made available for freeze/thaw and abrasion resistance upon request.

Note 3: The completed permeable pavement system must be tested in-situ after installation and will only be accepted when required performance value shown in Table 2.1A has been documented by a third party. Final test report must be submitted to the Owner prior to acceptance.

B. Visual Inspection:

1. All blocks shall be sound and free of defects that would interfere with the proper placing of the units or impair the strength or performance of the permeable pavement system.
2. Surface cracks incidental to the usual methods of manufacture, or surface chipping resulting from customary methods of handling in shipment and delivery, shall not be deemed grounds for rejection.
3. Cracks exceeding 0.25 inches in width and/or 1.0 inches in depth or larger shall be deemed grounds for rejection.
4. Ensure the PowerBlock™ delivered to the site matches the color requirements on plans.

C. The permeable paver shall be PowerBlock™, or pre-approved equal (as noted in Paragraph 1.04 E.), as represented and distributed by:

Ferguson Waterworks, 12500 Jefferson Avenue, Newport News, VA.
Branch Locator: <https://www.ferguson.com/searchBranch>

- D. When PowerBlock™ installation may be exposed to de-icing salts or salt air in coastal climates, blocks should be sealed after installation with optional Prossoco Saltguard WB, or equivalent. If specified, the coating shall be applied per manufacturer's recommendations.

2.02. STONE BASE:

- A. Permeable pavements require site specific design based on both structural and hydrologic requirements of the pavement. Depths shown on typical drawings must be evaluated and modified as necessary by the Engineer of Record.
- B. All aggregate shall be clean and angular on all sides, with no less than 90% fractured faces. Do not use rounded river gravel or fractured river gravel for any application.
- C. If more than 6" of base stone is required, use AASHTO #2 Stone or similar for the lower layers.

ASTM No. 2 Subbase

Grading Requirements

<u>Sieve Size</u>	<u>Percent Passing</u>
75 mm (3 in.)	100
63 mm (2½ in.)	90 to 100
50 mm (2 in.)	35 to 70
37.5 mm (1½ in.)	0 to 15
19 mm (¾ in.)	0 to 5

- D. AASHTO #57 Stone shall be used as a leveling course for the upper 4" to 6" of the base layer.

ASTM No. 57 Base

Grading Requirements

<u>Sieve Size</u>	<u>Percent Passing</u>
37.5 mm (1½ in.)	100
25 mm (1 in.)	95 to 100
12.5 mm (½ in.)	25 to 60
4.75 mm (No. 4)	0 to 10
2.36 mm (No. 8)	0 to 5

2.03 GEOTEXTILES:

- A. Use a woven monofilament geotextile, such as ACF (Ferguson) M200, or as specified in the contract documents.

2.04 EDGE RESTRAINT:

- A. Edges of the PowerBlock™ area shall be finished with an edge restraint. Acceptable forms of edge restraint include, but are not limited to, concrete flush curb, concrete vertical curb, concrete gutter curb, asphalt, or as shown on plans.
- B. Topsoil, landscaping, or other soils are not acceptable forms of edge restraint in traffic applications.

PART 3 - EXECUTION

3.01 FOUNDATION AND PREPARATION:

- A. Prepare subgrade as noted on plans. Typically, compaction of underlying subgrade soil should be avoided or minimized to encourage infiltration of stormwater. Subgrade should be uniform, level, and free of lumps and debris. All questions about the adequacy of the subgrade should be directed to the Owner's Engineer, who will approve the subgrade conditions prior to placement of the stone base.
- B. Place a woven monofilament geotextile, such as ACF (Ferguson) M200, on the subgrade base and sides of the excavation to prevent contamination of the clean aggregate base or as specified in the contract documents. Overlap seams a minimum of 12" in all directions, or as shown on plans.
- C. Install base materials in layers uniformly spread and compacted in 6" - 8" lifts or as noted on plans. When final layer of base stone is installed, compact first with a roller and finish with a 10,000 psi plate compactor in both the perpendicular and parallel directions. Compaction is complete when no movement of base materials is observed. Base shall be a smooth, plane surface, firm, and non-yielding prior to placement of the PowerBlock™
- D. Confirm finished elevations of the base match plan requirements.
- E. Completed base shall be proof rolled and inspected and approved by Engineer of Record. Reconstruct areas where deflection exceeds acceptable limits as determined by Engineer.

3.02 PAVERS:

- A. Ensure PowerBlock™ units are free of foreign material before installation.
- B. Set PowerBlock™ pavers as shown on plans, within the specified lines and grades shown on plans. Units shall be installed straight and true to the required lines. Ensure joint widths are consistent throughout installation.

1. Installation shall proceed by adding blocks adjacent to previously installed units.
 2. On sloped areas, work from lower areas toward the higher elevations.
- C. Cut PowerBlock™ units as needed to accommodate field conditions and to achieve a consistent pattern.
- D. When a substantial area of PowerBlock™ units has been installed, the pavers shall be static rolled to ensure a consistent top elevation.
- E. Replace pavers that are broken, substantially chipped, or stained during construction.
- F. The joints between the blocks shall not be backfilled with smaller aggregates or sand to function properly. The joints shall be always left open, including following maintenance of the permeable pavement.
- G. Within 60 days of completion of the installation, the surface infiltration rate of the pavement shall be field verified to confirm the required infiltration rate of the pavement (per Table 2.1A). If the system fails to perform as required, it shall be removed and replaced at no cost to the Owner.

3.04 INSPECTION AND MAINTENANCE:

- A. Inspection:
1. Inspect the permeable pavement, noting areas of standing water or significant accumulation of joint debris.
 2. If joints are excessively filled with debris or sediment, a surface infiltration test may be performed per Table 2.1A to determine the capabilities of the system.
- B. Maintenance:
1. Maintenance shall be performed when either:
 - a. The surface infiltration rates of more than 75% of the surface area fall below 10% of the rate required per Table 2.1A.
 - b. Surface ponding remains for 24 hours in an area larger than 10 square feet.
 - c. Other desired maintenance at the Owner's discretion to optimize performance.

2. Maintenance shall be performed with a vacuum device, not a mechanical sweeper, to remove accumulated debris from joints. This may be accomplished with smaller hand-held devices or with vacuum trucks such as the Elgin Whirlwind. Adjust device settings to avoid movement or lifting of block, or removal of the base stone underneath the blocks.

END OF SECTION

SECTION 02820
ALUMINUM FENCING

PART 1 - GENERAL

1.01 WORK INCLUDED: The Contractor shall provide all labor, materials, and appurtenances necessary for installation of the industrial ornamental aluminum fence system.

1.02 SYSTEM DESCRIPTION: The manufacturer shall supply a complete ornamental aluminum fence system design. The system shall include all components (i.e., pickets, rails, posts, gates, and hardware) required.

1.03 QUALITY ASSURANCE: The Contractor shall provide laborers and supervisors who are thoroughly familiar with the type of construction involved and materials and techniques specified.

1.04 REFERENCES:

A. American Society for Testing and Materials (ASTM):

1. ASTM B117 - Practice for Operating Salt-Spray (Fog) Apparatus.
2. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.
3. ASTM D523 - Test Method for Specular Gloss.
4. ASTM D822 - Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus.
5. ASTM D1654 - Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
6. ASTM D2244 - Test Method for Calculation of Color Differences from instrumentally Measured Color Coordinates.
7. ASTM D2794 - Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
8. ASTM D3359 - Test Method for Measuring Adhesion by Tape Test.

1.05 SUBMITTAL: The manufacturer's submittal package shall be provided prior to installation. Package shall include detailed shop drawings including dimensional properties of all gates.

1.06 PRODUCT HANDLING AND STORAGE: Upon receipt at the jobsite, all materials shall be checked to ensure that no damage occurred during shipping or handling. Materials shall be stored in such a manner as to ensure proper ventilation and drainage, and to protect against damage, weather, vandalism, and theft. Material shall be stored off grade on suitable dunnage and covered from the elements.

PART 2 - PRODUCTS

2.01 BASIS OF DESIGN: The industrial ornamental aluminum fence system shall be comparable to Superior Picket Fence Series 700 Aluminum Panel (Design Type A) with ISM clear anodized satin finish, or custom color as may be required by Engineer, produced by Superior Aluminum Products, Inc. In addition the following manufacturers shall also be acceptable:

1. Ametco Manufacturing Corp., Willoughby, Ohio.
2. Ameristar Fence Products, Tulsa, Oklahoma
3. Jerith Manufacturing Company, Philadelphia, Pennsylvania.

2.02 MATERIAL:

- A. Aluminum material for fence framework (i.e., tubular pickets, rails, and posts) shall conform to the requirements of ASTM B221. The aluminum extrusions for posts and rails (outer channel) shall be Alloy and Temper Designation 6063-T6.
- B. Material finish shall be anodized satin or custom color as required by the Architect.
- C. Material for fence pickets shall be extruded tubing at 4-½" o.c. spacing. The cross-sectional shape of the rails shall conform to the manufacturer's design with outside cross-section dimensions of 1.625" square. Fence posts and gate posts shall meet the minimum size requirements of Table 1. High quality PVC grommets shall be supplied to seal all picket-to-rail intersections.
- D. All fasteners shall be 304 Series stainless steel. Bracket to rail attachments shall be made using specially designed one-way tamperproof security bolts with inverted "t-nuts". Bracket to post connections shall be made using self-drilling hex-head screws.
- E. Aluminum castings shall be used for all rings, post caps, finials, and miscellaneous adornments.

TABLE 1	
Minimum Sizes for Posts	
Fence Posts	Panel Height
4" x 4" x .250" Alum.	Up to, and including, 6' Height

2.03 FABRICATION:

- A. Pickets, rails and posts shall be pre-cut to specified lengths. Rails shall be pre-punched to accept pickets.

- B. The rail inner slide shall be fully inserted into the rail outer channel to form the raceway for the internal retaining rod. Grommets shall be inserted into the pre-punched holes in the rails, and pickets shall be inserted through the grommets so that pre-drilled picket holes align with the internal raceway of the two-part rails. (Note: This can best be accomplished by using an alignment template). Retaining rods shall be inserted into each rail so that they pass through the pre-drilled holes in each picket, thus completing the panel assembly.
- C. Completed panels shall be capable of supporting a 300 lb. load (applied at midspan) without permanent deformation. Panels shall be biasable to a 25% change in grade.

2.04 GATES:

- A. Gates shall be fabricated using picket and rail material and gate ends having the same outside cross-section as the rail. Gate ends shall be minimum 0.125" thick. All rail and upright intersections shall be joined by welding. All picket and rail intersections shall also be joined either by welding or by the same retaining rod process used for panel assembly.
- B. Gate Hardware: Provide hardware and accessories for each gate and in accordance with the following:
 - 1. Hinges: Size and material to suit gate size, non-lift-off type, offset to permit 180 deg. gate opening. Provide 1-1/2 pair of hinges for each leaf over 6' nominal height.
 - 2. Latch: Plunger-bar type to permit operation from either side of gate, with padlock eye as integral part of latch.
 - 3. Keeper: Provide keeper for vehicle gates, which automatically engages gate leaf and holds it in open position until manually released.
 - 4. Double Gates: Provide gate stops for double gates, consisting of mushroom-type, flush plate with anchors, set in concrete, and designed to engage center drop rod or plunger bar. Include locking device and padlock eyes as integral part of latch, permitting both gate leaves to be locked with single padlock.
 - 5. Sliding Gates: Provide manufacturer's standard heavy-duty inverted channel track, ball-bearing hanger sheaves, overhead framing and supports, guides, stays, bracing, hardware, and accessories as required.

- 2.05 CONCRETE:** Provide concrete consisting of portland cement, ASTM C150, aggregates ASTM C 3, and clean water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 3,000 psi using at least 4 sacks of cement per cu. yd., 1" maximum size aggregate, maximum 3" (+/- 1") slump, and 2% to 4% entrained air.

PART 3 - EXECUTION

- 3.01 PREPARATION:** All new installation shall be laid out by the contractor in accordance with the construction plans.
- 3.02 FENCE INSTALLATION:** Fence posts shall be 8' o.c., typical. For installations that must be raked to follow sloping grades, the post spacing dimension must be measured along the grade. Fence panels shall be attached to posts with brackets supplied by the manufacturer. Posts shall be set in concrete footers having a minimum depth of 36".
- 3.03 FENCE INSTALLATION MAINTENANCE:** When cutting/drilling rails or posts, adhere to the following steps to seal the exposed surfaces: 1) Remove all metal shavings from cut area; 2) Apply custom finish paint matching fence color. Failure to seal exposed surfaces per steps 1 and 2 above will negate warranty. Manufacturer supplied paint pens shall be used to prime and finish exposed surfaces; it is recommended that paint pens be used to prevent overspray.
- 3.04 GATE INSTALLATION:** Gate posts shall be spaced according to the manufacturer's gate drawings, dependent on standard out-to-out gate leaf dimensions and gate hardware selected. Type and quantity of gate hinges shall be based on the application, weight, height, and number of gate cycles. The manufacturer's gate drawings shall identify the necessary gate hardware required for the application. Gate hardware shall be provided by the manufacturer of the gate and shall be installed per manufacturer's recommendations.
- 3.05 QUALITY ASSURANCE:**
- A. Gates shall swing or run smooth and latch without difficulty.
 - B. All gate operations shall be capable of being performed by any able boded Owner personnel with a minimum of effort.
 - C. Gates shall be adjusted and aligned to the satisfaction of the Engineer prior to final acceptance.

3.06 CLEANING:

- A. Remove waste fencing materials from the project site and dispose of off-site.
- B. Remove accumulations of silt and other erosion products from all permanent facilities.

END OF SECTION

SSECTION 02930

LANDSCAPE WORK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

- A. The extent of the landscape development work is shown on the Drawings and in schedules.
- B. The Contractor shall provide space for storage of sod prior to placement in a manner that will not endanger or restrict pedestrian or vehicular traffic.
- C. Subgrade Elevations: Excavation, filling, and grading required to establish elevations shown on the drawings are not specified in this section.

1.02 REFERENCED STANDARDS:

- A. State of Florida Department of Agriculture:
 - 1. Seed: Seed tags affixed to seed containers as required by State of Florida Seed Act.
 - 2. Sod: Inspection certificates of State Plant Board Inspection.
 - 3. Plants and Trees: Department of Agriculture and/or State Board of Florida Grades and Standards for Nursery Plants.
 - 4. General Landscaping: Florida Agricultural Extension Service - Landscaping Florida Homes.
 - 5. Fertilizer: Office of the Secretary of State, State of Florida, State of Florida Fertilizer Law.
- B. Satisfactory Stand: Satisfactory stand refers to a planting zone that has the specified plant spacing and survival of acceptable plant materials at the end of the warranty period. A satisfactory stand shall have the following properties:
 - 1. The spacing of installed acceptable plant materials as specified for each plant community zone on the Drawings.
 - 2. The overall survival rate of acceptable plant materials shall be at least 90% of the density specified in the Drawings following the establishment period and during the entirety of the warranty period.

Furthermore, in no case shall any planted area have a density that is less than 10% of the specified density in the Drawings. Only plants of the species specified in the Planting Schedule shall be used in evaluating satisfactory stand, with individual plants being the unit counted. The Contractor shall inform the Owner and Engineer when planting of an individual wetland feature has been completed to begin the warranty period for that feature, or may, at their option, wait until planting is completed for the entire treatment wetland to begin the warranty period.

3. Installed acceptable plant material found not to be in a vigorous, thriving condition as indicated by brown or unhealthy foliage shall be considered dead for purposes of survival calculations. Viable plants shall have one or more new live plant shoots arising from each separate plant plug or clump.
 4. A minimum of 5% of planted areas shall be evaluated to determine the overall survival rate of acceptable plant material.
- C. **Warranty Period:** The warranty period is a minimum 120-day period that encompasses a 90-day establishment period, following notification to the Owner and Engineer by the Contractor that planting has been completed in an individual wetland feature or the treatment wetland and a 30-day inspection period that begins after the 90-day establishment period has elapsed. The Contractor shall be responsible for providing vegetation management and minimum water needs for wetland plant establishment during the entirety of the warranty period. In the event that the inspection period shows that a satisfactory stand does not exist, the warranty period shall be extended to include a corrective period, followed by a subsequent inspection period.
- In the event that the inspection period would occur outside of the optimal planting period, assessing acceptable plant material may be infeasible. In this case, the inspection period will occur during the first 30 days of the subsequent optimal planting period. To accommodate the inspection period, the warranty period shall be extended to include the supplemental inspection period.
- D. **Establishment Period:** The establishment period is a 90-day period that is a part of the warranty period and provides planted material an opportunity to acclimate to onsite conditions and begin producing new growth.
- E. **Inspection Period:** The inspection period is a 30-day period that is a part of the warranty period and provides the Owner and Engineer or their representatives an opportunity to evaluate whether each individual wetland feature or the treatment wetland achieves a satisfactory stand.

- F. Corrective Period: In the event that a satisfactory stand is not produced during the planting and establishment periods, supplemental planting will be required during a corrective period of no more than 30 days. All additional plantings shall be the responsibility of the Contractor, and no additional costs will be incurred by the Owner. Following additional planting, the Contractor shall notify the Owner of completion and trigger another inspection period to verify installation of sufficient additional material.
- G. Final Completion: Final completion shall signify that the warranty period has been completed with a satisfactory stand of planted material. Following final completion, the Owner will assume management of the project.

1.03 QUALITY ASSURANCE:

- A. Source Quality Control:
 - 1. Ship landscape materials with certificates of inspection as required by governmental authorities. Comply with governing regulations applicable to landscape materials.
 - 2. Do not make substitutions. If specified landscape material is not obtainable, submit proof of non-availability and proposal for use of equivalent material.
 - 3. Furnish plant materials certified by State Department of Agriculture to be free from hazardous insects or apparent disease. Inspection at growing site does not preclude right of rejection at site.
- B. Topsoil: Before delivery of topsoil, furnish Engineer with written statement giving location of properties from which topsoil is to be obtained, names and addresses of owners, depth to be stripped, and crops grown during past two years.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at the site.
- B. Balled and Burlapped (B & B) Plants: Dig and prepare plants for shipment in a manner that will not damage roots, branches, shape, and future development after replanting. Ball the root area with firm, natural balls of soil and wrap the ball firmly with burlap or strong cloth and tie.
- C. Bare-root (BR) Plants: Dig plants and trees with entire root system intact but with earth carefully removed. Cover the roots with a thick coating of mud by puddling after plants are dug. Heel-in immediately upon delivery if not to be planted within 4 hours.

- D. Sod: Time delivery so that sod will be placed within 36 hours after stripping. Protect sod against drying and breaking of rolled strips.

1.05 JOB CONDITIONS:

- A. Proceed with, and complete, the landscape work as rapidly as portions of the site become available. Install plant material prior to seeding or sodding. Perform grassing only after preceding work affecting ground surface is complete. Restrict vehicular traffic from grassed areas after planting.
- B. Utilities: Determine location of underground utilities, and perform work in a manner that will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by all parties concerned.
- C. Planting Time: Plant or install materials during normal planting seasons for each type of landscape work required.

1.06 GUARANTEE:

- A. Guarantee lawns, plants, and trees for a period of one year against defects, including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse and/or damage by Contractor, or damages by others.
- B. Remove and replace lawns and plants found to be dead or in unhealthy condition during guarantee period. Make any replacements during growth season following end of guarantee period and maintain same until healthy, stable growth pattern is established. Furnish and plant replacements that comply with requirements shown and specified.

PART 2 - PRODUCTS

2.01 TOPSOIL:

- A. Topsoil for landscape work is not available at the site and, therefore shall be furnished as specified.
- B. Provide new topsoil which is fertile, friable, natural loam, surface soil, free of subsoil, clay lumps, brush, weeds, and other litter, and free of roots, stumps, stones larger than 1 inch in any dimension, and other extraneous or toxic matter harmful to plant growth.
- C. Obtain topsoil from local sources or from areas having similar soil characteristics to that found near the project site. Obtain topsoil only from naturally, well-drained sites where topsoil occurs in a depth of not less than 4 inches; do not obtain from bogs or marshes.

D. Soil Amendments:

1. Lime: Natural limestone containing not less than 85% of total carbonates, ground so that not less than 90% passes a 10 mesh sieve and not less than 50% passes a 100 mesh sieve.
2. Peat Humus: FS Q-P-166 and with the texture and pH range suitable for the intended use.
3. Bonemeal: Commercial, raw, finely ground; 4% nitrogen and 20% phosphoric acid.
4. Superphosphate: Soluble mixture of treated minerals; 20% available phosphoric acid.
5. Commercial Fertilizer: Complete fertilizer of neutral character, with some elements derived from organic sources and containing not less than 4% phosphoric acid and not less than 2% potassium, and the percentage of nitrogen required to provide not less than 1 pound of actual nitrogen per 1,000 square feet of lawn area. Provide nitrogen in a form that will be available to the lawn during the initial period of growth.

2.02 GRASS SOD:

A. Grass Sodding: The Contractor shall sod areas as shown on the Drawings or as required to control erosion:

1. All grass sod shall be St. Augustine Floratam, thick sod, commercially grown and cut. It shall be free of disease, hazardous insects, weeds, and other grasses. It shall be furnished in rolls or in 12" x 24" cut pads.
2. Approximately two inches of organic top soil shall be spread over the area to be sodded. The area shall be uniformly graded and hand raked prior to the installation of the sod.
3. Sod shall be placed tightly against adjacent pieces in order to provide a uniform surface, free of voids.
4. The Contractor shall provide routine maintenance of the sodded area until a full stand of grass has been obtained at the site. The Contractor shall mow the grass and clean up any debris prior to final acceptance.

2.03 PLANT MATERIALS:

- A. Plants and trees shall be well-formed and shaped, true to type, and free from disease, insects, and defects such as knots, sun-scald, windburn, injuries, abrasions, or disfigurement. They shall be true to botanical and common name and variety, cultivar, and/or species.
- B. All stock shall be nursery grown meeting ANSI Z601. They shall be grown under climatic conditions similar to those in locality of project.
- C. Container grown stock shall be growing in container for a minimum of 90 days before delivery. It shall not be root-bound or with root system hardened off.
- D. Bare-root stock plants shall have roots well branched and fibrous.

2.04 DECORATIVE INERT GROUND COVER MATERIAL: Cypress mulch shall be clean, bright, cypress bark with a particle size not exceeding 2.5 inches in diameter. It shall be free of deleterious materials.

2.05 FERTILIZER:

- A. Chemical Type: Fertilizer shall be uniform in composition, free flowing, conforming to state and federal laws and suitable for application with equipment designed for that performance. Available nutrients by weight.
 - 1. Nitrogen: 8 percent; 2 percent nitrate nitrogen, 2 percent ammoniacal nitrogen, 4 percent ureaformaldehyde for agricultural uses.
 - 2. Phosphoric Acid: 8 percent; superphosphate, bone meal, or tankage.
- B. Organic Type: Fertilizer shall be commercially processed cow manure with the following available nutrients by weight: 1 percent nitrogen, 1 percent phosphoric acid.

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION:

- A. Locate underground pipe, conduit, and other underground or aboveground utilities and structures prior to starting work. Adjust planting as required to avoid interference with these facilities. Verify final grades have been established prior to beginning grassing and planting operations.
- B. Inspect trees and shrubs for insect infestation and also for proper pruning. Do not start work until deficiencies are corrected, or the plants have been replaced.

- C. Stake out the locations for the plants and outline the planting beds on the ground. Do not begin excavation until the stake out of plant locations and plant beds are acceptable to the Engineer.

3.02 PREPARATION OF PLANTING SOIL:

- A. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
- B. Mix specified soil amendments and fertilizers with topsoil at the rates specified. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.

3.03 EXCAVATION FOR PLANTING:

- A. For Trees: Excavate a pit to a minimum depth of two feet from finish grade and increase as necessary to accommodate ball or roots, plus at least 6 inches of compacted topsoil below ball or roots. The pit shall have a width or diameter of two feet greater than the diameter of the root ball or the spread of roots if bare-rooted.
- B. For Shrubs: Excavate a pit or trench to a minimum depth of 16 inches; increase as necessary to accommodate the root ball or roots and at least 6 inches of topsoil below ball or roots. The pit or trench shall have a minimum width or diameter of one foot greater than the diameter of the root ball or spread of roots if bare-rooted.
- C. For Planting Beds: Remove existing soil from planting beds to a depth of 12 inches and replace with planting soil, if soil from bed cannot be made acceptable by adding organic material as nutrients. Bring beds to a smooth, even surface conforming to established grades after full settlement has occurred.
- D. Disposal of Excess Soil: Where specified, or waste over nearby low areas as directed.

3.04 PLANTING:

- A. General: Center plant in pit or trench and face for best effect. Set plant plumb and hold rigidly in position until soil has been tamped firmly around ball or roots. Use only planting soil for backfill. Place sufficient planting soil under plant to bring top of root ball one to two inch above finish grade. Backfill pit or trench with planting soil until two-thirds full and water each layer thoroughly to settle soil. After soil settles, fill pit with planting soil, water, and leave pit surface even with finish grade of surrounding ground.

- B. Balled Plants (B & B): Place in pit on planting soil material that has been hand-tamped prior to placing plant. Place with burlap intact so location of ground line at top of ball is same as at nursery. Remove binding at top of ball and lay top of burlap back six inches. Do not pull wrapping from under ball. Do not plant if ball is cracked or broken before or during planting process.
- C. Bare-root Plants: Cut off clean, broken, or frayed roots. Spread the roots out in the pit. Carefully work planting soil among roots.
- D. Container-grown Plants:
 - 1. Can Removal: Cut cans on two sides with an acceptable can cutter without injuring the root ball. Do not cut cans with a spade or ax. Carefully remove plants without injury or damage to root ball. After removing plant, superficially cut edge roots with knife on three sides.
 - 2. Box Removal: Remove bottom of plant boxes before planting them. Remove sides of box without damage to root ball after positioning plant and partially backfilling.
 - 3. Dig planting holes to accommodate root balls. Hand place plants that are in containers less than one gallon in size. Hand backfill and hand tamp leaving slight depression around bases of plants. Do not cover top of root ball.
- E. Watering Basin: Construct a topsoil berm 3 inches above finish grade, forming a watering basin with a level bottom around each plant. The size of the basin shall be two feet greater than the diameter of ball or spread of roots if bare-rooted.

3.05 GUYING AND STAKING OF TREES:

- A. Stake trees on plant list up to 5 inches in caliper, and those over 5 inches plant in special locations where guying is not feasible.
- B. Stake Installation: Drive stakes perpendicularly, three feet into ground at edge of root ball.
- C. Tying and Cross-bracing of Trees Over 5 Inches in Caliper: Cross brace and tie firmly with guy wire. Separate guy wire from bark by hose section, heavy cloth padding, or wood staves.
- D. Tying and Cross-bracing of Trees 2-1/2 to 5 Inches in Caliper: Nail cross-brace between stakes. Tie tree to cross-brace with brown cotton or other fabric of equal strength. Fold fabric to make tape approximately 1/2 inch thick by 1 inch wide and sufficiently long to wrap and pad with a least three layers at contact with tree.

- E. Tying and Cross-bracing of Trees Under 2-1/2 Inches in Caliper: Place stake toward prevailing wind and tie tree with double strand of guy wire run through an acceptable length of rubber hose. Cross sheathed guy wire once between stake and tree to prevent direct contact between stake and tree.

3.06 PRUNING: Prune the minimum necessary to remove injured twigs and branches, deadwood, and suckers. Remove 1/3 to 1/4 branching structure to compensate for loss of roots during transportation.

3.07 MULCHING: Mulch planting pits, trenches, and areas within two days after planting. Cover watering basin or bed evenly with 1 inch to 3 inches of mulch material. Water thoroughly immediately after mulching. Hose down planting area with fine spray to wash leaves of plants.

3.08 PREPARATION FOR PLANTING LAWNS:

- A. Loosen subgrade of lawn area to a minimum depth of 4 inches. Remove stones over 1-1/2 inch in any dimension and sticks, roots, rubbish, and other extraneous matter. Limit preparation to areas which will be planted promptly after preparation.
- B. Spread planting soil mixture to minimum depth required to meet lines, grades, and elevations shown, after light rolling and natural settlement.
- C. Place approximately half of the total amount of planting soil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil.
- D. Grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll, rake, and remove ridges and fill depressions as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.
- E. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.
- F. Restore lawn areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

3.09 MAINTENANCE:

- A. Begin maintenance immediately after planting.
- B. Maintain lawns and plants by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading, and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

- C. Replace impaired or dead plants promptly during specified planting season.

3.10 CLEAN-UP AND PROTECTION:

- A. During landscape work, store materials and equipment where directed. Keep pavements clean and work area in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, by others and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.11 INSPECTION AND ACCEPTANCE: At final inspection, if landscape work does not comply with the requirements, replace rejected work and continue specified maintenance until re-inspected by the Engineer and found to be acceptable. Remove rejected plants, grassing, and materials promptly from the project site.

END OF SECTION

SECTION 11100
POND FOUNTAINS

PART 1 - GENERAL

1.01 SCOPE: The work includes the furnishing of all labor, materials, equipment, and supervision for the installation of floating pond fountains as drawn and specified.

1.02 SUBMITTALS:

- A. Shop Drawings: Submit copies of shop drawings and product data for equipment furnished under this Section.
- B. Operating and Maintenance Manual: Furnish Operation and Maintenance Manuals titled "Operation and Maintenance Manual" in accordance with Section 01300, Submittals.
- C. Equipment Installation Certificate: The manufacturer shall provide a written report, through the Contractor and endorsed in writing by the Contractor, certifying that the equipment has been properly installed, checked, and is ready for placement into routine permanent service.

1.03 GUARANTEE: Submit written agreement from manufacturer/installer providing unconditional extended warranty on the fully assembled and installed unit. The warranty period shall be for one year after the final acceptance of the equipment by the Owner. The equipment manufacturer shall guarantee that the equipment furnished is suitable for the purpose intended and free from defects of design, material, and workmanship. In the event the equipment fails to perform as specified, the manufacturer shall promptly repair or replace the defective equipment without any cost to the Owner (including handling and shipment costs).

1.04 PRODUCT DELIVERY: The equipment shall be factory assembled components delivered undamaged to the site. They shall be capable of being set in place and field connected with minimal field assembly.

PART 2 - PRODUCTS

2.01 OVERVIEW:

- A. Floating fountain shall be as manufactured by Kasco (Model 8400JF), or equal, with control panel and lighting package suitable for saltwater applications.

- B. Complete package includes motor unit, control panel, float with screen, mooring lines, light package, cable.
 - 1. Cable is UL, CSA & NEC rated for underwater use.
 - 2. Total package Listed by ETL to UL/CSA standards.
 - 3. Intake near surface allows for shallow operation.
 - 4. Saltwater compatible.
 - 5. Packaged for convenient shipping.
 - 6. Optional lighting available.

2.02 FLOAT:

- A. Float shall have the following characteristics:
 - 1. UV-resistant polyethylene.
 - 2. Single-piece float.
 - 3. Series 300 stainless steel hardware.
 - 4. Thermoplastic protective bottom screen.
 - 5. Three 50' braided nylon mooring ropes.

2.03 FOUNTAIN COMPONENTS:

- A. Fountain components shall be as follows:
 - 1. Custom thermoplastic propeller
 - 2. UV-resistant thermoplastic draft tube and fountain disc
 - 3. Series 300 stainless steel hardware.
 - 4. Twist on/off nozzles for easy pattern changes.
 - 5. Spray pattern options.

2.04 POWER CABLE:

- A. Power cable shall be as follows:
 - 1. 3 wire (L, N, G).
 - 2. Quick Disconnect standard on 12+ AWG cords (otherwise optional).
 - 3. Stainless steel strain relief on 12+ AWG cords.
 - 4. 6' flex sleeving protection standard (optional for entire cord length).
- B. Confirm cabling length and size based on the drawing requirements to meet panel and fountain spacing.

2.05 MOTOR UNIT:

- A. Motor unit shall be as follows:
 - 1. 2 HP, 208-240 VAC operating voltage, single phase.
 - 2. 1750 rpm.

3. Oil cooled.
4. Continuous duty rated.
5. 17mm top and bottom bearings.
6. Thermal overload protection.
7. Fully unitized heavy-duty carbon-ceramic mechanical seal.
8. Series 300 stainless steel can.
9. Engineering grade thermoplastic top.
10. Sacrificial anode installed on 316 stainless shaft.

2.06 CONTROL PANEL:

A. Control panel shall be as follows:

1. UL listed Type 3R/4X thermoplastic enclosure.
2. Human-rated GFCI protection.
3. Surge protector.
4. (2) 24-hour mechanical fountain timer.
5. Photo eye for lighting.
5. 4-wire power required.

2.07 ACCESSORIES:

A. All required materials for system operation including, but not limited to, mooring cables, floats, LED fixtures, etc.

PART 3 - EXECUTION

3.01 INSPECTION AND TESTING:

- A. Upon completion of installation, in the presence of the Owner, a qualified manufacturer's representative shall perform a preliminary test on the system to ensure the functioning of all component parts to the satisfaction of the Owner.
- B. The manufacturer shall furnish all labor, materials, and equipment required for such test and shall correct any deficiencies noted by repairing or replacing the defective component and retesting as required until the equipment meets the satisfaction of the Owner.
- C. Operating personnel shall be trained in operation and maintenance of equipment at start-up. Instruction shall be given in operation, service, adjustments, and routine maintenance. Recommended spare parts lists and Operation and Maintenance Manuals shall be provided and reviewed with Owner's operating personnel.

END OF SECTION

SECTION 16010

ELECTRICAL

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK: The work covered by this section of the Specifications consists of the furnishing of all labor, material, and equipment and performing all operations necessary for the installation of the complete electrical system ready for use as specified and as shown on the Drawings. Omission of a specific electrical item obviously necessary for the proper functioning of equipment shall not relieve the Contractor of the responsibility of furnishing and installing the item as a part of this Contract at no additional cost to the Owner.

1.02 QUALITY ASSURANCE:

A. Codes and Standards: All work shall be performed in accordance with the following:

1. National Electrical Code
2. National Fire Protection Association Standards
3. National Electrical Safety Code

B. In addition, work shall be performed in accordance with all local codes, ordinances and regulations. All materials shall comply with the following applicable standards:

1. American National Standards Institute (ANSI)
2. National Electrical Manufacturer Association (NEMA)
3. Underwriters' Laboratories (UL)
4. Insulated Cable Engineers Association (ICEA)
5. Institute of Electrical and Electronics Engineers (IEEE)

All manufacturers and fabricators of electrical and control equipment required for this project shall be qualified with Underwriter's Laboratories (UL). Equipment shall meet all ASTM requirements where applicable and all NEMA standards unless otherwise noted. The Contractor shall be fully responsible for determination and adherence to these requirements.

C. Permits: The Contractor shall secure all necessary permits for the electrical, telephone, and low voltage work.

1.03 SUBMITTALS:

A. Shop Drawings: Submit Shop Drawings on all specified equipment in accordance with Section 01300. Include sufficient information to indicate complete compliance with Specifications. Such data shall include "cuts",

catalog data sheets, drawings, and/or certifications as necessary. Plainly mark on all submittals deviations from or exceptions to the Contract Documents. All Submittals shall be in booklet form.

1.04 JOB CONDITIONS: The installation shall comprise the following: wiring for lighting and power including service and auxiliary power; wiring for equipment of other trades; connection of equipment; wiring and conduit for telemetry and instrumentation signal systems; and grounding system.

- A. Wiring Method: The basic wiring method shall be metallic and non-metallic raceways.
- B. Service-Electrical, Telephone, and Low Voltage: Before submitting a bid and before ordering any material, verify all electric service details (voltage characteristics) with the utility involved and modify, if necessary, the details shown on the Drawings and in the Specifications as necessary to meet its requirements. In no case, however, shall equipment sizes (cable, conduit, circuit breakers, switch, motor starter) be reduced below those values specified.
- C. Locations and Dimensions: The Drawings are diagrammatic and the locations of equipment, devices, outlets, and similar items as indicated on the Drawings are approximate only. The exact locations will be determined by the Contractor and approved by the Engineer. The Contractor shall verify in the field all data and final locations of work done under other divisions of the specifications required for placing of electrical work. He shall make all field measurements necessary for his work and shall be responsible for their accuracy. In the case of interference with other work or of erroneous locations with respect to equipment or structures, the Contractor shall furnish all labor and materials to complete the work in an approved manner.
- D. Workmanship: Work under this section shall be accomplished by persons skilled in performance of the required work. All work shall be done in a first-class manner in keeping with conventions of the trade. Work under this section shall be closely coordinated with work of other trades to avoid conflict and interference.
- E. Working Clearances: Verify working clearances around equipment with electrical services to comply with code requirements. Should there be apparent violations of working clearance, notify the Engineer before proceeding with installation of equipment.
- F. The Contractor shall furnish a covered, weather-protected facility, providing a clean, dry, non-corrosive environment for storage of the electrical and instrumentation equipment incorporated into this project.

- G. Work Schedule: Refer to General Conditions and Project Construction Schedule under other Sections. Coordinate all demolition and construction through the Contractor.
- H. Visit the Sites before submitting a Bid and observe conditions affecting the Work.

1.05 ELECTRIC SERVICE:

- A. Primary electrical service and service transformer(s) will be provided by the local utility. The configuration and equipment locations indicated are tentative. Contact the utility in advance and verify availability and configuration of electrical service as indicated.
- B. Provide all labor, materials, and equipment not provided by the utility in accordance with utility's installation policies and procedures. Should a significant installation conflict occur, notify the Engineer immediately for resolution before starting any work. An Allowance has been established for providing the electrical service(s).

1.06 GUARANTY-WARRANTY: In general, guaranties and warranties shall comply with the requirements set forth in the General Conditions. However, guaranties and warranties in excess of one year may be required on specific equipment in this section of the specifications. Where such is specified, the manufacturer's guaranties and warranties shall be delivered to the Engineer for transmittal to the Owner and shall have all pertinent information such as serial numbers plainly noted thereon. Should it become necessary to repair or replace work executed under this section, corrective measures shall be subject to acceptance by the Engineer.

PART 2 - PRODUCTS

2.01 GENERAL: All materials shall be new and all components and all completed assemblies shall be UL labeled.

2.02 RACEWAYS:

- A. Metallic Conduit (Aluminum): All exposed conduit shall be heavy wall rigid aluminum of standard pipe weight complying with ANSI C80.5, unless noted otherwise.
 - 1. Couplings, conduit unions, conduit fittings, etc. shall be aluminum, shall have conventional trade dimensions, and shall be internally threaded with a tapered thread at each end to fit the tapered thread specified for the corresponding size conduit. Conduit outlet body covers shall be cast construction.

2. Where buried or where in corrosive atmospheres, all conduits, couplings, and fittings shall have a gray or black factory-applied PVC coating, or field applied heat shrink jacket, of not less than 20 mils thickness. Damaged PVC coatings shall be repaired with an approved compound. Conduit supports, channels, and mounting apparatus shall be 316 stainless steel.
- B. Liquid Tight Flexible Metallic Conduit shall be galvanized steel with extruded PVC jacket, type UA, UL labeled. Fittings for liquid tight metallic conduit shall be threaded and galvanized malleable iron, or steel, and shall have molded plastic compression ring.
- C. Non-metallic Conduit: All buried conduit, couplings, and fittings shall be Schedule 40 PVC unless noted otherwise. All PVC conduit joints shall be solvent-welded in accordance with the manufacturer's recommendations.
1. Underground conduits and conduit embedded within slabs on grade shall be non-metallic; however, conversion shall be made to rigid metallic conduit before conduit runs exit encasement. Conversion elbows, fittings, and risers within the concrete encasement shall be PVC coated rigid metallic conduit.
 2. Underground conduits shall be installed not less than 24 inches below grade.
 3. Underground pull boxes shall be provided for all miscellaneous underground conduit runs over 200 feet long.
 4. A minimum 3-inch wide polyethylene warning tape, yellow for electrical and orange for telephone, with imprinted legend, shall be installed in the backfill above all underground conduits. Warning Tape shall be Allen Terra Tape, or equal, and shall be guaranteed not to discolor. Unless indicated otherwise, the tape shall be 12 inches below the finished ground grade.

2.03 PULL BOXES, JUNCTION BOXES:

- A. Exposed outdoor and exposed indoor pull boxes shall be cast aluminum or stainless steel, gasketed, weatherproof and corrosion resistant. Concealed indoor pull boxes shall be of Code gauge steel complete with screw covers.
- B. Junction boxes shall be of Code gauge steel complete with gasketed screw covers. Enclosures installed inside shall be of NEMA 12 construction. Enclosures outside or exposed to the weather shall be of NEMA 4X, Type 316 stainless steel or cast aluminum construction. Verify all box dimensions to meet the requirements of the NEC and provide adequate space for the equipment and associated wiring that are to be installed in and on the enclosures.

2.04 WIRES AND CABLE:

A. General Requirements:

1. All wires shall be marked with voltage rating, size, and insulation type.
2. All circuits are to be color coded in accordance with the N.E.C., including single phase circuits.
3. The grounding conductor for all systems shall have green insulation. Conductor insulation shall be of the types indicated or as required by temperatures in the National Electrical Code.
4. Except for control wiring, the minimum size wire shall be No. 12 AWG, unless otherwise noted on the Drawings.
5. Single control cable shall be #14 AWG minimum, copper, stranded. Multi-conductor control cables shall be used as called for on the Drawings or as recommended by equipment manufacturers. The gage shall be #14 AWG minimum or as noted on the Drawings.

- B. Low Voltage Power Cable: 120/208, 240 and 480 voltage wire and cable shall be 600 volt, single-conductor copper, rated 90 degrees C in both dry and wet locations. Aluminum conductors will not be allowed, even on circuits feeding panels. Unless indicated otherwise, low voltage building wire shall have XHHW-2 insulation. For design purposes, allowable ampacities will be limited to 75°C ratings even though 90°C conductors are being used.

2.05 OUTLET BOXES:

- A. General: Each concealed outlet for lights, switches, and wall receptacles shall be provided with standard steel galvanized outlet box. Boxes and covers shall not be less than 1/16-inch thick and in every instance of such form and dimensions as to be adapted to their specific use and location, kind of fixtures, number, size and arrangement of conduits connecting to them. Boxes shall be provided with an approved 3/8-inch fixture stud where required. Outlet boxes shall be equipped with plaster rings when required. Exposed outlet boxes shall be galvanized malleable iron boxes, with stainless steel appropriate covers and threaded hubs. Outlets for special devices shall be suitable for the specific application.
- B. Sizes, Shapes, Covers: Ceiling outlet boxes, not less than 4-inches octagonal by 2-inches deep. Switch and receptacle outlet boxes, not less than 2-inches wide by 3-inches long by 2-inches deep to accept standard device covers.

- C. Boxes in Exposed Concrete and Exposed Masonry: Where boxes are concealed in exposed masonry units, boxes shall be fitted with rings of sufficient depth for the box to be wholly within the cavity of the block or tile.
- D. Surface-mounted, weatherproof, vaporproof and explosion-proof outlet boxes shall be galvanized malleable iron boxes type FS or FD as required with galvanized malleable iron or stainless steel cover and with threaded hubs.

2.06 BOXES:

- A. General: Boxes shall be installed at all locations necessary to facilitate proper installation and equipment connection, including each conduit/cable transition.
 - 1. Minimum dimensions of boxes shall not be less than NEC requirements and shall be increased if necessary for practical reasons or where required to suit job condition.
 - 2. Boxes shall have only the holes necessary to accommodate the conduits at point of installation. All boxes shall have lugs or ears to secure covers.
 - 3. All boxes shall be rigidly secured in position. All boxes, except on unfinished ceilings and walls, and where conduit is run exposed, shall be so set that the front edge of box shall be flush with or recessed not more than 1/4-inch behind the finished wall or ceiling line.
- B. Pull Boxes: Pull boxes, including junction boxes and terminal boxes, shall be installed at all necessary points, whether indicated or not, to prevent injury to the insulation or other damage that might result from pulling resistance or other reasons during installation.
 - 1. Unless indicated otherwise, pull boxes shall be NEMA 12 construction with gasketed screw covers and gray baked enamel over a rust-inhibiting primer finish. Pull boxes installed outdoors shall be NEMA 4X aluminum or 316 stainless.
 - 2. Pull boxes in excess of 36 inches x 36 inches x 12 inches shall be fabricated from code gauge aluminum or 316 stainless steel, suitably reinforced to provide a rigid, self-supporting construction. Each large pull box shall be equipped with a gasketed hinged cover fastened with screws on three sides. Dimension and installation details, for each large pull box, shall be approved prior to fabrication.
 - 3. Pull boxes in hazardous areas shall be explosion proof, cast aluminum construction with hinged, threaded, screw-on covers. Explosion proof pull boxes shall be equipped with threaded conduit openings as

required for the initial installation, all identified future connections, and a minimum of one spare conduit opening sized to match the largest otherwise required conduit opening.

4. Branch circuit pull boxes shall be appropriate outlet boxes with blank covers.
- C. Wireways: Wireways, as indicated on the Drawings or approved for installation shall be NEMA 12 construction with gasketed screw covers and gray baked enamel over a rust-inhibiting primer finish. Wireways installed outdoors shall be NEMA 4X aluminum or 316 stainless steel.
1. Wireways shall be furnished and installed with required conduit knockouts only.
- D. Underground Pull Boxes: Underground pull boxes shall be minimum 30-inch x 30-inch x 18-inch deep composolite service boxes constructed of reinforced polymer concrete suitable for Tier 22 loading, with locking cover and molded logo; Quazite Composolite, or equal.
1. Where open bottom pull boxes are indicated or approved for installation a bed of gravel, minimum 12" thick and exceeding the pull box footprint by 6" on all sides, shall be placed beneath each open bottom pull box.

2.07 SAFETY SWITCHES, CIRCUIT BREAKERS, STARTER:

- A. Safety Switches: Safety switches shall be heavy duty, quick-make, quick-break.
1. Exterior units and units exposed to moisture or in corrosive atmospheres shall be in NEMA 3R or NEMA 4X stainless steel or cast aluminum enclosures as indicated on the Drawings.
 2. Units shall have poles, voltage and ampere ratings as required or as called for on the Drawings. Switches shall be unfused unless otherwise noted on the Drawings.
 3. All units shall be of the same manufacture and all switches shall be equipped with engraved phenolic legend plate, securely fastened to the outside cover, stating what the switch controls. Switches shall be as manufactured by Cutler Hammer, Siemens, Square D, General Electric, or equivalent. For fused switches, one spare set of fuses for each set installed shall be furnished to the Owner. Manual transfer switch shall be service entrance rated.

- B. Circuit Breakers: Circuit breakers shall be 600 volt thermal-magnetic, quick-make, quick-break molded case air circuit breakers, with trip-free operation, incorporating an internal trip bar and shall indicate "on" and "off" positions, in front.
1. Unless otherwise indicated, interior units in non-corrosive atmospheres shall be in NEMA 1 or NEMA 12 enclosures or as called for on the Drawings. Exterior units and units exposed to moisture or in corrosive atmospheres shall be in NEMA 4X stainless steel or aluminum enclosures. Individual circuit breakers shall be safety dead front units.
 2. Units shall have poles, voltage and amperage ratings as required or as called for on the Drawings and shall be coordinated with the installed service and loads supplied. Unless otherwise noted on the Drawings, interrupting capacity shall be 22,000 RMS symmetrical amps minimum at 480 volts.
 3. All units shall be of the same manufacturer and all individual circuit breakers shall be equipped with engraved phenolic legend plates securely fastened to the outside of the cover stating what the circuit breaker controls. Circuit breakers shall be Cutler Hammer, Siemens, Square D, General Electric, or equivalent.
 4. Circuit breakers used as a service disconnecting device shall be 100% rated and UL service entrance rated; shall be equipped with long time, short-time, instantaneous and ground fault adjustments for system selectivity; and shall be fully rated for the maximum fault current, without the use of current limiters.
- C. Starters: Individual starters shall be combination type, motor circuit protection as called for on the Drawings, A.C. magnetic starters.
1. Unless otherwise indicated, interior units in non-corrosive atmospheres shall be in NEMA 1 or NEMA 12 enclosures or as called for on the Drawings. Exterior units and units exposed to moisture or in corrosive atmospheres shall be in NEMA 4X stainless steel or aluminum enclosures. Individual circuit breakers shall be safety dead front units.
 2. Starters shall be equipped with all necessary control devices, LED indicator lights, and auxiliary contacts as required or as called for on the Drawings. All three-phase starters shall have three ambient temperature compensated overloads which can be reset from the front of the cover. Overloads shall be sized as recommended by the manufacturer of the starter based upon 115% of actual motor nameplate full-load amperes. Each unit shall have inside the cover a

typewritten list stating the motor HP and name-plate full-load amperes of the motor served. Circuit breakers shall be interlocked with the door so that the door cannot be opened with the switch or circuit breaker is in the "on" position.

3. Minimum size for starter shall be NEMA size 1. Circuit breakers for the combination type starter shall have the same interrupting capacity as the individual circuit breaker. I.E.C. rated starters are not acceptable for this project.
4. Where connected to the incoming service, the starter shall be service entrance rated and shall have phase monitors.
5. All units shall be of the same manufacturer and all units shall have engraved phenolic legend plate securely fastened to the outside of the cover stating what the starter controls. Starters shall be as manufactured by Cutler Hammer, Siemens, Square D, General Electric, or equivalent, and shall be equipped with terminal strips.

PART 3 - EXECUTION

3.01 RACEWAY SYSTEM:

- A. Verify conduit sizes with the dimensions of the particular wires and cables to be installed. Exposed conduits shall be neatly installed. Runs shall be parallel and, in general, perpendicular or parallel to walls floors or principal structural elements. To prevent motion in any direction, conduits shall be supported and secured by galvanized wall brackets, ceiling trapeze or pipe clamps approved by the Engineer. Perforated metal strap hangers and wire hangers are not acceptable.
- B. All job cut threads shall be given a coat of rust-resistant paint, zinc chromate, or equivalent. All threaded joints shall be made watertight with a waterproofing compound. Conduits that have been cut shall have burrs removed by reaming.
- C. Where conduit is installed in a cabinet, hand hole, junction box, pull box, panelboard, or motor control center, the conductors shall be protected by a nylon insulated metallic bushing. One locknut shall be installed on each conduit on the inside and outside of the enclosure.
- D. Liquid-tight flexible metallic conduit shall be installed in such a manner that liquids tend to run off the surface and not drain toward the fittings. Sufficient slack shall be provided to reduce the effects of vibration. Where the fittings are brought into an enclosure with a knock-out, a gasket assembly consisting of an "O" ring and retainer, shall be provided on the outside.

- E. Set-Screw conduit connectors and running thread couplings shall not be used. Conduit and equipment connected by conduit shall be so installed as to provide proper continuous grounding bonds, using bonding jumpers where required.
- F. Any moisture in conduit shall be removed before installing wire. Conduit ends shall be capped or plugged as soon as possible after installation and shall remain so until just before the installation of wires. Junction boxes shall be installed in locations approved by the Engineer. Insulating bushings shall be installed on all conduits.
- G. Expansion fittings or other approved devices shall be installed where conduits cross expansion joints. Install pull boxes in all runs over 200 feet in length, or where called for on the Drawings. The maximum distance between pull boxes shall not exceed 200 feet.
- H. Where conduit or conduits are stubbed up from a concrete slab, a round or rectangular concrete collar shall be cast around the stubs. The collar shall protrude approximately 2-inches above the slab and shall be approximately 2-inches thick around the conduit. Purpose of the collar is to prevent corrosion of metal conduits and mechanical damage to non-metallic conduits. In slab construction, the maximum nominal conduit size shall not exceed 1/4 the slab dimension. Sleeves shall be provided for all conduits passing through concrete or masonry work. Location and sizing of sleeves passing through floors and walls that are not shown on the Drawings is the responsibility of the Contractor.
- I. Secure conduit in place and protect where necessary to prevent damage to the work during construction. Plug ends of all conduit runs with cork, oakum, or other suitable material. Do not secure conduit directly to other piping.
- J. Separate conduit parallel to or crossing uninsulated hot water or steam pipes from same by 12 inches if parallel or 7 inches if crossing. Where hot water or steam pipe lines are insulated, clear conduit parallel or crossing the insulated surfaces by 2 inches. Do not run conduit directly under cold water lines and separate from same in other directions by at least 3 inches.
- K. Terminate empty conduits with smooth insulating bushings and/or cap and leave with a No. 12 gauge steel wire pulled in and ends of conduit securely closed.
- L. Seal all conduit runs which extend from an air conditioned space to a non-air conditioned space to prevent the circulation of air. Accomplish by stuffing conduit with duct seal where the conduit run terminates inside the building in an outlet box or cabinet.

- M. Underground conduits shall be buried to a depth of at least 18 inches below finished grade, except where noted otherwise. Underground conduit within building limits, shall be at least 6 inches below bottom of slab or structure, unless specifically permitted otherwise elsewhere in these Specifications.
- N. Follow the layout shown on the Drawings. This layout is, however, diagrammatic only and where changes are necessary due to structural conditions, interference with other apparatus, or other causes, make such changes without additional cost to the Owner. Install offsets in conduits as required by the conditions.
- O. Where trenching and backfilling for conduit under proposed or existing pavement, pavement replacement, and backfill compaction shall be in accordance with pertinent section(s) of these Specifications.

3.02 WIRE AND CABLE:

- A. Lighting and Receptacle Wiring: Run as single phase, three wire circuits. Separate neutrals must be provided for each circuit, shared neutrals will not be allowed. If the one-way circuit distance from the panelboard to the first such outlet on a circuit exceeds 75', run No. 10 wire to the first outlet, with No. 12 thereafter unless otherwise noted.
- B. Care in Installing Wire: Care shall be exercised while installing wires in conduits so as not to injure the conductor insulation. Wire lubricant shall be used where wire is pulled by mechanical means. Such mechanical means shall be of the type commonly used within the trade, such as electrically operated winches. All wire shall be carried full size from source to load without intermediate splices. Where splices are unavoidable in conductors below ground level or in wet locations, splicing kit approved by the Engineer shall be used. Where splices are occurring, for reasons already mentioned, wire markers shall be applied at each side of the splice. The wire color coding shall be maintained from source to load. Twist-on wire connectors, or wing nuts, or splice caps are not permitted in splices on any conductor below ground level or wet locations.
- C. Wire Pulling: Wire shall not be pulled into conduit until all conduit and mechanical work is substantially complete. Where pulling lubricants are used, they shall be of a type approved for the particular cable insulation.
- D. Terminations: All terminations of control wiring shall be by means of ring-tongue compression lugs of the nylon self-insulated type with an inner bronze insulation grip sleeve on identified terminal strips. The manufacturer's recommended tooling shall be used to apply the lugs. All copper conductors #10 AWG and smaller, other than control wiring, shall be terminated and spliced with compression connectors. The manufacturer's recommended tooling shall be used to apply. (Soldered and screw-on connections are not permitted.) Where copper conductors, other than control wiring, are specified

on the Drawings to be terminated on terminal strips, they shall be terminated in the same manner as control wiring (see above). All conductors #8 AWG and larger shall be terminated, spliced, and taped, wherever practicable, with color-keyed compression connectors. The manufacturer's recommended tooling shall be used for installation. All control and power wiring in cabinets, panelboards, motor control center, pull boxes, junction boxes, and cable trenches shall be neatly trained and held with nylon cable ties. Where control or circuit cabling is clamped or fastened in cabinets or other equipment, non-metallic nylon cable clamps and mounting brackets shall be installed. Wire and cable shall be suitably protected from weather or damage during the storage and handling and shall be in first-class condition when installed.

- E. Grounding: Install complete grounding system at the service entrance equipment. Ground and bond all service entrance equipment, non-current-carrying metal parts of all equipment bus as required by Article 250 of the National Electrical Code and other referenced Articles. Resistance of ground system to earth shall not exceed 5 ohm. All grounding conductors shall be copper; no splices will be allowed in the grounding conductors. Protect and rigidly support all grounding conductors from mechanical injury. When grounding conductors are run through conduit, securely bond to such conduit at the entrance and exit. An insulated equipment grounding conductor shall be provided in each raceway and cable assembly for each circuit. Insulation shall be color coded green. Conductor shall be sized according to the National Electrical Code Table 250-122. Chain link fencing shall be grounded at any change of direction exceeding 15° or as called for on the Drawings. Ground rods shall be driven to 6 inches below grade and shall be connected to a non-current carrying enclosure exothermally welding a copper conductor to the ground rod and the enclosure.

3.03 OUTLET BOXES: All cuts in masonry to accommodate any outlet box or associated item shall be with a masonry saw. Chipping or breaking with a hammer will not be permitted.

- A. Locations: The approximate locations of outlets are shown on the Drawings. Determine the exact locations at the building site. The right is reserved to change the exact location of any switch, ceiling or other outlet boxes at the following heights above finished floor:
 - 1. Switch Outlets: 4 feet
 - 2. Wall Receptacles: 1 foot-6 inches
- B. Outlets for Wall Receptacles: Placed so that the cover plate will be mounted with the long side vertical.

3.04 ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER SPECIFICATION

SECTIONS: All electrical equipment furnished under other sections of the Specifications which require electrical service shall be connected as work of this section, except as otherwise noted. Method of connection shall be as required by arrangement and provision for service on each piece of equipment. Provide all fittings and accessories required to make a proper service connection.

3.05 MARKING AND DIRECTORIES:

- A. Marking: Identify each panel, terminal cabinet, and all other control devices suitably by means of 1/4-inch high letters cut in a black laminated phenolic strip to show white letters and neatly fasten on enclosure with screws. Adhesives are not acceptable. Control circuit conductor identification shall be made by color-coded insulated conductors and plastic coated self-adhering printed markers or permanently attached metal foil markers. The same color code shall be maintained for the full length of each circuit. Conductor identification shall be provided within each enclosure where a tap, splice, or termination is made. Control circuit terminals of equipment shall be properly identified. Terminal and conductor identifications shall match that shown on approved shop drawings. Hand lettering or marking is not acceptable. Conductor identification by insulation color-coding method is not required for three-phase circuits; however, each ungrounded conductor shall be properly identified by plastic-coated, self-adhering printed markers, permanently attached metal foil marker, or color-coded self-adhering plastic tape.
- B. Directories: Install typewritten circuit markers in all panelboards. Note changes in the location of conduits, the connection of circuits, and any other data different from the Contract Drawings on a set of prints furnished by the Engineer after acceptance of the work.

3.06 FIELD ACCEPTANCE TESTS: After the electrical installation is complete, thoroughly test to demonstrate that the system is in proper working order and in accordance with the Drawings and Specifications. The tests shall be as specified. The costs of the tests shall be borne by the Contractor, including expense incident to retests occasioned by defects and failures of equipment to meet the specifications. Provide calibrated electrical instruments. Make the necessary connections to the circuits for the testing instruments and place and connect the instruments and appliances necessary for the tests. Upon completion of the tests, remove the instruments and appliances and reconnect circuits in a permanent manner. Conduct the tests in the presence of the Engineer. Results are subject to the Engineer's approval. Notify the Engineer 24 hours or more in advance when any test is to take place, and do not start without the Engineer's permission

3.07 TESTING AS FOLLOWS:

- A. Wiring: Test the insulation of all feeders, subfeeders, and branch feeders and record all readings on forms printed for that purpose. The completed form shall be delivered to the Engineer.
- B. Motors and Controls: Before connecting, test the insulation of all motors in accordance with the manufacturer's recommendations. If low readings are obtained, notify the manufacturer of the item so that steps may be taken to correct the low resistance conditions. Check all motors for lubrication and lubricate, if required, in accordance with the manufacturer's instructions prior to energizing any motor. Check the running currents of all motors under maximum load conditions. If the current varies more than 10 percent from rated value, advise the Engineer. Verify ratings of thermal overload units installed with actual motor name plate full-load circuit. Each motor with its control shall be run for a sufficient length of time to demonstrate correct alignment, wiring capacity, speed, and satisfactory operation. Operate all switches and circuit breakers, but not necessarily at full load. These tests shall be in addition to, and not in substitution for, the tests of the individual items at the manufacturer's works.
- C. Testing Ceiling Anchors and Supports: Test each ceiling anchor or support for light fixtures with a weight of not less than 50 pounds or three times the weight of the installed fixture, whichever is greater.
- D. Ground Resistance: Make tests of the entire grounding system for continuity of connections and for resistance to the flow of current through ground connections. The ground resistance of conduits, equipment cases, and supporting frames shall not vary appreciably from that of the system as a whole. The ground resistance of the system shall not exceed 5 ohms.

3.08 FINAL INSPECTION: When the entire job is ready for final inspection, deliver to the Engineer one set of contract drawings marked to show all changes made during construction. This shall include changes in equipment ratings and alterations in locations of duct and conduit runs.

END OF SECTION

SECTION 16060
GROUNDING AND BONDING

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Grounding electrodes and conductors, equipment grounding conductors, and bonding to complete grounding system consisting of:
 - 1. Metal underground water pipe, if available.
 - 2. Effectively bonded and grounded metal frame of the building.
 - 3. Concrete-encased electrode.
 - 4. Rod electrodes.

1.02 REFERENCES: NFPA 70 - National Electrical Code, NFPA (edition adopted by Authority Having Jurisdiction).

1.03 PERFORMANCE REQUIREMENTS: Grounding System Resistance: 6 ohms.

1.04 QUALITY ASSURANCE:

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience with service facilities within 100 miles of Project.
- C. Products: Listed and classified by Underwriters Laboratories, Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.01 ELECTRODES:

- A. Rod Electrodes: Copper.
 - 1. Diameter: 5/8 inch (16 mm).
 - 2. Length: 10 feet (3000 mm).
- B. Concrete Encased Electrode: Per NEC 250.52(A)(3), provide concrete encased electrode. The electrode shall be encased in at least 2 inches of concrete, located within and near the bottom of a concrete foundation or footing that is in direct contact with the earth. The electrode shall consist of

at least 20' of conductive steel reinforcing bars or rods of not less than ½" diameter or 20' of bare copper conductor not smaller than no. 4.

2.02 CONNECTORS AND ACCESSORIES:

- A. Equipment Grounding Conductor: THWN Stranded copper with green coding.
- B. Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

PART 3 - EXECUTION

3.01 EXAMINATION: Verify existing conditions prior to beginning work.

3.02 INSTALLATION:

- A. Install ground electrodes at locations indicated. Install additional rod electrodes as required to achieve specified resistance to ground.
- B. Provide grounding electrode conductor and connect to metal water pipe (if available), ground rods, reinforcing steel in foundation footing, structural steel, and any other items required by NEC Article 250 and local codes. Bond steel together.
- C. Provide bonding to meet requirements described in Quality Assurance.
- D. Bond equipment such as metallic housing and feeder metallic conduits to grounding conductor. Use grounding bushings, on service conduit and at other points where grounding continuity is broken.
- E. Provide a bonding jumper for any equipment, motor, fixture or device to which current carrying conductors are connected that is not bonded directly to the grounded system. Connect bonding jumper to approved lugs and grounding conduit bushings or clamps.
- F. Equipment Grounding Conductor: As indicated on Drawings, provide separate, insulated grounding conductor within each feeder and branch circuit raceway (sized per NEC Section 250 if not indicated). Terminate each end on suitable lug, bus, or bushing. Metal raceways shall not be used as the sole method of grounding.

3.03 FIELD QUALITY CONTROL:

- A. Test grounding system to ensure continuity and that resistance to ground is not excessive (above 5 ohms). Test each ground rod for resistance to ground before making connections to rod; tie grounding system together and

test for resistance to ground. Make resistance measurements in dry weather, not earlier than 48 hours after rainfall.

- B. Provide ground test results.

END OF SECTION

SECTION 16075
ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.01 SECTION INCLUDES: Nameplates and labels.

1.02 REFERENCES: NFPA 70 - National Electrical Code, National Fire Protection Association (edition adopted by Authority Having Jurisdiction).

1.03 QUALITY ASSURANCE:

- A. Conform to requirements of NFPA 70.
- B. Products: Listed and classified by Underwriters Laboratories, Inc. As suitable for purpose specified and shown.

PART 2 - PRODUCTS

2.01 NAMEPLATES AND LABELS:

- A. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
- B. Locations:
 - 1. Each electrical distribution and control equipment enclosure.
- C. Letter Size:
 - 1. Use 1/8 inch (3 mm) letters for identifying individual equipment and loads.
 - 2. Use 1/4 inch (6 mm) letters for identifying grouped equipment and loads.
- D. Labels (for Power Outlets): Embossed adhesive tape, with 1/8 inch (3 mm) black letters on clear background. Use only for identification of appliances and equipment with their own branch circuits. Label outlet with name of load, panel and circuit number.

PART 3 - EXECUTION

3.01 PREPARATION: Degrease and clean surfaces to receive nameplates and labels.

3.02 INSTALLATION:

- A. Install nameplates and labels parallel to equipment lines.
- B. Secure nameplates to equipment front.
- C. Secure nameplates to inside surface of door on panelboards that are recessed in finished locations.

END OF SECTION