

RESOLUTION NO. 2019 - 191

**A RESOLUTION BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA, AUTHORIZING THE COUNTY ADMINISTRATOR, OR DESIGNEE, TO AWARD BID NO. 19-53 AND TO EXECUTE AN AGREEMENT FOR HOLIDAY ISLE LIFT STATION IMPROVEMENTS.**

**RECITALS**

**WHEREAS**, the County desires to enter into a contract with Danus Utilities, Inc. to complete the Holiday Isle Lift Station Improvements; and

**WHEREAS**, The construction of the Holiday Isle Lift Station Improvements project requires the contractor to furnish all labor, materials, equipment, and incidentals necessary for improvements to the Holiday Isle Lift Station located in St. Augustine, FL. Work will generally include, but not limited to obtaining required permits and coordination with FP&L, dewatering and installation of new 8 ft diameter precast concrete wetwell and 5 ft diameter precast doghouse/pour-in-place receiving manhole, coating the existing and proposed wetwell/manhole interior with Raven405 or approved equal, precast concrete top slab with access hatch, 316 stainless steel piping, valves, guide rails, pump bases, submersible pumps, diesel bypass pump, and water service for lift station, relocation/replacement of existing 4" and 6" backflow preventers, concrete slab/driveway, concrete masonry block wall with stucco finish and cantilever gate, electrical rack including control panel, explosion-proof terminal boxes, RTU, electrical wiring, service disconnect, and electrical meter per SJCUD standards, temporary bypass pumping and demolition/removal of existing lift station components and building and conversion of the existing wetwell into a manhole. All work shall be bid and performed specifically in accordance with the plans and specifications.

**WHEREAS**, through the County's formal Bid process, Danus Utilities, Inc. was the lowest, responsive, responsible bidder to enter into a contract with the County to perform the work referenced above; and;

**WHEREAS**, the County has reviewed the terms, provisions, conditions and requirements of the proposed contract (attached hereto, an incorporated herein) and finds that entering into contracts to complete the work services serves a public purpose.

**WHEREAS**, the contract will be in substantial conformance with the attached draft contract.

**NOW, THEREFORE BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA**, as follows:

Section 1. The above Recitals are incorporated by reference into the body of this Resolution and such Recitals are adopted as finds of fact.

Section 2. The County Administrator, or designee, is hereby authorized to award Bid 19-53 to Danus Utilities, Inc. and to execute a contract for the services set forth therein.

Section 3. Upon Board approval, the County Administrator, or designee, is authorized to execute an agreement in substantially the same form and format as the attached draft on behalf of the County to provide the scope of services as specifically provided in Bid 19-53.

Section 4. To the extent that there are typographical and/or administrative errors that do not change the tone, tenor, or concept of this Resolution, then this Resolution may be revised without subsequent approval by the Board of County Commissioners.

**PASSED AND ADOPTED** by the Board of County Commissioners of St. Johns County, Florida, this 4 day of June, 2019.



**BOARD OF COUNTY COMMISSIONERS OF  
ST. JOHNS COUNTY, FLORIDA**

By: \_\_\_\_\_

Paul M. Waldron, Chair

**ATTEST:** Hunter S. Conrad, Clerk

By: Tam Halterman  
Deputy Clerk

**RENDITION DATE** 6/6/19

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

THIS AGREEMENT is by and between St. Johns County, Florida ("Owner") and Danus Utilities, Inc., ("Contractor"). 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:
- A. The construction of the Holiday Isle Lift Station Improvements project requires the contractor to furnish all labor, materials, equipment, and incidentals necessary for improvements to the Holiday Isle Lift Station located in St. Augustine, FL. Work will generally include, but not limited to obtaining required permits and coordination with FP&L, dewatering and installation of new 8 ft diameter precast concrete wetwell and 5 ft diameter precast doghouse/pour-in-place receiving manhole, coating the existing and proposed wetwell/manhole interior with Raven405 or approved equal, precast concrete top slab with access hatch, 316 stainless steel piping, valves, guide rails, pump bases, submersible pumps, diesel bypass pump, and water service for lift station, relocation/replacement of existing 4" and 6" backflow preventers, concrete slab/driveway, concrete masonry block wall with stucco finish and cantilever gate, electrical rack including control panel, explosion-proof terminal boxes, RTU, electrical wiring, service disconnect, and electrical meter per SJCUD standards, temporary bypass pumping and demolition/removal of existing lift station components and building and conversion of the existing wetwell into a manhole. All work shall be bid and performed specifically in accordance with the plans and specifications.

**Article 2. PROJECT**

- 2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:
- A. Bid No. 19-53: Holiday Isle Lift Station Improvements

**Article 3. ENGINEER**

- 3.01 The Project has been designed by St Johns County Utility Department, 1205 State Road 16, St Augustine, FL 32084.
- 3.02 The Owner has retained Constantine Engineering Group ("Engineer") to act as Owner's Representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

**Article 4. CONTRACT TIMES**

- 4.01 Time 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 completed within One Hundred and Fifty (150) consecutive days after the date when the Contract Times commence and will 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 Thirty (30) days after Substantial Completion.

#### 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 times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. 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 \$1,241.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A 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 Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$1,241.00 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 not additive and will not be imposed concurrently.

#### 4.04 Special Damages

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

## **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 other than Unit Price Work, a lump sum of:

**\$ Three Hundred Ninety Three Thousand, One Hundred Fifty Dollars (\$393,150.00).**

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

5.02 For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

| Unit Price Work                                                                                           |             |      |                    |            |                |
|-----------------------------------------------------------------------------------------------------------|-------------|------|--------------------|------------|----------------|
| Item No.                                                                                                  | Description | Unit | Estimated Quantity | Unit Price | Extended Price |
|                                                                                                           | N/A         |      |                    |            |                |
|                                                                                                           |             |      |                    |            |                |
|                                                                                                           |             |      |                    |            |                |
|                                                                                                           |             |      |                    |            |                |
|                                                                                                           |             |      |                    |            |                |
| Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities) |             |      |                    |            | \$             |

5.03 Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment)

**\$ Three Hundred Ninety Three Thousand, One Hundred Fifty Dollars (\$393,150.00).**

5.04 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 account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 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. 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 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. Ninety (90%) percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
  - b. Fifty (50%) 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 One Hundred (100%) percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less Two Hundred (200%) percent of 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 in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

### Article 7. INTEREST

- 7.01 All amounts not paid when due shall bear interest at the rate of Zero (0.00) percent per annum

### Article 8. CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations
  - A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
  - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. 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 Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. 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.
- G. 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.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. 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.

## **Article 9. CONTRACT DOCUMENTS**

### **9.01 Contents:**

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to 8, inclusive).
  - 2. Public construction bond (pages 1 to 2, inclusive).
  - 3. General Conditions (pages 1 to 72, inclusive).
  - 4. Supplementary Conditions (pages 1 to 12, inclusive).
  - 5. Specifications as listed in the table of contents of the Project Manual.
  - 6. Drawings (not attached but incorporated by reference) consisting of 15 sheets with

each sheet bearing the following general title: Holiday Isle Lift Station Improvements

7. Addenda (numbers 1 to 3, inclusive)
8. Exhibits to this Agreement (enumerated as follows):
  - a. Contractor's Bid (pages 1 to 34, inclusive).
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.
- B. The documents listed in Paragraph 9.01.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 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

## **Article 10. MISCELLANEOUS**

### **10.01 Terms**

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

### **10.02 Assignment of Contract**

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto 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 Documents.

### **10.03 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.

### **10.04 Severability**

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that

the Contract Documents shall 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.

#### 10.05 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 10.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing 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.

#### 10.06 Other Provisions

A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, 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.

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

This Agreement will be effective \_\_\_\_\_ (which is the Effective Date of the Contract).

**OWNER:**

**CONTRACTOR:**

**St. Johns County, FL**

\_\_\_\_\_  
(Typed Name)

By: \_\_\_\_\_  
Signature of Authorized Representative

By: \_\_\_\_\_  
Signature of Authorized Representative

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

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

\_\_\_\_\_  
Title

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date of Execution:

\_\_\_\_\_  
Date of Execution:

**ATTEST:**

**St. Johns County, FL  
Clerk of Courts**

Attest: \_\_\_\_\_

By: \_\_\_\_\_

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

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

**Legally Sufficient:**

Mailing Address for giving notices:

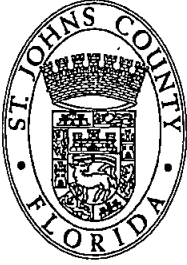
\_\_\_\_\_  
Deputy County Attorney

\_\_\_\_\_  
Date of Execution:

Mailing Address for giving notices:

500 San Sebastian View  
St. Augustine, FL 32084

License No.: \_\_\_\_\_



**ST. JOHNS COUNTY  
PURCHASING DEPARTMENT**

500 San Sebastian View  
St. Augustine, Florida 32084

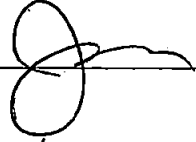
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**I N T E R O F F I C E   M E M O R A N D U M**

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**TO:** James Overton; Engineer – Capital Improvement Projects  
**FROM:** David E. Pyle, CPPB, Procurement Coordinator  
**SUBJECT:** Bid No. 19-53: Holiday Isle Lift Station Improvements  
**DATE** March 12, 2019

By signing below, the above referenced Project Manager acknowledges receipt of the final Bid Documents for the above project, and approves the advertisement of the Bid as it has been provided. Budget must be in place before the project will be advertised.

Approval:  \_\_\_\_\_

Date: 3/13/2019

Budget Amount: \$ 455,000

GL # and/or Project #: 4483-56302-6702-56302

# ST. JOHNS COUNTY BID TABULATION

BID TITLE HOLIDAY ISLE LIFT STATION IMPROVEMENTS

BID NUMBER 19-53

OPENING DATE/TIME April 24, 2019 2:00 PM

POSTING DATE/TIME FROM 04/24/19 UNTIL 04/29/19  
4:00 PM 4:00 PM

ANY BIDDER AFFECTED ADVERSELY BY AN INTENDED  
DECISION WITH RESPECT TO THE AWARD OF ANY BID,  
SHALL FILE WITH THE PURCHASING DEPARTMENT FOR  
ST. JOHNS COUNTY, A WRITTEN NOTICE OF INTENT  
FILE A PROTEST NOT LATER THAN SEVENTY-TWO (72)  
HOURS (EXCLUDING SATURDAY, SUNDAY AND LEGAL  
HOLIDAYS) AFTER THE POSTING OF THE BID TABULATION  
PROTEST PROCEDURES MAY BE OBTAINED IN THE  
PURCHASING DEPARTMENT.

OPENED BY  
TABULATED BY  
VERIFIED BY

David E. Pyle  
Shelly Vongchanta  
David E. Pyle

PAGE(S) 1 of 1

| BIDDERS                               | TOTAL LUMP SUM<br>BID PRICE | BID BOND | MANDATORY PRE-<br>BID ATTENDANCE | ADDENDUM #1 | ADDENDUM #2 | ADDENDUM #3 |  |
|---------------------------------------|-----------------------------|----------|----------------------------------|-------------|-------------|-------------|--|
| WPC Industrial Contractors,<br>Inc.   | \$471,000.00                | Yes      | Yes                              | Yes         | Yes         | Yes         |  |
| Danus Utilities, Inc.                 | \$393,150.00                | Yes      | Yes                              | Yes         | Yes         | Yes         |  |
| G&H Underground<br>Construction, Inc. | \$548,655.00                | Yes      | Yes                              | Yes         | Yes         | Yes         |  |
|                                       |                             |          |                                  |             |             |             |  |
|                                       |                             |          |                                  |             |             |             |  |
|                                       |                             |          |                                  |             |             |             |  |

BID AWARD DATE - \_\_\_\_\_



## St. Johns County Board of County Commissioners

Purchasing Division

### NOTICE OF INTENT TO AWARD

May 7, 2019

**RE:** Bid No: 19-53: Holiday Isle Lift Station Improvements

Please be advised that the Purchasing Department of the St. Johns County Board of County Commissioners is issuing this notice of its Intent to Award a contract to Danus Utilities, Inc., as the responsive, responsible bidder for Bid No: 19-53; Holiday Isle Lift Station Improvements. This notice will remain posted until 2:00 PM, Friday, May 10, 2019.

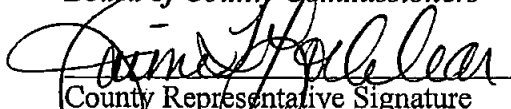
Any person (including any bidder or proposer) who is, or claims to be, adversely affected by the County's decision or proposed decision shall file a written Notice of Protest with the Purchasing Department of St. Johns County within 72 hours after the posting of the notice of decision or proposed decision. Failure to file a Notice of Protest within the time prescribed in Section 304.10 of the St. Johns County Purchasing Manual (the Bid Protest Procedure), or failure to post the bond or other security required by the County within the time allowed for filing a bond, shall constitute a waiver of proceedings and a waiver of the right to protest. The protest procedures may be obtained from the Purchasing Department and are included in the County's Purchasing Manual. All of the terms and conditions of the County Purchasing Manual are incorporated herein by reference and are fully binding.

Should the Purchasing Department receive no protests in response to this notice, an agenda item will be submitted to the St. Johns County Board of County Commissioners for their consideration and subsequent approval to award and execute a contract.

Please forward all correspondence, requests or inquiries directly to David E. Pyle, CCPB, Procurement Coordinator, at [dpyle@sjcfl.us](mailto:dpyle@sjcfl.us).

Sincerely,

**St. Johns County, FL  
Board of County Commissioners**

  
County Representative Signature

Date: 5/7/19

Jaime T. Locklear, MPA, CPPO, CPPB, FCCM  
Purchasing Manager  
(904) 209-0158 – Direct  
(904) 209-0159 – Fax  
[jlocklear@sjcfl.us](mailto:jlocklear@sjcfl.us)



Copy - 2

BID NO: 19-53

SECTION 00300  
OFFICIAL COUNTY BID FORM  
ST. JOHNS COUNTY, FLORIDA

PROJECT: HOLIDAY ISLE LIFT STATION IMPROVEMENTS

TO: THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA

DATE SUBMITTED: April 24, 2019

BID PROPOSAL OF

Danus Utilities, Inc.

Full Legal Company Name

2320 Beardall Ave, Sanford, FL 32771

Mailing Address

386-233-5588

Telephone Number

407-878-1254

Fax Number

Bidders: Having become familiar with requirements of the project, and having carefully examined the Bidding Documents and Specifications entitled for Bid No: 19-53, HOLIDAY ISLE LIFT STATION IMPROVEMENTS in St. Johns County, Florida, the undersigned proposes to furnish all materials, labor and equipment, supervision and all other requirements necessary to comply with the Contract Documents to submit the following Bid Proposal summarized as follows:

BASE BID

FOR: HOLIDAY ISLE LIFT STATION IMPROVEMENTS as per plans and specifications.

TOTAL LUMP SUM BID PRICE:

\$ 393,150.00

Total Lump Sum Bid Price (Numerical)

Three Hundred Ninety Three Thousand, One Hundred and Fifty and 00/100 /100 Dollars

Total Lump Sum Bid Price (Amount written or typed in words)

Bidder shall insert the Lump Sum Base Bid Price in numerals and in words. Any discrepancy between the two submitted amounts shall be determined by the amount written in words.

Bidder shall insert the Total Bid Price in numerals and in words. Any discrepancy between the two submitted amounts shall be determined by the amount written in words.

During the preparation of the Bid, the following addenda, if any, were received:

No.: 1 Date Received: 3/20/2019

No.: 2 Date Received: 3/27/2019

We, the undersigned, hereby declare that no person or persons, firm or corporation, other than the undersigned are interested, in this proposal, as principals, and that this proposal is made without collusion with any person, firm or corporation, and we have carefully and to our satisfaction examined the Bid Documents and Project Specifications.

We have made a full examination of the location of the proposed work and the sources of supply of materials, and we hereby agree to furnish all necessary labor, equipment and materials, fully understanding that any quantities shown therewith are approximate only, and that we will fully complete all requirements therein as prepared by the Owner, within the same time limit specified in the Bid Documents as indicated above.

If the Undersigned is notified of the acceptance of this Bid Proposal by the Board within ninety (90) calendar days for the time set for the opening of Bids, the Undersigned further agrees, to execute a contract for the above work within ten (10) days after notice that his Bid has been accepted for the above stated compensation in the form of a Contract presented by the Owner.

The Undersigned further agrees that security in the form of a Bid Bond, certified or cashier's check in the amount of not less than five percent (5%) of Total Bid Price, payable to the Owner, accompanies this Bid; that the amount is not to be construed as a penalty, but as liquidated damages which said Owner will sustain by failure of the Undersigned to execute and deliver the Contract and Bond within ten (10) days of the written notification of the Award of the Contract to him; thereupon, the security shall become the property of the Owner, but if this Bid is not accepted within ninety (90) days of the time set for the submission of Bids, or if the Undersigned delivers the executed Contract upon receipt, the Security shall be returned to the Bidder within seven (7) working days.

**CORPORATE/COMPANY**

Full Legal Company Name: Danus Utiliteis, Inc. (Seal)

By: [Signature] Daniel J Pardus President  
Signature of Authorized Representative (Name & Title typed or printed)

By: \_\_\_\_\_  
Signature of Authorized Representative (Name & Title typed or printed)

Address: 2320 Beardall Ave, Sanford, FL 32771

Telephone No.: (386) 233-5588

Fax No.: (407) 878-1254

Email Address for Authorized Company Representative: dan@danusutilities.com

Federal I.D. Tax Number: 27-0404772

DUNS #: 831728212  
(If applicable)

**INDIVIDUAL**

Name: \_\_\_\_\_  
(Signature) (Name typed or printed) (Title)

Address: \_\_\_\_\_

Telephone No.: (\_\_\_\_) \_\_\_\_\_

Fax No.: \_\_\_\_\_

Email Address: \_\_\_\_\_

Federal I.D. Tax Number: \_\_\_\_\_

**Submittal Requirements:**

- Official County Bid Form
- ✓ Attachment "A" – St Johns County Board of County Commissioners Affidavit
- ✓ Attachment "B" – Certificate as to Corporate Principal w/ Bid Bond
- ✓ Attachment "C" – License / Certification List
- Attachment "D" – List of Proposed Sub-Contractors / Suppliers
- ✓ Attachment "E" – Conflict of Interest Disclosure Form
- ✓ Attachment "F" – Certificate of Compliance with Florida Trench Safety Act
- ✓ Attachment "G" – Proof of Insurance
- ✓ Attachment "H" – Contractor's Qualifications Form
- Bid Bond Form
- Fully Acknowledged Addenda Applicable to this bid

Official County Bid Form, Attachments "A", "B", "C", "D", "E", "F", "G", "H" and Bid Bond must be completed, along with a fully acknowledged copy of each Addendum applicable to this Bid and submitted with each copy of the Bid Proposal. One (1) original and two (2) copies of all required forms must be submitted.

ATTACHMENT "A"

**ST. JOHNS COUNTY, BOARD OF COUNTY COMMISSIONERS AFFIDAVIT**

TO: ST. JOHNS COUNTY, BOARD OF COUNTY COMMISSIONERS,  
ST. JOHNS COUNTY, ST. AUGUSTINE, FLORIDA.

At the time the proposal is submitted, the Bidder shall attach to his Bid a sworn statement.

This sworn statement shall be an affidavit in the following form, executed by an officer of the firm, association, or corporation submitting the proposal, and shall be sworn to before a person who is authorized by law to administer oaths.

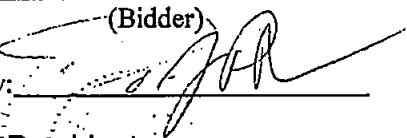
STATE OF FLORIDA, COUNTY OF ST. JOHNS

Before me, the Undersigned authority, personally appeared Daniel J Pardus who being duly sworn, deposes and says he is President (Title) of the firm of Danus Utilities, Inc. Bidder submitting the attached proposal for the services covered by the bid documents for Bid No: 19-53; Holiday Isle Lift Station Improvements, in St. Johns County, Florida.

The affiant further states that no more than one proposal for the above-referenced project will be submitted from the individual, his firm or corporation under the same or different name, and that such Bidder has no financial interest in the firm of another bidder for the same work. That neither he, his firm, association nor corporation has either directly or indirectly entered into any agreement, participated in any collusion, nor otherwise taken any action in restraint of free competitive bidding in connection with this firm's Bid on the above-described project. Furthermore, neither the firm nor any of its officers are barred from participating in public contract lettings in the State of Florida or any other state.

Danus Utilities, Inc.

(Bidder)

By: 

President

(Title)

Sworn and subscribed to me this 24 day  
of April, 2019.

Notary Public:

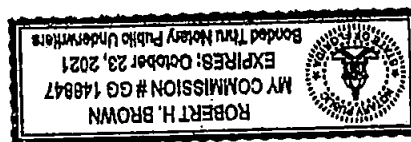
Signature

Robert H Brown

Printed

My commission Expires: October 23, 2021

BIDDER ON ALL COUNTY PROJECTS MUST EXECUTE AND ATTACH THIS AFFADAVIT TO EACH BID.



Executed in 3 Counterparts

BID NO: 19-53

**BID BOND**

STATE OF FLORIDA  
COUNTY OF ST. JOHNS

KNOW ALL MEN BY THESE PRESENTS, that Danus Utilities, Inc. as Principal, and<sup>\*</sup>  
as Surety, are held and firmly bound unto St. Johns County, Florida, in the penal sum of <sup>\*\*</sup>  
Dollars (\$           (5%)          ) lawful money of the United States, we bind ourselves, our heirs, executors,  
administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATIONS IS SUCH that whereas the Principal has submitted the accompanying Bid,  
dated April 24th, 2019.

For  
**HOLIDAY ISLE LIFT STATION IMPROVEMENTS**  
St. Johns County, Florida

NOW THEREFORE,

- (a) If the Principal shall not withdraw said Bid within ninety (90) days after Bid Award date, and shall within ten (10) days after prescribed forms are presented to him for signature, enter into a written Contract with the County in accordance with the Bid as accepted, and give Bond with good and sufficient Surety or Sureties, as may be required, for the faithful performance and proper fulfillment of such Contract, then the above obligations shall be void and of no effect, otherwise to remain in full force and virtue.
- (b) In the event of the withdrawal of said Bid within the period specified, or the failure to enter into such Contract and give such Bond within the time specified, if the Principal shall pay the County the difference between the amount specified, in said Bid and the amount for which the County may procure the required Work and supplies, if the latter amount be in excess of the former, then the above obligations shall be void and of no effect, otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above bounded parties have executed this instrument under their several seals, this day of April 24th A.D., 2019, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

\* North American Specialty Insurance Company

\*\* Five Percent of Amount Bid

BID NO: 19-53

WITNESSES:

(If Sole Ownership or Partnership two (2) Witnesses required).  
(If Corporation, Secretary only will attest and affix seal).

WITNESSES:

Alice Pardus  
Alice Pardus  
Secretary

WITNESS:

Jenna Pagan  
Jenna Pagan

Danus Utilities, Inc.

PRINCIPAL:

Danus Utilities, Inc.

NAME OF FIRM:

[Signature]

SIGNATURE OF AUTHORIZED  
OFFICER (AFFIX SEAL)

President

TITLE

2320 Beardall Avenue

BUSINESS ADDRESS

Sanford,

CITY

FL

STATE

North American Specialty Insurance Company

SURETY:

North American Specialty Insurance Company

CORPORATE SURETY

[Signature]

ATTORNEY-IN-FACT (AFFIX SEAL)  
& FL Lic. Resident Agent, Teresa L. Durham  
1200 Main Street, Suite 800

BUSINESS ADDRESS

Kansas City,

CITY

MO

STATE

Florida Surety Bonds, Inc.

NAME OF LOCAL INSURANCE AGENCY

BID NO: 19-53

ATTACHMENT "B"

**CERTIFICATE AS TO CORPORATE PRINCIPAL**

I, Alice Pardus, certify that I am the Secretary of the Corporation named as Principal in the attached bond; that Daniel J Pardus who signed the said bond on behalf of the Principal, was then of said Corporation; that I know his signature, and his signature hereto is genuine; and that said bond was duly signed, sealed, and attested for and in behalf of said Corporation by authority of its governing body.

Alice Pardus

Secretary

Corporate Seal

(STATE OF FLORIDA  
COUNTY OF ~~SIXTHS~~  
ORANGE

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared\* to me well known, who being by me first duly sworn upon oath, says that he is the Attorney-In-Fact, for the\*\* and that he has been authorized by North American Specialty Insurance Company to execute the foregoing bond on behalf of the surety named therein in favor of St. Johns County, Florida.

Subscribed and sworn to me this 24th day of April, 2019, A.D.

\* Teresa L. Durham

\*\* North American Specialty Insurance Company

NOTARY PUBLIC  
State of Florida-at-large

Sarah M. Drinnan  
Sarah M. Drinnan

My Commission Expires: 09/01/2019



(Attach Power of Attorney to original Bid Bond and Financial Statement of Surety Company)



1450 American Lane, Suite 1100, Schaumburg, Illinois 60173  
847-273-1231, FAX: 847-273-6408, 800/338-0753

**NORTH AMERICAN SPECIALTY INSURANCE COMPANY**  
A New Hampshire Corporation

**BALANCE SHEET AS OF DECEMBER 31, 2018**  
(Statutory Basis)

Valuation of securities on National Association of Insurance Commissioner Basis

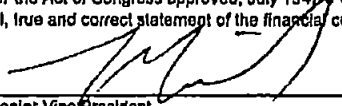
**ASSETS**

|                              |                    |
|------------------------------|--------------------|
| Cash                         | 29,344,055         |
| Bonds                        | 305,313,574        |
| Other Invested Assets        | 85,392,243         |
| Other Admitted Assets        | 109,846,154        |
| <b>TOTAL ADMITTED ASSETS</b> | <b>529,896,026</b> |

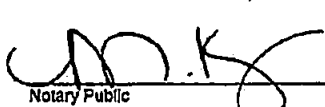
**LIABILITIES**

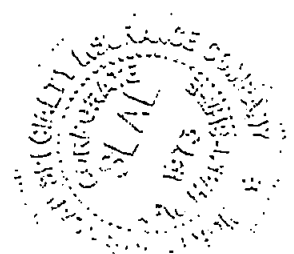
|                                                       |                    |
|-------------------------------------------------------|--------------------|
| Reserve for Unearned Premiums                         | 7,786              |
| Reserve for Losses and Loss Adjustment Expenses       | 22,601,839         |
| Funds Withheld                                        | 9,468,208          |
| Taxes and Other Liabilities                           | 163,487,098        |
| Surplus                                               | 334,251,118        |
| <b>TOTAL LIABILITIES &amp; POLICYHOLDERS' SURPLUS</b> | <b>529,798,026</b> |

The undersigned, being duly sworn, says: That he is Senior Vice President of North American Specialty Insurance Company, Kansas City, Missouri that said company is a corporation duly organized, existing by virtue of the Laws of the State of New Hampshire and that said Company has also complied with and is duly qualified to act as Surety under the Act of Congress approved; July 1947, U.S.C. sec. 6-13; and that to the best of his knowledge and belief the above statement is a full, true and correct statement of the financial condition of the said Company on the 31st day of December, 2018.

  
\_\_\_\_\_  
Michael A. Ito, Senior Vice President  
North American Specialty Insurance Company

Subscribed and sworn before me,  
this 30th day of March, 2019

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





SWISS RE CORPORATE SOLUTIONS

NORTH AMERICAN SPECIALTY INSURANCE COMPANY  
WASHINGTON INTERNATIONAL INSURANCE COMPANY  
WESTPORT INSURANCE CORPORATION

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Manchester, New Hampshire and Washington International Insurance Company a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Schaumburg, Illinois, and Westport Insurance Corporation, organized under the laws of the State of Missouri, and having its principal office in the City of Overland Park, Kansas each does hereby make, constitute and appoint:

EFFREY W. REICH, SUSAN L. REICH, KIM E. NIV, TERESA L. DURHAM, GLORIA A. RICHARDS, CHERYL FOLEY,

LISA ROSELAND, SONJA AMANDA FLOREE HARRIS, ROBERT P. O'LINN and SARAH K. O'LINN JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

ONE HUNDRED TWENTY FIVE MILLION (\$125,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on March 24, 2000 and Westport Insurance Corporation by written consent of its Executive Committee dated July 18, 2011.

"RESOLVED, that any two of the President, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile; and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."



By  
Steven P. Anderson, Senior Vice President of Washington International Insurance Company  
& Senior Vice President of North American Specialty Insurance Company  
& Senior Vice President of Westport Insurance Corporation

By  
Michael A. Ito, Senior Vice President of Washington International Insurance Company  
& Senior Vice President of North American Specialty Insurance Company  
& Senior Vice President of Westport Insurance Corporation



IN WITNESS WHEREOF, North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 22nd day of February, 20 18.

North American Specialty Insurance Company  
Washington International Insurance Company  
Westport Insurance Corporation

State of Illinois  
County of Cook

ss:

On this 22nd day of February, 20 18, before me, a Notary Public personally appeared Steven P. Anderson, Senior Vice President of

Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Senior Vice President of Westport Insurance Corporation and Michael A. Ito Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Senior Vice President of Westport Insurance Corporation, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.



M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Vice President and Assistant Secretary of North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company, Washington International Insurance Company and Westport Insurance Corporation which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 24th day of April, 20 19.

Jeffrey Goldberg, Vice President & Assistant Secretary of Washington International Insurance Company, &  
North American Specialty Insurance Company & Vice President & Assistant Secretary of Westport Insurance Corporation



**FLORIDA SURETY BONDS, INC.**

Phone 407-786-7770

Maitland, FL

---

**ATTACHMENT "C"**

**LICENSE / CERTIFICATION LIST**

In the space below, the Bidder shall list all **current** licenses and certifications held.

*The bidder shall attach a copy of each current license or certification listed below to this form.*

| License Name                                              | License #  | Issuing Agency        | Expiration Date            |
|-----------------------------------------------------------|------------|-----------------------|----------------------------|
| Certified Underground Utilities and Excavation Contractor | CUC1224744 | State of Florida      | 8/31/2020                  |
| Maintenance of Traffic                                    | 5312       | United Safety Council | Scheduling Recertification |
| Class C Wastewater Collection Technician                  | 5842       | FWPCOA                | N/A                        |
|                                                           |            |                       |                            |
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**ATTACHMENT "D"**

**LIST OF PROPOSED SUB-CONTRACTORS / SUPPLIER LIST**

All subcontractors and major materials suppliers are subject to approval of Owner. The following are subcontractors and manufacturers of materials and/or equipment that are proposed to be utilized by the Contractor in the performance of this work, provide company names and contacts for the following as a minimum and list any additional as necessary:

| <b>Company Name</b>   | <b>Division/Discipline</b> | <b>Primary Contact Name</b> | <b>Contact Number and Email Address</b>        |
|-----------------------|----------------------------|-----------------------------|------------------------------------------------|
| Danus Utilities, Inc. | Underground Utility        | Dan Pardus                  | 386-233-5588<br>dan@danusutilities.com         |
| Chinchors Electric.   | Electrical                 | Kevin Brand                 | 386-774-1020<br>kbrand@chinchorelectric.com    |
| Curry Controls        | SCADA Integrator           | Mike Hixon                  | 863-646-5781<br>currycontrolscompany@gmail.com |
| Mack Concrete         | Precast Concrete           | Tim Jones                   | 321-247-1575<br>tjones@mackconcrete.com        |
| Danus Utilities, Inc. | Pour-in-place Concrete     | Dan Pardus                  | 386-233-5588<br>dan@danusutilities.com         |
| EK Masonary           | Masonry/Fence              | Eric Kelly                  | 904-805-3770<br>erickelly@ekmasonry.com        |
| Fortiline             | Pipes, Valves and Fittings | Jerry Ford                  | 407-688-9180<br>jerry.ford@fortiline.com       |
| PCI                   | Coatings                   |                             | 352-383-0194<br>dennis@plastlccomposites.com   |
|                       |                            |                             |                                                |
|                       |                            |                             |                                                |
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|                       |                            |                             |                                                |
|                       |                            |                             |                                                |

ATTACHMENT "E"

**ST. JOHNS COUNTY BOARD OF COUNTY COMMISSIONERS  
CONFLICT OF INTEREST DISCLOSURE FORM**

Project (BID) Number/Description: Bid No 19-53: Holiday Isle Lift Station Improvements

The term "conflict of interest" refers to situations in which financial or other considerations may adversely affect, or have the appearance of adversely affecting a consultant's/contractor's professional judgment in completing work for the benefit of St. Johns County ("County"). The bias such conflicts could conceivably impart may inappropriately affect the goals, processes, methods of analysis or outcomes desired by the County.

Consultants/Contractors are expected to safeguard their ability to make objective, fair, and impartial decisions when performing work for the benefit of the County. Consultants/Contractors, therefore must there avoid situations in which financial or other considerations may adversely affect, or have the appearance of adversely affecting the consultant's/contractor's professional judgement when completing work for the benefit of the County.

The mere appearance of a conflict may be as serious and potentially damaging as an actual distortion of goals, processes, methods of analysis or outcomes. Reports of conflicts based upon appearances can undermine public trust in ways that may not be adequately restored even when the mitigating facts of a situation are brought to light. Apparent conflicts, therefore, should be disclosed and evaluated with the same vigor as actual conflicts.

It is expressly understood that failure to disclose conflicts of interest as described herein may result in immediate disqualification from evaluation or immediate termination from work for the County.

Please check the appropriate statement:

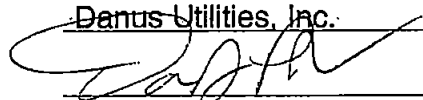
☒ I hereby attest that the undersigned Respondent has no actual or potential conflict of interest due to any other clients, contracts, or property interests for completing work on the above referenced project.

☐ The undersigned Respondent, by attachment to this form, submits information which may be a potential conflict of interest due to other clients, contracts or property interests for completing work on the above referenced project.

Legal Name of Respondent:

Darus Utilities, Inc.

Authorized Representative(s):

  
Signature

Daniel J Pardus - President  
Print Name/Title

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name/Title



ATTACHMENT "F"

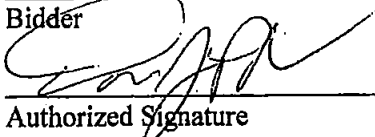
**CERTIFICATE OF COMPLIANCE WITH FLORIDA TRENCH SAFETY ACT**

Bidder acknowledges that he is solely responsible for complying with the Florida Trench Safety Act (ACT) and Occupational Safety and Health Administrations excavation safety standard 29 CFR 1926.650 (Subpart P as amended) and the St. Johns County Trenching and Excavation Safety Program. If there is a conflict between the ACT and the St. Johns County Trenching and Excavation Safety Program, the more stringent requirement would apply. Bidder further acknowledges that included in the various items of the proposal and in the Total Bid Price are costs for complying with the Florida Trench Safety Act (90-96, Laws of Florida) effective October 1, 1990 and the Occupational Safety and Health Administrations excavation safety standard.

By: Daniel J Pardus - President

Danus Utilities, Inc.

Bidder

  
Authorized Signature

4/24/2019

Date



**BID NO: 19-53**

**ATTACHMENT "G"**

**CERTIFICATE OF INSURANCE**

INSERT CERTIFICATE OF INSURANCE HERE



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

06/27/2018

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCER</b><br>Caton-Hosey Insurance<br>3731 Nova Rd.<br><br>Port Orange<br>FL 32129          | <b>CONTACT NAME:</b> Melissa Adrian, CPSR<br><b>PHONE (A/C, No, Ext):</b> (386) 767-3161<br><b>FAX (A/C, No):</b> (386) 760-1770<br><b>E-MAIL ADDRESS:</b> melissa@catonhosey.com<br><b>INSURER(S) AFFORDING COVERAGE</b><br><b>INSURER A:</b> National Builders (Vinings)<br><b>INSURER B:</b> Owners Insurance Company<br><b>INSURER C:</b> Starstone Insurance<br><b>INSURER D:</b><br><b>INSURER E:</b><br><b>INSURER F:</b> |
| <b>INSURED</b><br>Danus Utilities, Inc<br>4133 Saddle Club Dr<br><br>New Smyrna Beach<br>FL 32168 | <b>NAIC #</b><br>16632<br>32700<br>88986                                                                                                                                                                                                                                                                                                                                                                                         |

**COVERAGES****CERTIFICATE NUMBER:** CL1862719812**REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE                                                                                                                                                                                                                                                                                                                                                                                                                                 | ADDL SUBR INSD WVD | POLICY NUMBER  | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS                                                                                                                                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|-------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A        | <input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b><br><input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR<br><input checked="" type="checkbox"/> Contractual Liability<br><input checked="" type="checkbox"/> XCU Included<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br><input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC<br>OTHER: |                    | PKG-0197186-00 | 07/02/2018              | 07/02/2019              | EACH OCCURRENCE \$ 1,000,000<br>DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000<br>MED EXP (Any one person) \$ 10,000<br>PERSONAL & ADV INJURY \$ 1,000,000<br>GENERAL AGGREGATE \$ 2,000,000<br>PRODUCTS - COMPI/OP AGG \$ 2,000,000<br>\$ |
| B        | <b>AUTOMOBILE LIABILITY</b><br><input checked="" type="checkbox"/> ANY AUTO<br><input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS<br><input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY                                                                                                                                                                |                    | 4806741403     | 07/02/2018              | 07/02/2019              | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000<br>BODILY INJURY (Per person) \$<br>BODILY INJURY (Per accident) \$<br>PROPERTY DAMAGE (Per accident) \$<br>\$                                                                                  |
| C        | <input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> OCCUR<br><input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE<br>DED <input type="checkbox"/> RETENTION \$                                                                                                                                                                                                                      |                    | G82835180ALI   | 07/02/2018              | 07/02/2019              | EACH OCCURRENCE \$ 4,000,000<br>AGGREGATE \$ 4,000,000<br>\$                                                                                                                                                                                     |
| A        | <b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b><br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)<br>If yes, describe under DESCRIPTION OF OPERATIONS below                                                                                                                                                                                                                                                     | Y/N<br>N           | WCV-0264441-00 | 07/02/2018              | 07/02/2019              | <input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER<br>E.L. EACH ACCIDENT \$ 1,000,000<br>E.L. DISEASE - EA EMPLOYEE \$ 1,000,000<br>E.L. DISEASE - POLICY LIMIT \$ 1,000,000                                         |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

**CERTIFICATE HOLDER****CANCELLATION**

\*\*Proof of Coverage\*\*

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2015 ACORD CORPORATION. All rights reserved.



ATTACHMENT "H"

**CONTRACTOR'S QUALIFICATIONS FORM**

Bidder acknowledges that he is fully licensed to perform work in the STATE OF FLORIDA.

Any material misrepresentation, as determined by the County, shall result in disqualification.

By: Danus Utilities, Inc.

4/24/2019

Bidder

Date

Authorized Signature

**Contractor's Project Experience**

The Bidder shall provide the following information regarding experience within the **past five (5) years** of this solicitation. Bidder must demonstrate the successful completion of **three (3) projects** of similar complexity, nature, size, and dollar amount of project.

|                                       |  |                                                                                                                                                                                                                                                                                           |
|---------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name of Project:</b>               |  | Brevard County Lift Station X-15 Rehabilitation                                                                                                                                                                                                                                           |
| <b>Project Manager Name:</b>          |  | Dan Pardus                                                                                                                                                                                                                                                                                |
| <b>Superintendent Name:</b>           |  | Joe Guffenburg                                                                                                                                                                                                                                                                            |
| <b>Project Description:</b>           |  | The project consists of relocating three existing blowers from inside a building to outside; construction of a pre-engineered canopy, replacement of existing air piping and valves; temporary blower equipment and piping as necessary to maintain continuous operation of the facility. |
| <b>Owner Information</b>              |  |                                                                                                                                                                                                                                                                                           |
| <b>Name:</b>                          |  | Brevard County, FL                                                                                                                                                                                                                                                                        |
| <b>Address:</b>                       |  | 2725 Judge Fran Jamieson Way, Viera, FL 32940                                                                                                                                                                                                                                             |
| <b>Contact Person:</b>                |  | Owen Callard                                                                                                                                                                                                                                                                              |
| <b>Telephone Number:</b>              |  | 321-633-209                                                                                                                                                                                                                                                                               |
| <b>Engineer/Architect Information</b> |  |                                                                                                                                                                                                                                                                                           |
| <b>Name:</b>                          |  | Wade Trim Inc.                                                                                                                                                                                                                                                                            |
| <b>Address:</b>                       |  | 3790 Dixie Hwy NE, Palm Bay, FL 32905                                                                                                                                                                                                                                                     |
| <b>Contact Person:</b>                |  | Rodrigo Cruz                                                                                                                                                                                                                                                                              |
| <b>Telephone Number:</b>              |  | 321-728-3389                                                                                                                                                                                                                                                                              |
| <b>Contract Dates</b>                 |  |                                                                                                                                                                                                                                                                                           |
| <b>Started:</b>                       |  | 06/2018                                                                                                                                                                                                                                                                                   |

|                                             |                                                 |              |
|---------------------------------------------|-------------------------------------------------|--------------|
| <b>Original Contractual Completion:</b>     |                                                 | 9/2018       |
| <b>Final Contractual Completion:</b>        |                                                 | 10/2019      |
| <b>Actual Completion:</b>                   |                                                 | 10/2019      |
| <b>Contract Value</b>                       |                                                 |              |
| <b>Original Contract Value:</b>             |                                                 | \$110,800.00 |
| <b>Final Contract Value:</b>                |                                                 | \$100,800.00 |
| <b>Value of Change Orders to Date:</b>      |                                                 | -\$10,000.00 |
| <b>Value of Outstanding Claims to Date:</b> |                                                 | \$0.00       |
| <b>Bonding Company Information</b>          |                                                 |              |
| <b>Name:</b>                                | Florida Surety Bonds, Inc.                      |              |
| <b>Address:</b>                             | 620 N Wymore Road Suite 200, Maitland, FL 32751 |              |
| <b>Contact Person:</b>                      | Sarah Drinnan                                   |              |
| <b>Telephone Number:</b>                    | 407-786-7766                                    |              |
| <b>Major Subcontractor Information</b>      |                                                 |              |
| <b>Name:</b>                                | Chinchor Electric, Inc.                         |              |
| <b>Address:</b>                             | 1460 S Leavitt Ave, Orange City, FL 32763       |              |
| <b>Contact Person:</b>                      | Don Hasco, Inc.                                 |              |
| <b>Telephone Number:</b>                    | 386-774-1020                                    |              |
| <b>Name:</b>                                |                                                 |              |
| <b>Address:</b>                             |                                                 |              |
| <b>Contact Person:</b>                      |                                                 |              |
| <b>Telephone Number:</b>                    |                                                 |              |
| <b>Name:</b>                                |                                                 |              |
| <b>Address:</b>                             |                                                 |              |
| <b>Contact Person:</b>                      |                                                 |              |
| <b>Telephone Number:</b>                    |                                                 |              |

|                              |  |                                              |
|------------------------------|--|----------------------------------------------|
| <b>Name of Project:</b>      |  | Brevard County Lift Station J-02 Replacement |
| <b>Project Manager Name:</b> |  | Dan Pardus                                   |
| <b>Superintendent Name:</b>  |  | Joe Guffenburg                               |

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>Project Description:</b>                 | The project consists of the installation of the proposed Lift Station J-02, including but not limited to the demolition of the existing lift station; installation of a new wetwell via the tremie method (the tremie method is the only acceptable method), valve vault, pumps, risers, valves, piping, control panel, generator, and associated electrical components, telemetry infrastructure, and the associated instrumentation and controls. |  |
| <b>Owner Information</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Name:</b>                                | Brevard County, FL                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |
| <b>Address:</b>                             | 2725 Judge Fran Jamleson Way, Viera, FL 32940                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Contact Person:</b>                      | Owen Callard                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Telephone Number:</b>                    | 321-633-209                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| <b>Engineer/Architect Information</b>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Name:</b>                                | Honeycutt and Associate                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Address:</b>                             | 3700 S Washington Ave, Titusville, FL 32780                                                                                                                                                                                                                                                                                                                                                                                                         |  |
| <b>Contact Person:</b>                      | Sarah Drinnan                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| <b>Telephone Number:</b>                    | 321-269-7847                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Contract Dates</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Started:</b>                             | 9/2018                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Original Contractual Completion:</b>     | 11/2018                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Final Contractual Completion:</b>        | 12/2018                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Actual Completion:</b>                   | 12/2018                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Contract Value</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Original Contract Value:</b>             | \$644,500.00                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Final Contract Value:</b>                | \$601,273.00                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Value of Change Orders to Date:</b>      | -\$43,227.00                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Value of Outstanding Claims to Date:</b> | \$0.00                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
| <b>Bonding Company Information</b>          |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Name:</b>                                | Florida Surety Bonds, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                          |  |
| <b>Address:</b>                             | 620 N Wymore Road Suite 200, Maitland, FL 32751                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Contact Person:</b>                      | Rodney Honeycutt                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| <b>Telephone Number:</b>                    | 407-786-7766                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |
| <b>Major Subcontractor Information</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Name:</b>                                | Chinchor Electric, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                             |  |
| <b>Address:</b>                             | 1460 S Leavitt Ave, Orange City, FL 32763                                                                                                                                                                                                                                                                                                                                                                                                           |  |
| <b>Contact Person:</b>                      | Don Hasco, Inc.                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |

|                   |              |
|-------------------|--------------|
| Telephone Number: | 386-774-1020 |
| Name:             |              |
| Address:          |              |
| Contact Person:   |              |
| Telephone Number: |              |
| Name:             |              |
| Address:          |              |
| Contact Person:   |              |
| Telephone Number: |              |

|                                       |                                                                                                                                                                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name of Project:                      | Seminole Tribe of Florida - Hollywood Police Station Rehabilitation                                                                                                                                                                       |
| Project Manager Name:                 | Dan Pardus                                                                                                                                                                                                                                |
| Superintendent Name:                  | Joe Guffenburg                                                                                                                                                                                                                            |
| Project Description:                  | This sewer lift station rehabilitation project generally consists of demolishing the major components of the existing lift station, except for the wet well, and reconstructing with new components in accordance with STOF Public Works. |
| <b>Owner Information</b>              |                                                                                                                                                                                                                                           |
| Name:                                 | Seminole Tribe of Florida                                                                                                                                                                                                                 |
| Address:                              | 6300 Stirling Road, Hollywood, FL 33024                                                                                                                                                                                                   |
| Contact Person:                       | Rudy Garcia                                                                                                                                                                                                                               |
| Telephone Number:                     | 954-966-6300                                                                                                                                                                                                                              |
| <b>Engineer/Architect Information</b> |                                                                                                                                                                                                                                           |
| Name:                                 | Jacobs Engineering                                                                                                                                                                                                                        |
| Address:                              | 550 W. CYPRESS CREEK ROAD, SUITE 400, FORT LAUDERDALE, FLORIDA 33309                                                                                                                                                                      |
| Contact Person:                       | Walmer Martinez                                                                                                                                                                                                                           |
| Telephone Number:                     | 787-901-1627                                                                                                                                                                                                                              |
| <b>Contract Dates</b>                 |                                                                                                                                                                                                                                           |
| Started:                              | 1/2018                                                                                                                                                                                                                                    |
| Original Contractual Completion:      | 6/2018                                                                                                                                                                                                                                    |

|                                        |                                                    |
|----------------------------------------|----------------------------------------------------|
| Final Contractual Completion:          | 7/2018                                             |
| Actual Completion:                     | 7/2018                                             |
| <b>Contract Value</b>                  |                                                    |
| Original Contract Value:               | \$233,150.00                                       |
| Final Contract Value:                  | \$221,297.00                                       |
| Value of Change Orders to Date:        | -\$11,853.00                                       |
| Value of Outstanding Claims to Date:   |                                                    |
| <b>Bonding Company Information</b>     |                                                    |
| Name:                                  | Florida Surety Bonds, Inc.                         |
| Address:                               | 620 N Wymore Road Suite 200, Maitland, FL 32751    |
| Contact Person:                        | Rodney Honeycutt                                   |
| Telephone Number:                      | 407-786-7766                                       |
| <b>Major Subcontractor Information</b> |                                                    |
| Name:                                  | Brown and Brown Electric                           |
| Address:                               | 6555 Powerline Rd # 205, Fort Lauderdale, FL 33309 |
| Contact Person:                        | Henry Brown                                        |
| Telephone Number:                      | 954-938-8986                                       |
| Name:                                  | Maxx Environmental                                 |
| Address:                               | 3610 Fiscal Court, Riviera Beach, FL 33404         |
| Contact Person:                        | Brad Miller                                        |
| Telephone Number:                      | 561-398-2781                                       |
| Name:                                  |                                                    |
| Address:                               |                                                    |
| Contact Person:                        |                                                    |
| Telephone Number:                      |                                                    |

**Additional Questions**

Do you have any similar work in progress at this time?   X   Yes        No

Length of time in business:   9 1/2   Years

Is your company currently involved in any active litigation? Yes or No:   No   If Yes, explain: \_\_\_\_\_

Has your company ever been sued? Yes or No: NO If Yes, explain and/or submit court decision or judgment, as applicable: \_\_\_\_\_

---



## St. Johns County Board of County Commissioners

Purchasing Division

March 20, 2019

### ADDENDUM #1

**To:** Prospective Bidders  
**From:** St. Johns County Purchasing Department  
**Subject:** Bid No. 19-53, Holiday Isle Lift Station Improvements

This Addendum #1 is issued for further respondent's information and is hereby incorporated into the Bid documents. Each respondent will ascertain before submitting a proposal that he/she has received all Addenda. Please return an original copy of this signed Addendum with your proposal to the St. Johns County Purchasing Department, David E. Pyle, CPPB; 500 San Sebastian View; St. Augustine, FL 32084.

#### Questions:

1. Request code 9258812

**Answer:** All bids are posted and advertised on Demand Star. Once they are posted we cannot add or change codes for that bid posting.

#### For Pipe Construction:

2. What are the approximate lengths, sizes and types of the pipes to be installed on the project?

**Answer:** The project is the construction of a new lift station to replace the existing lift station that has insufficient capacity and is in need of rehabilitation. The installation of underground pipe is limited to approximately 30 LF of 6" PVC water main, 8 LF of 4" PVC force main, 30 LF of 6" PVC force main and 23 LF of 10" PVC gravity sewer. The remaining pipe is above grade 6"/4"/1" SCH40 316 stainless steel pipe, fittings and valves per SJCUD lift station standards and 6"/4"/1" backflow assemblies for water services.

3. Are there any portions of the project that will need to be Bored?

**Answer:** No.

4. Are the crossings to be Jack & Bored or Directionally Bored?

**Answer:** No.

5. What are the approximate lengths and diameters of the portions to be bored?

**Answer:** Not applicable.

For Manhole Rehabilitation:

6. How many manholes will be rehabilitated on the project?

**Answer:** The existing 6' diameter wetwell shall be rehabilitated and converted into a receiving manhole. A new 5' diameter manhole and 8' diameter wetwell is proposed for the new lift station.

7. What type of rehabilitation will be used on the manholes?

**Answer:** Pouring a new bench at the specified elevation, setting a new top slab with ring and cover, interior cleaning and surface preparation, and coating the interior with the Raven 405 epoxy.

8. How much is the required bid bond for the project?

**Answer:** The bid bond shall be 5% of the Total Lump Sum.

9. How much is the cost estimate of the project?

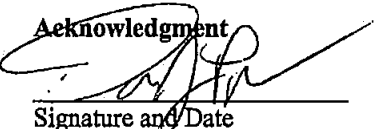
**Answer:** The engineers estimate is \$455,000 for the work included in the plans and specifications.

10. Do you have any further details you wish to provide?

**Answer:** No.

**THE BID DUE DATE REMAINS April 24, 2019 AT 2:00 P.M.**

**Acknowledgment**

  
Signature and Date

Daniel J. Pardus - President  
Printed Name/Title

Danus Utilities, Inc  
Company Name (Print)

Sincerely,

David E. Pyle, CPPB  
Procurement Coordinator

**END OF ADDENDUM NO. 1**





## St. Johns County Board of County Commissioners

Purchasing Division

March 27, 2019

### ADDENDUM #2

**To:** Prospective Bidders  
**From:** St. Johns County Purchasing Department  
**Subject:** Bid No. 19-53, Holiday Isle Lift Station Improvements

This Addendum #2 is issued for further respondent's information and is hereby incorporated into the Bid documents. Each respondent will ascertain before submitting a proposal that he/she has received all Addenda. Please return an original copy of this signed Addendum with your proposal to the St. Johns County Purchasing Department, David E. Pyle, CPPB; 500 San Sebastian View; St. Augustine, FL 32084.

#### Questions:

1. GML Coatings would like to be considered "as equal" to the Raven liner systems.

**Answer:** The Green Monster Structural system manufactured by GML Coatings is an approved equal to the Raven 405 system manufactured by Raven Lining Systems.

**THE BID DUE DATE REMAINS April 24, 2019 AT 2:00 P.M.**

Acknowledgment

Signature and Date

Daniel J. Pardo - President

Printed Name/Title

Pardus Utilities, Inc.

Company Name (Print)

Sincerely,

David E. Pyle, CPPB  
Procurement Coordinator

END OF ADDENDUM NO. 2



## St. Johns County Board of County Commissioners

Purchasing Division

April 17, 2019

### ADDENDUM #3

**To:** Prospective Bidders  
**From:** St. Johns County Purchasing Department  
**Subject:** Bid No. 19-53, Holiday Isle Lift Station Improvements

This Addendum #3 is issued for further respondent's information and is hereby incorporated into the Bid documents. Each respondent must ascertain before submitting a proposal that he/she has received all Addenda and submit one (1) original and two (2) copies of each signed addendum with the bid proposal.

#### Questions:

1. **Question:** What are the Average and Peak Flow Rates?

**Answer:** The average flow rate is 100 gpm and the peak hour flow rate is 350 gpm. The pump design point is 460 gpm at 73 ft TDH.

2. **Question:** The Bid Plans specify that the County is furnishing certain equipment on Sheets C-1, C-3 and C-4. Can SJCUD provide information from Xylem on the equipment furnished?

**Answer:** Attached is a list of equipment provided by Xylem Water Solutions USA, Inc., (please note that the Motorola ACE3600 RTU, antenna, force main pressure transmitter, water pressure sensor and Godwin CD100M bypass pump are not included in Xylem's proposal but will be furnished by SJCUD per the notes in the Bid Plans). The Contractor is required to install all furnished equipment.

3. **Question:** Is permitting required to be performed by the Contractor?

**Answer:** Yes, the Contractor is responsible for all permitting and coordination with outside entities (i.e. City of St Augustine Beach (COSAB) Building and Electrical Permits and FPL coordination) as stated within General Conditions, section 7.08 and Project Specifications.

4. **Question:** Who is responsible for SCADA installation and programming?

The Contractor shall employ the services of a pre-approved SJCUD SCADA System Integrator (Curry Controls, Revere Control Systems, CDM Smith, Star Controls, and ITG) to install, program and commission the SJCUD furnished Motorola ACE3600 RTU, antenna and instrumentation mentioned above.

5. **Question:** Is a Geotechnical Report included in the bid documents?

**Answer:** Yes, please refer to Appendix A at the end of the Project Specifications.

6. **Question:** Does SJCUD have another location for laydown area and storage of excess material from the excavation?

The proposed limits of construction are shown on Sheet C-1. The entrance to the Resort shall remain open at all times. Work with the entrance driveway shall be temporary and notification shall be provided in advance to Resort

management. In the event that equipment and excess materials cannot be stored within the limits of construction in a clean and safe manner, the Contractor may use the Anastasia Island WWTP located at 860 W 16<sup>th</sup> Street, St Augustine, FL 32080 (approximately 3 miles from the lift station site) or arrange another temporary laydown area closer to the site.

**Clarifications:**

1. **Clarification:** The Sequence of Construction is provided on Sheet C-1. The Sequence of Construction is assumed to be the most efficient method of constructing the new lift station and decommissioning the existing lift station to limit bypass pumping. The Contractor shall ultimately determine the construction sequence and the best methods to deliver the project.
2. **Clarification:** The Bid Plans specify Raven 405 or approved equal for the wet well liner. Please note that Green Monster by GML Coatings was approved per Addendum #2. SpectraShield and Agru-Liner are also approved liners for wet well applications.
3. **Clarification:** The proposed bypass requires the flow coming from the north to have a bypass pump setup within the median of the Ocean Villas condominium entrance and will require a road ramp crossing and approximate 350 ft of hose to pump into the forcemain/manhole near the lift station. It is also assumed that the flow from the Resort can be manifolded within the wet well to gravity feed to the manhole to the west of the existing wet well. Ultimately, the Contractor shall be responsible for the bypass pumping plan while the demo and modifications are made to divert flow to the new lift station.

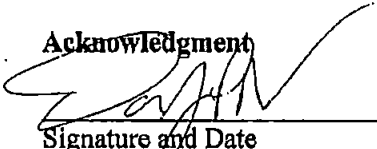
**Revision:**

Minimum Qualifications shall be revised as follows "Prime bidder must be fully licensed to do business in the State of Florida and hold either a current Certified General Contractor's license and/or a current Certified Underground Utility Contractor's license. Bidders must have successfully completed, as a Prime or Sub-contractor, at least three (3) projects, in the past five (5) years, of similar type, size and dollar value of the project described herein."

**THE BID DUE DATE REMAINS April 24, 2019 AT 2:00 P.M.**

**Acknowledgment**

**Sincerely,**

  
Signature and Date

David E. Pyle, CPPB  
Procurement Coordinator

Daniel J Poulos, President  
Printed Name/Title

Danvs Utilities, Inc.  
Company Name (Print)

**END OF ADDENDUM NO. 3**

Addendum #3: ATTACHMENT

Date: April 15, 2019

Subject: Holiday Isle PS

Xylem Water Solutions USA, Inc.

- Equipment provided for Bid 19-53: Holiday Isle Lift Station Improvements:

- (2) Flygt NP3153.185/464 submersible waste water pumps, 20HP, FM rated exp, 3/230V, each with 50' of motor cable. Pumps standard construction with hardened high chrome wet ends.
- (2) 4" x 4" Flygt discharge connections.
- (1) Flygt mix flush valve.
- (1) Duplex 20HP/230V control panel w/MPE pump controller built to St. Johns County standards.
- (2) ENM mechanical floats, each with 65' of cable.
- (1) MultiSmart level probe.
- (1) Rose & Bopla 316 stainless steel type Ex junction box, 19.7" wide x 15.8" high x 6.3" deep.
- (1) Rose & Bopla 316 stainless steel type Ex junction box, 11.8" wide x 15.8" high x 6.3" deep.
- (8) Anchor bolts, 316 stainless steel.
- (2) 2" upper guide rail brackets, 316 stainless steel.
- (1) Cable holder, 316 stainless steel.
- (4) 20' lengths of 2" diameter guide rail, 316 stainless steel.
- (2) 20' "grip - eye" pump lifting cables, 316 stainless steel.
- (2) 2" 316 stainless steel IGBB mid rail brackets.
- (2) 2" 316 stainless steel upper guide brackets.
- (1) 42" x 36" 300# aluminum access cover.
- (1) Startup service by a representative of this company.



RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY



**STATE OF FLORIDA**  
**DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION**  
**CONSTRUCTION INDUSTRY LICENSING BOARD**

THE UNDERGROUND UTILITY & EXCAVATION CO HEREIN IS CERTIFIED UNDER THE  
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

**PARDUS, DANIEL J**

DANUS UTILITIES INC  
2320 BEARDALL AVE  
SANFORD FL 32773

**LICENSE NUMBER: CUC1224744**

**EXPIRATION DATE: AUGUST 31, 2020**

Always verify licenses online at [MyFloridaLicense.com](http://MyFloridaLicense.com)



Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.



## SEMINOLE COUNTY BUSINESS TAX RECEIPT

JOEL M. GREENBERG, SEMINOLE COUNTY TAX COLLECTOR

PO BOX 630 | SANFORD, FL 32772 | 407-665-1000

WWW.SEMINOLECOUNTY.TAX

VALID THROUGH 09/30/19

DANUS UTILITIES INC  
2320 BEARDALL AVE  
SANFORD, FL 32771

Account #:197339

DAN J PARDUS (OFFICER)

REGULATED

License # - CUC1224744

Qualifier- PARDUS DANIEL J

**\*\*SANFORD CITY LICENSE REQUIRED \*\***

Receipt #: 10292018082903734

Amount Paid: \$ 45.00

Date Paid: 08/29/2018

### BUSINESS OWNER, PLEASE NOTE THE FOLLOWING:

• **DISPLAY THE ABOVE RECEIPT PROMINENTLY:** This Business Tax Receipt shall be displayed conspicuously at the place of business in such a manner that it can be open to the view of the public and subject to inspection by all duly authorized officers of the County. Upon failure to do so the business shall be subject to the payment of another business tax for the same business or profession.

• **RENEW THIS TAX BEFORE IT EXPIRES:** Pursuant to Florida Statutes, all Business Tax Receipts shall be issued by the Tax Collector beginning July 1st of each year, and it shall expire on September 30th of the succeeding year. Those Business Tax Receipts issued as renewal accounts beginning October 1st shall be delinquent and subject to a delinquency penalty of 10% for the month of October, plus an additional 5% penalty for each month of delinquency thereafter until paid; provided that the total penalty shall not exceed 25% of the business tax for the delinquent establishment (Florida Statute [FS] 205.053 [1]).

A 25% penalty shall be imposed on any individual engaged in any new business or profession without first obtaining a Seminole County Business Tax receipt ([FS] 205.053 [2]).

This Business Tax Receipt is only a receipt for business taxes paid. It does not permit the taxpayer to violate any existing regulatory or zoning laws of the state, county, or municipality, nor does it exempt the taxpayer from any other required licenses, registrations, certifications, or permits. Business Tax requirements are subject to legislative change.

• **REPORT ALL CHANGES:** The holder of this Business Tax Receipt is required to report a change in the following: Ownership, Business Location, Mailing Address, or any other information that would alter the status of the current year's information. This includes, but is not limited to, the loss of or a change in a State or Regulatory License which was used to qualify for the business identified on the current County Business Tax Receipt. If you have any changes to report, contact the Business Tax Department at 407-665-7636.

DANUS UTILITIES INC  
PO BOX 291671  
PORT ORANGE, FL 32129



**CITY OF SANFORD**

**Building Division**

**PO Box 1788, Sanford, FL 32772-1788**

**2019**

**LOCAL BUSINESS TAX RECEIPT**

**VALID THROUGH SEPTEMBER 30, 2019**

**DANUS UTILITIES INC  
2320 BEARDALL AVE  
SANFORD FL 32771**

**This receipt is a local business tax only. It does not permit the local business taxpayer to violate any existing zoning or regulatory laws of the state or county, nor does it exempt the business taxpayer from any other license or permits required by law.**

**Issue Date: August 14, 2018  
Business Location: 2320 BEARDALL AVE**

**Control Number: 0031005**

| Receipt Number         | Classification                                                                | Receipt Amount | Penalty Amount | Total  |
|------------------------|-------------------------------------------------------------------------------|----------------|----------------|--------|
| 00044925               | FIREINS<br>FIRE INSPECTIONS                                                   | 50.00          | .00            | 50.00  |
| 00044926               | 5030B<br>CONTRACTOR 5-9 EMPLOYEES                                             | 150.00         | .00            | 150.00 |
| RESTRICTION<br>COMMENT | UNDERGROUND UTILITY LOCATOR/CONTRACTOR<br>SUBJECT TO MEETING P & Z CONDITIONS |                |                |        |

**SEMINOLE COUNTY TAX RECEIPT REQUIRED  
ORIGINAL TAX RECEIPT MUST BE DISPLAYED ON PREMISES**



DIVISION OF  
CORPORATIONS

Department of State / Division of Corporations / Search Records / Detail By Document Number /

## Detail by Entity Name

Florida Profit Corporation

DANUS UTILITIES INC

### Filing Information

Document Number P09000053628

FEI/EIN Number 27-0404772

Date Filed 06/22/2009

Effective Date 06/20/2009

State FL

Status ACTIVE

### Principal Address

2320 BEARDALL AVE  
SANFORD, FL 32771

Changed: 03/15/2018

### Mailing Address

P.O. BOX 291671  
PORT ORANGE, FL 32129

Changed: 03/15/2018

### Registered Agent Name & Address

PARDUS, DAN J  
4133 Saddle Club Dr  
New Smyrna Beach, FL 32168

Address Changed: 07/01/2015

### Officer/Director Detail

#### **Name & Address**

Title PRES

PARDUS, DAN J  
4133 Saddle Club Dr  
New Smyrna Beach, FL 32168

THE SECRETARY



File Secretary

Pardus, Alice M  
4133 Saddle Club Dr  
New Smyrna Beach, FL 32168

Annual Reports

| Report Year | Filed Date |
|-------------|------------|
| 2016        | 03/08/2016 |
| 2017        | 03/27/2017 |
| 2018        | 03/15/2018 |

Document Images

03/15/2018 -- ANNUAL REPORT

03/27/2017 -- ANNUAL REPORT

03/08/2016 -- ANNUAL REPORT

07/01/2015 -- ANNUAL REPORT

03/02/2014 -- ANNUAL REPORT

01/27/2013 -- ANNUAL REPORT

02/09/2012 -- ANNUAL REPORT

01/29/2011 -- ANNUAL REPORT

05/08/2010 -- ANNUAL REPORT

06/22/2009 -- Domestic Profit

**2018 FLORIDA PROFIT CORPORATION ANNUAL REPORT**

DOCUMENT# P09000053628

Entity Name: DANUS UTILITIES INC

Current Principal Place of Business:

2320 BEARDALL AVE  
SANFORD, FL 32771

Current Mailing Address:

P.O. BOX 291671  
PORT ORANGE, FL 32129 US

FEI Number: 27-0404772

Certificate of Status Desired: No

Name and Address of Current Registered Agent:

PARDUS, DAN J  
4133 SADDLE CLUB DR  
NEW SMYRNA BEACH, FL 32168 US

*The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.*

SIGNATURE:

Electronic Signature of Registered Agent

Date

**Officer/Director Detail :**

Title        PRES  
Name        PARDUS, DAN J  
Address     4133 SADDLE CLUB DR  
City-State-Zip: NEW SMYRNA BEACH FL 32168

Title        SECRETARY  
Name        PARDUS, ALICE M  
Address     4133 SADDLE CLUB DR  
City-State-Zip: NEW SMYRNA BEACH FL 32168

*I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am an officer or director of the corporation or the receiver or trustee empowered to execute this report as required by Chapter 607, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.*

SIGNATURE: DAN PARDUS

PRESIDENT

03/15/2018

Electronic Signature of Signing Officer/Director Detail

Date



3320 Boardwalk Ave, Sanford, FL 32771 • P.O. BOX 291671, Port Orange, FL 32129 • (386) 233-5588  
State License # CUC 1224744

Attachment No.:

|         |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                         |               |
|---------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 06/2015 | 07/2015 | Sagittarius Pump Station Improvements - By-pass new pumps, new control panel, pipes, valves and fittings, coatings and precast.                                                                                                                                                                                                                                                                                                                                        | South Seminole & Orange County Waste Water Transmission Authority<br>410 Lake Howell Rd, Maitland, FL 32751<br>Ed Gil DeRubio - 407-628-3419                            | \$193,308.00  |
| 08/2015 | 08/2015 | Holly Hill Lift Station # 6 Rehabilitation Project - Bid # 14-WW01 including: By-pass new pumps, new control panel, pipes, valves and fittings, coatings and precast.                                                                                                                                                                                                                                                                                                  | City of Holly Hill<br>1065 Ridgewood Ave<br>Holly Hill, FL 32117<br>Walt Smyzer<br>386-248-9463<br>Engineering:<br>Quentin L Hampton Associates<br>386-761-6810         | \$247,761.00  |
| 09/2015 | 10/2015 | Holly Hill Lift Station # 17 Rehabilitation Project - Bid # 15 WW02. including: By-pass new pumps, new control panel, pipes, valves and fittings, coatings and precast.                                                                                                                                                                                                                                                                                                | City of Holly Hill<br>1065 Ridgewood Ave<br>Holly Hill, FL 32117<br>Walt Smyzer<br>386-248-9463<br>Engineering:<br>Quentin L Hampton Associates<br>386-761-6810         | \$208,990.00  |
| 10/2015 | 11/2015 | Ormond Beach Saddler's Run Lift Station Rehabilitation Project - Bid # 2015-25: including - By-pass new pumps, new control panel, pipes, valves and fittings, coatings and precast.                                                                                                                                                                                                                                                                                    | City of Ormond Beach<br>22 South Beach Street<br>Ormond Beach, FL 32174<br>Ron Burk<br>386-676-3368<br>Engineering:<br>Quentin L Hampton Associates<br>386-761-6810     | \$179,450.00  |
| 11/2015 | 11/2015 | City of Deltona Whitewood and Wellington Rehab Project - ITB # PW-15-10: Including - Removal and replacement of the manhole immediately upstream of lift station #1 and lining of wetwell. Demolition and removal of existing manhole, by-pass pumping, Installation of replacement manhole with liner and additional piping required to reestablish the connections and also the lining of existing wetwell.                                                          | City of Deltona<br>2345 Providence Blvd.<br>Deltona, FL 3725<br>Phyllis Wallace 386-878-8955<br>Engineering:<br>Quentin L Hampton Associates<br>386-761-6810            | \$93,250.00   |
| 12/2015 | 02/2016 | Brevard County Lift Station S-07 Replacement - Bid No. B-4-15-90: Including - The modification to existing wet well, removal of pumps, pumps building, control panel, tower, meter and all electrical connections. The work also consists of installing new sanitary wet well, dual submersible pumps, force main, control panel, transfer switch, telemetry tower and all other incidentals necessary to complete the work in accordance with the Contract Documents. | Brevard County, FL<br>2725 Judge Fran Jamleson Way<br>Viera, Florida 32940<br>Owen Callard 321-633-2089<br>Engineering:<br>Quentin L Hampton Associates<br>386-761-6810 | \$440,339.00  |
| 06/2016 | 08/2016 | SSNOCWTA - Five Points and Consumers Lift Stations Improvements - 2015-16-14: Including - By-pass, Demolition of existing equipment, replacement of risers, replacement of piping valves and fittings, Installation of odor control, replace electrical and instrumentation, Installation of new generator ATS and related items.                                                                                                                                      | South Seminole & Orange County Waste Water Transmission Authority<br>410 Lake Howell Rd, Maitland, FL 32751<br>Ed Gil DeRubio - 407-628-3419                            | \$ 536,180.00 |



Attachment No.:  
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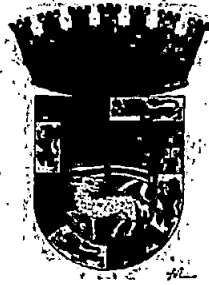
|         |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                    |                 |
|---------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 05/2016 | 06/2016 | Brevard County Lift Station F-10 Electrical Upgrade - B-4-16-17: Including furnishing and installing a Triplex Pump Control Panel, electrical disconnects, battery charging system for the existing emergency generator, complete and integrated grounding system, and making improvements to instruments, controls, alarms, and lighting. This work also involves the re-installation of an Owner-furnished RTU system and includes providing and maintaining a temporary bypass pumping system, performing required demolition of old components, performing all demonstration tests, and furnishing and installing all hardware, fasteners, conduits, wiring, and other incidentals. | Brevard County, FL<br>2725 Judge Fran Jamieson Way<br>Viera, Florida 32940<br>Craig Helping 321-633-2089<br>Tetra Tech (Engineering):<br>Rasesh Shah 407-480-3926                                                                  | \$ 209,000.00   |
| 08/2016 | 11/2016 | Brevard County Lift Stations B-08 and B-11 Replacement - Bid No. B-4-16-13: Including: Demolition, bypass pumping, installation of gravity lines and manhole, installation of wet well, pumps, piping and valves, electrical, control panel, telemetry tower, antenna, and RTU, fence, gate, concrete driveway and ground cover, and restoration.                                                                                                                                                                                                                                                                                                                                       | Brevard County, FL<br>2725 Judge Fran Jamieson Way<br>Viera, Florida 32940<br>Craig Helping 321-633-2089<br>Engineering: Honeycutt and Associates: Rodney Honeycutt: 321-269-7847                                                  | \$ 830,950.00   |
| 12/2016 | 02/2017 | City of Holly Hill Lift Station 16 Rehabilitation - BID NO. 16VW01: Including demolition, bypass pumping, supply and installation of PVF, pigging, electrical, directional drill of HDPE force main, tie-in to existing lift station and manhole, air release valve assembly, abandoning of existing force main, MOT and restoration.                                                                                                                                                                                                                                                                                                                                                   | City of Holly Hill<br>1065 Ridgewood Ave<br>Holly Hill, FL 32117<br>Walt Smyzer<br>386-248-9463<br>Engineering:<br>Quentin L Hampton Associates<br>386-761-6810                                                                    | \$ 236,640.00   |
| 12/2016 | 01/2018 | Brevard County Lift Stations S-09 and S-15 Replacement - Bid No. B-4-16-88: Including - The project consists of replacing two (2) existing "dry-well" lift stations with new submersible lift stations (Using Tremmie method), including new valve pads, tie-in to the existing force mains, new power service, new control panel, new telemetry tower (with a 3KVA step down transformer), site grading, chain link fence and gates, new access driveway.                                                                                                                                                                                                                              | Brevard County, FL<br>2725 Judge Fran Jamieson Way<br>Viera, Florida 32940<br>Owen Callard 321-633-2089<br>Engineering: Honeycutt and Associates: Rodney Honeycutt: 321-269-7847                                                   | \$ 1,205,242.00 |
| 02/2017 | 05/2017 | City of Ormond Beach - Lift Station 8M-1 Improvements - BID NO. 2016-05: Work includes electrical improvements: replacement of the existing valve box; rehabilitation of the existing perimeter knee wall; wet well improvements, including replacement of the existing top slab, lining the existing wet well interior and replacement of the existing riser pipes, guide rails, brackets and pumps. In addition, the work includes removal of an existing camphor tree stump; lining of an existing manhole; replacement of a settled gravity sewer main and surface restoration.                                                                                                     | City of Ormond Beach<br>22 South Beach Street<br>Ormond Beach, FL 32174<br>Ron Burk: 386-676-3368<br>Engineering: McKim & Creed, Inc.<br>139 Executive Circle, Suite 201<br>Daytona Beach, FL 32114<br>Scott Spooner: 386-274-2828 | \$ 216,050.00   |
| 01/2017 | 08/2017 | SSNOCWTA - Winter Park Central Lift Stations Improvements - 2015.16-33: Including By-pass, Demolition of existing equipment, replacement of risers, replacement of piping valves and fittings. Concrete/grout repair for base plates and voids. Installation of steel plate for riser pipes, wet well catchment bowl and drop pipe, guide rails, swing gate, crane hoist and runway beam, sluice gate, hatches for effluent vault, wet well and influent control structure, wet well and influent control structure liners. Replace electrical and instrumentation. Canopy structure and restoration.                                                                                   | South Seminole & Orange County<br>Waste Water Transmission<br>Authority<br>410 Lake<br>Howell Rd, Maitland, FL 32751<br>Ed Gil DeRublo - 407-628-3419                                                                              | \$ 589,093.50   |



Attachment No.:  
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 State License # CUC 1224744

|         |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                   |               |
|---------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 09/2017 | 01/2018 | Brevard County - Lift Station S-17 Replacement - Replace the existing dry well/wet well S-17 Lift Station within the public Right-of-Way for Burns Boulevard. The new lift station will consist of a 10 foot diameter wet well and twin 10 horsepower submersible pumps. A proposed 10 inch force main will connect to an existing 10 inch force main located within Burns Boulevard. The existing dry well will be cut down below grade and filled with sand. The existing wet well will be converted to a terminal manhole and all other incidentals necessary to complete the work in accordance with the Contract Documents.                                                                                                                                                                                                                                                                                                | Brevard County, FL<br>2725 Judge Fran Jamieson Way<br>Viera, Florida 32940<br>Craig Helping 321-633-2089<br>Engineering: Honeycutt and Associates: Rodney Honeycutt: 321-269-7847 | \$ 499,948.00 |
| 8/2017  | 09/2018 | Town of Longboat Key - 7 Lift Station Rehabilitation Project - Including: By-pass pumping. Replacement of pipes, valves and fittings, base plates, guide rails, top slab and hatches and coatings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Town of Longboat Key<br>501 Bay Isle Road<br>Longboat Key, FL 34228<br>Brad Walter - 941-316-1999<br>Engineering: Town of Longboat Key 321-269-7847                               | \$ 557,969.51 |
| 02/2017 | 02/2018 | Brevard County - Lift Station C-12 Rehabilitation - The project consists of rehabilitation of Lift Station C-12 to include rehabilitation of the existing wet well; removal and disposal / salvaging of existing pumps, valves, fittings and piping from the dry pit; demolition of the top five (5) feet of dry pit and filling it with suitable soil; construction of an above ground valve pad; installation of new pumps, base elbows, discharge piping, valves, and fittings and connection to the existing force main; installation of an electrical control panel, pedestal box, RTU panel with antenna. The project also involves site improvements including construction of a fence with gate and an access driveway. By-pass pumping of the wastewater during the rehabilitation of the lift station is included and all other incidentals necessary to complete the work in accordance with the Contract Documents. | Brevard County, FL<br>2725 Judge Fran Jamieson Way<br>Viera, Florida 32940<br>Craig Helping 321-633-2089<br>Engineering:                                                          | \$ 234,580.00 |
| 01/2018 | 06/2018 | Seminole Tribe of Florida - Hollywood Police Station Rehabilitation - This sewer lift station rehabilitation project generally consists of demolishing the major components of the existing lift station, except for the wet well, and reconstructing with new components in accordance with STOF Public Works.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Seminole Tribe of Florida<br>6300 Stirling Road<br>Hollywood, FL 33024<br>Rudy Garcia - 954-966-6300<br>Engineering: Jacobs Engineering-Walmer Martinez - 787-901-1627            | \$ 233,150.00 |
| 04/2018 | 10/2018 | Brevard County Lift Station J-02 Replacement - The project consists of the installation of the proposed Lift Station J-02, including but not limited to the demolition of the existing lift station; installation of a new wet well via the tremie method (the tremie method is the only acceptable method), valve vault, pumps, risers, valves, piping, control panel, generator, and associated electrical components, telemetry infrastructure, and the associated instrumentation and controls.                                                                                                                                                                                                                                                                                                                                                                                                                             | Brevard County, FL<br>2725 Judge Fran Jamieson Way<br>Viera, Florida 32940<br>Owen Callard 321-633-2089<br>Engineering: Honeycutt and Associates: Rodney Honeycutt: 321-269-7847  | \$ 644,500.00 |
| 06/2018 | 10/2018 | Brevard County Lift Station X-15 Rehabilitation - The project consists of relocating three existing blowers from inside a building to outside; construction of a pre-engineered canopy; replacement of existing air piping and valves; temporary blower equipment and piping as necessary to maintain continuous operation of the facility.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Brevard County, FL<br>2725 Judge Fran Jamieson Way<br>Viera, Florida 32940<br>Owen Callard 321-633-2089<br>Engineering: Wade Trim Inc. Rodrigo Cruz 321-728-3389                  | \$ 110,800.00 |

| <b>Vehicles</b>  |                                                           |
|------------------|-----------------------------------------------------------|
| 1                | 2015 Dodge 5500 Utility Truck w/ Auto Crane and Tools (2) |
| 2                | 2000 Ford F-350 Utility Truck                             |
| 3                | 2015 Ford F-550 Flatbed Truck                             |
| 4                | 2017 Ford F-350 Blue Truck                                |
| 5                | 2015 Ford F-250 Red Truck                                 |
| 6                | 2004 Ford F-250 Gray Truck                                |
| 7                | 2009 Ford F-150 Red Truck                                 |
| 8                | 2008 Ford F-150 Red Truck                                 |
| 9                | 2006 Ford F-150 Silver                                    |
| <b>Trailers</b>  |                                                           |
| 1                | 2018 SureTrac Flat "Blue" Trailer                         |
| 2                | 2015 Big Tex Flat "Black" Trailer                         |
| 3                | Big Tex 70PI Dewatering Trailer                           |
| 4                | 2017 SureTrac Dump Trailer                                |
| 5                | 2013 Big Tex 14LX Dump Trailer                            |
| 6                | 2007 Drag Dump Hydraulic Dump                             |
| 7                | Vermeer 750 Gallon Vector                                 |
| 8                | 2005 750 Super Vac                                        |
| <b>By-Pumps</b>  |                                                           |
| 1                | 2018 Godwin 8" By-Pass #1                                 |
| 2                | Godwin 4" By-Pass                                         |
| 3                | Godwin 4" By-Pass                                         |
| <b>Machinery</b> |                                                           |
| 1                | 2013 CAT 304 Mini Excavator                               |
| 2                | 2013 CAT 259 Skid Steer W/ Attachments                    |
| 3                | CAT 320E Excavator                                        |
| <b>Tools</b>     |                                                           |
| 1                | McCroy HDPE Butt Fusion Machine                           |
| 2                | Central Thermoplast HDPE Electro Fusion Machine           |
| 3                | Generators / Welders                                      |
| 4                | Bosch Jack Hammer                                         |
| 5                | ISC 695-F4 5HP Concrete Chain Saw                         |
| 6                | Stihl 14" Gas Chop Saws (3)                               |
| 7                | Confined Space Tripods                                    |
| 8                | Gas Detectors                                             |
| 9                | Hilti Chisel Hammer                                       |
| 10               | Compactor / Tamper                                        |
| 11               | All Required Piping tools                                 |



**Board of County Commissioners  
St. Johns County Florida**

**BID NO: 19-53**

**HOLIDAY ISLE LIFT STATION IMPROVEMENTS**

**BID DOCUMENTS  
PROJECT SPECIFICATIONS**

**St. Johns County Purchasing Department  
500 San Sebastian View  
St. Augustine FL 32084  
904.209.0150**

**Final 3/12/19**

## **BID NO: 19-53; HOLIDAY ISLE LIFT STATION IMPROVEMENTS**

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Attachment "B" – Certificate as to Corporate Principal

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Attachment "H" – Contractor's Qualifications Form

#### **CONTRACT FORMS AND CONDITIONS**

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Attachment A – Public Construction Bond

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#### **PROJECT DRAWINGS/TECHNICAL DOCUMENTS**

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Sheet CD-3: Miscellaneous Details

Sheet S-1: Structural General Notes and Site Plan

Sheet S-2: Structural Details

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Sheet E-1: Electrical Single Line Diagram

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#### **PROJECT SPECIFICATIONS**

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**SECTION 00020  
NOTICE TO BIDDERS**

Notice is hereby given that sealed bids will be received until 2:00 P.M. on Wednesday, April 24, 2019 by the St. Johns County Purchasing Department, located at 500 San Sebastian View, St. Augustine, Florida 32084 for **Bid No: 19-53; Holiday Isle Lift Station Improvements.** Bids will be opened promptly after the 2:00 P.M. deadline. **Note:** Bids delivered or received in the Purchasing Department after the 2:00 P.M. deadline shall not be given consideration and shall be returned to the sender unopened.

**Scope of Work**

The construction of the Holiday Isle Lift Station Improvements project requires the contractor to furnish all labor, materials, equipment, and incidentals necessary for improvements to the Holiday Isle Lift Station located in St. Augustine, FL. Work will generally include, but not limited to obtaining required permits and coordination with FP&L, dewatering and installation of new 8 ft diameter precast concrete wetwell and 5 ft diameter precast doghouse/pour-in-place receiving manhole, coating the existing and proposed wetwell/manhole interior with Raven405 or approved equal, precast concrete top slab with access hatch, 316 stainless steel piping, valves, guide rails, pump bases, submersible pumps, diesel bypass pump, and water service for lift station, relocation/replacement of existing 4" and 6" backflow preventers, concrete slab/driveway, concrete masonry block wall with stucco finish and cantilever gate, electrical rack including control panel, explosion-proof terminal boxes, RTU, electrical wiring, service disconnect, and electrical meter per SJCUD standards, temporary bypass pumping and demolition/removal of existing lift station components and building and conversion of the existing wetwell into a manhole. All work shall be bid and performed specifically in accordance with the plans and specifications.

**Minimum Qualifications**

Prime bidder must be fully licensed to do business in the State of Florida and hold a current Certified General Contractor's license at the time the bid is due. Prime or Sub-contractor performing underground utility work shall be fully licensed to do business in the State of Florida and hold a current Certified Underground Utility Contractor's license. Bidders must have successfully completed, as a Prime or Sub-contractor, at least three (3) projects, in the past five (5) years, of similar type, size and dollar value of the project described herein.

**Pre-Bid Conference and Site Visit**

A **MANDATORY Pre-Bid Conference** will be held on **April 3, 2019 at 9:00 A.M.** at the St. Johns County Utility Department, 1205 State Road 16, St. Augustine, FL 32084. Immediately following the Pre-Bid Conference shall be a **Site Visit** following the Pre-Bid Conference at the existing Holiday Isle Lift Station at 860 A1A Beach Blvd, St Augustine Beach, FL. Attendance is required the Pre-Bid Conference for prime bidders in order to be eligible to submit a bid for this project. Failure to sign in at the Pre-Bid Conference shall result in a bidder being deemed non-responsive and removal from consideration for award. **Please do not park in designated customer service parking spots.**

**Bid Documents, Project Specifications and Drawings**

Bid Documents may be obtained from Onvia DemandStar, Inc., at their website www.demandstar.com, by requesting Document #19-53. For technical assistance with this website please contact Onvia Supplier Services at 1-800-711-1712. A link to the Onvia DemandStar website is available through the St. Johns County Purchasing website by clicking on the following link: http://www.sjcfl.us/Purchasing/OpenBids.aspx. Please check the County's website for download availability and any applicable fees. Bid Documents may also be requested, **in writing**, from David E. Pyle, Procurement Coordinator, St. Johns County Purchasing Department, via email to dpyle@sjcfl.us or fax to (904) 209-0149.

**Point of Contact**

Any and all questions related to this project shall be directed, **in writing**, to David E. Pyle, Procurement Coordinator, Purchasing Department, via email to dpyle@sjcfl.us or fax to (904) 209-0149. In the event the Designated Point of Contact is absent or otherwise unavailable for more than three (3) business days, firms may contact Leigh Daniels, CPPB, Procurement Supervisor at ldaniels@sjcfl.us.

Questions are due no later than **4:00 P.M.** on **Wednesday, April 10, 2019**, so that any necessary addenda may be issued in a timely manner. Any questions received after the deadline will not be answered unless previously approved by the SJC

Purchasing Manager or other designated County Representative.

Any bidder, proposer or person substantially and adversely affected by an intended decision or by any term, condition, procedure or specification with respect to any bid, invitation, solicitation of proposals or requests for qualifications, shall file with the Purchasing Department for St. Johns County, a written notice of intent to protest no later than 72 hours (excluding Saturdays, Sundays and legal holidays for employees of St. Johns County) after the posting either electronically or by other means of the notice of intended action, notice of intended award, bid tabulation, publication by posting electronically or by other means of a procedure, specification, term or condition which the person intends to protest, or the right to protest such matter shall be waived. The protest procedures may be obtained from the Purchasing Department and are included in the County's Purchasing Manual. All of the terms and conditions of the County's Purchasing Manual are incorporated by reference and are fully binding.

**Vendors shall not contact, lobby, or otherwise communicate with any SJC employee, including any member of the Board of County Commissioners, other than the above referenced individual from the point of advertisement of the Bid until a contract(s) is executed by all parties, per SJC Purchasing Code 304.6.5 "Procedures Concerning Lobbying". According to SJC policy, any such communication shall disqualify the vendor, contractor, or consultant from responding to the subject invitation to bid, request for quote, request for proposal, invitation to negotiate, or request for qualifications. St. Johns County reserves the right to accept or reject any or all bids/proposals, waive minor formalities, and to award the bid/proposal that best serves the interests of St. Johns County. St. Johns County also reserves the right to award the base bid and any alternate bids in any combination that best suits the needs of the County.**

BOARD OF COUNTY COMMISSIONERS  
OF ST. JOHNS COUNTY, FLORIDA  
HUNTER S. CONRAD, CLERK

BY: \_\_\_\_\_

Deputy Clerk

# **FRONT END BID DOCUMENTS**

**BID NO: 19-53**

**SECTION 00100  
INSTRUCTION TO BIDDERS**

**OWNER:** The Board of County Commissioners of St. Johns County, Florida ("County") OR ("Owner")

**PROJECT:** BID NO: 19-53; Holiday Isle Lift Station Improvements

**DEFINITIONS**

All definitions set forth in the General Conditions of the Contract or in other Contract Documents are applicable to the Bidding Documents.

Addenda are written or graphic instruments issued by the Purchasing Department prior to the time and date for receiving Bids that modify or interpret the Bidding Documents by addition, deletion, clarification, or corrections.

Base Bid is complete and properly signed proposal to do the work, or designated portion thereof, for the sums stipulated therein supported by data called for by the Bidding Documents.

Bid An offer, as a price, whether for payment or acceptance. A quotation, specifically given to a prospective purchaser upon its request, usually in competition with other vendors

Bid (Formal or Sealed) A request for firm prices by Advertised Legal Notice. Prices are submitted in sealed envelopes and in conformance with a prescribed format, all of which are opened in public on an appointed hour and date as advertised.

Bid Bond A good faith monetary commitment which a bidder or surety forfeits to the County of the bidder refuses, or is unable to enter into a contract after submitting a bid, or the bidder cannot furnish the required bonds, usually five percent (5%) of the bid proposal price.

Bidder is a firm or individual who submits a Bid to the Owner for the work described in the proposed Contract Documents.

Bidding Documents include the Advertisement/Notice to Bidders, Front End Bid Documents, Contract Forms and Conditions, Specifications and Plans including any Addenda issued prior to receipt of Bids.

Contract A delivered agreement between two or more parties, legally binding and enforceable, to perform a specific act or acts or exchange goods for consideration. A purchase order becomes a contract when accepted by a vendor. A unilateral contract is one in which only one party promises performance. A bilateral contract is one in which both parties promise performance.

Contractor An individual or firm having a contract to provide goods, service or construction for a specified price

County St. Johns County, a political subdivision of the State of Florida (F.S. 217.73)

Experience Modification Rate (EMR) Number used by insurance companies to gauge both past cost of injuries and future chances of risk.

Responsible Bidder A bidder capable of performing in all respects to fulfill the contract requirements. This includes having the ability to perform, the experience, reliability, capacity, credit, facilities and equipment to meet the contractual obligation.

Responsive Bid, Responsive Proposal, or Responsive Reply A bid, proposal, or reply submitted by a responsive and responsible vendor conforming in all material respects to the solicitation.

Specifications A clear, complete and accurate statement of the physical, functional or technical requirements descriptive of an item and if applicable, the procedure to be followed to determine if the requirements are met.

Subcontractor A party who contracts with a prime contractor to perform all or any part of the prime contractor's obligations.

Unit Price is an amount stated in the Bid as a price per unit of measurement for materials or services as described in the

contract documents which shall include all labor, materials, equipment and any other item/s essential to accomplish the scope of work of the Unit Price.

### **BIDDER'S REPRESENTATION**

Each Bidder, by marking his Bid, represents that he has read and understands the Bidding and Contract Documents and his Bid is made in accordance herewith: he has visited the Site and has familiarized himself with the local conditions under which the Work is to be performed; and his Bid is based upon the materials, systems and equipment described in the Bidding Documents without exceptions.

### **BIDDING DOCUMENTS**

Bidding documents may be obtained from [www.demandstar.com](http://www.demandstar.com) as stated in the Advertisement or Invitation - Notice to Bidders. Complete sets of Bidding Documents shall be used in preparing the Bid Proposal. St. Johns County shall not assume any responsibility for errors or misinterpretations resulting from the use of complete or incomplete sets of Bidding Documents. The Owner, in making copies of the Bidding Documents available on the above terms, do so only for the purpose of obtaining bids on the Work and do not confer a license or grant for any other use.

### **INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS**

Bidders shall promptly notify the Owner of any ambiguity, inconsistency, or error which they may discover upon examination of the Bidding Documents or of the site and local conditions. Bidders requiring clarification of interpretation of the Bidding Documents shall make a written request to the Owner, to reach him at least **fourteen (14) days** prior to the date for receipt of Bids.

An interpretation, correction, or change of the bidding Documents will be made by Addendum. Interpretation, corrections, or changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretation, corrections, and change. No change will be made to the Bidding Documents by the Owner or its Representative **seven (7) days** prior to Bid receiving date, however, the Owner reserves the authority to decrease this time depending on the necessity of such change.

### **SUBSTITUTIONS**

The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution. No substitution will be considered unless written request for approval has been submitted by the Bidder and has been received by the Owner at least **fourteen (14) days** prior to the date for receipt of Bids. Each such request shall meet the requirements of the Supplementary Conditions and include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute, including drawings, cuts, performance and test data any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The project director's approval or disapproval of a proposed substitution shall be final.

If County Staff approves any proposed substitution, such approval will be set forth in an Addendum. Bidders shall **not** rely upon approval made in any other manner.

### **PRE-BID CONFERENCE AND SITE VISIT**

A **MANDATORY Pre-Bid Conference** will be held on **April 3, 2019 at 9:00 A.M.** at the St. Johns County Utility Department, 1205 State Road 16, St. Augustine, FL 32084. Immediately following the Pre-Bid Conference shall be a **Site Visit** at the existing Holiday Isle Lift Station located at 860 A1A Beach Blvd, St Augustine Beach, FL. Attendance is required for prime bidders at Pre-Bid Conference in order to be eligible to submit a bid for this project. Failure to sign in at both the Pre-Bid Conference shall result in a bidder being deemed non-responsive and removal from consideration for award. **Please do not park in designated customer service parking spots.**

### **DESIGNATED POINT OF CONTACT**

Any and all questions related to this project shall be directed, **in writing**, to David E. Pyle, Procurement Coordinator, Purchasing Department, via email to [dpyle@sjcfl.us](mailto:dpyle@sjcfl.us) or fax to (904) 209-0149. In the event the Designated Point of Contact is absent or otherwise unavailable for more than three (3) business days, firms may contact Leigh Daniels, CPPB, Procurement Supervisor at [ldaniels@sjcfl.us](mailto:ldaniels@sjcfl.us).

Bidders shall not contact, lobby, or otherwise communicate with any other County Staff, including members of the Board of County Commissioners, other than the designated representative shown above. Failure to comply with this requirement shall disqualify a bidder from consideration for award, as provided in St. Johns County Purchasing Code 304.6.5 as provided below:

Vendors shall not contact, lobby, or otherwise communicate with any SJC employee, including any member of the Board of County Commissioners, other than the above referenced individual from the point of advertisement of the Bid until a contract(s) is executed by all parties, per SJC Purchasing Code 304.6.5 "Procedures Concerning Lobbying". According to SJC policy, any such communication shall disqualify the vendor, contractor, or consultant from responding to the subject invitation to bid, request for quote, request for proposal, invitation to negotiate, or request for qualifications. St. Johns County reserves the right to accept or reject any or all bids/proposals, waive minor formalities, and to award the bid/proposal that best serves the interests of St. Johns County. St. Johns County also reserves the right to award the base bid and any alternate bids in any combination that best suits the needs of the County.

### **QUESTIONS**

Any and all questions related to this project shall be directed, in writing, to David E. Pyle, SJC Purchasing Department, via email to [dpyle@sjcfl.us](mailto:dpyle@sjcfl.us) or fax to (904) 209-0149. Questions are due no later than 4:00 P.M. on **Wednesday, April 10, 2019**, so that any necessary addenda may be issued in a timely manner. Any questions received after the deadline will not be answered unless previously approved by the SJC Purchasing Manager or other designated County Representative.

### **ADDENDA**

Addenda will be distributed to all who are known by the entity responsible for distribution of the complete set of Bidding Documents. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

Each Bidder shall ascertain prior to submitting a bid, that all issued addenda have been received, and each Bidder **shall** acknowledge receipt, of all issued addenda in the space provided in the Official County Bid Form, and a fully acknowledged copy of each issued addendum must be included in the submitted bid proposal. Failure to provide fully acknowledged copies of each addendum may result in a bid proposal being deemed non-responsive.

### **BID SUBMITTAL REQUIREMENTS**

Bids shall be submitted in **TRIPLICATE (one (1) original and two (2) copies)** on the required forms provided herein. All blanks on the Bid Form shall be filled in by typewriter or manually in blue or black ink. Bidders are not required to submit a copy of this Bid Document with their bid proposals. The bidders are required to submit, at a minimum, the Bid Proposal Attachments.

Bid proposals must be placed in an envelope, sealed and placed in a second envelope or container, plainly marked on the outside addressed to St. Johns County Purchasing Department, with the bidder's return address in top left hand corner and recite: "BID NO: 19-53; Holiday Isle Lift Station Improvements".

### ***See Example Below:***

ABC Company, Inc.  
123 Aviles Street  
St. Augustine, FL 32084

St. Johns County Purchasing Department  
500 San Sebastian View  
St. Augustine, FL 32084

**BID NO.: XX-XX – SEALED BID FOR SAMPLE PROJECT**

At the end of this document, a sealed Bid mailing label is provided for convenience. Bidders shall affix the provided label to the outside of the sealed envelope/container to submit their Bid.

Bidder shall assume full responsibility for timely delivery at location designated for receipts of Bids. Bids shall be deposited at the designated location prior to the time and date for receipt of Bids indicated in the Advertisement/Notice to Bidders, or any time extension thereof made by Addendum. Bids received after the time and date for receipt of Bids will

be returned to the sender unopened.

Oral, telephonic, telegraphic or electronic Bids are invalid and will not receive consideration.

Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and in the case of discrepancy between the two, the amount expressed in words shall govern.

Any interlineations, alteration or erasure must be initialed by the signer of the Bid; failure to do so may cause the Bidder's proposal to be considered non-responsive.

Bidder shall make no stipulation on the Bid Form nor qualify his Bid in any manner, to do so will classify the Bid as being non-responsive, and may result in the Bidder being removed from consideration for award.

Each submitted copy of the Bid Proposal shall include the full legal company name, address, telephone number and legal name of an authorized representative for the Bidder and a statement as to whether the Bidder is a sole proprietor, partnership, corporation, or any other legal entity. Each copy of the submitted Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporation seal affixed.

A Bid submitted by an agent shall have a current Power of Attorney attached certifying agent's authority to bind the Bidder.

#### **BID SECURITY**

Each submitted Bid shall be accompanied by a Bid Security, submitted on the Bid Bond Form provided herein, or in the form of a certified or cashier's check, in the amount of **five percent (5%) of the Total Lump Sum Bid Price** amount submitted on the Official County Bid Form, pledging that the Bidder will enter into a contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds as described hereunder covering the faithful performance of the Contract and the payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds to the Owner, if required, the amount of the Bid Security shall be forfeited, not as penalty, but as liquidated damages.

A Bid Security in the form of a certified or cashier's check must be made payable to the Board of County Commissioners of St. Johns County. Bidders submitting a certified or cashier's check as the bid security are not required to submit Attachment "B" – Certificate as to Corporate Principal, or the Bid Bond forms provided herein.

A Bid Security in the form of a Bid Bond shall be written on the form provided herein, with an acceptable surety, and the Attorney-in-Fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of his Power of Attorney. Acceptable surety companies are defined herein under "Surety Bond". The Surety Company shall be licensed to do business in the State of Florida and shall be listed by the U.S. Treasury Department. Any Bidder submitting a Bid Security in the form of a Bid Bond must also submit Attachment "B" – Certificate as to Corporate Principal.

The Owner shall have the right to retain the Bid Security of Bidders until either: (a) the Contract is executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) all Bids have been rejected.

#### **BID BOND INSTRUCTIONS**

If a Bidder chooses to submit a Bid Bond on the form provided herein, he must submit the bond as follows:

1. Prepare and submit one (1) original and two (2) copies of the required Bid Bond Forms as shown above
2. Type or print Bidder's and Surety's names in the same language as in the Advertisement, or Invitation to Bid.
3. Affix the Corporate Seal, and type or print the name of the Surety on the line provided and affix its corporate seal.
4. Attach a copy of Surety agent's Power of Attorney, unless the Power of Attorney has been recorded in St. Johns County. If it has been recorded, give the record book and page. If not recorded, the copy of the Power of Attorney must have an original signature of the Secretary or Assistant Secretary of Surety certifying the copy. The Surety's corporate seal must be affixed.

#### **BID POSTPONEMENT/CANCELLATION**

The County may, at its sole and absolute discretion, reject any bids that are not submitted in accordance with the terms in

this Bid Solicitation. The County may re-advertise this Bid; postpone or cancel, at any time, this Bid process; or waive any irregularities in this Bid or in the proposals received as a result of this Bid.

#### **MODIFICATION OR WITHDRAWAL OF BID**

A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and Bidder so agrees in submitting his Bid.

Prior to time and date designated for receipt of Bids, a Bid submitted early may be modified or withdrawn only by notice to the party receiving Bids at the place and prior to the time designated for receipt of Bids.

Such notice shall be in writing over the signature of the Bidder. If by telephone, written confirmation over the signature of Bidder must be mailed and postmarked on or before the date and time set for receipt of Bids; it shall be so worded as not to reveal the amount of the original Bid.

Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

Bid Security shall be in the amount of five percent (5%) of the Bid as modified or resubmitted.

#### **COSTS INCURRED BY BIDDERS**

All expenses involved with the preparation and submission of bids to the County, or any work performed in connection therewith, shall be borne by the Bidder(s). No rights of ownership will be conferred until title of the property is transferred to the successful bidder. All fees for copying and reproduction services for items listed herein are nonrefundable.

#### **CONSIDERATION OF BIDS**

**Opening of Bids:** Unless stated otherwise in an Addenda to the Advertisement/Notice to Bidders, the properly identified Bids received on time will be opened publicly as specified in the Advertisement and a tabulation of the bid amounts of the Base Bids and major Alternates, if any, will be made available to Bidders. The Bid Tabulation will be posted on the Purchasing Department bulletin board for seventy two (72) hours.

Any bidder, proposer or person substantially and adversely affected by an intended decision or by an term, condition, procedure or specification with respect to any bid, invitation, solicitation of proposals or requests for qualifications, shall file with the Purchasing Department for St. Johns County, a written notice of intent to protest no later than seventy two (72) hours (excluding Saturdays, Sundays and legal holidays for employees of St. Johns County) after the posting either electronically or by other means of the notice of intended action, not of intended award, bid tabulation, publication by posting electronically or by other means of a procedure, specification, term or condition which the person intends to protest, or the right to protest such matter shall be waived. The protest procedures may be obtained from the Purchasing Department and are included in the Owner's Purchasing Manual. All of the terms and conditions of the Owner Purchasing Manual are incorporated by reference and are fully binding.

**Rejection of Bids:** The Owner reserves the right to reject any or all Bids and in particular to reject a Bid not accompanied by any required Bid Security or data required by the Bidding Documents or a Bid in any way incomplete or irregular.

**Acceptance of Bid (Award):** The Owner shall have the right to reject any or all Bids or waive any minor formality or irregularity in any Bid received.

The Owner shall have the right to accept alternates in any order or combination and to determine the low Bidder on the basis of the sum of the Base Bid and/or the Alternates accepted if alternate bids are requested in the Official County Bid Form.

It is the intent of the Owner to award a contract to the lowest responsible Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents, if judged to reasonable, and does not exceed the funds budgeted for the Project.

If the Contract is awarded, it will be awarded within a minimum of ninety (90) days from the date of the Bid opening, or as designated in the Bid Documents.



### **MINIMUM QUALIFICATION OF CONTRACTORS**

Prime bidder must be fully licensed to do business in the State of Florida and hold a current Certified General Contractor's license at the time the bid is due. Prime or Sub-contractor performing underground utility work shall be fully licensed to do business in the State of Florida and hold a current Certified Underground Utility Contractor's license. Bidders must have successfully completed, as a Prime or Sub-contractor, at least three (3) projects, in the past five (5) years, of similar type, size and dollar value of the project described herein.

Proof of qualifications shall be provided by completing and submitting Attachment "C" – License/Certification List and Attachment "H" – Contractor's Qualifications Form along with a copy of each license and certificate listed. All licenses, certifications and pre-qualifications must be valid and current on the date bids are submitted.

Bidders to whom award of a contract is under consideration shall submit to the County, upon his request, a properly executed Contractor's Qualification Statement of AIA Document A305, unless such a statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

### **SUB-CONTRACTORS**

Each Bidder shall submit to the County, a list of Subcontractors and major materials suppliers to be used if awarded the contract. A copy of the form, Attachment "D", is provided in the Bidding Documents.

Upon request by the County, the successful Bidder shall within seven (7) days thereafter, submit all data required to establish to the satisfaction of the County, the reliability and responsibility of the proposed Subcontractors to furnish and perform the work described in the Sections of the Specifications pertaining to such proposed Subcontractor's respective trades.

Prior to the award of the Contract, the County will notify the Bidder in writing if either the County, after due investigation, has reasonable and substantial objection to any person or organization proposed as a Subcontractor. The Bidder then may, at his option, withdraw his Bid without forfeiture of Bid Security or submit an acceptable substitute at no increase in Bid price. If the Bidder fails to submit an acceptable substitute within seven (7) days of the original notification, the County then may, at his option, disqualify the Bidder, at no cost to the County.

The County reserves the right to disqualify any Contractor, Subcontractor, Vendor, or material supplier due to previously documented project problems, either with performance or quality.

Sub-contractors and other persons and organizations proposed by the Bidder and accepted by the County, must be used on the work for which they were proposed and accepted and shall not be changed except with the written approval of the County.

### **PUBLIC CONSTRUCTION BOND**

The Contractor shall be required to obtain and submit a recorded Public Construction Bond covering the faithful performance of the Contract and the payment of all obligations arising thereunder in full amount of the Contract, with such acceptable sureties, secured through the Bidder's usual sources as may be agreeable to the parties. The Contractor shall furnish the required bond, after full execution of the awarded Contract. The Bond shall be released upon satisfactory completion of the project.

### **SURETY BOND**

Acceptable Surety Companies: To be responsible to the Owner as Surety on Bonds, Surety shall comply with the following provisions:

1. Surety must be licensed to do business in the State of Florida;
2. Surety must have been in business and have a record of successful continuous operations for at least three (3) years;
3. Surety shall not have exposed itself to any loss on any one risk in an amount exceeding twenty percent (20%) of its surplus to policyholders;
4. Surety must have fulfilled all of its obligations on all other bonds given to the Owner;
5. Surety must have good underwriting, economic management, adequate reserves for undisclosed liabilities, and net resources for unusual stock and sound investment.

#### Time of Delivery and Form of Bonds

The Public Construction Bond form will be forwarded to the successful Bidder with his copy of the fully executed contract. **The Public Construction Bond must be recorded after the contract is signed by all parties.** The bidder will have 3 days from receipt of fully executed contract to have the Public Construction Bond recorded. The bidder shall have the Public Construction Bond recorded at the St. Johns County Clerk of Courts office, in St. Augustine, Florida. After the book and page number have been assigned to the bond by the recording person, the Bidder is to obtain from the recording person a certified copy of the recorded bond, and deliver the certified copy to the Owner's Contract Administrator. No work can commence until the required bond and Insurance Certificates have been delivered to the Owner. Upon receipt of the certified copy of the recorded bond, the Owner may issue a Notice to Proceed.

Unless otherwise specified in the Bid Documents, the bonds shall be written on the form provided herein. The Bidder shall require the Attorney-in-Fact who executes the required bonds on behalf of the Surety to affix thereto a certified and current copy of his Power of Attorney authorizing his firm to act as agent for the Surety in issuing the bonds.

#### INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, its officials, and employees, from and against liability, claims, damages, losses and expenses including attorney's fees arising out of or resulting from performance of the work, provided that such liability, claims, damages, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including loss of use resulting therefrom, but only to the extent caused in whole or in part, by negligent acts or omissions of the Contractor, a Subcontractor, or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such liability, claim, damage, loss or expense is caused in part by a party indemnified hereunder.

In claims against any person or entity indemnified under this paragraph by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefits acts or other employee benefits acts.

#### TERMINATION

Failure on the part of the Contractor to comply with any portion of the duties and obligations under the Contract Agreement shall be cause for termination. If the Contractor fails to perform any aspect of the responsibilities described herein St. Johns County shall provide written notification of any and all items of non-compliance. The Contractor shall then have five (5) consecutive calendar days to correct any and all items of non-compliance. If the items of non-compliance are not corrected, or acceptable corrective action has not been taken within the five (5) consecutive calendar days, the Contract Agreement may be terminated by St. Johns County for cause, upon giving fourteen (14) consecutive calendar days written notice to the Contractor.

The County may terminate the Contract Agreement at any time, without cause, upon thirty (30) days written notice to the Contractor of intention to do so.

If, at any time, the Contract Agreement with the awarded vendor is terminated by the County, whether for cause or for convenience, the County may, at its sole discretion, negotiate with the second lowest, responsible, responsive bidder for the required services in order to enter into a contract with that vendor to prevent a gap in services for the County, if it serves the best interest of the County to do so.

#### FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Form to be used: Unless otherwise provided in the Bidding Documents, the Agreement for Work will be written on C-520 Agreement Stipulated Price.

#### CONTRACT TIME – LIQUIDATED DAMAGES

The Contractor shall have ten (10) days to return Contract originals from the time the Contractor receives a "Notice of Award". St. Johns County will return a "fully executed" Contract to the Contractor no later than seven (7) days after the return of the executed Contract originals (but no later than seventeen (17) days from the Notice of Award).

The Contractor will furnish a recorded original of the Public Construction Bond three (3) business days after receipt of the fully executed Contract (the Public Construction Bond must be recorded after the Contract is fully executed by all parties including the County Clerk). Upon receipt of the recorded Public Construction Bond, the County will issue a Notice to Proceed. If the Contractor fails to meet any of the dates and timeframes set forth in this section, or fails to execute the Contract, or to provide a Public Construction Bond, the County may elect at its option to consider the Contractor non-responsive and Contract with the next best Bidder.

The work to be performed under this Agreement shall be commenced within **ten (10)** days of the date of the Notice to Proceed, in writing. Construction of the project shall be substantially complete within **one hundred and fifty (150)** consecutive calendar days from the date stipulated on the Notice to Proceed. Final completion shall be attained within **thirty (30)** consecutive calendar days from the date of substantial completion.

**Conditions under which Liquidated Damages are Imposed:**

Should the Contractor or, in case of his default, the Surety fail to complete the work within the time stipulated in the contract, or within such extra time as may have been granted by the Owner, the Contractor or, in case of his default, the Surety shall pay to the Owner, not as a penalty but as liquidated damages, the amount so due as determined by the following schedule:

| <u>Original Contract Amount</u>              | <u>Daily Charge Per Calendar Day</u>                 |
|----------------------------------------------|------------------------------------------------------|
| \$50,000 and under.....                      | \$956 Over                                           |
| \$50,000 but less than \$250,000.....        | \$964                                                |
| \$250,000 but less than \$500,000.....       | \$1,241                                              |
| \$500,000 but less than \$2,500,000.....     | \$1,665                                              |
| \$2,500,000 but less than \$5,000,000.....   | \$2,712                                              |
| \$5,000,000 but less than \$10,000,000.....  | \$3,447                                              |
| \$10,000,000 but less than \$15,000,000..... | \$4,866                                              |
| \$15,000,000 but less than \$20,000,000..... | \$5,818                                              |
| \$20,000,000 and over.....                   | \$9,198 plus 0.00005 of any amount over \$20 million |
| (Round to nearest whole dollar)              |                                                      |

**INSURANCE**

The Contractor shall not commence work under this Agreement until he/she has obtained all insurance required under this section and such insurance has been approved by the County. All insurance policies shall be issued by companies authorized to do business under the laws of the State of Florida. The Contractor shall furnish proof of Insurance to the County prior to the commencement of operations. The Certificate(s) shall clearly indicate the Contractor has obtained insurance of the type, amount, and classification as required by contract and that no material change or cancellation of the insurance shall be effective without thirty (30) days prior written notice to the County. **Certificates shall specifically include the County as Additional Insured for all lines of coverage except Workers' Compensation and Professional Liability. A copy of the endorsement must accompany the certificate.** Compliance with the foregoing requirements shall not relieve the Contractor of its liability and obligations under this Agreement.

Certificate Holder Address: St. Johns County, a political subdivision of the State of Florida  
500 San Sebastian View  
St. Augustine, FL 32084

The Contractor shall maintain during the life of this Agreement, Comprehensive General Liability Insurance with minimum limits of \$1,000,000 per occurrence, \$2,000,000 aggregate, to protect the Contractor from claims for damages for bodily injury, including wrongful death, as well as from claims of property damages which may arise from any operations under this contract, whether such operations be by the Contractor or by anyone directly employed by or contracting with the Contractor.

The Contractor shall maintain during the life of this Agreement, Professional Liability or Errors and Omissions Insurance with minimum limits of \$1,000,000, if applicable.

The Contractor shall maintain during the life of this Contract, Comprehensive Automobile Liability Insurance with

minimum limits of \$2,000,000 combined single limit for bodily injury and property damage liability to protect the Contractor from claims for damages for bodily injury, including the ownership, use, or maintenance of owned and non-owned automobiles, including rented/hired automobiles whether such operations be by the Contractor or by anyone directly or indirectly employed by a Contractor.

The Contractor shall maintain Umbrella or Excess Liability Insurance covering workers compensation, commercial general liability and business auto liability with minimum limits of liability of \$1,000,000.

The Contractor shall maintain during the life of this Agreement, adequate Workers' Compensation Insurance in at least such amounts as is required by the law for all of its employees per Florida Statute 440.02.

In the event of unusual circumstances, the County Administrator or his designee may adjust these insurance requirements.

#### **GOVERNING LAWS & REGULATIONS**

The Contractor shall be responsible for being familiar and complying with any and all federal, state, and local laws, ordinances, rules and regulations that, in any manner, affect the work required under this contract. The agreement shall be governed by the laws of the State of Florida and St. Johns County both as to interpretation and performance.

#### **TAXES**

Project is subject to Federal Excise and Florida Sales Taxes, which must be included in Bidder's proposal.

#### **FLORIDA TRENCH SAFETY ACT**

Bidders shall complete Certificate of Compliance with Florida Trench Safety Act, in accordance with the requirements of Chapter 553, Florida Statutes. If trenching is not required for this project, state so thereon. Contractor shall be responsible for compliance with all trenching shoring safety requirements.

#### **LIST OF MAJOR EQUIPMENT/MATERIAL SUPPLIERS**

No substitution will be considered unless written request for approval has been submitted by the Bidder and has been received by the Engineer at least **fourteen (14) calendar days** prior to the date for receipt of Bids and has been approved by Owner/Engineer via addenda.

The Owner reserves the right to disqualify any Contractor, Subcontractor, Vendor, or material/equipment supplier due to previously documented problems, either with performance or quality.

#### **OWNER DIRECT PURCHASE**

St. Johns County reserves the right to Owner Direct Purchase materials or equipment in accordance with County Purchasing Policy 302.21 or implement other means in order to achieve related sales tax or other cost savings.

**END OF SECTION**

**OFFICIAL COUNTY BID FORM  
WITH ATTACHMENTS**

**BID NO: 19-53**

**SECTION 00300  
OFFICIAL COUNTY BID FORM  
ST. JOHNS COUNTY, FLORIDA**

**PROJECT: HOLIDAY ISLE LIFT STATION IMPROVEMENTS**

**TO: THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA**

**DATE SUBMITTED:** \_\_\_\_\_

**BID PROPOSAL OF**

\_\_\_\_\_  
Full Legal Company Name

\_\_\_\_\_  
Mailing Address

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

\_\_\_\_\_  
Fax Number

Bidders: Having become familiar with requirements of the project, and having carefully examined the Bidding Documents and Specifications entitled for Bid No: 19-53, HOLIDAY ISLE LIFT STATION IMPROVEMENTS in St. Johns County, Florida, the undersigned proposes to furnish all materials, labor and equipment, supervision and all other requirements necessary to comply with the Contract Documents to submit the following Bid Proposal summarized as follows:

**BASE BID**

**FOR: HOLIDAY ISLE LIFT STATION IMPROVEMENTS** as per plans and specifications.

**TOTAL LUMP SUM BID PRICE:**

\$ \_\_\_\_\_

Total Lump Sum Bid Price (Numerical)

\_\_\_\_\_/100 Dollars

Total Lump Sum Bid Price (Amount written or typed in words)

Bidder shall insert the Lump Sum Base Bid Price in numerals and in words. Any discrepancy between the two submitted amounts shall be determined by the amount written in words.

Bidder shall insert the Total Bid Price in numerals and in words. Any discrepancy between the two submitted amounts shall be determined by the amount written in words.

During the preparation of the Bid, the following addenda, if any, were received:

No.: \_\_\_\_\_ Date Received:

No.: \_\_\_\_\_ Date Received:

No.: \_\_\_\_\_ Date Received:

We, the undersigned, hereby declare that no person or persons, firm or corporation, other than the undersigned are interested, in this proposal, as principals, and that this proposal is made without collusion with any person, firm or corporation, and we have carefully and to our satisfaction examined the Bid Documents and Project Specifications.

We have made a full examination of the location of the proposed work and the sources of supply of materials, and we hereby agree to furnish all necessary labor, equipment and materials, fully understanding that any quantities shown therewith are approximate only, and that we will fully complete all requirements therein as prepared by the Owner, within the same time limit specified in the Bid Documents as indicated above.

If the Undersigned is notified of the acceptance of this Bid Proposal by the Board within ninety (90) calendar days for the time set for the opening of Bids, the Undersigned further agrees, to execute a contract for the above work within ten (10) days after notice that his Bid has been accepted for the above stated compensation in the form of a Contract presented by the Owner.

The Undersigned further agrees that security in the form of a Bid Bond, certified or cashier's check in the amount of not less than five percent (5%) of Total Bid Price, payable to the Owner, accompanies this Bid; that the amount is not to be construed as a penalty, but as liquidated damages which said Owner will sustain by failure of the Undersigned to execute and deliver the Contract and Bond within ten (10) days of the written notification of the Award of the Contract to him; thereupon, the security shall become the property of the Owner, but if this Bid is not accepted within ninety (90) days of the time set for the submission of Bids, or if the Undersigned delivers the executed Contract upon receipt, the Security shall be returned to the Bidder within seven (7) working days.

**CORPORATE/COMPANY**

Full Legal Company Name: \_\_\_\_\_ (Seal)

By: \_\_\_\_\_  
Signature of Authorized Representative (Name & Title typed or printed)

By: \_\_\_\_\_  
Signature of Authorized Representative (Name & Title typed or printed)

Address: \_\_\_\_\_

Telephone No.: (\_\_\_\_) \_\_\_\_\_ Fax No.: (\_\_\_\_) \_\_\_\_\_

Email Address for Authorized Company Representative: \_\_\_\_\_

Federal I.D. Tax Number: \_\_\_\_\_ DUNS #: \_\_\_\_\_  
(If applicable)

**INDIVIDUAL**

Name: \_\_\_\_\_  
(Signature) (Name typed or printed) (Title)

Address: \_\_\_\_\_

Telephone No.: (\_\_\_\_) \_\_\_\_\_ Fax No.: \_\_\_\_\_

Email Address: \_\_\_\_\_

Federal I.D. Tax Number: \_\_\_\_\_

Submittal Requirements:      Official County Bid Form  
Attachment "A" – St Johns County Board of County Commissioners Affidavit  
Attachment "B" – Certificate as to Corporate Principal  
Attachment "C" – License / Certification List  
Attachment "D" – List of Proposed Sub-Contractors / Suppliers  
Attachment "E" – Conflict of Interest Disclosure Form  
Attachment "F" – Certificate of Compliance with Florida Trench Safety Act  
Attachment "G" – Proof of Insurance  
Attachment "H" – Contractor's Qualifications Form  
Bid Bond Form  
Fully Acknowledged Addenda Applicable to this bid

Official County Bid Form, Attachments "A", "B", "C", "D", "E", "F", "G", "H" and Bid Bond must be completed, along with a fully acknowledged copy of each Addendum applicable to this Bid and submitted with each copy of the Bid Proposal. One (1) original and two (2) copies of all required forms must be submitted.



BID NO: 19-53

ATTACHMENT "A"

**ST. JOHNS COUNTY, BOARD OF COUNTY COMMISSIONERS AFFIDAVIT**

TO: ST. JOHNS COUNTY, BOARD OF COUNTY COMMISSIONERS,  
ST. JOHNS COUNTY, ST. AUGUSTINE, FLORIDA.

At the time the proposal is submitted, the Bidder shall attach to his Bid a sworn statement.

This sworn statement shall be an affidavit in the following form, executed by an officer of the firm, association, or corporation submitting the proposal, and shall be sworn to before a person who is authorized by law to administer oaths.

STATE OF FLORIDA, COUNTY OF ST. JOHNS

Before me, the Undersigned authority, personally appeared \_\_\_\_\_ who being duly sworn, deposes and says he is \_\_\_\_\_ (Title) of the firm of \_\_\_\_\_ Bidder submitting the attached proposal for the services covered by the bid documents for Bid No: 19-53; Holiday Isle Lift Station Improvements, in St. Johns County, Florida.

The affiant further states that no more than one proposal for the above-referenced project will be submitted from the individual, his firm or corporation under the same or different name, and that such Bidder has no financial interest in the firm of another bidder for the same work. That neither he, his firm, association nor corporation has either directly or indirectly entered into any agreement, participated in any collusion, nor otherwise taken any action in restraint of free competitive bidding in connection with this firm's Bid on the above-described project. Furthermore, neither the firm nor any of its officers are barred from participating in public contract lettings in the State of Florida or any other state.

\_\_\_\_\_  
(Bidder)

By: \_\_\_\_\_

\_\_\_\_\_  
(Title)

Sworn and subscribed to me this \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_\_\_:

Notary Public:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed

My commission Expires: \_\_\_\_\_

BIDDER ON ALL COUNTY PROJECTS MUST EXECUTE AND ATTACH THIS AFFADAVIT TO EACH BID.

BID NO: 19-53

ATTACHMENT "B"

**CERTIFICATE AS TO CORPORATE PRINCIPAL**

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

\_\_\_\_\_  
Secretary

\_\_\_\_\_  
Corporate Seal

(STATE OF FLORIDA  
COUNTY OF ST. JOHNS)

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared to me well known, who being by me first duly sworn upon oath, says that he is the Attorney-In-Fact, for the and that he has been authorized by \_\_\_\_\_ to execute the foregoing bond on behalf of the surety named therein in favor of St. Johns County, Florida.

Subscribed and sworn to me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, A.D.

NOTARY PUBLIC  
State of Florida-at-large

My Commission Expires:

(Attach Power of Attorney to original Bid Bond and Financial Statement of Surety Company)

**BID NO: 19-53**

**ATTACHMENT "C"**

**LICENSE / CERTIFICATION LIST**

In the space below, the Bidder shall list all **current** licenses and certifications held.

*The bidder shall attach a copy of each current license or certification listed below to this form.*

| License Name | License # | Issuing Agency | Expiration Date |
|--------------|-----------|----------------|-----------------|
|              |           |                |                 |
|              |           |                |                 |
|              |           |                |                 |
|              |           |                |                 |
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|              |           |                |                 |
|              |           |                |                 |
|              |           |                |                 |
|              |           |                |                 |

**ATTACHMENT "D"**

**LIST OF PROPOSED SUB-CONTRACTORS / SUPPLIER LIST**

All subcontractors and major materials suppliers are subject to approval of Owner. The following are subcontractors and manufacturers of materials and/or equipment that are proposed to be utilized by the Contractor in the performance of this work, provide company names and contacts for the following as a minimum and list any additional as necessary:

| <b>Company Name</b> | <b>Division/Discipline</b> | <b>Primary Contact Name</b> | <b>Contact Number and Email Address</b> |
|---------------------|----------------------------|-----------------------------|-----------------------------------------|
|                     | Underground Utility        |                             |                                         |
|                     | Electrical                 |                             |                                         |
|                     | SCADA Integrator           |                             |                                         |
|                     | Precast Concrete           |                             |                                         |
|                     | Pour-in-place Concrete     |                             |                                         |
|                     | Masonry/Fence              |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |
|                     |                            |                             |                                         |

**BID NO: 19-53**

**ATTACHMENT "E"**

**ST. JOHNS COUNTY BOARD OF COUNTY COMMISSIONERS  
CONFLICT OF INTEREST DISCLOSURE FORM**

Project (BID) Number/Description: Bid No 19-53: Holiday Isle Lift Station Improvements

The term “conflict of interest” refers to situations in which financial or other considerations may adversely affect, or have the appearance of adversely affecting a consultant’s/contractor’s professional judgment in completing work for the benefit of St. Johns County (“County”). The bias such conflicts could conceivably impart may inappropriately affect the goals, processes, methods of analysis or outcomes desired by the County.

Consultants/Contractors are expected to safeguard their ability to make objective, fair, and impartial decisions when performing work for the benefit of the County. Consultants/Contractors, therefore must there avoid situations in which financial or other considerations may adversely affect, or have the appearance of adversely affecting the consultant's/contractor's professional judgement when completing work for the benefit of the County.

The mere appearance of a conflict may be as serious and potentially damaging as an actual distortion of goals, processes, methods of analysis or outcomes. Reports of conflicts based upon appearances can undermine public trust in ways that may not be adequately restored even when the mitigating facts of a situation are brought to light. Apparent conflicts, therefore, should be disclosed and evaluated with the same vigor as actual conflicts.

It is expressly understood that failure to disclose conflicts of interest as described herein may result in immediate disqualification from evaluation or immediate termination from work for the County.

Please check the appropriate statement:

I hereby attest that the undersigned Respondent has no actual or potential conflict of interest due to any other clients, contracts, or property interests for completing work on the above referenced project.

The undersigned Respondent, by attachment to this form, submits information which may be a potential conflict of interest due to other clients, contracts or property interests for completing work on the above referenced project.

Legal Name of Respondent:

Authorized Representative(s):

Signature

---

Print Name/Title

Signature

Print Name/Title

**BID NO: 19-53**

**ATTACHMENT "F"**

**CERTIFICATE OF COMPLIANCE WITH FLORIDA TRENCH SAFETY ACT**

Bidder acknowledges that he is solely responsible for complying with the Florida Trench Safety Act (ACT) and Occupational Safety and Health Administrations excavation safety standard 29 CFR 1926.650 (Subpart P as amended) and the St. Johns County Trenching and Excavation Safety Program. If there is a conflict between the ACT and the St. Johns County Trenching and Excavation Safety Program, the more stringent requirement would apply. Bidder further acknowledges that included in the various items of the proposal and in the Total Bid Price are costs for complying with the Florida Trench Safety Act (90-96, Laws of Florida) effective October 1, 1990 and the Occupational Safety and Health Administrations excavation safety standard.

By: \_\_\_\_\_

\_\_\_\_\_  
Bidder

\_\_\_\_\_  
Date

\_\_\_\_\_  
Authorized Signature

**BID NO: 19-53**

**ATTACHMENT "G"**

**CERTIFICATE OF INSURANCE**

INSERT CERTIFICATE OF INSURANCE HERE

BID NO: 19-53

**ATTACHMENT "H"**

**CONTRACTOR'S QUALIFICATIONS FORM**

Bidder acknowledges that he is fully licensed to perform work in the STATE OF FLORIDA.

Any material misrepresentation, as determined by the County, shall result in disqualification.

By: \_\_\_\_\_  
Bidder \_\_\_\_\_ Date \_\_\_\_\_  
\_\_\_\_\_  
Authorized Signature

**Contractor's Project Experience**

The Bidder shall provide the following information regarding experience within the **past five (5) years** of this solicitation. Bidder must demonstrate the successful completion of **three (3) projects** of similar complexity, nature, size, and dollar amount of project.

| <b>Contractor's Project Experience Details</b> |  |
|------------------------------------------------|--|
| <b>Project No. 1</b>                           |  |
| Name of Project:                               |  |
| Project Manager Name:                          |  |
| Superintendent Name:                           |  |
| Project Description:                           |  |
| <b>Owner Information</b>                       |  |
| Name:                                          |  |
| Address:                                       |  |
| Contact Person:                                |  |
| Telephone Number:                              |  |
| <b>Engineer/Architect Information</b>          |  |
| Name:                                          |  |
| Address:                                       |  |
| Contact Person:                                |  |
| Telephone Number:                              |  |
| <b>Contract Dates</b>                          |  |
| Started:                                       |  |



| Contractor's Project Experience Details<br>Project No. 1 |  |
|----------------------------------------------------------|--|
| Original Contractual Completion:                         |  |
| Final Contractual Completion:                            |  |
| Actual Completion:                                       |  |
| <b>Contract Value</b>                                    |  |
| Original Contract Value:                                 |  |
| Final Contract Value:                                    |  |
| Value of Change Orders to Date:                          |  |
| Value of Outstanding Claims to Date:                     |  |
| <b>Bonding Company Information</b>                       |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| <b>Major Subcontractor Information</b>                   |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |

| Contractor's Project Experience Details<br>Project No. 2 |  |
|----------------------------------------------------------|--|
| Name of Project:                                         |  |
| Project Manager Name:                                    |  |
| Superintendent Name:                                     |  |

| Contractor's Project Experience Details<br>Project No. 2 |  |
|----------------------------------------------------------|--|
| Project Description:                                     |  |
| <b>Owner Information</b>                                 |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| <b>Engineer/Architect Information</b>                    |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| <b>Contract Dates</b>                                    |  |
| Started:                                                 |  |
| Original Contractual Completion:                         |  |
| Final Contractual Completion:                            |  |
| Actual Completion:                                       |  |
| <b>Contract Value</b>                                    |  |
| Original Contract Value:                                 |  |
| Final Contract Value:                                    |  |
| Value of Change Orders to Date:                          |  |
| Value of Outstanding Claims to Date:                     |  |
| <b>Bonding Company Information</b>                       |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| <b>Major Subcontractor Information</b>                   |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |

| Contractor's Project Experience Details<br>Project No. 2 |  |
|----------------------------------------------------------|--|
| Telephone Number:                                        |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |

| Contractor's Project Experience Details<br>Project No. 3 |  |
|----------------------------------------------------------|--|
| Name of Project:                                         |  |
| Project Manager Name:                                    |  |
| Superintendent Name:                                     |  |
| Project Description:                                     |  |
| <b>Owner Information</b>                                 |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| <b>Engineer/Architect Information</b>                    |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| <b>Contract Dates</b>                                    |  |
| Started:                                                 |  |
| Original Contractual Completion:                         |  |

| Contractor's Project Experience Details<br>Project No. 3 |  |
|----------------------------------------------------------|--|
| Final Contractual Completion:                            |  |
| Actual Completion:                                       |  |
| <b>Contract Value</b>                                    |  |
| Original Contract Value:                                 |  |
| Final Contract Value:                                    |  |
| Value of Change Orders to Date:                          |  |
| Value of Outstanding Claims to Date:                     |  |
| <b>Bonding Company Information</b>                       |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| <b>Major Subcontractor Information</b>                   |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |
| Name:                                                    |  |
| Address:                                                 |  |
| Contact Person:                                          |  |
| Telephone Number:                                        |  |

**Additional Questions**

Do you have any similar work in progress at this time? \_\_\_\_\_ Yes \_\_\_\_\_ No

Length of time in business: \_\_\_\_\_ Years

Is your company currently involved in any active litigation? Yes or No: \_\_\_\_\_ If Yes, explain: \_\_\_\_\_

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

THIS AGREEMENT is by and between St. Johns County, Florida ("Owner") and \_\_\_\_\_ ("Contractor"). 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:

A. The construction of the Holiday Isle Lift Station Improvements project requires the contractor to furnish all labor, materials (except what is listed in the plans to be furnished by the Owner), equipment, and incidentals necessary for improvements to the Holiday Isle Lift Station located in St. Augustine, FL. Work will generally include, but not limited to obtaining required permits and coordination with FP&L; dewatering and installation of new 8 ft diameter precast concrete wetwell and 5 ft diameter precast doghouse/pour-in-place receiving manhole; coating the existing and proposed wetwell/manhole interior with Raven405 or approved equal; precast concrete top slab with access hatch, 316 stainless steel piping, valves, guide rails, pump bases, submersible pumps, diesel bypass pump, and water service for lift station; relocation/replacement of existing 4" and 6" backflow preventers; concrete slab/driveway; concrete masonry block wall with stucco finish and cantilever gate; electrical rack including control panel, explosion-proof terminal boxes, RTU, electrical wiring, service disconnect, and electrical meter; temporary bypass pumping and demolition/removal of existing lift station and building; and conversion of the existing wetwell into a manhole. All work shall be bid and performed specifically in accordance with the plans and specifications.

**Article 2. PROJECT**

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

A. Bid No. 19-53: Holiday Isle Lift Station Improvements includes the improvements and modifications shown in the plans and specifications. The lift station is located at 860 A1A Beach Blvd., St. Augustine Beach, FL 32086.

**Article 3. ENGINEER**

3.01 The Project has been designed by St Johns County Utility Department, 1205 State Road 16, St Augustine, FL 32084 and Constantine Engineering, 1988 Lewis Turner Blvd, Fort Walton Beach, FL 32547.

3.02 The Owner has retained Constantine Engineering ("Engineer") to act as Owner's Representative, assume all duties and responsibilities, and have the rights and authority

assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

#### **Article 4. CONTRACT TIMES**

##### **4.01 Time 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 completed within One Hundred and Fifty (150) consecutive days after the date when the Contract Times commence and will 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 Thirty (30) days after Substantial Completion.

##### **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 times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. 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 \$1,665.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A 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 Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$1,665.00 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 not additive and will not be imposed concurrently.

##### **4.04 Special Damages**

- A. In addition to the amount provided for liquidated damages, Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete

- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.

## **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 other than Unit Price Work, a lump sum of:

\$ \_\_\_\_\_

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

- 5.02 Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment)

\$ \_\_\_\_\_

- 5.03 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 account of the Contract Price on the basis of Contractor's Applications for Payment on or about the day of each month during performance of the Work as provided in Paragraph 15.01 of the General Conditions, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. 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 on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

- 6.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with Paragraph

15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

## **Article 7. INTEREST**

7.01 All amounts not paid when due shall bear interest at the rate of Zero (0.00) percent per annum

## **Article 8. CONTRACTOR'S REPRESENTATIONS**

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. 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 Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. 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.
- G. 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.



- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
- J. 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.

## **Article 9. CONTRACT DOCUMENTS**

### **9.01 Contents:**

- A. The Contract Documents consist of the following:
  - 1. This Agreement (pages 1 to [ ], inclusive).
  - 2. Public construction bond (pages 1 to [ ], inclusive).
  - 3. General Conditions (pages 1 to [ ], inclusive).
  - 4. Supplementary Conditions (pages 1 to [ ], inclusive).
  - 5. Specifications as listed in the table of contents of the Project Manual.
  - 6. Drawings (not attached but incorporated by reference) consisting of 15 sheets with each sheet bearing the following general title: Holiday Isle Lift Station Improvements
  - 7. Addenda (numbers [ ] to [ ], inclusive)
  - 8. Exhibits to this Agreement (enumerated as follows):
    - a. Contractor's Bid (pages 1 to [ ], inclusive).
  - 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.
- B. The documents listed in Paragraph 9.01.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 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

## **Article 10. MISCELLANEOUS**

#### 10.01 Terms

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

#### 10.02 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto 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 Documents.

#### 10.03 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.

#### 10.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall 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.

#### 10.05 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 10.05:
  - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing 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

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



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## 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 form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting 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, or both; 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, or both; 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; or (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. 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), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree 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 the 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. *Engineer*—The individual or entity named as such in the Agreement.
21. *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.
22. *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. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *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.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
27. *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.
28. *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.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
30. *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.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or "RPR" includes any assistants or field staff of Resident Project Representative.
33. *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.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals and the performance of related construction activities.
35. *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.
36. *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.

37. *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 furnished by Owner which are designated for the use of Contractor.
38. *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.
39. *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.
40. *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 thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, 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.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *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.

48. *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 the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. 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:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
    - a. does not conform to the Contract Documents; or
    - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
    - c. 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 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean 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, shall mean 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, shall mean 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. 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 Bonds and Evidence of Insurance***

- A. *Bonds:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor's Insurance:* When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner's Insurance:* After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), 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 executed 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 specifically 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 *Initial 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 for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall 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.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items 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 items, or from those established in applicable transmittal protocols.

### ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

#### 3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one 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 or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall 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.

#### 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, shall mean 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, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, 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, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 Documents 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 Documents 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 shall 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 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 thereunder.
- 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 give written notice to Owner and Contractor 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 editions, 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 shall preclude 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 thirtieth 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 sixtieth day after the day of Bid opening or the thirtieth 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 shall 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 shall 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 shall 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 the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the 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. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall 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 utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
  4. acts of war or terrorism.
- D. 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.
- E. Paragraph 8.03 governs 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.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times 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.

- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

## **ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor 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; 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 7.12, 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 at law; 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 shall 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 known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
  - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); 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 upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
  - 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.

#### 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 either:
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; or
  2. is of such a nature as to require a change in the Drawings or Specifications; or
  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 the necessity of Owner's obtaining 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 above; 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. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, 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 conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- 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; or
  - 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 as 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, or both, then any such adjustment shall 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, or both, 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.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
  - 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
  - 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
    - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
    - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
    - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
    - d. 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 in the Contract Documents, or was not shown or indicated 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), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.

- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; 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 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. *Possible Price and Times Adjustments:*
  - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, 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. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
    - 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;
    - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
    - d. 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, or both, then any such adjustment shall 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, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
  2. 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 Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. 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; or
  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, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, 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.
- 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 or 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 shall obligate 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 shall obligate 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 all of Contractor's obligations under the Contract. These bonds shall 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 Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, 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 shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. 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.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

### 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. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is

maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements 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 and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. 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, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of 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.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect 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 shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

#### 6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
  - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
  - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
  - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).

4. Foreign voluntary worker compensation (if applicable).
- B. *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:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
  2. claims for damages insured by reasonably available personal injury liability coverage.
  3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
    - a. Such insurance shall 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, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Broad form property damage coverage.
  4. Severability of interest.
  5. Underground, explosion, and collapse coverage.
  6. Personal injury coverage.
  7. 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); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
  8. 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.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims 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 shall be written on an occurrence basis.
- E. *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. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result

of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.

- G. *Additional insureds:* The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance:* If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
  - 1. include at least the specific coverages provided in this Article.
  - 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
  - 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
  - 4. remain in effect at least until final payment (and longer if expressly required in this Article) 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 Documents.
  - 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed 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.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

#### 6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. 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.

#### 6.05 *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 full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
  - 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07; and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
  - 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
  - 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
  - 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).



5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
  6. extend to cover damage or loss to insured property while in transit.
  7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
  8. allow for the waiver of the insurer's subrogation rights, as set forth below.
  9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
  10. not include a co-insurance clause.
  11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
  12. include performance/hot testing and start-up.
  13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed 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.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- 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 notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance:* 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 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property:* If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

#### 6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers 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. 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 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 Subcontractors, all individuals or entities identified in the Supplementary Conditions as 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. None of the above waivers shall extend 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. 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:
  - 1. loss 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 perils whether or not insured by Owner; and
  - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner 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.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work 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 any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

#### 6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the

**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 will 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 therewith 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 shall 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 shall 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 shall 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 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 shall 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, or both, 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 shall 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 rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven 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 on account of 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. 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 shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and 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.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. 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, or
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, 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 on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of 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 that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
  - j. liquidated 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;
  - l. there are other items entitling 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 shall 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 shall be treated as an amount due as determined by Paragraph 15.01.C.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 seven 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 shall 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 seven 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 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 6.05 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 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall 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 disputes that Contractor believes are unsettled; 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 Application and Acceptance:*
1. 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 ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall 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. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. 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. *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.
- D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation,

including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

**15.07 Waiver of Claims**

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- 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 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 terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then 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 other adjacent areas;
  - 2. correct such defective Work;
  - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, 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 therefrom.
- B. If 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 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 correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. 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.
- D. 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.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not 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, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall 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) ten 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) 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 seven 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 shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate For Convenience*

- A. Upon seven 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 on account of loss of anticipated overhead, profits, or revenue, 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 seven 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, seven 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; and
  - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising 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; or
  - 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 Documents requires the giving of written notice, it will be deemed to have been validly given if:
  - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
  - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

### **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 shall not constitute a waiver of that provision, nor shall 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 or completion of the Contract or termination 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 *Headings*

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



SECTION 00800  
SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions except as amended by Article 1. Additional terms used in these Supplementary Conditions have the meanings stated in Article 1 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 thereto.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC 1.01        Add the following language at the end of last sentence of Paragraph 1.01.A.8:

**The Change Order form to be used on this Project is provided by the Owner. Owner approval is required before Change Orders are effective.**

SC 1.01        Delete Paragraph 1.01.A.15 in its entirety and add the following in its place:

**Contract Times - The number of days or the dates stated in the Agreement to complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation.**

SC 1.01        Add the following new language at the end of the last sentence of Paragraph 1.01.A.28:

**The authorized representative of Owner assigned to this project is herein, referred to as Project Director.**

SC 1.01        Add the following new language at the end of the last sentence of Paragraph 1.01.A.48:

**A Work Change directive cannot change Contract Price or Contract Times. Contract Price or Contract time can only be modified with a Change Order.**

ARTICLE 2 – PRELIMINARY MATTERS

SC 2.02        Amend the first sentence of Paragraph 2.02.A to read as follows:

**A.     OWNER shall furnish to the Contractor three (3) copies of the Contract Document (including one fully executed counter part of the Agreement) and one copy in electronic portable document format (PDF).**

SC 2.06        Delete Paragraph 2.06.B in its entirety.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SECTION 00800  
SUPPLEMENTARY CONDITIONS

SC 4.01 Delete Paragraph 4.01.A in its entirety and add the following in its place:

- A. Notice to Proceed – The OWNER will, after executing the Contract, issue to the Contractor in writing a Notice to Proceed. The beginning of the time allotted for the Contract completion will be 10 days after the date of the Notice to Proceed, or the day on which Work is actually started, whichever occurs first.**

SC. 4.05 Add the following paragraphs immediately after Paragraph 4.05.C.2

- a. Claims for delays due to abnormal weather conditions shall be handled on a monthly basis. The Contractor shall submit a notice of a claim for a weather delay in each particular month on the last day of that month. Failure to submit notice as required shall constitute a waiver of any claim because of abnormal weather conditions for that month. The Contractor shall submit the notice to the Engineer. Within seven (7) calendar days after the submission of the weather claim notice, the Contractor will submit to the Engineer evidence to justify the claim. This evidence will include the following:**

**1. The days of the month on which the adverse weather occurred. The Contractor will also provide the hours of the day during which the adverse weather occurred at the job site.**

**2. A detailed description of the activities that were affected by the adverse weather.**

**3. A detailed description of claim for the impact of the adverse weather on the critical path of the schedule.**

- b. The Engineer will review the claim evidence submitted by the Contractor. The Engineer will first compare the adverse weather received during the month against the weather that could have been anticipated for that month, then compare the number of days in the month that exceeded 0.1 inches, then verify that the days requested had greater than 1-inch of precipitation. Anticipated weather for a month will be defined as the average of the weather conditions that have occurred in that month for the years 2014-2016, as documented by the NOAA National Data Center at the St. Augustine Lighthouse.**

**ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS;  
HAZARDOUS ENVIRONMENTAL CONDITIONS**

SC 5.03 Add the following paragraphs immediately after Paragraph 5.03.A.3

- A. Report dated November 7, 2016 titled "Report of Geotechnical Exploration Holiday Isle Lift Station, St Augustine Beach, Florida" is included in the Specifications as Appendix A – Geotechnical Report.**

SECTION 00800  
SUPPLEMENTARY CONDITIONS

ARTICLE 6 – BONDS AND INSURANCE

SC 6.01 Amend Paragraph A to read as follows:

- A. Contractor shall furnish a public construction bond, in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. The bond shall 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 Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.**

SC 6.01 Amend Paragraph F to read as follows:

- F. Upon request, Owner shall provide a copy of the public construction bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.**

SC 6.02 Add the following paragraphs immediately after Paragraph 6.02.J:

- K. The Contractor shall not commence work under this Contract until he/she has obtained all insurance required under this section and such insurance has been approved by the County. All insurance policies shall be issued by companies authorized to do business under the laws of the State of Florida. The Contractor shall furnish proof of Insurance to the County prior to the commencement of operations. The Certificate(s) shall clearly indicate the Contractor has obtained insurance of the type, amount, and classification as required by contract and that no material change or cancellation of the insurance shall be effective without thirty (30) days prior written notice to the County. Certificates shall specifically include the County as Additional Insured for all lines of coverage except Workers' Compensation and Professional Liability. A copy of the endorsement must accompany the certificate. Compliance with the foregoing requirements shall not relieve the Contractor of its liability and obligations under this Contract.**

**Certificate Holder Address:**

**St. Johns County, a political subdivision of the State of Florida  
500 San Sebastian View  
St. Augustine, FL 32084**

SC 6.03 Delete Paragraph 6.03.A. and replace with the following paragraph:

SECTION 00800  
SUPPLEMENTARY CONDITIONS

- A. **Workers' Compensation:** The Contractor shall maintain during the life of this Contract, adequate Workers' Compensation Insurance in at least such amounts as are required by the law for all of its employees per Florida Statute 440.02.

SC 6.03 Delete paragraph 6.03 B and replace with the following paragraph:

- B. **Comprehensive General Liability:** The Contractor shall maintain during the life of this Contract, Comprehensive General Liability Insurance with minimum limits of \$1,000,000 per occurrence, \$2,000,000 aggregate to protect the Contractor from claims for damages for bodily injury, including wrongful death, as well as from claims of property damages which may arise from any operations under this Contract, whether such operations be by the Contractor or by anyone directly employed by or contracting with the Contractor.

SC 6.03 Delete paragraph 6.03 C in its entirety.

SC 6.03 Delete paragraph 6.03 D and replace with the following paragraph:

- D. **Automotive Liability:** The Contractor shall maintain during the life of this Contract, Comprehensive Automobile Liability Insurance with minimum limits of \$2,000,000 combined single limit for bodily injury and property damage liability to protect the Contractor from claims for damages for bodily injury, including the ownership, use, or maintenance of owned and non-owned automobiles, including rented/hired automobiles whether such operations be by the Contractor or by anyone directly or indirectly employed by a Contractor.

SC 6.03 Delete paragraph 6.03 E and replace with the following paragraph:

- E. **Umbrella or Excess Liability:** The Contractor shall maintain Umbrella or Excess Liability Insurance covering workers compensation, commercial general liability and business auto liability with minimum limits of liability of \$1,000,000.

SC 6.03 Delete Paragraph 6.03.F in its entirety.

SC 6.03 Delete Paragraph 6.03.H in its entirety and replace with the following paragraph:

- H. **Contractor's professional liability insurance:** The Contractor shall maintain during the life of the contract, Professional Liability or Errors and Omissions Insurance with minimum limits of \$1,000,000, if applicable.

SC 6.05 Delete Paragraph 6.05 in its entirety.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

SECTION 00800  
SUPPLEMENTARY CONDITIONS

SC 7.02 Amend the first sentence of Paragraph 7.02.B by adding 7:00 AM to 5:00 PM.

SC 7.04 Delete Paragraph 7.04 in its entirety and replace with the following paragraph:

- A. **Section 01 11 00 – Summary of Work** describes the methods and means that the Contractor shall submit for approval of all equipment and materials that are not specifically listed as approved manufacturers, products, or equipment on the project. These procedures will be followed. Should the Contractor wish to deviate from the design provided herein, costs for review and approval of these modifications will be borne by the Contractor. The Contractor must submit a request for deviation and acknowledgement that they are responsible for all costs prior to the Engineer reviewing said changes.
- B. For products, materials, or equipment specified by name and which do not include "Engineer Approved Equal" or "Or Equal", there is not an option to provide a substitution and one of the product manufacturers or equipment listed shall be provided.
- C. Any equipment, materials, or products that the Contractor wishes to provide an alternate product, material, or equipment vendor and which are listed in the technical specifications or on the Drawings as "Engineer Approved Equal" or "Or Equal" shall be approved PRIOR to the bid opening. Contractor shall submit all information for approval by the Engineer a minimum of 14-days prior to the bid opening. Substitutions provided after that date will not be accepted or allowed.
  - 1. Provide the following information with the substitutions package for review during the bid phase:
    - a. Name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute, including drawings, cut sheets, performance and testing data, and any other information necessary for the evaluation. Standard brochures are not acceptable. Information shall be specific and detailed for this project.
    - b. Provide a statement comparing the product, material, or equipment with the technical specification or drawings with any deviations, changes, or modifications required clearly outlined.
    - c. Provide a list of references of similar sized equipment or installation references for review. At least three separate references shall be provided.
  - 2. Approval of substitutions is strictly at the discretion of the Owner and Engineer.

SC 7.05 Delete Paragraph 7.05 in its entirety.

SC 7.06 Amend Paragraph 7.06.A by adding the following text to the end of the

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paragraph:

**The Contractor shall not award work valued at more than 50 percent of the Contract Price less cost of direct purchased items and the Sales Tax Exemption Agreement to Subcontractor(s), without prior written approval of the OWNER.**

SC 7.16 Delete Paragraph 7.16.B. and replace with the following paragraph:

***Submittal Procedures for Shop Drawings, Samples and Other Submittals:***  
**Contractor shall submit as per Section 01 33 00 of the Specifications.**

SC 7.16 Delete Paragraph 7.16.C in its entirety.

SC 7.16 Amend Paragraph 7.16.E.2 by striking out the following: "~~three~~" and replace with:  
**two**

SC 7.16 Amend Paragraph 7.16.E.2 by striking out the following: "~~fourth~~" and replace with:  
**third**

**ARTICLE 9 – OWNER'S RESPONSIBILITIES**

SC 9.13 Add the following new paragraph immediately after Paragraph 9.12.

**9.13 Project Director**

- A. The Project Director, unless otherwise directed by the Owner shall perform those duties and discharge those responsibilities allocated to the Project Director as set forth in this Agreement. The Project Director shall be the Owner's representative from the effective date of this Agreement until Final Payment has been made. The Project Director shall be authorized to act on behalf of the Owner only to the extent provided in this Agreement.**
- B. The Owner and the Contractor shall communicate with each other in the first instance through the Engineer and Project Director.**
- C. The Project Director shall be the initial interpreter of the requirements of the drawings and specifications and the judge of the performance there under by the Contractor. The Project Director shall render written or graphic interpretations necessary for the proper execution or progress of the Work with reasonable promptness on request of the Contractor.**
- D. The Engineer and Project Director shall review the Contractor's Applications for Payment and shall certify to the Owner for payment to the Contractor, those amounts then due to the Contractor as provided in this Agreement.**
- E. The Project Director shall have authority to reject Work, which is defective or does not conform to the requirements of this Agreement. If the Project**

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Director deems it necessary or advisable, the Project Director shall authority to require additional inspection or testing of the Work for compliance with Contract requirements at Contractor's expense.

- F. The Project Director shall review and approve, or take other appropriate action as necessary, concerning the Contractor's submittals including Product Data and Samples. Such review, approval or other action shall be for the sole purpose of determining conformance with the design concept and information given through the Contract Documents.
- G. The Project Director shall prepare Change Orders and may authorize minor changes in the Work by field order as provided elsewhere herein.
- H. The Project Director shall, upon written request from the Contractor, conduct inspections to determine the date of Substantial Completion and the date of Final Completion, shall receive and forward to the Owner for the Owner's review and records, written warranties and related documents required by this Agreement and shall issue a Final Certificate for Payment upon compliance with the requirements of this Agreement.
- I. The Project Director's decision in matters relating to aesthetic effect shall be final if consistent with the intent of this Agreement.

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

SC 15.01 Delete Paragraph 15.01.B.3 in its entirety and replace with the following:

The amount of such payments shall be the total value of the Work done to the date of the estimate, based upon the quantities and the Contract unit and/or lump sum prices, less an amount retained and less payments previously made. The amount retained shall be determined in accordance with Section 255.078 of the Florida Statutes.

- (a) Owner may withhold from each progress payment made to the Contractor an amount not to exceed ten (10) percent of the payment as retainage until fifty (50) percent completion of the Work.
- (b) After fifty (50) percent completion of the Work is purchased pursuant to this Agreement, Owner will reduce to five (5) percent the amount of retainage withheld from each subsequent progress payment made to the Contractor. The term "fifty (50) percent completion" as used in this provision means the point at which Owner has expensed fifty (50) percent of the total cost of the Work purchased as provided herein, together with all costs associated with existing change orders and other additions or modifications to the Work described herein.
- (c) After fifty (50) percent completion of the Work is purchased pursuant to this Agreement, the Contractor may present to the Owner a payment

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request for up one-half of the retainage held by the Owner. The Owner shall make prompt payment to the Contractor, unless in accordance with Section 255.078(6) of the Florida Statutes, such funds are the subject of a good faith dispute, claim or demand by the Owner or the Contractor.

(d) No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

SC 15.01 Add the following new paragraph immediately after Paragraph 15.01.B.3

4. **The Application for Payment form to be used on this Project is supplied by Owner. The OWNER must approve all Applications for Payment before payment is made.**

SC 15.01 Delete Paragraph 15.01.D.1 in its entirety and replace with the following:

**The Application for Payment with Engineer's recommendations will be presented to the OWNER and Agency for consideration. If the OWNER finds the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the OWNER, and the OWNER will make payment to the Contractor.**

SC 15.02 Amend Paragraph 15.02.A by striking out the following: "~~no later than seven days after the time of payment by Owner~~" and replace with:

**no later than the time of payment by OWNER.**

SC 16.02 Add the following new paragraphs immediately after Paragraph 16.02.A.4

5. **fails to make prompt payment to Subcontractors, or for materials or labor;**
6. **persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction; or**
7. **otherwise substantially violates a material provision of this Agreement,**

SC 16.02 Replace the words **performance bond** with the words **public construction bond** in Paragraph 16.02.B.2

SC 16.02 Replace the words **performance bond** with the words **public construction bond** in Paragraph 16.02.C

SC 16.02 Replace the words **payment bond or performance bond** with the words **public construction bond** in Paragraph 16.02.F.

SC 16.02 Replace the words **payment bond or performance bond** with the words **public**



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**construction bond** in Paragraph 16.02.G.

SC 16.03 Add the following new paragraph immediately after Paragraph 16.03.B

- C. The Contractor shall incur no further obligations in connection with the Work and the Contractor shall stop Work when such termination becomes effective. The Contractor shall also terminate outstanding orders and subcontracts. The Contractor shall settle liabilities and claims arising out of the termination of subcontracts and orders. The Owner may direct the Contractor to assign the Contractor's right, title and interest under terminated orders or subcontracts to the Owner or its designee.
- D. The Contractor shall transfer title and deliver to the Owner such completed or partially completed Work and materials, equipment, parts, fixtures, information and Contract rights as the Contractor has.
- E. The Contractor shall submit a termination claim to the Project Director specifying the amounts due because of the termination for convenience together with costs, pricing or other data required by the Project Director. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Owner shall pay the Contractor, an amount derived in accordance with subparagraph (G) below.
- F. The Owner and the Contractor may agree to compensation, if any, due to the Contractor hereunder.
- G. Absent agreement to the amount due to the Contractor, the Owner shall pay the Contractor the following amounts;
  - 1. Contract prices for labor, materials, equipment, and other services accepted under this Agreement;
  - 2. Reasonable costs incurred in preparing to perform and in performing a portion of the Work prior to termination and not included in (G.1.) or (G.2), and in terminating the Contractor's performance, plus a fair and reasonable allowance for overhead and profit thereon (such profit shall not include anticipated profit or consequential damages); provided, however, that if it appears that the Contractor would have not profited or would have sustained a loss if the entire Contract had been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss, if any;
  - 3. Reasonable costs of settling and paying claims arising out of the termination of Subcontracts or orders pursuant to Subparagraph 16.03.C of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.
- H. The total sum to be paid the Contractor under this Subparagraph 16.03 shall not exceed the total Contract Price, as properly adjusted, reduced by the amount of payments otherwise made, and shall in no event include duplication of payment.

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SC 18.01 Delete from Paragraph A.2 the words "registered or certified."

SC 18.09 Add the following new paragraph immediately after Paragraph 18.08

**18.09 Contractor's Employment Opportunity**

- A. The Contractor and all Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin or age.
- B. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, national origin or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertisement, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.
- C. The Contractor and all Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants shall receive consideration for employment without regard to race, religion, color, sex, national origin or age.

SC 18.10 Add the following new paragraph immediately after Paragraph 18.09

**18.10 Apprenticeship Law (Chapter 446, Florida Statutes)**

- A. The Contractor shall make a diligent effort to hire for Performance of the Contract a number of apprentices in each occupation which bears to the average number of journeyman in that occupation to be employed in the performance of the Contract, the ratio of at least one (1) apprentice or trainee to every five (5) journeymen.
- B. The Contractor shall, when feasible and except when the number of apprentices or trainees to be hired is fewer than four (4), assure that twenty-five (25) percent of such apprentices or trainees are in their first year of training. Feasibility here involves a consideration of the availability of training opportunities for first year apprentices or trainees, the hazardous nature of the Work for beginning workers, and excessive unemployment of apprentices or trainees in their second or subsequent years of training.
- C. The Contractor, during the performance of the Contract, shall make diligent efforts to employ the number of apprentices or trainees necessary to meet requirements of Subparagraphs a. and b. However, on-the-job training programs shall only be established in non-apprenticable trades or occupations to meet the requirements of this section.
- D. The Contractor agrees to return records of employment, by trade, of the number of apprentices or trainees by first year of training, and the number

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of journeymen and the wages paid, and hours of work, of such persons on a form as prescribed by the Bureau of Apprenticeship of the Division of Labor at three (3) month intervals. Submission of duplicate copies of forms submitted to the United States Department of Labor shall be sufficient compliance with the provisions of the section.

- E. The Contractor agrees to supply the Bureau of Apprenticeship of the Division of Labor, at three (3) months intervals, a statement describing steps taken toward making diligent effort and containing a breakdown by craft or hours worked and wages paid for first year apprentices or trainees, other apprentices or trainees and journeymen.
- F. The Contractor agrees to insert in any Subcontract under this Agreement the requirements contained in this section. "The term Contractor" as used in such clauses and any Subcontract shall mean the Subcontractor.
- G. Anything herein to the Contrary notwithstanding, Contractor agrees to comply with all of the provisions of Florida Statutes 446 and all regulations prescribed by the Bureau of Apprenticeship of the Division of Labor.

SC 18.11 Add the following new paragraph immediately after Paragraph 18.10.

**18.11 Public Records**

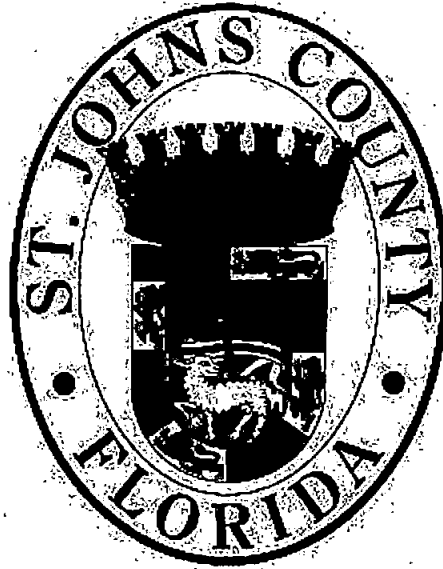
- A. The cost of reproduction, access to, disclosure, non-disclosure, or exemption of records, data, documents, and/or materials, associated with this Agreement shall be subject to the applicable provisions of the Florida Public Records Law (Chapter 119, Florida Statutes), and other applicable State and Federal provisions. Access to such public records, may not be blocked, thwarted, and/or hindered by placing the public records in the possession of a third party, or an unaffiliated party.
- B. In accordance with Florida law, to the extent that Contractor's performance under this Contract constitutes an act on behalf of the County, Contractor shall comply with all requirements of Florida's public records law. Specifically, if Contractor is expressly authorized, and acts on behalf of the County under this Agreement, Contractor shall:
  - (1) Keep and maintain public records that ordinarily and necessarily would be required by the County in order to perform the Services;
  - (2) Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost as provided in Chapter 119, Florida Statutes, or as otherwise provided by law;
  - (3) Ensure that public records related to this Agreement that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by applicable law for the duration of this Agreement and following completion of this Agreement if the Contractor does not transfer the records to the County; and

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(4) Upon completion of this Agreement, transfer, at no cost, to the County all public records in possession of the Contractor or keep and maintain public records required by the County to perform the Services.

- C. If the Contractor transfers all public records to the County upon completion of this Agreement, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of this Agreement, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the County's custodian of public records, in a format that is compatible with the County's information technology systems.
- D. Failure by the Contractor to comply with the requirements of this section shall be grounds for immediate, unilateral termination of this Agreement by the County.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO ITS DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT: OCA, ATTN: Public Records Manager, 500 San Sebastian View, St. Augustine, FL 32084, PH: (904) 209-0805, EMAIL: [publicrecords@sjcfl.us](mailto:publicrecords@sjcfl.us).



**Project Specifications**  
**for**  
**HOLIDAY ISLE LIFT**  
**STATION IMPROVEMENTS**

**SJCUD Project No.: 4483-56302-6702-56302**

**MARCH 2019**

**St. Johns County Utility Department**  
**1205 State Road 16**  
**St. Augustine, FL 32084**  
**Tel: (904) 209-2614**

**HOLIDAY ISLE LIFT STATION IMPROVEMENTS  
PROJECT SPECIFICATIONS  
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**SECTION 01 11 00  
SUMMARY OF WORK**

**PART 1      GENERAL**

**1.01      WORK COVERED BY CONTRACT DOCUMENTS**

A.    The Contractor shall include furnishing all labor, equipment, materials and other items necessary for improvements to the Holiday Isle lift station located in St Augustine Beach, FL. Work shall generally include, but not be limited to the following:

1.    Obtain required permits and coordination with FP&L.
2.    Dewatering and installation of new 8 ft diameter precast concrete wetwell and 5 ft diameter precast doghouse/pour-in-place receiving manhole.
3.    Coating the existing and proposed wetwell/manhole interior with Raven405 or approved equal.
4.    Precast concrete top slab with access hatch, 316 stainless steel piping, valves, guide rails, pump bases, submersible pumps, diesel bypass pump, and water service for lift station.
5.    Relocation/replacement of existing 4" and 6" backflow preventers.
6.    Concrete slab/driveway, concrete masonry block wall with stucco finish and cantilever gate.
7.    Electrical rack including control panel, explosion-proof terminal boxes, RTU, electrical wiring, service disconnect, and electrical meter per SJCUD standards.
8.    Temporary bypass pumping.
9.    Demolition/removal of existing lift station components and building and conversion of the existing wetwell into a manhole.

All work shall be bid and performed specifically in accordance with the plans and specifications.

The St Johns County Utility Department (SJCUD) shall furnish the following equipment and materials for the Contractor to install:

1.    (2) NP3153 HT~464 Submersible Pumps (20hp/3ph/230v)
2.    (1) 200A Control Panel
3.    (2) Rose+Bopla Junction Boxes
4.    (1) 600A Disconnect Switch w/ SS Enclosure
5.    (1) Motorola ACE3600 RTU w/ Enclosure
6.    (1) Godwin CD100M Dri-Prime Pump w/ Sound Attenuated Enclosure
7.    (1) Wetwell Access Hatch
8.    (2) 4x4 Pump Bases

9. SS Guiderails and Accessories

- B. All work shall conform to SJCUD Standards and these contract documents. Except as authorized by the Project Director, in case of conflicts between these contract documents and SJCUD *Manual of Water, Wastewater, and Reuse Design Standards and Specifications*, the stricter standard or specification shall apply.
- C. The Technical Specifications shall cover work outside the normal scope of SJCUD Standards. Technical Specifications for the lift station improvements shall be per the plans and SJCUD Standard Pump Station Specifications and Details from the *Manual of Water, Wastewater, and Reuse Design Standards and Specification*.
- D. The following standards and specification sections may apply to the project from the *Manual of Water, Wastewater, and Reuse Design Standards and Specifications*:
  - 1. 2.18 Wastewater Pump Station Design Specifications
  - 2. 2.19 Wastewater Pump Station Electrical Design
  - 3. 3.2 Site Preparation, Surface Removal and Restoration
  - 4. 3.3 Excavation, Backfill, Compaction and Grading
  - 5. 3.4 Pressure Pipe Restraint
  - 6. 3.9 Pressure and Leakage Testing of Pressurized Pipe
  - 7. 3.13 Wastewater Force Main Materials
  - 8. 3.14 Wastewater Force Main Installation.
- E. As-built, Record Drawing survey requirements are called out in Section 01 77 00, Closeout Procedures.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**



**SECTION 01 26 00**  
**CONTRACT MODIFICATION PROCEDURES**

**PART 1      GENERAL**

**1.01      PROPOSAL REQUESTS**

- A.    Owner may, in anticipation of ordering an addition, deletion, or revision to the Work, request Contractor to prepare a detailed proposal of cost and times to perform contemplated change.
- B.    Proposal request will include reference number for tracking purposes and detailed description of and reason for proposed change, and such additional information as appropriate and as may be required for Contractor to accurately estimate cost and time impact on Project.
- C.    Proposal request is for information only; Contractor is neither authorized to execute proposed change nor to stop Work in progress as result of such request.
- D.    Contract modification procedures, including Contractor claims, field orders and changes in work shall be as specified in Article 11 of the General Conditions

**PART 2      PRODUCTS (NOT USED)**

**PART 3      EXECUTION (NOT USED)**

**END OF SECTION**

**SECTION 01 29 00  
PAYMENT PROCEDURES**

**PART 1      GENERAL**

**1.01      SUBMITTALS**

- A. Submittals for payments under this contract shall comply with Article 15, Payment to Contractor in the General and Supplemental Conditions.
- B. Informational Submittals:
  - 1. Schedule of Values: Submit on Contractor's standard form.
  - 2. Schedule of Estimated Progress Payments:
    - a. Submit with initially acceptable Schedule of Values.
    - b. Submit adjustments thereto with Application for Payment.
  - 3. Application for Payment.
  - 4. Final Application for Payment.

**1.02      SCHEDULE OF VALUES**

- A. Prepare a separate Schedule of Values for each schedule of the Work under the General Conditions as outlined in Article 2.03, 2.05 and 15.01.
- B. Lump Sum Work:
  - 1. Reflect specified cash and contingency allowances and alternates, as applicable.
  - 2. List bonds and insurance premiums, mobilization, demobilization, preliminary and detailed progress schedule preparation, equipment testing, facility startup, and contract closeout separately.

**1.03      SCHEDULE OF ESTIMATED PROGRESS PAYMENTS**

- A. Show estimated payment requests throughout Contract Times aggregating initial Contract Price.
- B. Base estimated progress payments on initially acceptable progress schedule. Adjust to reflect subsequent adjustments in progress schedule and Contract Price as reflected by modifications to the Contract Documents.

**1.04      APPLICATION FOR PAYMENT**

- A. Submit Applications for Payment as described in Article 15.01 of the General and Supplementary Conditions.

- B. Include separate line item for each Change Order and Work Change Directive executed prior to date of submission. Provide further breakdown of such as requested by the Project Director.
- C. Preparation:
  - 1. Round values to nearest cent.
  - 2. Submit Application for Payment, including a Transmittal Summary Form and detailed Application for Payment Form(s) for each schedule as applicable, , and such supporting data as may be requested by the Project Director.

**1.05 PAYMENT**

- A. Payment for all Lump Sum Work shown or specified in Contract Documents is included in the Contract Price. Payment will be based on a percentage complete basis for each line item of the accepted Schedule of Values.
- B. Owner may decline to or withhold payments as described in Article 15.01.C.5 of the General Conditions.
- C. Payments to the Contractor for substantial and final completion shall be as described in Article 15.03 and 15.06 in the General and Supplemental Conditions.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**

**SECTION 01 31 13**  
**PROJECT COORDINATION**

**PART 1      GENERAL**

**1.01      SUBMITTALS**

- A.    Informational:
  - 1.    Photographs
  - 2.    Video

**UTILITY NOTIFICATION AND COORDINATION**

- B.    Coordinate the Work with various utilities within Project limits. Notify applicable utilities prior to commencing Work, if damage occurs, or if conflicts or emergencies arise during Work.

**1.02      FACILITY OPERATIONS**

- A.    The Contractor's work schedule shall be established on the basis of working a normal work schedule including 5 days per week, single shift, 8 hours per day or 4 days per week, single shift, ten hours per day. Unless otherwise approved by the Owner, normal or general items of work shall be scheduled during the normal work schedule.
- B.    Continuous operation of Owner's facilities is of critical importance. Schedule and conduct activities to enable existing facilities to operate continuously, unless otherwise specified.
- C.    The Owner may require the Contractor to perform work outside the normal work schedule for such tasks as tie-in work to existing facilities and work that may impact the continued (non-interruptible service to the Owner's existing utility customers. The Contractor shall plan and anticipate the cost impact of these work schedule limitations.
- D.    The Contractor shall notify the Project Director at least 48 hours prior to actual tie-in work. The Project Director and/or another representative of the Owner, must be present during tie-in work.
- E.    Perform Work continuously during critical connections and changeovers, and as required to prevent interruption of Owner's operations.
- F.    When necessary, plan, design, and provide various temporary services, utilities, connections, pumping systems, temporary piping and heating, access, and similar items to maintain continuous operations of Owner's facility.

- G. Do not close lines, open or close valves, or take other action which would affect the operation of existing systems, except as specifically required by the Contract Documents and after authorization by Owner and Engineer. Such authorization will be considered within 48 hours after receipt of Contractor's written request.
- H. Install and maintain bypass pumping facilities and temporary connections required to keep Owner's wastewater lift station operations on-line. Sequences other than those specified will be considered upon written request to Owner and Engineer, provided they afford equivalent continuity of operations.
- I. Do not proceed with Work affecting a facility's operation without obtaining Owner's and Engineer's advance approval of the need for and duration of such Work.

#### 1.03 ADJACENT FACILITIES AND PROPERTIES

##### A. Examination:

1. After Effective Date of the Agreement and before work at sites is started, Contractor and Project Director, and affected property owners, if desired by the Owner, shall make a thorough examination of pre-existing conditions including existing buildings, structures, and other improvements in vicinity of Work, as applicable, which could be damaged by construction operations.
2. Periodic re-examination shall be jointly performed to include, but not limited to, cracks in structures, settlement, leakage, and similar conditions.

##### B. Documentation:

1. Record and submit documentation of observations made on examination inspections in accordance with paragraph Construction Photographs and Audio-Video Recordings.
2. Upon receipt, Project Director will review, sign, and return one record copy of documentation to Contractor to be kept on file in field office.
3. Such documentation shall be used as indisputable evidence in ascertaining whether and to what extent damage occurred as a result of Contractor's operations, and is for the protection of adjacent property owners, Contractor, and Owner.

#### 1.04 CONSTRUCTION PHOTOGRAPHS AND/OR VIDEO

- A. Photographically and/or video document all phases of the project including preconstruction, construction progress, and post-construction.

- B. Film handling and development shall be done by a commercial laboratory.
- C. Project Director shall have the right to select the subject matter and vantage point from which photographs are to be taken.
- D. Pre-Construction and Post-Construction:
  - 1. After Effective Date of the Agreement and before Work at Site is started, and again upon issuance of Substantial Completion, take photos and/or video from all vantage points of the Construction Site and property adjacent to perimeter of Construction Sites.
  - 2. Particular emphasis shall be directed to structures both inside and outside the Site.
  - 3. Format: Digital 12-megapixel photographs in .jpeg format or 1080p video footage in .mpg/.wmv format.
- E. Digital Images/Video:
  - 1. Archive using a commercially-available photo/video management system.
  - 2. Label each disk with Project and Owner's name, and week and year images/video were produced.

#### 1.05 REFERENCE POINTS AND SURVEYS

- A. Owner's Responsibilities:
  - 1. Establish bench marks convenient to Work and at least every 500 feet on pipelines and roads.
  - 2. Establish horizontal reference points or coordinate system with bench marks and reference points for Contractor's use as necessary to lay out Work.
- B. Location and elevation of bench marks are shown on Drawings.
- C. Contractor's Responsibilities:
  - 1. Provide additional survey and layout required to layout the Work.
  - 2. Notify Project Director at least 5 working days in advance of time when grade and line to be provided by Owner will be needed.
  - 3. Check and establish exact location of existing facilities prior to construction of new facilities and any connections thereto.
  - 4. In event of discrepancy in data or staking provided by Owner, request clarification before proceeding with Work.
  - 5. Retain professional land surveyor or civil engineer registered in state of Project who shall perform or supervise engineering surveying necessary for additional construction staking and layout.

6. Maintain complete accurate log of survey Work as it progresses as a Record Document.
7. On request of Project Director, submit documentation.
8. Provide competent employee(s), tools, stakes, and other equipment and materials as Project Director may require to:
  - a. Establish control points, lines, and easement boundaries.
  - b. Check layout, survey, and measurement Work performed by others.
  - c. Measure quantities for payment purposes.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

**3.01 CUTTING, FITTING, AND PATCHING**

- A. Cut, fit, adjust, or patch Work and work of others, including excavation and backfill as required, to make Work complete.
- B. Obtain prior written authorization of Project Director before commencing Work to cut or otherwise alter:
  1. Structural or reinforcing steel, structural column or beam, elevated slab, trusses, or other structural member.
  2. Weather- or moisture-resistant elements.
  3. Efficiency, maintenance, or safety of element.
  4. Work of others.
- C. Refinish surfaces to provide an even finish.
  1. Refinish continuous surfaces to nearest intersection.
  2. Refinish entire assemblies.
  3. Finish restored surfaces to such planes, shapes, and textures that no transition between existing work and Work is evident in finished surfaces.
- D. Restore existing work, Underground Facilities, and surfaces that are to remain in completed Work including concrete-embedded piping, conduit, and other utilities as specified and as shown.
- E. Make restorations with new materials and appropriate methods as specified for new Work of similar nature; if not specified, use recommended practice of manufacturer or appropriate trade association.
- F. Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces and fill voids.

G. Remove specimens of installed Work for testing when requested by Engineer.

**END OF SECTION**

MARCH 12, 2019

PROJECT COORDINATION  
01 31 13 - 5



**SECTION 01 31 19**  
**PROJECT MEETINGS**

**PART 1      GENERAL**

**1.01      GENERAL**

- A. Project Director will schedule physical arrangements for meetings throughout progress of the Work, prepare meeting agenda with regular participant input and distribute with written notice of each meeting, preside at meetings, record minutes to include significant proceedings and decisions, and reproduce and distribute copies of minutes within 5 days after each meeting to participants and parties affected by meeting decisions.

**1.02      PRECONSTRUCTION CONFERENCE**

- A. Within 20 days after Contract Time starts to run, Contractor shall schedule a preconstruction conference. Contractor shall be prepared to discuss the following subjects, as a minimum:

1. Required schedules.
2. Status of Bonds and insurance.
3. Sequencing of critical path work items.
4. Progress payment procedures.
5. Project changes and clarification procedures.
6. Submittal list and schedule.
7. Use of Site, access, office and storage areas, security and temporary facilities.
8. Major product delivery and priorities.
9. Contractor's safety plan and representative.

- B. Attendees will include:

1. Project Director and other Owner's representatives.
2. Contractor's office representative.
3. Contractor's resident superintendent.
4. Contractor's quality control representative.
5. Subcontractors' representatives whom Contractor may desire or Engineer may request to attend.
6. If required by Owner, Engineer's representatives.
7. Others as appropriate.

1.03 PRELIMINARY SCHEDULES REVIEW MEETING

- A. As set forth in Paragraph 7.7 of the Agreement and Section 01 32 00, Construction Progress Documentation.

1.04 PROGRESS MEETINGS

- A. Project Director will schedule regular progress meetings at Owner's offices conducted bi-weekly to review the Work progress, Progress Schedule, Schedule of Submittals, Application for Payment, contract modifications, and other matters needing discussion and resolution.
- B. Attendees will include:
  - 1. Project Director and other Owner's representative(s), as appropriate.
  - 2. Contractor, Subcontractors, and Suppliers, as appropriate.
  - 3. Engineer's representative(s) if required by the Owner.
  - 4. Others as appropriate.

1.05 FACILITY STARTUP MEETINGS

- A. Schedule and attend a minimum of one facility startup meeting for each individual sewage pumping station. The first of such meetings shall be held prior to submitting Facility Startup Plan, as specified in Section 01 91 14, Equipment Testing and Facility Startup, and shall include preliminary discussions regarding such plan.
- B. Agenda items shall include, but not be limited to, content of Facility Startup Plan, coordination needed between various parties in attendance, and potential problems associated with startup.
- C. Attendees will include:
  - 1. Contractor.
  - 2. Contractor's designated quality control representative.
  - 3. Subcontractors and equipment manufacturer's representatives whom Contractor deems to be directly involved in facility startup.
  - 4. Engineer's representatives.
  - 5. Owner's operations personnel.
  - 6. Others as required by Contract Documents or as deemed necessary by Contractor.

1.06 OTHER MEETINGS

- A. In accordance with Contract Documents and as may be required by Owner and Project Director.

**PART 2      PRODUCTS (NOT USED)**

**PART 3      EXECUTION (NOT USED)**

**END OF SECTION**

**MARCH 12, 2019**

**PROJECT MEETINGS  
01 31 19 - 3**

**SECTION 01 32 00**  
**CONSTRUCTION PROGRESS DOCUMENTATION**

**PART 1      GENERAL**

**1.01      SUBMITTALS**

**A.      Informational Submittals:**

1.      Preliminary Progress Schedule: Submit at least 7 days prior to preconstruction conference.
2.      Detailed Progress Schedule:
  - a.      Submit initial Detailed Progress Schedule within 60 days after Effective Date of the Agreement.
  - b.      Submit an Updated Progress Schedule at each update, in accordance with Detailed Progress Schedule.
3.      Submit with Each Progress Schedule Submission:
  - a.      Contractor's certification that Progress Schedule submission is actual schedule being utilized for execution of the Work.
  - b.      Progress Schedule: Four legible copies.
  - c.      Narrative Progress Report: Same number of copies as specified for Progress Schedule.
4.      Prior to final payment, submit a final Updated Progress Schedule.

**1.02      PRELIMINARY PROGRESS SCHEDULE**

- A.      In addition to basic requirements outlined in the General Conditions, show a detailed schedule, beginning with Notice to Proceed, for minimum duration of 90 days, and a summary of balance of Project through Final Completion.
- B.      Show activities including, but not limited to the following:
  1.      Notice to Proceed.
  2.      Permits.
  3.      Submittals, with review time. Contractor may use Schedule of Submittals specified in Section 01 33 00, Submittal Procedures.
  4.      Early procurement activities for long lead equipment and materials.
  5.      Initial Site work.
  6.      Earthwork.
  7.      Specified Work sequences and construction constraints.
  8.      Contract Milestone and Completion Dates.
  9.      Owner-furnished products delivery dates or ranges of dates.
  10.      Major structural, mechanical, equipment, electrical, architectural, and instrumentation and control Work.
  11.      System startup summary.
  12.      Project close-out summary.
  13.      Demobilization summary.

- C. Update Preliminary Progress Schedule monthly as part of progress payment process. Failure to do so may result in the Owner withholding all or part of the monthly progress payment until the Preliminary Progress Schedule is updated in a manner acceptable to Project Director.
- D. Format: In accordance with Progress Schedule—Bar Chart.

#### 1.03 DETAILED PROGRESS SCHEDULE

- A. In addition to requirements of the General Conditions, submit Detailed Progress Schedule beginning with Notice to Proceed and continuing through Final Completion.
- B. Show the duration and sequences of activities required for complete performance of the Work reflecting means and methods chosen by Contractor.
- C. When accepted by Project Director, Detailed Progress Schedule will replace Preliminary Progress Schedule and become Baseline Schedule. Subsequent revisions will be considered as Updated Progress Schedules.
- D. Format: In accordance with 1.04 Progress Schedule—Bar Chart.
- E. Update monthly to reflect actual progress and occurrences to date, including weather delays.

#### 1.04 PROGRESS SCHEDULE—BAR CHART

- A. General: Comprehensive bar chart schedule, generally as outlined in Associated General Contractors of America (AGC) 580, "Construction Project Planning and Scheduling Guidelines." If a conflict occurs between the AGC publication and this Specification, this Specification shall govern.
- B. Format:
  - 1. Unless otherwise approved, white paper, 11-inch by 17-inch sheet size.
  - 2. Title Block: Show name of project and Owner, date submitted, revision or update number, and name of scheduler.
  - 3. Identify horizontally, across the top of the schedule, the time frame by year, month, and day.
  - 4. Identify each activity with a unique number and a brief description of the Work associated with that activity.
  - 5. Legend: Describe standard and special symbols used.
- C. Contents: Identify, in chronological order, those activities reasonably required to complete the Work, including as applicable, but not limited to:

1. Obtaining permits, submittals for early product procurement, and long lead time items.
2. Mobilization and other preliminary activities.
3. Initial Site work.
4. Specified Work sequences, constraints, and Milestones, including Substantial Completion date(s).
5. Subcontract Work.
6. Submittals.
7. Major equipment design, fabrication, factory testing, and delivery dates.
8. Delivery dates for Owner-furnished products, as specified in Section 01 11 00, Summary of Work.
9. Sitework.
10. Concrete Work.
11. Structural steel Work.
12. Equipment Work.
13. Mechanical Work.
14. Electrical Work.
15. Instrumentation and control Work.
16. Interfaces with Owner-furnished equipment.
17. Other important Work for each major facility.
18. Equipment and system startup and test activities.
19. Project closeout and cleanup.
20. Demobilization.

#### 1.05 PROGRESS OF THE WORK

A. Updated Progress Schedule shall reflect:

1. Progress of Work to within 5 working days prior to submission.
2. Approved changes in Work scope and activities modified since submission.
3. Delays in Submittals or resubmittals, deliveries, or Work.
4. Adjusted or modified sequences of Work.
5. Other identifiable changes.
6. Revised projections of progress and completion.
7. Report of changed logic.

B. Produce detailed sub-schedules during Project, upon request of Owner or Engineer, to further define critical portions of the Work such as facility shutdowns.

- C. If Contractor fails to complete activity by its latest scheduled completion date and this Failure is anticipated to extend Contract Times (or Milestones), Contractor shall, within 7 days of such failure, submit a written statement as to how Contractor intends to correct nonperformance and return to acceptable current Progress Schedule. Actions by Contractor to complete the Work within Contract Times (or Milestones) will not be justification for adjustment to Contract Price or Contract Times.
- D. Owner may order Contractor to increase plant, equipment, labor force or working hours if Contractor fails to:
  - 1. Complete a Milestone activity by its completion date.
  - 2. Satisfactorily execute Work as necessary to prevent delay to overall completion of Project, at no additional cost to Owner.

#### 1.06 NARRATIVE PROGRESS REPORT

##### A. Format:

- 1. Organize same as Progress Schedule.
- 2. Identify, on a cover letter, reporting period, date submitted, and name of author of report.

##### B. Contents:

- 1. Number of days worked over the period, work force on hand, construction equipment on hand (including utility vehicles such as pickup trucks, maintenance vehicles, stake trucks).
- 2. General progress of Work, including a listing of activities started and completed over the reporting period, mobilization/demobilization of subcontractors, and major milestones achieved.
- 3. Contractor's plan for management of Site (e.g., lay down and staging areas, construction traffic), utilization of construction equipment, buildup of trade labor, and identification of potential Contract changes.
- 4. Identification of new activities and sequences as a result of executed Contract changes.
- 5. Documentation of weather conditions over the reporting period, and any resulting impacts to the work.
- 6. Description of actual or potential delays, including related causes, and the steps taken or anticipated to mitigate their impact.
- 7. Changes to activity logic.
- 8. Changes to the critical path.
- 9. Identification of, and accompanying reason for, any activities added or deleted since the last report.
- 10. Steps taken to recover the schedule from Contractor-caused delays.

## 1.07 SCHEDULE ACCEPTANCE

### A. Project Director's acceptance will demonstrate agreement that:

1. Proposed schedule is accepted with respect to:
  - a. Contract Times, including Final Completion and all intermediate Milestones are within the specified times.
  - b. Specified Work sequences and constraints are shown as specified.
  - c. Specified Owner-furnished Equipment or Material arrival dates, or range of dates, are included.
  - d. Access restrictions are accurately reflected.
  - e. Startup and testing times are as specified.
  - f. Submittal review times are as specified.
  - g. Startup testing duration is as specified and timing is acceptable. In all other respects, Project Director's acceptance of Contractor's schedule indicates that, in Project Director's judgment, schedule represents reasonable plan for constructing Project in accordance with the Contract Documents. Project Director's review will not make any change in Contract requirements. Lack of comment on any aspect of schedule that is not in accordance with the Contract Documents will not thereby indicate acceptance of that change, unless Contractor has explicitly called the nonconformance to Project Director's attention in submittal. Schedule remains Contractor's responsibility and Contractor retains responsibility for performing all activities, for activity durations, and for activity sequences required to construct Project in accordance with the Contract Documents.

### B. Unacceptable Preliminary Progress Schedule:

1. Make requested corrections; resubmit within 10 days.
2. Until acceptable to Project Director as Baseline Progress Schedule, continue review and revision process, during which time Contractor shall update schedule on a monthly basis to reflect actual progress and occurrences to date.

### C. Unacceptable Detailed Progress Schedule:

1. Make requested corrections; resubmit within 10 days.
2. Until acceptable to Engineer as Baseline Progress Schedule, continue review and revision process.

### D. Narrative Report: All changes to activity duration and sequences, including addition or deletion of activities subsequent to Project Director's acceptance of Baseline Progress Schedule, shall be delineated in Narrative Report current with proposed Updated Progress Schedule.



## 1.08 ADJUSTMENT OF CONTRACT TIMES

- A. Reference General Conditions and Section 01 26 00, Contract Modification Procedures.
- B. Evaluation and reconciliation of Adjustments of Contract Times shall be based on the Updated Progress Schedule at the time of proposed adjustment or claimed delay.
- C. Schedule Contingency:
  - 1. Contingency, when used in the context of the Progress Schedule, is time between Contractor's proposed Completion Time and Contract Completion Time.
  - 2. Contingency included in Progress Schedule is a Project resource available to both Contractor and Owner to meet Contract Milestones and Contract Times. Use of Schedule contingency shall be shared to the proportionate benefit of both parties.
  - 3. Use of schedule contingency suppression techniques such as preferential sequencing and extended activity times is prohibited.
  - 4. Pursuant to Contingency sharing provisions of this Specification, no time extensions will be granted, nor will delay damages be paid until a delay occurs which (i) consumes all available contingency time, and (ii) extends Work beyond the Contract Completion date.
- D. Claims Based on Contract Times:
  - 1. Where Project Director has not yet rendered formal decision on Contractor's Claim for adjustment of Contract Times, and parties are unable to agree as to amount of adjustment to be reflected in Progress Schedule, Contractor shall reflect an interim adjustment in the Progress Schedule as acceptable to Project Director.
  - 2. It is understood and agreed that such interim acceptance will not be binding on either Contractor or Owner, and will be made only for the purpose of continuing to schedule Work until such time as formal decision has been rendered as to an adjustment, if any, of the Contract Times.
  - 3. Contractor shall revise Progress Schedule prepared thereafter in accordance with Project Director's formal decision.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**

**SECTION 01 33 00  
SUBMITTAL PROCEDURES**

**PART 1     GENERAL**

**1.01     DEFINITIONS**

- A.    Action Submittal: Written and graphic information submitted by Contractor that requires Engineer's approval.
- B.    Informational Submittal: Information submitted by Contractor that does not require Engineer's approval.

**1.02     PROCEDURES**

- A.    Direct submittals to Engineer at the following address, unless specified otherwise.

St Johns County Utility Department  
1205 State Road 16  
St Augustine, FL 32084  
Attn: James Overton

- B.    Transmittal of Submittal:

- 1.    Contractor shall:
  - a.    Review each submittal and check for compliance with Contract Documents.
  - b.    Stamp each submittal with uniform approval stamp before submitting to Engineer.
    - 1)    Stamp to include Project name, submittal number, Specification number, Contractor's reviewer name, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with Contract Documents.
    - 2)    Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- 2.    Complete, sign, and transmit with each submittal package, one Transmittal of Contractor's Submittal form attached at end of this section.

3. Identify each submittal with the following:
  - a. Numbering and Tracking System:
    - 1) Sequentially number each submittal.
    - 2) Resubmission of submittal shall have original number with sequential alphabetic suffix.
  - b. Specification section and paragraph to which submittal applies.
  - c. Project title and Engineer's project number.
  - d. Date of transmittal.
  - e. Names of Contractor, Subcontractor or Supplier, and manufacturer as appropriate.
4. Identify and describe each deviation or variation from Contract Documents.

C. Format:

1. Do not base Shop Drawings on reproductions of Contract Documents.
2. Package submittal information by individual Specification section. Do not combine different Specification sections together in submittal package, unless otherwise directed in Specification.
3. Present in a clear and thorough manner and in sufficient detail to show kind, size, arrangement, and function of components, materials, and devices, and compliance with Contract Documents.
4. Index with labeled tab dividers in orderly manner.

D. Timeliness: Schedule and submit in accordance Schedule of Submittals, and requirements of individual Specification sections.

E. Processing Time:

1. Time for review shall commence on Engineer's receipt of submittal.
2. Engineer will act upon Contractor's submittal and transmit response to Contractor not later than 5 days after receipt, unless otherwise specified.
3. Resubmittals will be subject to same review time.
4. No adjustment of Contract Times or Price will be allowed due to delays in progress of Work caused by rejection and subsequent resubmittals.

F. Resubmittals: Clearly identify each correction or change made.

G. Incomplete Submittals:

1. Engineer will return entire submittal for Contractor's revision if preliminary review deems it incomplete.
2. When any of the following are missing, submittal will be deemed incomplete:
  - a. Contractor's review stamp, completed and signed.
  - b. Transmittal of Contractor's Submittal, completed and signed.

c. Insufficient number of copies.

H. Submittals not required by Contract Documents:

1. Will not be reviewed and will be returned stamped "Not Subject to Review."
2. Engineer will keep one copy and return all remaining copies to Contractor.

1.03 ACTION SUBMITTALS

A. Prepare and submit Action Submittals required by individual Specification sections.

B. Shop Drawings:

1. Copies: One in PDF format.
2. Identify and Indicate:
  - a. Applicable Contract Drawing and Detail number, products, units and assemblies, and system or equipment identification or tag numbers.
  - b. Equipment and Component Title: Identical to title shown on Drawings.
  - c. Critical field dimensions and relationships to other critical features of Work. Note dimensions established by field measurement.
  - d. Project-specific information drawn accurately to scale.
3. Manufacturer's standard schematic drawings and diagrams as follows:
  - a. Modify to delete information that is not applicable to the Work.
  - b. Supplement standard information to provide information specifically applicable to the Work.
4. Product Data: Provide as specified in individual Specifications.
5. Foreign Manufacturers: When proposed, include following additional information:
  - a. Names and addresses of at least two companies that maintain technical service representatives close to Project.
  - b. Complete list of spare parts and accessories for each piece of equipment.

C. Samples:

1. Copies: One, unless otherwise specified in individual Specifications.
2. Preparation: Mount, display, or package Samples in manner specified to facilitate review of quality. Attach label on unexposed side that includes the following:
  - a. Manufacturer name.
  - b. Model number.

- c. Material.
    - d. Sample source.
  - 3. Manufacturer's Color Chart: Units or sections of units showing full range of colors, textures, and patterns available.
  - 4. Full-size Samples:
    - a. Size as indicated in individual Specification section.
    - b. Prepared from same materials to be used for the Work.
    - c. Cured and finished in manner specified.
    - d. Physically identical with product proposed for use.
- D. Action Submittal Dispositions: Engineer will review, mark, and stamp as appropriate, and distribute marked-up copies as noted:
  - 1. Approved:
    - a. Contractor may incorporate product(s) or implement Work covered by submittal.
    - b. Distribution:
      - 1) Owner
      - 2) Project Director
      - 3) Engineer
      - 4) Contractor
  - 2. Approved as Noted:
    - a. Contractor may incorporate product(s) or implement Work covered by submittal, in accordance with Engineer's notations.
    - b. Distribution:
      - 1) Owner
      - 2) Project Director
      - 3) Engineer
      - 4) Contractor
  - 3. Partial Approval, Resubmit as Noted:
    - a. Make corrections or obtain missing portions, and resubmit.
    - b. Except for portions indicated, Contractor may begin to incorporate product(s) or implement Work covered by submittal, in accordance with Engineer's notations.
    - c. Distribution:
      - 1) Owner
      - 2) Project Director
      - 3) Engineer
      - 4) Contractor
  - 4. Revise and Resubmit:
    - a. Contractor may not incorporate product(s) or implement Work covered by submittal.
    - b. Distribution:
      - 1) Project Director
      - 2) Engineer

3) Contractor

1.04 INFORMATIONAL SUBMITTALS

A. General:

1. Copies: One in PDF format.
2. Refer to individual Specification sections for specific submittal requirements.
3. Project Director will review each submittal. If submittal meets conditions of the Contract, Project Director will forward copies to appropriate parties. If Project Director determines submittal does not meet conditions of the Contract and is therefore considered unacceptable, Project Director will retain one copy and return remaining copies with review comments to Contractor, and require that submittal be corrected and resubmitted.

B. Application for Payment: In accordance with Section 01 29 00, Payment Procedures.

C. Certificates:

1. General:
  - a. Provide notarized statement that includes signature of entity responsible for preparing certification.
  - b. Signed by officer or other individual authorized to sign documents on behalf of that entity.
2. Welding: In accordance with individual Specification sections.
3. Installer: Prepare written statements on manufacturer's letterhead certifying that installer complies with requirements as specified in individual Specification sections.
4. Material Test: Prepared by qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
5. Certificates of Successful Testing or Inspection: Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in individual Specification sections.
6. Manufacturer's Certificate of Compliance: In accordance with Section 01 43 33, Manufacturers' Field Services.
7. Manufacturer's Certificate of Proper Installation: In accordance with Section 01 43 33, Manufacturers' Field Services.

D. Construction Photographs/Video: In accordance with Section 01 31 13, Project Coordination, and as may otherwise be required in Contract Documents.

- E. Contract Closeout Submittals: In accordance with Section 01 77 00, Closeout Procedures.
- F. Contractor-Design Data:
  - 1. Written and graphic information.
  - 2. List of assumptions.
  - 3. List of performance and design criteria.
  - 4. Summary of loads or load diagram, if applicable.
  - 5. Calculations.
  - 6. List of applicable codes and regulations.
  - 7. Name and version of software.
  - 8. Information requested in individual Specification section.
- G. Manufacturer's Instructions: Written or published information that documents manufacturer's recommendations, guidelines, and procedures in accordance with individual Specification sections.
- H. Operation and Maintenance Data: As required in Section 01 78 23, Operation and Maintenance Data.
- I. Schedules:
  - 1. Schedule of Submittals: Prepare separately or in combination with Progress Schedule as specified in Section 01 32 00, Construction Progress Documentation.
    - a. Show for each, at a minimum, the following:
      - 1) Specification section number.
      - 2) Identification by numbering and tracking system as specified under Paragraph Transmittal of Submittal.
      - 3) Estimated date of submission to Engineer, including reviewing and processing time.
    - b. On a monthly basis, submit updated schedule to Engineer if changes have occurred or resubmittals are required.
  - 2. Schedule of Values: In accordance with Section 01 29 00, Payment Procedures.
  - 3. Schedule of Estimated Progress Payments: In accordance with Section 01 29 00, Payment Procedures.
  - 4. Progress Schedules: In accordance with Section 01 32 00, Construction Progress Documentation.
- J. Special Guarantee: Supplier's written guarantee as required in individual Specification sections.
- K. Statement of Qualification: Evidence of qualification, certification, or registration as required in Contract Documents to verify qualifications of

professional land surveyor, engineer, materials testing laboratory, specialty Subcontractor, trade, Specialist, consultant, installer, and other professionals.  
Submittals Required by Laws, Regulations, and Governing Agencies:

1. Submit promptly notifications, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable federal, state, or local governing agency or their representative.
2. Transmit to Engineer for Owner's records one copy of correspondence and transmittals (to include enclosures and attachments) between Contractor and governing agency.

L. Test and Inspection Reports:

1. General: Shall contain signature of person responsible for test or report.
2. Factory:
  - a. Identification of product and Specification section, type of inspection or test with referenced standard or code.
  - b. Date of test, Project title and number, and name and signature of authorized person.
  - c. Test results.
  - d. If test or inspection deems material or equipment not in compliance with Contract Documents, identify corrective action necessary to bring into compliance.
  - e. Provide interpretation of test results, when requested by Engineer.
  - f. Other items as identified in individual Specification sections.
3. Field: As a minimum, include the following:
  - a. Project title and number.
  - b. Date and time.
  - c. Record of temperature and weather conditions.
  - d. Identification of product and Specification section.
  - e. Type and location of test, Sample, or inspection, including referenced standard or code.
  - f. Date issued, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
  - g. If test or inspection deems material or equipment not in compliance with Contract Documents, identify corrective action necessary to bring into compliance.
  - h. Provide interpretation of test results, when requested by Engineer.
  - i. Other items as identified in individual Specification sections.

M. Testing and Startup Data: In accordance with Section 01 91 14, Equipment Testing and Facility Startup.

N. Training Data: In accordance with Section 01 43 33, Manufacturers' Field Services.



1.05 SUPPLEMENTS

A. The supplement listed below, following "End of Section," is part of this Specification.

1. Forms: Transmittal of Contractor's Submittal.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**



# St. Johns County Board of County Commissioners

Utility Department

## TRANSMITTAL OF CONTRACTOR'S SUBMITTAL

TO: \_\_\_\_\_

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

Submittal No.: \_\_\_\_\_

☐ New Submittal ☐ Resubmittal

Project No.: \_\_\_\_\_

FROM: \_\_\_\_\_

Contractor

Specification Section No.: \_\_\_\_\_

(Cover only one section with each transmittal)

Schedule Date of Submittal: \_\_\_\_\_

SUBMITTAL TYPE: ☐ Shop Drawing

☐ Sample

☐ Informational

The following items are hereby submitted:

| Number of<br>Copies | Description of Item Submitted<br>(Type; Size, Model Number, Etc.) | Spec. and<br>Para. No. | Drawing or<br>Brochure Number | Contains Variation<br>to Contract |     |
|---------------------|-------------------------------------------------------------------|------------------------|-------------------------------|-----------------------------------|-----|
|                     |                                                                   |                        |                               | No                                | Yes |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |
|                     |                                                                   |                        |                               |                                   |     |

Contractor hereby certifies that (i) Contractor has complied with the requirements of Contract Documents in preparation, review, and submission of designated Submittal and (ii) the Submittal is complete and in accordance with the Contract Documents and requirements of laws and regulations and governing agencies.

By: \_\_\_\_\_

Contractor (Authorized Signature)

**SECTION 01-38 00**  
**AS-BUILT SUBMITTAL REQUIREMENTS**

1. Three (3) sets of signed and sealed "Water & Sewer" black-line As-Built drawings and one (1) file in PDF format.
2. Electronic Drawing File Standards:
  - A. All As-Built drawings submitted to the St. Johns County Utility Department shall be accompanied by an electronic copy on an IBM PC compatible floppy diskette or Compact Disc. The acceptable file formats are as follows:

CAD Drawings: DWG (AutoCAD drawing file)

GIS Layers:           ARC/INFO Export file  
                          ArcView Shape files
  - B. Include a completed copy of the Electronic Drawing File Submittal Form with all electronic files submitted.
  - C. All new fire hydrant locations shall be identified based upon the Florida State Plane Coordinate System. Submit an electronic file containing this data to the St. Johns County Fire-Rescue Department.
3. "As-Built Certification by Registered Professional," must be completed by the project Engineer of Record.
4. FDEP Wastewater Distribution System approval.
5. FDEP Water System Distribution System approval.

**General**

1. Must be prepared and certified by either a Florida Registered Land Surveyor or a Florida Registered Engineer.
2. Each sheet must be labeled "AS-BUILT" in one inch high bold letters in the bottom right hand corner.
3. Name, address, registration number of Florida Registered Land Surveyor or Florida Registered Engineer responsible for preparing "AS-BUILT."
4. North Arrow.
5. Street names.

6. Easements as shown on approved paving and drainage drawings must be depicted on "AS-BUILT."
7. Location, elevation and datum of the Benchmark used.

#### **AS-BUILT DRAWING REQUIREMENTS**

- A. As-built drawings shall be based on all engineering design drawings as released for construction, and shall include all detail sheets and depict any deviations. Re-drafting for the purpose of As-builts will not be accepted unless specifically approved by the owner.
- B. The following dimensional references must be depicted on As-built drawings:
  1. Station Numbers with offsets.
  2. Ties.
  3. Lot Numbers.
  4. Street Names.
  5. North Arrow.
  6. Scale.
- C. Locations, elevations, sizes, types, and materials of the following must be accurately shown and labeled (as applicable) on the As-built drawings:
  1. Manholes (include specialty lining material, pipe invert, manhole rim and bottom elevations).
  2. Water and Force Main Valves.
  3. Water and Sewer services.
  4. Fire Hydrants and all associated structures.
  5. Fittings.
  6. Electrical Wiring and conduits (power and control)
- D. All water and sewer mains must be identified on the as-built drawings by their size, material, and DR/SDR classification. Horizontal locations and top of pipe elevations must also be labeled every 300 linear feet.
- E. The requirements listed in the "St. Johns County Development Services - As-Built Survey Requirements and Acceptance Procedures" section of this Contract and Specification Book will also apply.
- F. Electronic file requirements are listed on the documents titled "St. Johns County Utility Department Electronic File Standards" and "St. Johns County Utility Department Electronic File Submittal Form" both of which are included. The Contractor must comply with and complete the Electronic File Submittal form which is to be submitted with the electronic as-built files.

**ST. JOHNS COUNTY UTILITY DEPARTMENT  
ELECTRONIC DRAWING FILE STANDARDS**



All As-Built drawings submitted to the St. Johns County Utility Department shall be accompanied by an electronic copy on a compact disk (CD). The electronic files must meet the following requirements:

**File Format**

The acceptable file formats are as follows:

CAD drawings..... DWG (AutoCAD drawing file)  
DXF (Drawing Interchange Format)

GIS layers..... ARC/INFO Export file  
ArcView Shape files

**Coordinate System**

All Plan drawings and GIS layer files must be submitted in the following projected coordinate system:

**State Plane Feet  
NAD 83  
Florida East Zone (901)**

**Layering Format**

All Utility features on Plan drawings must be separated from other drawing features and placed on individual layers as follows:

Water mains  
Water service laterals  
Water point features (fire hydrants, meters, valves, fittings, etc.)  
Water text (size and material labels, dimensions, notes, etc.)  
Water as-built markups  
Sewer pressure mains  
Sewer gravity mains  
Sewer service laterals  
Sewer point features (lift stations, manholes, valves, fittings, etc.)  
Sewer text (size and material labels, dimensions, notes, etc.)  
Sewer as-built markups

Specific layer names are not required, but a list of layer names for the feature/entity layers listed above must be included with the submittal.

**A completed Electronic Data Submittal form must accompany all drawing files submitted to the Utility Department.**

**ST. JOHNS COUNTY UTILITY DEPARTMENT  
ELECTRONIC DRAWING FILE  
SUBMITTAL FORM**



**Include a completed copy of this form with ALL electronic files submitted.**

Company Name: \_\_\_\_\_ Project: \_\_\_\_\_  
File Name(s): \_\_\_\_\_

**Contact Person:**

Name: \_\_\_\_\_ Phone: \_\_\_\_\_  
Title: \_\_\_\_\_ Email: \_\_\_\_\_

**Format:**    \_\_\_ DWG (AutoCAD drawing file)  
                  Version: \_\_\_\_\_  
  
              \_\_\_ E00 (ARC/INFO export file)  
  
              \_\_\_ SHP (ArcView shape file)  
                  Include all files (.shp, .shx, .dbf, etc.)

**Layer Identification for Plan drawing sheets:**

| <u>Layer Name</u> | <u>Utility features/entities</u>                                       |
|-------------------|------------------------------------------------------------------------|
| _____             | Water mains                                                            |
| _____             | Water service laterals                                                 |
| _____             | Water point features (fire hydrants, meters, valves, fittings, etc.)   |
| _____             | Water text (size and material labels, dimensions, notes, etc.)         |
| _____             | Water as-built markups                                                 |
| _____             | Sewer pressure mains                                                   |
| _____             | Sewer gravity mains                                                    |
| _____             | Sewer service laterals                                                 |
| _____             | Sewer point features (lift stations, manholes, valves, fittings, etc.) |
| _____             | Sewer text (size and material labels, dimensions, notes, etc.)         |
| _____             | Sewer as-built markups                                                 |

For technical questions regarding this request please contact:

Tom Tibbitts  
Utility Information Coordinator  
St. Johns County Utility Dept.  
(904) 209-2636  
Fax: (904) 209-2637  
Email: ttibbitts@sjcfl.us

- E. Only those days of service approved by Project Director will be credited to fulfill the specified minimum services.
- F. When specified in individual specification sections, manufacturer's onsite services shall include:
  - 1. Assistance during product (system, subsystem, or component) installation to include observation, guidance, instruction of Contractor's assembly, erection, installation or application procedures.
  - 2. Inspection, checking, and adjustment as required for product (system, subsystem, or component) to function as warranted by manufacturer and necessary to furnish Manufacturer's Certificate of Proper Installation.
  - 3. Providing, on a daily basis, copies of all manufacturers' representatives field notes and data to Project Director.
  - 4. Revisiting the Site as required to correct problems and until installation and operation are acceptable to Project Director.
  - 5. Resolution of assembly or installation problems attributable to, or associated with, respective manufacturer's products and systems.
  - 6. Assistance during functional and performance testing, and facility startup and evaluation.
  - 7. Training of Owner's personnel in the operation and maintenance of respective product as required.
  - 8. Additional requirements may be specified elsewhere.

### 3.02 MANUFACTURER'S CERTIFICATE OF COMPLIANCE

- A. When so specified, a Manufacturer's Certificate of Compliance, a copy of which is attached to this section, shall be completed in full, signed by the entity supplying the product, material, or service, and submitted prior to shipment of product or material or the execution of the services.
- B. Project Director or Engineer may permit use of certain materials or assemblies prior to sampling and testing if accompanied by accepted certification of compliance.
- C. Such form shall certify that the proposed product, material, or service complies with that specified. Attach supporting reference data, affidavits, and certifications as appropriate.
- D. May reflect recent or previous test results on material or product, if acceptable to Project Director or Engineer.

### 3.03 MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

- A. When so specified, a Manufacturer's Certificate of Proper Installation form, a copy of which is attached to this section, shall be completed and signed by the equipment manufacturer's representative.

- B. Such form shall certify that the signing party is a duly authorized representative of the manufacturer, is empowered by the manufacturer to inspect, approve, and operate their equipment and is authorized to make recommendations required to assure that the equipment is complete and operational.

### 3.04 TRAINING

A. General:

1. Furnish manufacturers' representatives for detailed classroom and hands-on training to Owner's personnel on operation and maintenance of specified product (system, subsystem, component) and as may be required in applicable Specifications.
2. Furnish trained, articulate personnel to coordinate and expedite training, to be present during training coordination meetings with Owner, and familiar with operation and maintenance manual information specified in Section 01 78 23, Operation and Maintenance Data.
3. Manufacturer's representative shall be familiar with facility operation and maintenance requirements as well as with specified equipment.
4. Furnish complete training materials, to include operation and maintenance data, to be retained by each trainee.

B. Training Schedule:

1. List specified equipment and systems that require training services and show:
  - a. Respective manufacturer.
  - b. Estimated dates for installation completion.
  - c. Estimated training dates.
2. Allow for multiple sessions when several shifts are involved.
3. Adjust schedule to ensure training of appropriate personnel as deemed necessary by Owner, and to allow full participation by manufacturers' representatives. Adjust schedule for interruptions in operability of equipment.
4. Coordinate with Section 01 32 00, Construction Progress Documentation, and Section 01 91 14, Equipment Testing and Facility Startup.

C. Lesson Plan: When manufacturer or vendor training of Owner personnel is specified, prepare a lesson plan for each required course containing the following minimum information:

1. Title and objectives.
2. Recommended attendees (e.g., managers, engineers, operators, maintenance).



3. Course description, outline of course content, and estimated class duration.
4. Format (e.g., lecture, self-study, demonstration, hands-on).
5. Instruction materials and equipment requirements.
6. Resumes of instructors providing the training.

D. Pre-startup Training;

1. Coordinate training sessions with Owner's operating personnel and manufacturers' representatives, and with submission of operation and maintenance manuals in accordance with Section 01 78 23, Operation and Maintenance Data.
2. Complete at least 14 days prior to beginning of facility startup.

E. Post-startup Training: If required in Specifications, furnish and coordinate training of Owner's operating personnel by respective manufacturer's representatives.

3.05 SUPPLEMENTS

A. The supplements listed below, following "End of Section", are part of this Specification.

1. Form: Manufacturer's Certificate of Compliance.
2. Form: Manufacturer's Certificate of Proper Installation.

**END OF SECTION**

## MANUFACTURER'S CERTIFICATE OF COMPLIANCE

OWNER:

PRODUCT, MATERIAL, OR SERVICE  
SUBMITTED:

PROJECT NAME:

PROJECT NO:

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I hereby certify that the above-referenced product, material, or service called for by the contract for the named project will be furnished in accordance with all applicable requirements. I further certify that the product, material, or service are of the quality specified and conform in all respects with the contract requirements, and are in the quantity shown.

Date of Execution: \_\_\_\_\_, 20\_\_

Manufacturer: \_\_\_\_\_

Manufacturer's Authorized Representative (*print*): \_\_\_\_\_

\_\_\_\_\_  
(Authorized Signature)

MARCH 12, 2019

MANUFACTURERS' CERTIFICATE  
OF COMPLIANCE  
01 43 33 SUPPLEMENT - 1

## MANUFACTURER'S CERTIFICATE OF PROPER INSTALLATION

OWNER \_\_\_\_\_ EQPT SERIAL NO: \_\_\_\_\_

EQPT TAG NO: \_\_\_\_\_ EQPT/SYSTEM: \_\_\_\_\_

PROJECT NO: \_\_\_\_\_ SPEC. SECTION: \_\_\_\_\_

I hereby certify that the above-referenced equipment/system has been:

(Check Applicable)

- ☐ Installed in accordance with Manufacturer's recommendations.
- ☐ Inspected, checked, and adjusted.
- ☐ Serviced with proper initial lubricants.
- ☐ Electrical and mechanical connections meet quality and safety standards.
- ☐ All applicable safety equipment has been properly installed.
- ☐ Functional tests.
- ☐ System has been performance tested, and meets or exceeds specified performance requirements. (When complete system of one manufacturer)

Note: Attach any performance test documentation from manufacturer.

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

I, the undersigned Manufacturer's Representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and operate his equipment and (iii) authorized to make recommendations required to assure that the equipment furnished by the manufacturer is complete and operational, except as may be otherwise indicated herein. I further certify that all information contained herein is true and accurate.

Date: \_\_\_\_\_, 20\_\_

Manufacturer: \_\_\_\_\_

By Manufacturer's Authorized Representative: \_\_\_\_\_

(Authorized Signature)

MARCH 12, 2019

MANUFACTURERS' CERTIFICATE  
OF PROPER INSTALLATION  
01 43 33 SUPPLEMENT - 1

**SECTION 01 45 16.13**  
**CONTRACTOR QUALITY CONTROL**

**PART 1      GENERAL**

**1.01      REFERENCES**

A. The following is a list of standards which may be referenced in this Section:

1. ASTM International (ASTM):
  - a. D3740, Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
  - b. E329, Use in the Evaluation of Testing and Inspection Agencies as Used in Construction.

**1.02      DEFINITIONS**

A. Contractor Quality Control (CQC): The means by which Contractor ensures that the construction, to include that performed by subcontractors and suppliers, complies with the requirements of the Contract.

**1.03      SUBMITTALS**

A. Informational Submittals:

1. CQC Plan: Submit, not later than 30 days after receipt of Notice to Proceed.
2. CQC Report: Submit, weekly, an original and one copy in report form.

**1.04      OWNER'S QUALITY ASSURANCE**

A. All Work is subject to Owner's quality assurance inspection and testing at all locations and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract Documents.

B. Owner's quality assurance inspections and tests are for the sole benefit of Owner and do not:

1. Relieve Contractor of responsibility for providing adequate quality control measures;
2. Relieve Contractor of responsibility for damage to or loss of the material before acceptance;
3. Constitute or imply acceptance; or
4. Affect the continuing rights of Owner after acceptance of the completed Work.

- C. The presence or absence of a quality assurance inspector does not relieve Contractor from any Contract requirement.
- D. Promptly furnish all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Project Director.
- E. Owner may charge Contractor for any additional cost of inspection or test when Work is not ready at the time specified by Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. Quality assurance inspections and tests will be performed in a manner that will not unnecessarily delay the Work.

## **PART 2 PRODUCTS (NOT USED)**

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Maintain an adequate inspection system and perform such inspections as will ensure that the Work conforms to the Contract Documents.
- B. Maintain complete inspection records and make them available at all times to Owner and Engineer.
- C. The quality control system shall consist of plans, procedures, and organization necessary to produce an end product that complies with the Contract Documents. The system shall cover all construction and demolition operations, both onsite and offsite, including Work by subcontractors, fabricators, suppliers and purchasing agents, and shall be keyed to the proposed construction sequence.

### **3.02 COORDINATION MEETING**

- A. After the Preconstruction Conference, but before start of construction, and prior to acceptance of the CQC Plan, schedule a meeting with Owner to discuss the quality control system.
- B. Develop a mutual understanding of the system details, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite Work, and the interrelationship of Contractor's management and control with the Owner's Quality Assurance.
- C. There may be occasions when subsequent conferences may be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures that may require corrective action by Contractor.

### 3.03 QUALITY CONTROL ORGANIZATION

#### A. CQC System Manager:

1. Designate an individual within Contractor's organization who will be responsible for overall management of CQC and have the authority to act in CQC matters for the Contractor.
2. CQC System Manager may perform other duties on the Project.
3. CQC System Manager shall be an experienced construction person, with a minimum of 3 years construction experience on similar type Work.
4. CQC System Manager shall report to the Contractor's project manager or someone higher in the organization. Project manager in this context shall mean the individual with responsibility for the overall quality and production management of the Project.
5. CQC System Manager shall be onsite during construction; periods of absence may not exceed 2 weeks at any one time.
6. Identify an alternate for CQC System Manager to serve with full authority during the System Manager's absence. The requirements for the alternate will be the same as for designated CQC System Manager.

#### B. CQC Staff:

1. Designate a CQC staff, available at the Site at all times during progress, with complete authority to take any action necessary to ensure compliance with the Contract. CQC staff members shall be subject to acceptance by Engineer.
2. CQC staff shall take direction from CQC System Manager in matters pertaining to QC.
3. CQC staff must be of sufficient size to ensure adequate QC coverage of Work phases, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by experience and technical training to perform their assigned QC responsibilities and must be allowed sufficient time to carry out these responsibilities.
4. The actual strength of the CQC staff may vary during any specific Work period to cover the needs of the Project. Add additional staff when necessary for a proper CQC organization.

- C. Organizational Changes: Obtain Project Director's acceptance before replacing any member of the CQC staff. Requests for changes shall include name, qualifications, duties; and responsibilities of the proposed replacement.

### 3.04 CONTRACTOR QUALITY CONTROL PLAN

#### A. General:

1. Plan shall identify personnel, procedures, control, instructions, test, records, and forms to be used.
2. An interim plan for the first 30 days of operation will be considered.
3. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of Work to be started.
4. Work outside of the features of Work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of Work to be started.

#### B. Content:

1. Plan shall cover the intended CQC organization for the entire Contract and shall include the following, as a minimum:
  - a. Organization: Description of the quality control organization, including a chart showing lines of authority.
  - b. CQC Staff: The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a QC function.
  - c. Letters of Authority: A copy of a letter to the CQC System Manager signed by an authorized official of the firm, describing the responsibilities and delegating sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop Work which is not in compliance with the Contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities and responsibilities. Copies of these letters will also be furnished to Owner.
  - d. Submittals: Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers and purchasing agents.
  - e. Testing: Control, verification and acceptance testing procedures for each specific test to include the test name, frequency, specification paragraph containing the test requirements, the personnel and laboratory responsible for each type of test, and an estimate of the number of tests required.
  - f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests, including documentation.

- g. Procedures for tracking deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.
  - h. Reporting procedures, including proposed reporting formats; include a copy of the CQC report form.
- C. Acceptance of Plans: Acceptance of the Contractor's basic and addendum CQC plans is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. Owner reserves the right to require Contractor to make changes in the CQC plan and operations including removal of personnel, as necessary, to obtain the quality specified.
- D. Notification of Changes: After acceptance of the CQC plan, Contractor shall notify Engineer, in writing, a minimum of 7 calendar days prior to any proposed change. Proposed changes are subject to acceptance by Owner.

### 3.05 CONTRACTOR QUALITY CONTROL REPORT

- A. As a minimum, prepare a CQC report for every 60 calendar days. Account for all days throughout the life of the Contract. Reports shall be signed and dated by CQC System Manager. Include copies of test reports and copies of reports prepared by QC staff.
- B. Maintain current records of quality control operations, activities, and tests performed, including the Work of subcontractors and suppliers.
- C. Records shall be on an acceptable form and shall be a complete description of inspections, the results of inspections, daily activities, tests, and other items, including but not limited to the following:
  - 1. Contractor/subcontractor and their areas of responsibility.
  - 2. Operating plant/equipment with hours worked, idle, or down for repair.
  - 3. Work performed today, giving location, description, and by whom. When a network schedule is used, identify each phase of Work performed each day by activity number.
  - 4. Test and/or control activities performed with results and references to specifications/plan requirements.
  - 5. Material received with statement as to its acceptability and storage.
  - 6. Identify submittals reviewed, with Contract reference, by whom, and action taken.
  - 7. Offsite surveillance activities, including actions taken.
  - 8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.
  - 9. List instructions given/received and conflicts in Drawings and/or Specifications.
  - 10. Contractor's verification statement.



11. Indicate a description of trades working on the Project; the number of personnel working; weather conditions encountered; and any delays encountered.
12. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in file work and workmanship comply with the Contract.

### 3.06 SUBMITTAL QUALITY CONTROL

- A. Submittals shall be as specified in Section 01 33 00, Submittal Procedures. The CQC organization shall be responsible for certifying that all submittals are in compliance with the Contract requirements. Owner will furnish copies of test report forms upon request by Contractor. Contractor may use other forms as approved.

### 3.07 TESTING QUALITY CONTROL

#### A. Testing Procedure:

1. Perform tests specified or required to verify that control measures are adequate to provide a product which conforms to Contract requirements. Procure services of a licensed testing laboratory. Perform the following activities and record the following data:
  - a. Verify testing procedures comply with contract requirements.
  - b. Verify facilities and testing equipment are available and comply with testing standards.
  - c. Check test instrument calibration data against certified standards.
  - d. Verify recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.
  - e. Documentation:
    - 1) Record results of all tests taken, both passing and failing, on the CQC report for the date taken.
    - 2) Include specification paragraph reference, location where tests were taken, and the sequential control number identifying the test.
    - 3) Actual test reports may be submitted later, if approved by Engineer, with a reference to the test number and date taken.
    - 4) Provide directly to Engineer an information copy of tests performed by an offsite or commercial test facility. Test results shall be signed by an engineer registered in the state where the tests are performed.
    - 5) Failure to submit timely test reports, as stated, may result in nonpayment for related Work performed and disapproval of the test facility for this Contract.

- B. Testing Laboratories: Laboratory facilities, including personnel and equipment, utilized for testing soils, concrete, asphalt and steel shall meet criteria detailed in ASTM D3740 and ASTM E329, and be accredited by the American Association of Laboratory Accreditation (AALA), National Institute of Standards and Technology (NIST), National Voluntary Laboratory Accreditation Program (NVLAP), the American Association of State Highway and Transportation Officials (AASHTO), or other approved national accreditation authority. Personnel performing concrete testing shall be certified by the American Concrete Institute (ACI).

### 3.08 COMPLETION INSPECTION

- A. CQC System Manager shall conduct an inspection of the Work at the completion of all Work or any milestone established by a completion time stated in the Contract.
- B. Punchlist:
1. CQC System Manager shall develop a punchlist of items which do not conform to the Contract requirements.
  2. Include punchlist in the CQC report, indicating the estimated date by which the deficiencies will be corrected.
  3. CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected and so notify the Owner.
  4. These inspections and any deficiency corrections required will be accomplished within the time stated for completion of the entire Work or any particular increment thereof if the Project is divided into increments by separate completion dates.

**END OF SECTION**

**SECTION 01 50 00**  
**TEMPORARY FACILITIES AND CONTROLS**

**PART 1      GENERAL**

**1.01      REFERENCES**

A.    The following is a list of standards which may be referenced in this section:

1.    American Association of Nurserymen (AAN): American Standards for Nursery Stock.
2.    Federal Emergency Management Agency (FEMA).
3.    National Fire Prevention Association (NFPA): 241, Standard for Safeguarding Construction, Alteration, and Demolition Operations.
4.    Telecommunications Industry Association (TIA); Electronic Industries Alliance (EIA): 568B, Commercial Building Telecommunications Cabling Standard.
5.    U.S. Department of Agriculture (USDA): Urban Hydrology for Small Watersheds.
6.    U.S. Weather Bureau: Rainfall-Frequency Atlas of the U.S. for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years.

**1.02      SUBMITTALS**

A.    Informational Submittals:

1.    Copies of permits and approvals for construction as required by Laws and Regulations and governing agencies.
2.    Temporary Construction Submittals:
  - a.    Traffic and Pedestrian Control and Routing Plans: As specified herein, and proposed revisions thereto.
  - b.    Plan for maintenance of existing facility operations.
3.    Temporary Control Submittals: Plan for disposal of waste materials and intended haul routes.

**1.03      MOBILIZATION**

A.    Mobilization shall normally include, but not be limited to, these principal items:

1.    Obtaining required permits.
2.    Where required, installing temporary construction power, wiring, and lighting facilities.

3. Providing onsite sanitary facilities and potable water facilities as specified and as required by Laws and Regulations, and governing agencies.
  4. Posting OSHA required notices and establishing safety programs and procedures.
  5. Having Contractor's superintendent at Site full time.
- B. If no area is available at the project site on the Owner's property for Contractor's temporary facilities, the Contractor shall then provide lands and access to lands for temporary facilities for use by Contractor for duration of the Project.

#### 1.04 PROTECTION OF WORK AND PROPERTY

- A. Comply with Owner's safety rules while on Owner's property.
- B. Keep Owner informed of serious onsite accidents and related claims.
- C. Use of Explosives: No blasting or use of explosives will be allowed onsite.

#### 1.05 VEHICULAR TRAFFIC

- A. Traffic Control Plan: Contractor shall develop a traffic control plan for project sites that are located adjacent to private and public roads. Adhere to traffic control plan that has been reviewed and accepted by Project Director. Change to this plan shall be made only by written approval of appropriate public authority. Secure approvals for necessary changes so as not to delay progress of the Work.

### PART 2 PRODUCTS (NOT USED)

### PART 3 EXECUTION

#### 3.01 TEMPORARY UTILITIES

- A. Power:
  1. Electric power will be available at or near Sites as shown. Determine type and amount available and make arrangements for obtaining temporary electric power service, metering equipment, and pay all costs for electric power used during contract period, except for portions of the Work designated in writing by Engineer as substantially complete.
  2. Cost of electric power will be borne by Contractor.

- B. Lighting: Provide temporary lighting to meet applicable safety requirements to allow erection, application, or installation of materials and equipment, and observation or inspection of the Work.
- C. Heating, Cooling, and Ventilating:
  - 1. Provide as required to maintain adequate environmental conditions to facilitate progress of the Work, to meet specified minimum conditions for installation of materials, and to protect materials, equipment, and finishes from damage due to temperature or humidity.
  - 2. Provide adequate forced air ventilation of enclosed areas to cure installed materials, to dispense humidity, and to prevent hazardous accumulations of dust, fumes, vapors, or gases.
  - 3. Pay all costs of installation, maintenance, operation, removal, and fuel consumed.
  - 4. Provide portable unit heaters, complete with controls, oil- or gas-fired, and suitably vented to outside as required for protection of health and property.
  - 5. If permanent natural gas piping is used for temporary heating units, do not modify or reroute gas piping without approval of utility company. Provide separate gas metering as required by utility.
- D. Water:
  - 1. Water will be available at each Site. The Owner will not charge the Contractor for the water.
  - 2. Hydrant Water:
    - a. May be available from nearby hydrants. Secure written permission for connection and use from water department and meet requirements for use. Notify fire department before obtaining water from fire hydrants.
    - b. Use only special hydrant-operating wrenches to open hydrants. Make certain hydrant valve is open full, since cracking valve causes damage to hydrant. Repair damaged hydrants and notify appropriate agency as quickly as possible. Hydrants shall be completely accessible to fire department at all times.
    - c. Include costs to connect and transport water to construction areas in Contract Price.
  - 3. Provide temporary facilities and piping required to bring water to point of use and remove when no longer needed. Contractor must obtain metering device from Owner (no charge).
- E. Sanitary and Personnel Facilities: Provide and maintain facilities for Contractor's employees, Subcontractors, and all other onsite employers' employees. Service, clean, and maintain facilities and enclosures.

- F. Telephone Service: Contractor: Contractor shall provide own phone service at the project site. Onsite telephone service is not available
- G. Fire Protection: Furnish and maintain on Site adequate firefighting equipment capable of extinguishing incipient fires. Comply with applicable parts of NFPA 241.

### 3.02 PROTECTION OF WORK AND PROPERTY

#### A. General:

1. Perform Work within right-of-way and easements in a systematic manner that minimizes inconvenience to property owners and the public.
2. No residence or business shall be cut off from vehicular traffic for a period exceeding 4 hours, unless special arrangements have been made.
3. Maintain in continuous service all existing oil and gas pipelines, underground power, telephone or communication cable, water mains, irrigation lines, sewers, poles and overhead power, and all other utilities encountered along line of the Work, unless other arrangements satisfactory to owners of said utilities have been made.
4. Where completion of the Work requires temporary or permanent removal or relocation of existing utility, coordinate all activities with owner of said utility and perform all work to their satisfaction.
5. Protect, shore, brace, support, and maintain underground pipes, conduits, drains, and other underground utility construction uncovered or otherwise affected by construction operations.
6. Keep fire hydrants and water control valves free from obstruction and available for use at all times.
7. In areas where Contractor's operations are adjacent to or near a utility, such as gas, telephone, television, electric power, water, sewer, or irrigation system, and such operations may cause damage or inconvenience, suspend operations until arrangements necessary for protection have been made by Contractor.
8. Notify property owners and utility offices that may be affected by construction operation at least 2 days in advance: Before exposing a utility, obtain utility owner's permission. Should service of utility be interrupted due to Contractor's operation, notify proper authority immediately. Cooperate with said authority in restoring service as promptly as possible and bear costs incurred.
9. Do not impair operation of existing sewer system. Prevent construction material, pavement, concrete, earth, volatile and corrosive wastes, and other debris from entering sewers, pump stations, or other sewer structures.
10. Maintain original Site drainage wherever possible.

- B. Site Security: Some project sites may be located in unsecured areas. Provide and maintain additional temporary security fences as necessary to protect the Work and Contractor-furnished products not yet installed.
- C. Barricades and Lights:
  - 1. Provide as necessary to prevent unauthorized entry to construction areas and affected roads, streets, and alleyways, inside and outside of fenced area, and as required to ensure public safety and the safety of Contractor's employees, other employer's employees, and others who may be affected by the Work.
  - 2. Provide to protect existing facilities and adjacent properties from potential damage.
  - 3. Locate to enable access by facility operators and property owners.
  - 4. Protect streets, roads, highways, and other public thoroughfares that are closed to traffic by effective barricades with acceptable warning signs.
  - 5. Locate barricades at the nearest intersecting public thoroughfare on each side of the blocked section.
  - 6. Illuminate barricades and obstructions with warning lights from sunset to sunrise.
- D. Signs and Equipment:
  - 1. Conform to requirements of manual published by the Florida Department of Transportation.
  - 2. Provide at obstructions, such as material piles and equipment.
  - 3. Use to alert general public of construction hazards, which would include surface irregularities, unramped walkways, grade changes, and trenches or excavations in roadways and in other public access areas.
- E. Trees and Plantings:
  - 1. Protect from damage and preserve trees, shrubs, and other plants outside limits of the Work and within limits of the Work, which are designated on the Drawings to remain undisturbed.
    - a. Where practical, tunnel beneath trees when on or near line of trench.
    - b. Employ hand excavation as necessary to prevent tree injury.
    - c. Do not stockpile materials or permit traffic within drip lines of trees.
    - d. Provide and maintain temporary barricades around trees.
    - e. Water vegetation as necessary to maintain health.
    - f. Cover temporarily exposed roots with wet burlap, and keep burlap moist until soil is replaced around roots.

- g. No trees, except those specifically shown on Drawings to be removed, shall be removed without written approval of Engineer.
    - h. Dispose of removed trees in a legal manner off the Site.
  - 2. Balling and burlapping of trees indicated for replacement shall conform to recommended specifications set forth in the American Standards for Nursery Stock, published by American Association of Nurserymen. All balls shall be firm and intact and made-balls will not be accepted. Handle ball and burlap trees by ball and not by top.
  - 3. In event of damage to bark, trunks, limbs, or roots of plants that are not designated for removal, treat damage by corrective pruning, bark tracing, application of a heavy coating of tree paint, and other accepted horticultural and tree surgery practices.
  - 4. Replace each plant that dies as a result of construction activities.
- F. Existing Structures:
  - 1. Where Contractor contemplates removal of small structures such as mailboxes, signposts, and culverts that interfere with Contractor's operations, obtain approval of property owner and Project Director.
  - 2. Move mailboxes to temporary locations accessible to postal service.
  - 3. Replace items removed in their original location and a condition equal to or better than original.
- G. Finished Construction: Protect finished floors and concrete floors exposed as well as those covered with composition tile or other applied surfacing.
- H. Waterways:
  - 1. Keep ditches, culverts, and natural drainages continuously free of construction materials and debris.
  - 2. Dewatering: Construct, maintain, and operate cofferdams, channels, flume drains, sumps, pumps, or other temporary diversion and protection works. Furnish materials required, install, maintain, and operate necessary pumping and other equipment for the environmentally safe removal and disposal of water from the various parts of the Work. Maintain foundations and parts of the Work free from water.
- I. Archaeological Finds:
  - 1. If prehistoric artifacts such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the Contractor shall cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries.



2. The Contractor shall immediately contact the Project Director concerning the discovery. The Project Director, in concert with the Owner, will contact the Florida Department of State, Division of Historical Resources, Compliance and Review at (850) 245-6333 or (800) 847-7278, as well as the appropriate funding agency office.
3. The Contractor's project activities shall not resume until directed to do so by the Project Director.
4. In the event that unmarked human remains are encountered during the permitted activities, Contractor shall immediately stop work and notify proper authorities in accordance with Section 872.05, *Florida Statute*.

### 3.03 TEMPORARY CONTROLS

#### A. Air Pollution Control:

1. Minimize air pollution from construction operations.
2. Burning of waste materials, rubbish, or other debris will not be permitted on or adjacent to Site.
3. Conduct operations of dumping rock and of carrying rock away in trucks to cause a minimum of dust. Give unpaved streets, roads, detours, or haul roads used in construction area a dust-preventive treatment or periodically water to prevent dust. Strictly adhere to applicable environmental regulations for dust prevention.
4. Provide and maintain temporary dust-tight partitions, bulkheads, or other protective devices during construction to permit normal operation of existing facilities. Construct partitions of plywood, insulating board, plastic sheets, or similar material. Construct partitions in such a manner that dust and dirt from demolition and cutting will not enter other parts of existing building or facilities. Remove temporary partitions as soon as need no longer exists.

#### B. Noise Control: Provide acoustical barriers so noise emanating from tools or equipment will not exceed legal noise levels.

#### C. Water Pollution Control:

1. Divert sanitary sewage and nonstorm waste flow interfering with construction and requiring diversion to sanitary sewers. Do not cause or permit action to occur which would cause an overflow to existing waterway.
2. Prior to commencing excavation and construction, obtain Project Director's agreement with detailed plans showing procedures intended to handle and dispose of sewage, groundwater, and stormwater flow, including dewatering pump discharges.

3. Comply with procedures outlined in U.S. Environmental Protection Agency manuals entitled, "Guidelines for Erosion and Sedimentation Control Planning" and "Implementation, Processes, Procedures, and Methods to Control Pollution Resulting from All Construction Activity," and "Erosion and Sediment Control-Surface Mining in Eastern United States."
  4. Do not dispose of volatile wastes such as mineral spirits, oil, chemicals, or paint thinner in storm or sanitary drains. Disposal of wastes into streams or waterways is prohibited. Provide acceptable containers for collection and disposal of waste materials, debris, and rubbish.
- D. Erosion, Sediment, and Flood Control: Provide, maintain, and operate temporary facilities to control erosion and sediment releases, and to protect the Work and existing facilities from flooding during construction period.

#### 3.04 ACCESS ROADS AND DETOURS

- A. All areas are accessible from local road network.
- B. Coordinate with Project Director detours and other operations affecting traffic and access. Provide at least 72 hours' notice to Project Director of operations that will alter access to the Site.

#### 3.05 PARKING AREAS

- A. Control vehicular parking to preclude interference with public traffic or parking, access by emergency vehicles, Owner's operations, or construction operations.

#### 3.06 VEHICULAR TRAFFIC

- A. Comply with Laws and Regulations regarding closing or restricting use of public streets or highways. No public or private road shall be closed, except by written permission of proper authority. Assure the least possible obstruction to traffic and normal commercial pursuits.
- B. Conduct the Work to interfere as little as possible with public travel, whether vehicular or pedestrian.
- C. Whenever it is necessary to cross, close, or obstruct roads, driveways, and walks, whether public or private, provide and maintain suitable and safe bridges, detours, or other temporary expedients for accommodation of public and private travel.

- D. In making street crossings, do not block more than one-half the street at a time. Whenever possible, widen shoulder on opposite side to facilitate traffic flow. Provide temporary surfacing on shoulders as necessary.
- E. Maintain top of backfilled trenches before they are paved, to allow normal vehicular traffic to pass over. Provide temporary access driveways where required. Cleanup operations shall follow immediately behind backfilling.
- F. When flaggers and guards are required by regulation or when deemed necessary for safety, furnish them with approved orange wearing apparel and other regulation traffic control devices.
- G. Notify fire department and police department before closing street or portion thereof. Notify said departments when streets are again passable for emergency vehicles. Do not block off emergency vehicle access to consecutive arterial crossings or dead-end streets, in excess of 300 linear feet, without written permission from fire department. Conduct operations with the least interference to fire equipment access, and at no time prevent such access. Furnish Contractor's night emergency telephone numbers to police department.

### 3.07 CLEANING DURING CONSTRUCTION

- A. In accordance with Contract Conditions, as may be specified in other Specification sections, and as required herein.
- B. Wet down exterior surfaces prior to sweeping to prevent blowing of dust and debris. At least weekly, sweep all floors (basins, tunnels, platforms, walkways, roof surfaces), and pick up all debris and dispose.
- C. Provide approved containers for collection and disposal of waste materials, debris, and rubbish. At least at weekly intervals, dispose of such waste materials, debris, and rubbish offsite.
- D. At least weekly, brush sweep entry drive, roadways, and all other streets and walkways affected by the Work and where adjacent to the Work.

### END OF SECTION

**SECTION 01 57 13**  
**TEMPORARY EROSION AND SEDIMENT CONTROL**

**PART 1      GENERAL**

**1.01      WORK OF THIS SECTION**

- A. This section covers work necessary for stabilization of soil to prevent erosion during and after construction and land disturbing activities. The work shall include the furnishing of all labor, materials, tools, and equipment to perform the work and services necessary as herein specified and as indicated on the Drawings. This shall include installation, maintenance, and final removal of all temporary soil erosion and sediment control measures.
- B. The minimum areas requiring soil erosion and sediment control measures are indicated on the Drawings. The right is reserved to modify the use, location, and quantities of soil erosion and sediment control measures based on activities of the Contractor and as the Project Director considers to be to the best interest of the Owner.
- C. See additional information noted on the Drawings.

**1.02      GENERAL**

- A. All activities shall conform to the Standard Erosion Control Specification: Florida Department of Transportation Design Standard, latest version; FDEP construction permit; and the Drawings. In the event of a conflict, the more stringent requirement shall apply.
- B. Soil erosion stabilization and sedimentation control consist of the following elements:
  - 1. Maintenance of existing permanent or temporary storm drainage piping and channel systems, as necessary.
  - 2. Construction of new permanent and temporary storm drainage piping and channel systems, as necessary.
  - 3. Construction of temporary erosion control facilities such as silt fences, check dams, etc.
  - 4. Topsoil and Seeding:
    - a. Placement and maintenance of Temporary Seeding on all areas disturbed by construction.
    - b. Placement of permanent topsoil, fertilizer, and seed, etc., in all areas not occupied by structures or pavement, unless shown otherwise.
  - 5. Soil Stabilization Seeding: Placement of fertilizer and seed, etc., in areas as specified hereinafter.

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- C. The Contractor shall be responsible for phasing Work in areas allocated for his exclusive use during this Project, including any proposed stockpile areas, to restrict sediment transport. This will include installation of any temporary erosion control devices, ditches, or other facilities.
- D. Permanent stockpiling of material is not permitted. Sediment transport and erosion from working stockpiles shall be controlled and restricted from moving beyond the immediate stockpile area by construction of temporary toe-of-slope ditches and accompanying silt fences, as necessary. The Contractor shall keep these temporary facilities in operational condition by regular cleaning, regrading, and maintenance. Stockpiles remaining in place longer than 14 calendar days shall be removed from the construction site.
- E. The Contractor shall maintain all elements of the Soil Erosion Stabilization and Sedimentation Control systems and facilities to be constructed during this Project for the duration of his activities on this Project. Formal inspections made jointly by the Contractor and the Project Director shall be conducted every 2 weeks to evaluate the Contractor's conformance to the requirements of both these Specifications and St. John's County Regulations.
- F. All silt traps shall be cleaned of collected sediment after every storm or as determined from the biweekly inspections. Cleaning shall be done in a manner that will not direct the sediment into the storm drain piping system. Removed sediment shall be taken to an area selected by the Project Director where it can be cleaned of sticks and debris, then allowed to dry. Final sediment and debris disposal shall be offsite.
- G. Replacement or repair of failed or overloaded silt fences, check dams, or other temporary erosion control devices shall be accomplished by the Contractor within 2 days after receiving written notice from the Project Director.
- H. Unpaved earth drainage ditches shall be regraded as needed to maintain original grade and remove sediment buildup. If a ditch becomes difficult to maintain, the Contractor shall cooperate with the Project Director and install additional erosion control devices such as check dams, temporary paving, or silt fences as directed by the Project Director.
- I. If the Contractor has not complied with any of the above maintenance efforts to the satisfaction of the Project Director within 2 working days after receiving written notification from the Project Director, the Owner shall have the prerogative of engaging others to perform any needed maintenance or cleanup, including removal of accumulated sediment at constructed erosion control facilities, and deduct from the Contractor's monthly partial payment the costs for such efforts plus a \$500 administration fee.

### 1.03 SUBMITTALS

- A. Submittals shall be made in accordance with Section Submittals in Division 1, General Requirements.
- B. In addition, the Contractor shall provide the following specific information:
  - 1. Certificates of inspection of seed by state or federal authorities and copies of delivery invoices or other proof of quantities of fertilizer.
  - 2. Manufacturer's certificate of compliance attesting that the geotextile meets the requirements of these Specifications.

## PART 2 PRODUCTS

### 2.01 PERMANENT SEED

- A. Bahia grass seed with a minimum pure seed content of 95 percent with a minimum germination of 85 percent.

### 2.02 SOIL STABILIZATION AND TEMPORARY SEED

- A. October 15 through February 28: Annual type ryegrass seed with a minimum pure seed content of 95 percent with a germination of 90 percent. March 1 through October 14: Millet with a minimum pure seed content of 95 percent with a germination of 90 percent.

### 2.03 TOPSOIL

- A. Topsoil shall be as specified under Section 31 23 23, Fill and Backfill.

### 2.04 FERTILIZER

- A. Fertilizer shall be commercial, chemical type, uniform in composition, free-flowing, conforming to state and federal laws, and suitable for application with equipment designed for that purpose.
- B. Fertilizer shall have a minimum percentage of plant food by weight for the following: Permanent fertilizer mix shall be 10 percent nitrogen, 10 percent phosphoric acid, and 10 percent potash.

### 2.05 STRAW MULCH

- A. Threshed straw of oats, wheat, barley, or rye, free from seed of noxious weeds, or clean salt hay.

## **PART 3      EXECUTION**

### **3.01      GENERAL**

- A.    The Contractor shall install erosion and sediment control measures and maintain in accordance with the Drawings. The sequence of construction shown on the Drawings is made a part of these Contract Documents.
- B.    The Contractor shall provide and maintain Temporary Seeding at all times.

### **3.02      SEEDING**

#### **A.    General:**

- 1.    The Contractor shall give at least 3 days notice to the Project Director prior to seeding to allow the Owner to inspect the prepared areas. The Contractor shall rework any areas not approved for seeding to the Owner's satisfaction.
- 2.    The Contractor shall keep the Project Director advised of schedule of operations.
- 3.    Seed shall be clean, delivered in original unopened packages and bearing an analysis of the contents, guaranteed 95 percent pure with minimum germination rate of 85 percent.

#### **B.    Schedules:**

- 1.    Seeding shall be performed in accordance with the following schedule:
  - a.    Summer Seeding: Between March 15 and June 15, or September 1 to November 15.
  - b.    Winter Seeding: All other times of year, except when weather conditions prohibit further construction operations as determined by the Project Director.

#### **C.    Soil Stabilization and Temporary Seeding:**

- 1.    Soil stabilization seeding shall consist of the application of the following materials in quantities as further described herein for disturbed areas left inactive for more than 14 days.
  - a.    Lime.
  - b.    Fertilizer.
  - c.    Seed.
  - d.    Mulch.
  - e.    Maintenance.
- 2.    Hydroseeding will be permitted as an alternative method of applying seed and associated soil conditioning agents described above. Should the Contractor elect to apply soil stabilization seeding by hydroseeding methods, he shall submit his operational plan and methods to the Engineer.

3. Temporary Seeding is to be placed and maintained over all disturbed areas prior to Permanent Seeding. Maintain Temporary Seeding until such time as areas are approved for Permanent Seeding. As a minimum, maintenance shall include the following:
  - a. Fix-up and reseeding of bare areas or redisturbed areas.
  - b. Mowing for stands of grass or weeds exceeding 6 inches in height.

D. Topsoil and Permanent Seeding:

1. Topsoil and Permanent Seeding shall consist of the application of the following materials in quantities as further described herein:
  - a. 4-inch depth of topsoil.
  - b. Lime.
  - c. Fertilizer.
  - d. Permanent seed mix.
  - e. Mulch.
2. Topsoil is to be placed over all disturbed areas that are not surfaced with concrete, asphalt, or pavers.
3. Preparation:
  - a. After rough grading is completed and reviewed by the Project Director, Contractor shall spread topsoil as hereinbefore specified over all areas to receive Permanent Seeding to a minimum compacted depth of 6 inches with surface elevations as shown. Loosen the finished surface to a depth of 2 inches and leave in smooth condition, free from depressions or humps, ready for seeding.
  - b. Finish Grading:
    - 1) Contractor shall rake the topsoiled area to a uniform grade, so that all areas drain as indicated on the grading plan.
    - 2) Contractor shall remove all trash and stones exceeding 1 inch in diameter from area to a depth of 2 inches.
4. Permanent Seed:
  - a. After soil has been scarified, apply seed and other products at the rate and proportion specified below:
    - 1) Seed Mix: 150 pounds per acre.
    - 2) 10-10-10 Fertilizer: 1,000 pounds per acre.
    - 3) Lime: 3 tons per acre.
    - 4) Water: As necessary.
5. Maintenance:
  - a. Maintenance Period: Contractor shall begin maintenance immediately after each portion of permanent grass is planted and continue for 8 weeks after all planting is completed.



- b. Maintenance Operations: Contractor shall water to keep surface soil moist. Repair washed out areas by filling with topsoil, liming, fertilizing, and seeding. Replace mulch on banks when washed or blown away. Mow to 2 inches after grass reaches 3 inches in height, and mow frequently enough to keep grass from exceeding 3-1/2 inches. Weed by local spot application of selective herbicide only after first planting season when grass is established.
6. Guarantee:
- a. If, at the end of the 8-week maintenance period, a satisfactory stand of grass has not been produced, the Contractor shall renovate and reseed the grass or unsatisfactory portions thereof immediately, or, if after October 15 during the next planting season. If a satisfactory stand of grass develops by July 1 of the following year, it will be accepted. If it is not accepted, a complete replanting will be required during the planting season meeting all of the requirements specified under paragraph Permanent Seed.
  - b. A satisfactory stand is defined as grass or section of grass that has a substantial establishment of new grass, strongly rooted, and uniformly green in appearance from a distance of 50 feet. No noticeable thin or bare areas as determined by the Project Director.

**END OF SECTION**

**SECTION 01 57 28**  
**TEMPORARY SANITARY SEWER FLOW CONTROL**

**PART 1      GENERAL**

**1.01      REFERENCES**

- A.    The following is a list of standards which may be referenced in this section:
1.    ASTM International (ASTM):
    - a.    D3350, Standard Specification for Polyethylene Plastic Pipe and Fittings Materials.
  2.    American Water Works Association (AWWA):
    - a.    C110/A21.20, ANSI Standard for Ductile-Iron and Gray-Iron Fittings, 3 in. - 48 in. (76 mm - 1219 mm), for Water.
    - b.    C111/A21.11, ANSI Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
    - c.    C151/A21.51, ANSI Standard for Ductile-Iron Pipe, Centrifugally Cast, for Water.

**1.02      DEFINITIONS**

- A.    Flow Control: Procedure and method to reduce or eliminate flow in a downstream sewer to a level adequate for proper sewer inspection and rehabilitation.
- B.    Temporary Bypass Pumping: Flow control method that uses a temporary bypass pumping system.

**1.03      PERFORMANCE REQUIREMENTS**

1.    It is essential to operation of existing sewerage system that there be no interruption in flow of sewage throughout duration of Project.
2.    Provide, maintain, and operate temporary facilities such as dams, plugs, pumping equipment conduits, and necessary power to intercept sewage flow before it reaches point where it would interfere with the Work.
3.    Maintain sewer flow around Work area in a manner that will not cause surcharging of sewers, damage to sewers, and that will protect public and private property from damage.
4.    Protect water resources, wetlands, and other natural resources.

## 1.04 SUBMITTALS

### A. Informational Submittals:

1. Flow Control Plan: Submit at least 7 days prior to controlling flows. Include, as a minimum, the following:
  - a. Estimate of peak amount of flow to be controlled.
  - b. Detailed procedures for handling peak estimated flow.
  - c. Schedule.
  - d. Drawing of plug and/or bypass pump and pipeline locations.
  - e. Listing of equipment.
    - 1) Bypass pump sizes, capacities, number of each size to be onsite, and power requirements including standby equipment.
    - 2) Bypass pipeline sizes and material types.
  - f. Sewer user notification plan.
  - g. Operation plan.
  - h. Emergency procedures.
2. Permits to locate and operate flow control system.

## PART 2 PRODUCTS

### 2.01 FLOW CONTROL SYSTEM

- A. General: Provide adequate capacity and size to handle existing flows plus additional flows that may occur during periods of rainstorm. Estimate peak amount of flow to be bypassed and provide bypass flow capacity of at least 125 percent of peak flow estimate.
- B. Plugs:
  1. Provide with taps for connection of pressure gauges and air hoses, and flow-through capability.
  2. Pipe Diameters 24 inches and Smaller: Use mechanical plugs with rubber gaskets or pneumatic plugs with rubber boots.
  3. Pipe Diameters Larger than 24 inches:
    - a. Use inflatable bag stoppers made in two or more pieces.
    - b. Manufacturer: Lansas, Cherne Industries.
- C. High-Density Polyethylene (HDPE) or Ductile Iron Discharge Piping:
  1. Leak free.
  2. Pressure rating at least 1.5 times the operating pressure.

3. HDPE Pressure Piping:
  - a. In accordance with ASTM D3350.
  - b. SDR of 32.5, maximum.
  - c. Joints: Butt-fusion welded.
4. Ductile Iron:
  - a. AWWA C151/A21.51, Centrifugally cast, Grade 60-42-10 iron.
  - b. Joints: Rubber gasketed push-on in accordance with AWWA C111/21.11.
  - c. Fittings: In accordance with AWWA C110/A21.20.
5. May reuse for subsequent flow bypass pumping system placements. Owner or Project Director, at their sole discretion, shall have right to reject sections deemed unserviceable.

D. Bypass Pumps:

1. Fully-automatic, self-priming units that do not require use of foot valves or vacuum pumps in priming system.
2. Open impeller design with ability to pump minimum 3-inch-diameter solids.
3. Able to run dry for long periods of time to accommodate cyclical nature of flows.
4. Engine: Equipped to minimize noise. Noise levels shall not exceed 86 dBA at a distance of 50 feet from the source.
5. Standby Pump: One of each size to be available onsite.
6. Auto-Dialer programmed to contact the Contractor's person-in-charge in case of pump failure or high level. Person-in-charge shall be within 30 minutes from the project site.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Notify Project Director at least 7 days prior to implementing flow control system.
- B. Operate and maintain 24 hours per day, 7 days per week, including holidays, as required, to control flow.
- C. Take all necessary precautions to ensure no private or public properties are subjected to a sewage backup or spill. Contractor shall be solely responsible for all cleanup, damages, and resultant fines in the event of a backup or spill.
- D. When depth of flow in a pipe section is above the maximum depth specified for rehabilitation, reduce flow by plugging, diverting, or pumping flow around Work area.

- E. Eliminate flow from sewer manhole-to-manhole segments during spot repair, service connection rehabilitation, and sewer pipe replacement or lining within that segment.
- F. If flow reaches peak estimated flow that flow control system was designed for, stop all Work that requires flow control, secure work area, and restore flow in sewer until flow recedes.
- G. After the Work is completed, return flow to replaced sewer and remove temporary equipment.

### 3.02 BLOCKING FLOW

- A. Flow control may consist of blocking flow with mechanical or pneumatic plugs if only a small amount of flow needs to be controlled and adequate storage is available.
- B. Use primary and secondary plugs for each flow control location.
- C. When blocking flow is no longer needed for performance and acceptance of the Work, removed plugs in a manner that permits sewage flow to slowly return to normal without surcharging or causing other major disturbances downstream.
- D. Remove temporary plugs at end of each working day and restore normal flow. If downstream work is not or cannot be completed during the workday provide, operate, and maintain bypass pumping system.
- E. Use bypass pumping if the Work cannot be scheduled at a time when flow is low or completed during low flow period.

### 3.03 BYPASS PUMPING

- A. When blocking flow in upstream sewers is not appropriate, use flow bypass pumping for reducing flow below the maximum depth or for completely bypassing flow.
- B. Design, furnish, install, and maintain all power, primary and standby pumps, appurtenances, tanks and trucks, and bypass piping required to maintain existing flows and services.
- C. Obtain approval and secure all permits for placement of temporary bypass pumping system and pipeline within public right-of-way.

D. Site Verification:

1. Locate existing utilities in area of bypass pipelines.
2. Bypass Pipeline Location:
  - a. Minimize disturbance of existing utilities.
  - b. Confine bypass discharge pipeline within public rights-of-way or temporary construction area and permanent easement.
  - c. When bypass pipeline crosses local streets and private driveways, place bypass pipeline in trench and cover with temporary pavement.
  - d. Installation of bypass pipelines is prohibited in salt marsh/wetland areas.

- E. Flow bypass shall be done in such a manner that will not damage private or public property, or create a nuisance or public menace. Pumped sewage shall be in an enclosed pipe that is adequately protected from traffic, and shall be redirected into sanitary sewer system or alternatively into an enclosed tank for hauling to the wastewater treatment plant. Dumping or free flow of sewage on private or public property, gutters, streets, sidewalks, or into storm sewers is prohibited.

3.04 FIELD QUALITY CONTROL

A. Hydrostatic Pressure Test for Pump Bypass System:

1. Prior to operation, test each section of discharge piping with maximum pressure equal to 1.5 times the maximum operating pressure of system.
2. Notify Project Director 24 hours prior to testing.

3.05 CLEANING

- A. Before bypass pumping system is broken down, and moved to next section or removed at the completion of the Work, discharge sewage remaining in bypass discharge pipeline and pumping equipment to working sewer.
- B. Disturbed Areas: Upon completion of bypass pumping operation, clean disturbed areas restoring to condition, including pavement restoration, at least equal to that which existed prior to start of the Work.

**END OF SECTION**

**SECTION 01 61 00**  
**COMMON PRODUCT REQUIREMENTS**

**PART 1      GENERAL**

**1.01      DEFINITIONS**

**A.      Products:**

1.      New items for incorporation in the Work, whether purchased by Contractor or Owner for the Project, or taken from previously purchased stock, and may also include existing materials or components required for reuse.
2.      Includes the terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent and is not intended to change meaning of such other terms used in Contract Documents, as those terms are self-explanatory and have well recognized meanings in construction industry.
3.      Items identified by manufacturer's product name, including make or model designation, indicated in manufacturer's published product literature, that is current as of the date of the Contract Documents.

**1.02      PREPARATION FOR SHIPMENT**

- A.      When practical, factory-assemble products. Mark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with strippable protective coating.**
- B.      Package products to facilitate handling and protect from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, name of Project and Contractor, equipment number, and approximate weight. Include complete packing list and bill-of-materials with each shipment.**
- C.      Extra Materials, Special Tools, Test Equipment, and Expendables:**
1.      Furnish as required by individual Specifications.
  2.      Schedule:
    - a.      Ensure that shipment and delivery occur concurrent with shipment of associated equipment.
    - b.      Transfer to Owner shall occur immediately subsequent to Contractor's acceptance of equipment from Supplier.

3. Packaging and Shipment:
    - a. Package and ship extra materials and special tools to avoid damage during long term storage in original cartons insofar as possible, or in appropriately sized, hinged-cover, wood, plastic, or metal box.
    - b. Prominently displayed on each package, the following:
      - 1) Manufacturer's part nomenclature and number, consistent with Operation and Maintenance Manual identification system.
      - 2) Applicable equipment description.
      - 3) Quantity of parts in package.
      - 4) Equipment manufacturer.
  4. Deliver materials to designated work sites.
  5. Project Director upon arrival for transfer of materials.
  6. Replace extra materials and special tools found to be damaged or otherwise inoperable at time of transfer to Owner.
- D. Factory Test Results: Reviewed and accepted by Project Director before product shipment as required in individual Specification sections.

#### 1.03 DELIVERY AND INSPECTION

- A. Deliver products in accordance with accepted current Progress Schedule and coordinate to avoid conflict with the Work and conditions at Site. Deliver anchor bolts and templates sufficiently early to permit setting prior to placement of structural concrete.
- B. Deliver products in undamaged condition, in manufacturer's original container or packaging, with identifying labels intact and legible. Include on label, date of manufacture and shelf life, where applicable.
- C. Unload products in accordance with manufacturer's instructions for unloading or as specified. Record receipt of products at Site. Promptly inspect for completeness and evidence of damage during shipment.
- D. Remove damaged products from Site and expedite delivery of identical new undamaged products, and remedy incomplete or lost products to provide that specified, so as not to delay progress of the Work.

#### 1.04 HANDLING, STORAGE, AND PROTECTION

- A. Handle and store products in accordance with manufacturer's written instructions and in a manner to prevent damage. Store in approved storage yards or sheds provided in accordance with Section 01 50 00, Temporary Facilities and Controls. Provide manufacturer's recommended maintenance during storage, installation, and until products are accepted for use by Owner.



- B. Manufacturer's instructions for material requiring special handling, storage, or protection shall be provided prior to delivery of material.
- C. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage or deterioration. Keep running account of products in storage to facilitate inspection and to estimate progress payments for products delivered, but not installed in the Work.
- D. Store electrical, instrumentation, and control products, and equipment with bearings in weather-tight structures maintained above 60 degrees F. Protect electrical, instrumentation, and control products, and insulate against moisture, water, and dust damage. Connect and operate continuously space heaters furnished in electrical equipment.
- E. Store fabricated products above-ground on blocking or skids, and prevent soiling or staining. Store loose granular materials in well-drained area on solid surface to prevent mixing with foreign matter. Cover products that are subject to deterioration with impervious sheet coverings; provide adequate ventilation to avoid condensation.
- F. Store finished products that are ready for installation in dry and well-ventilated areas. Do not subject to extreme changes in temperature or humidity.
- G. After installation, provide coverings to protect products from damage due to traffic and construction operations. Remove coverings when no longer needed.
- H. Hazardous Materials: Prevent contamination of personnel, storage area, and Site. Meet requirements of product specification, codes, and manufacturer's instructions.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. Provide manufacturer's standard materials suitable for service conditions, unless otherwise specified in the individual Specifications.
- B. Where product specifications include a named manufacturer, with or without model number, and also include performance requirements, named manufacturer's products must meet the performance specifications.

- C. Like items of products furnished and installed in the Work shall be end products of one manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, manufacturer's services, and implement same or similar process instrumentation and control functions in same or similar manner.
- D. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.
- E. Provide interchangeable components of the same manufacturer, for similar components, unless otherwise specified.
- F. Equipment, Components, Systems, and Subsystems: Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and shall comply with applicable OSHA, state, and local health and safety regulations.
- G. Regulatory Requirement: Coating materials shall meet federal, state, and local requirements limiting the emission of volatile organic compounds and for worker exposure.
- H. Safety Guards: Provide for all belt or chain drives, fan blades, couplings, or other moving or rotary parts. Cover rotating part on all sides. Design for easy installation and removal. Use 16-gauge or heavier; galvanized steel, aluminum coated steel, or galvanized or aluminum coated 1/2-inch mesh expanded steel. Provide galvanized steel accessories and supports, including bolts. For outdoors application, prevent entrance of rain and dripping water.
- I. Authority Having Jurisdiction (AHJ):
  - 1. Provide the Work in accordance with NFPA 70, National Electrical Code (NEC). Where required by the AHJ, material and equipment shall be labeled or listed by a nationally recognized testing laboratory or other organization acceptable to the AHJ in order to provide a basis for approval under NEC.
  - 2. Materials and equipment manufactured within the scope of standards published by Underwriters Laboratories, Inc. shall conform to those standards and shall have an applied UL listing mark.
- J. Equipment Finish:
  - 1. Provide manufacturer's standard finish and color, except where specific color is indicated.
  - 2. If manufacturer has no standard color, provide equipment with gray finish as approved by Owner.

- K. Special Tools and Accessories: Furnish to Owner, upon acceptance of equipment, all accessories required to place each item of equipment in full operation. These accessory items include, but are not limited to, adequate oil and grease (as required for first lubrication of equipment after field testing), light bulbs, fuses, hydrant wrenches, valve keys, handwheels, chain operators, special tools, and other spare parts as required for maintenance.
- L. Lubricant: Provide initial lubricant recommended by equipment manufacturer in sufficient quantity to fill lubricant reservoirs and to replace consumption during testing, startup, and operation until final acceptance by Owner.

## 2.02 FABRICATION AND MANUFACTURE

### A. General:

1. Manufacture parts to U.S.A. standard sizes and gauges.
2. Two or more items of the same type shall be identical, by the same manufacturer, and interchangeable.
3. Design structural members for anticipated shock and vibratory loads.
4. Use 1/4-inch minimum thickness for steel that will be submerged, wholly or partially, during normal operation.
5. Modify standard products as necessary to meet performance Specifications.

### B. Lubrication System:

1. Require no more than weekly attention during continuous operation.
2. Convenient and accessible; oil drains with bronze or stainless steel valves and fill-plugs easily accessible from the normal operating area or platform. Locate drains to allow convenient collection of oil during oil changes without removing equipment from its installed position.
3. Provide constant-level oilers or oil level indicators for oil lubrication systems.
4. For grease type bearings, which are not easily accessible, provide and install stainless steel tubing; protect and extend tubing to convenient location with suitable grease fitting.

## 2.03 SOURCE QUALITY CONTROL

- A. Where Specifications call for factory testing to be witnessed by Engineer, notify Engineer not less than 14 days prior to scheduled test date, unless otherwise specified.
- B. Calibration Instruments: Bear the seal of a reputable laboratory certifying instrument has been calibrated within the previous 12 months to a standard endorsed by the National Institute of Standards and Technology (NIST).

- C. Factory Tests: Perform in accordance with accepted test procedures and document successful completion.

## **PART 3 EXECUTION**

### **3.01 INSPECTION**

- A. Inspect materials and equipment for signs of pitting, rust decay, or other deleterious effects of storage. Do not install material or equipment showing such effects. Remove damaged material or equipment from the Site and expedite delivery of identical new material or equipment. Delays to the Work resulting from material or equipment damage that necessitates procurement of new products will be considered delays within Contractor's control.

### **3.02 INSTALLATION**

- A. Equipment Drawings show general locations of equipment, devices, and raceway, unless specifically dimensioned.
- B. No shimming between machined surfaces is allowed.
- C. Install the Work in accordance with NECA Standard of Installation, unless otherwise specified.
- D. Repaint painted surfaces that are damaged prior to equipment acceptance.
- E. Do not cut or notch any structural member or building surface without specific approval of Engineer.
- F. Handle, install, connect, clean, condition, and adjust products in accordance with manufacturer's instructions, and as may be specified. Retain a copy of manufacturers' instruction at Site, available for review at all times.
- G. For material and equipment specifically indicated or specified to be reused in the Work:
  - 1. Use special care in removal, handling, storage, and reinstallation to assure proper function in the completed Work.
  - 2. Arrange for transportation, storage, and handling of products that require offsite storage, restoration, or renovation. Include costs for such Work in the Contract Price.

### **3.03 FIELD FINISHING**

- A. In accordance with Section 09 90 00, Painting and Coating, and individual Specification sections.

## **COMMON PRODUCT REQUIREMENTS**

3.04 ADJUSTMENT AND CLEANING

- A. Perform required adjustments, tests, operation checks, and other startup activities.

3.05 LUBRICANTS

- A. Fill lubricant reservoirs and replace consumption during testing, startup, and operation prior to acceptance of equipment by Owner.

**END OF SECTION**

**SECTION 01 77 00  
CLOSEOUT PROCEDURES**

**PART 1      GENERAL**

**1.01      SUBMITTALS**

**A.      Informational Submittals:**

1.      Submit prior to application for final payment.
  - a.      Record Documents: As required in the Standard Agreement and specified in Section 01 38 00, As-Built Submittal Requirements.
  - b.      Special bonds, Special Guarantees, and Service Agreements.
  - c.      Request for Final Inspection.
  - d.      Consent of Surety to Final Payment: As required in the General and Supplementary Conditions.
  - e.      Releases or Waivers of Liens and Claims: As required in the General and Supplementary Conditions.
  - f.      Releases from Agreements.
  - g.      Final Application for Payment: Submit in accordance with procedures and requirements stated in the General and Supplementary Conditions and in Section 01 29 00, Payment Procedures.
  - h.      Extra Materials: As required by individual Specification sections.

**1.02      RECORD DOCUMENTS**

**A.      Quality Assurance:**

1.      Furnish qualified and experienced person, whose duty and responsibility shall be to maintain record documents.
2.      Accuracy of Records:
  - a.      Coordinate changes within record documents, making legible and accurate entries on each sheet of Drawings and other documents where such entry is required to show change.
  - b.      Purpose of Project record documents is to document factual information regarding aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive Site measurement, investigation, and examination.
3.      Make entries within 24 hours after receipt of information that a change in the Work has occurred.
4.      Prior to submitting each request for progress payment, request Project Director's review and approval of current status of record documents. Failure to properly maintain, update, and submit record documents may

result in a deferral by Project Director to recommend whole or any part of Contractor's Application for Payment, either partial or final.

### **1.03 RELEASES FROM AGREEMENTS**

- A. Furnish Owner written releases from property owners or public agencies where side agreements or special easements have been made, or where Contractor's operations have not been kept within the Owner's construction right-of-way.
- B. In the event Contractor is unable to secure written releases:
  - 1. Inform Owner of the reasons.
  - 2. Owner or its representatives will examine the Site, and Owner will direct Contractor to complete the Work that may be necessary to satisfy terms of the side agreement or special easement.
  - 3. Should Contractor refuse to perform this Work, Owner reserves right to have it done by separate contract and deduct cost of same from Contract Price, or require Contractor to furnish a satisfactory bond in a sum to cover legal Claims for damages.
  - 4. When Owner is satisfied that the Work has been completed in agreement with Contract Documents and terms of side agreement or special easement, right is reserved to waive requirement for written release if: (i) Contractor's failure to obtain such statement is due to grantor's refusal to sign, and this refusal is not based upon any legitimate Claims that Contractor has failed to fulfill terms of side agreement or special easement, or (ii) Contractor is unable to contact or has had undue hardship in contacting grantor.

### **PART 2 PRODUCTS (NOT USED)**

### **PART 3 EXECUTION**

#### **3.01 MAINTENANCE OF RECORD DOCUMENTS**

- A. General:
  - 1. Promptly following commencement of Contract Times, secure from Engineer at no cost to Contractor, three (3) complete sets of Contract Documents. Drawings will be full size.
  - 2. Label or stamp each record document with title, "AS-BUILT" or "RECORD DOCUMENTS," in neat large printed letters.
  - 3. Record information concurrently with construction progress and within 24 hours after receipt of information that change has occurred. Do not cover or conceal Work until required information is recorded.

B. Preservation:

1. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
2. Make documents and Samples available at all times for observation by Engineer.

C. Making Entries on Drawings:

1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
  - a. Color Coding:
    - 1) Green when showing information deleted from Drawings.
    - 2) Red when showing information added to Drawings.
    - 3) Blue and circled in blue to show notes.
2. Date entries.
3. Call attention to entry by "cloud" drawn around area or areas affected.
4. Legibly mark to record actual changes made during construction, including, but not limited to:
  - a. Depths of various elements of foundation in relation to finished first floor data if not shown or where depth differs from that shown.
  - b. Horizontal and vertical locations of existing and new Underground Facilities and appurtenances, and other underground structures, equipment, or Work. Reference to at least two measurements to permanent surface improvements.
  - c. Location of internal utilities and appurtenances concealed in the construction referenced to visible and accessible features of the structure.
  - d. Locate existing facilities, piping, equipment, and items critical to the interface between existing physical conditions or construction and new construction.
  - e. Changes made by Addenda and Field Orders, Work Change Directive, Change Order, and Engineer's written interpretation and clarification using consistent symbols for each and showing appropriate document tracking number.
5. Dimensions on Schematic Layouts: Show on record drawings, by dimension, the centerline of each run of items such as are described in previous subparagraph above.
  - a. Clearly identify the item by accurate note such as "cast iron drain," "galv. water," and the like.
  - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum," "exposed," and the like).
  - c. Make identification so descriptive that it may be related reliably to Specifications.



### 3.02 FINAL CLEANING

- A. At completion of the Work or of a part thereof and immediately prior to Contractor's request for certificate of Substantial Completion; or if no certificate is issued, immediately prior to Contractor's notice of completion, clean entire Site or parts thereof, as applicable.
1. Leave the Work and adjacent areas affected in a cleaned condition satisfactory to Owner.
  2. Remove grease, dirt, dust, paint or plaster splatter, stains, labels, fingerprints, and other foreign materials from exposed surfaces.
  3. Repair, patch, and touch up marred surfaces to specified finish and match adjacent surfaces.
  4. Clean all windows.
  5. Clean and wax wood, vinyl, or painted floors.
  6. Broom clean exterior paved driveways and parking areas.
  7. Hose clean sidewalks, loading areas, and others contiguous with principal structures.
  8. Rake clean all other surfaces.
  9. Remove snow and ice from access to buildings.
  10. Replace air-handling filters and clean ducts, blowers, and coils of ventilation units operated during construction.
  11. Leave water courses, gutters, and ditches open and clean.
- B. Use only cleaning materials recommended by manufacturer of surfaces to be cleaned.

### END OF SECTION

**SECTION 01 91 14**  
**EQUIPMENT TESTING AND FACILITY STARTUP**

**PART 1      GENERAL**

**1.01      DEFINITIONS**

- A.    Facility: Each lift station, or an agreed-upon portion, including its entire unit processes.
- B.    Functional Test: Test or tests in presence of Engineer and Project Director to demonstrate that installed equipment meets manufacturer's installation, calibration, and adjustment requirements and other requirements as specified.
- C.    Performance Test: Test or tests performed after any required functional test in presence of Engineer and Project Director to demonstrate and confirm individual equipment meets performance requirements specified in individual sections.
- D.    Facility Performance Demonstration:
  - 1.    A demonstration, conducted by Contractor, with assistance of Owner, to demonstrate and document the performance of the entire operating facility, both manually and automatically (if required), based on criteria developed in conjunction with Owner and as accepted by the Project Director.
  - 2.    Such demonstration is for the purposes of (i) verifying to Owner entire facility performs as a whole, and (ii) documenting performance characteristics of completed facility for Owner's records. Neither the demonstration nor the evaluation is intended in any way to make performance of the entire facility the responsibility of Contractor, unless such performance is otherwise specified.

**1.02      SUBMITTALS**

- A.    Informational Submittals:
  - 1.    Facility Startup and Performance Demonstration Plan.
  - 2.    Functional and performance test results.
  - 3.    Completed Facility Performance Demonstration/Certification Form.

### 1.03 FACILITY STARTUP AND PERFORMANCE DEMONSTRATION PLAN

- A. Develop a written plan, in conjunction with Owner's operations personnel; to include the following:
  - 1. Step-by-step instructions for startup of each wastewater lift station following completion of upgrade work.
  - 2. Lift Station Startup Form (sample attached), to minimally include the following:
    - a. Description of the equipment numbers/nomenclature of each item of equipment and all included devices involved in the startup.
    - b. Detailed procedure for startup of the lift station, including pumps to be operated, valves to be opened/closed, order of equipment startup, etc.
    - c. Space for evaluation comments.
  - 3. Facility Performance Demonstration/Certification Form (sample attached), to minimally include the following:
    - a. Description of lift stations included in the facility startup.
    - b. Sequence of activities to achieve startup of each lift station.
    - c. Description of computerized operations, if any, included in the facility.
    - d. Contractor certification facility is capable of performing its intended function(s), including fully automatic operation.
    - e. Signature spaces for Contractor and Project Director.

### PART 2 PRODUCTS (NOT USED)

### PART 3 EXECUTION

#### 3.01 GENERAL

- A. Facility Startup Meetings: Schedule, in accordance with requirements of Section 01 31 19, Project Meetings, to discuss test schedule, test methods, materials, chemicals and liquids required, facilities operations interface, and Owner involvement.
- B. Contractor's Testing and Startup Representative:
  - 1. Designate and furnish one or more personnel to coordinate and expedite testing and facility startup.
  - 2. Representative(s) shall be present during startup meetings and shall be available at all times during testing and startup.
- C. Provide temporary valves, gauges, piping, test equipment and other materials and equipment required for testing and startup.

D. Provide Subcontractor and equipment manufacturers' staff adequate to prevent delays. Schedule ongoing work so as not to interfere with or delay testing and startup.

E. Owner will:

1. Provide water and power, and other items as required for startup, unless otherwise indicated.
2. Operate wastewater lift stations with support of Contractor.

### 3.02 EQUIPMENT TESTING

A. Preparation:

1. Complete installation before testing.
2. Furnish qualified manufacturers' representatives, when required by individual Specification sections.
3. Obtain and submit from equipment manufacturer's representative Manufacturer's Certificate of Proper Installation Form, in accordance with Section 01 43 33, Manufacturers' Field Services, when required by individual Specification sections.
4. Equipment Test Report Form: Provide written test report for each item of equipment to be tested, to include the minimum information:
  - a. Owner/Project Name.
  - b. Equipment or item tested.
  - c. Date and time of test.
  - d. Type of test performed (Functional or Performance).
  - e. Test method.
  - f. Test conditions.
  - g. Test results.
  - h. Signature spaces for Contractor and Project Director as witness.
5. Cleaning and Checking: Prior to beginning functional testing:
  - a. Calibrate testing equipment in accordance with manufacturer's instructions.
  - b. Inspect and clean equipment, devices, connected piping, and structures to ensure they are free of foreign material.
  - c. Lubricate equipment in accordance with manufacturer's instructions.
  - d. Turn rotating equipment by hand when possible to confirm that equipment is not bound.
  - e. Open and close valves by hand and operate other devices to check for binding, interference, or improper functioning.

- f. Check power supply to electric-powered equipment for correct voltage.
  - g. Adjust clearances and torque.
  - h. Test piping for leaks.
6. Ready-to-test determination will be by Project Director based at least on the following:
- a. Acceptable Operation and Maintenance Data.
  - b. Notification by Contractor of equipment readiness for testing.
  - c. Receipt of Manufacturer's Certificate of Proper Installation, if so specified.
  - d. Adequate completion of work adjacent to, or interfacing with, equipment to be tested.
  - e. Availability and acceptability of manufacturer's representative, when specified, to assist in testing of respective equipment.
  - f. Satisfactory fulfillment of other specified manufacturer's responsibilities.
  - g. Equipment and electrical tagging complete.
  - h. Delivery of all spare parts and special tools.

B. Functional Testing:

- 1. Conduct as specified in individual Specification sections.
- 2. Notify Project Director in writing at least 10 days prior to scheduled date of testing.
- 3. Prepare Equipment Test Report summarizing test method and results.
- 4. When, in Project Director's opinion, equipment meets functional requirements specified, such equipment will be accepted for purposes of advancing to performance testing phase, if so required by individual Specification sections. Such acceptance will be evidenced by Project Director's signature as witness on Equipment Test Report.

C. Performance Testing:

- 1. Conduct as specified in individual Specification sections.
- 2. Notify Project Director in writing at least 10 days prior to scheduled date of test.
- 3. Performance testing shall not commence until equipment has been accepted by Project Director as having satisfied functional test requirements specified.
- 4. Type of fluid, gas, or solid for testing shall be as specified.
- 5. Unless otherwise indicated, furnish labor, materials, and supplies for conducting the test and taking samples and performance measurements.

6. Prepare Equipment Test Report summarizing test method and results.
7. When, in Project Director's opinion, equipment meets performance requirements specified, such equipment will be accepted as to conforming to Contract requirements. Such acceptance will be evidenced by Project Director's signature on Equipment Test Report.

### 3.03 STARTUP OF WASTEWATER LIFT STATIONS

- A. Prior to lift station startup, all new equipment within lift station shall be accepted by project director as having met functional and performance testing requirements specified.
- B. Make adjustments, repairs, and corrections necessary to complete lift station startup.
- C. Startup shall be considered complete when, in opinion of Project Director, the lift station has operated in manner intended for one continuous day without significant interruption. This period is in addition to functional or performance test periods specified elsewhere.
- D. Significant Interruption: May include any of the following events:
  1. Failure of Contractor to provide and maintain qualified onsite startup personnel as scheduled.
  2. Failure to meet specified functional operation for more than 2 consecutive hours.
  3. Failure of any critical piece of equipment that is not satisfactorily corrected within 5 hours after failure.
  4. Failure of any noncritical equipment that is not satisfactorily corrected within 8 hours after failure.
  5. As determined by Project Director.
- E. A significant interruption will require startup then in progress to be stopped. After corrections are made, startup test period to start from beginning again.

**END OF SECTION**

## **SECTION 02 41 00 DEMOLITION**

### **PART 1 GENERAL**

#### **1.01 REFERENCES**

A. The following is a list of standards which may be referenced in this Section:

1. American National Standards Institute (ANSI): A10.6, Safety Requirements for Demolition Operations.
2. Occupational Safety and Health Administration (OSHA), U.S. Code of Federal Regulations (CFR) Title 29 Part 1926—Occupational Safety and Health Regulations for Construction.
3. Environmental Protection Agency (EPA), U.S. Code of Federal Regulations (CFR), Title 40:
  - a. Part 61—National Emission Standards for Hazardous Air Pollutants.
  - b. Part 82—Protection of Stratospheric Ozone.
  - c. Part 273—Standards for Universal Waste Management.

#### **1.02 DEFINITIONS**

- A. ACM: Asbestos-containing material.
- B. Demolition: Dismantling, razing, destroying, or wrecking of any fixed building or structure or any part thereof.
- C. Modify: Provide all necessary material and labor to modify an existing item to the condition indicated or specified.
- D. Relocate: Remove, protect, clean and reinstall equipment, including electrical, instrumentation, and all ancillary components required to make the equipment fully functional, to the new location identified on the Drawings.
- E. Renovation: Altering a facility or one or more facility components in any way.
- F. Salvage/Salvageable: Remove and deliver, to the specified location(s), the equipment, building materials, or other items so identified to be saved from destruction, damage, or waste; such property to remain that of Owner. Unless otherwise specified, title to items identified for demolition shall revert to Contractor.

### 1.03 SUBMITTALS

#### A. Informational Submittals:

1. Submit proposed Demolition/Renovation Plan, in accordance with requirements specified herein, for approval before such Work is started.
2. Submit copies of any notifications, authorizations and permits required to perform the Work.

### 1.04 REGULATORY AND SAFETY REQUIREMENTS

- A. When applicable, demolition Work shall be accomplished in strict accordance with 29 CFR 1926-Subpart T.
- B. Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the General Conditions, Contractor's safety requirements shall conform to ANSI A10.6.
- C. Furnish timely notification of this demolition/renovation project to applicable federal, state, regional, and local authorities in accordance with 40 CFR 61-Subpart M.

### 1.05 DEMOLITION/RENOVATION PLAN

- A. Demolition/Renovation Plan shall provide for safe conduct of the Work and shall include:
  1. Detailed description of methods and equipment to be used for each operation;
  2. The Contractor's planned sequence of operations, including coordination with other work in progress;
  3. Procedures for removal and disposition of materials specified to be salvaged.
  4. Disconnection schedule of utility services.
- B. Contractor shall perform initial inspection and inspection throughout the performance of Work of the existing facilities to ensure their suitability to perform as a safe working environment. If inspection reveals a safety hazard to workers, Contractor shall notify Owner immediately of safety hazard condition.

### 1.06 SEQUENCING AND SCHEDULING

- A. The Work of this Specification shall not commence until Contractor's Demolition/Renovation Plan has been approved by Engineer.



- B. Include the Work of this Specification in the progress schedule, as specified in Section 01 32 00, Construction Progress Documentation.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION**

**3.01 EXISTING FACILITIES TO BE DEMOLISHED OR RENOVATED**

**A. Facilities:**

1. Buildings and adjacent designated areas scheduled for complete demolition are as shown on Contract Drawings.
2. Portions of buildings and other areas scheduled for selective demolition, partial demolition, and renovation Work are as shown on Contract Drawings.

- B. Structures: Existing above-grade structures indicated shall be removed to 2 feet below grade, unless otherwise noted.

**C. Utilities and Related Equipment:**

1. Notify Owner or appropriate utilities to turn off affected services at least 48 hours before starting demolition or renovation activities.
2. Remove existing utilities as indicated and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by Engineer.
3. When utility lines are encountered that are not indicated on the Drawings, notify Owner prior to further work in that area.
4. Remove meters and related equipment and deliver to a location as determined by the Owner.
5. Excavate and remove utility lines serving buildings to be demolished as shown on Drawings.
6. Provide a permanent leak-proof closure for water lines.
7. Plug sewer lines with concrete to a minimum plug length of 2 feet to prevent groundwater infiltration.

**D. Paving and Slabs:**

1. Sawcut and remove concrete and asphaltic concrete paving and slabs as indicated on Contract Drawings.
2. Provide neat sawcuts at limits of pavement removal as indicated.

- E. Concrete: Where new concrete adjoins existing, the new Work shall abut or tie into the existing construction as indicated on Contract Drawings.

F. Patching:

1. Where removals leave holes and damaged surfaces exposed in the finished Work, patch and repair to match adjacent finished surfaces as to texture and finish.
2. Where new Work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new Work.
3. Patching shall be as specified and indicated, and shall include:
  - a. Fill holes and depressions caused by previous physical damage or left as a result of removals in existing concrete walls with an approved patching material, applied in accordance with the manufacturer's printed instructions.

G. Electrical:

1. Cut off concealed or embedded conduit, boxes, or other materials a minimum of 3/4 inch below final finished surface.
2. When removing designated equipment, conduit and wiring may require rework to maintain service to other equipment.
3. Rework existing circuits, or provide temporary circuits as necessary during renovation to maintain service to existing lighting and equipment not scheduled to be renovated. Existing equipment and circuiting shown are based upon limited field surveys. Verify existing conditions, make all necessary adjustments, and record the Work on the Record Drawings. This shall include, but is not limited to, swapping and other adjustments to branch circuits and relocation of branch circuit breakers within panelboards as required to accomplish the finished work.
4. Reuse of existing luminaires, devices, conduits, boxes, or equipment will be permitted only where specifically indicated.
5. Raceways and cabling not scheduled for reuse.
6. Inaccessibly Concealed: Cut off and abandon in place.
7. Exposed or Concealed Above Accessible Ceilings: Remove.
8. Raceways and Cabling Scheduled for Future Use: Cap/seal and tag.
9. Relocating Equipment: Extend existing wiring or run new wiring from the source.
10. Where the existing raceway is concealed, the outlet box shall be cleaned, and a blank cover plate installed.
11. Where the concealed raceway is uncovered remove raceway (or extended to new location if appropriate).
12. Provide new typewritten panelboard circuit directory cards.

- H. Universal Waste Lamps and Thermostats: Manage, contain, package, and label in strict accordance with 40 CFR 273.

### 3.02 PROTECTION

#### A. Dust and Debris Control:

1. Prevent the spread of dust debris and avoid the creation of a nuisance hazard in the work area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution.
2. Sweep pavements as often as necessary to control the spread of debris that may result in foreign object damage potential to vehicular traffic.

#### B. Traffic Control Signs: Where pedestrian and driver safety is endangered in the area of removal Work, use traffic barricades with flashing lights.

#### C. Existing Work:

1. Survey the site and examine the Drawings and Specifications to determine the extent of the Work before beginning any demolition or renovation, and submit D/R Plan per 1.03, Submittals.
2. Take necessary precautions to avoid damage to existing items scheduled to remain in place, to be reused, or to remain the property of Owner; any Contractor-damaged items shall be repaired or replaced as directed by Engineer.
3. Provide temporary weather protection during interval between removal of existing exterior surfaces and installation of new to ensure that no water leakage or damage occurs to structure or interior areas of existing building.
4. Ensure that structural elements are not overloaded as a result of or during performance of the Work. Responsibility for additional structural elements or increasing the strength of existing structural elements as may be required as a result of any Work performed under this Contract shall be that of the Contractor. Repairs, reinforcement, or structural replacement must have Engineer approval.
5. Do not overload pavements to remain.

#### D. Weather Protection: For portions of the building scheduled to remain, protect building interior and materials and equipment from weather at all times. Where removal of existing roofing is necessary to accomplish the Work, have materials and workmen ready to provide adequate and temporary covering of exposed areas so as to ensure effectiveness and to prevent loss.

#### E. Trees: Protect trees within the Site that might be damaged during demolition and are indicated to be left in place, by a 6-foot-high fence. The fence shall be securely erected a minimum of 5 feet from the trunk of individual trees or follow the outer perimeter of branches or clumps of trees. Any tree designated to remain that is damaged during the Work shall be replaced in kind, as approved by the Engineer.

F. Facilities:

1. Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities.
2. Floors, roofs, walls, columns, pilasters, and other structural elements that are designed and constructed to stand without lateral support or shoring, and are determined by Contractor to be in stable condition, shall remain standing without additional bracing, shoring, or lateral support until demolished, unless directed otherwise by the Engineer.
3. Protect all facility elements not scheduled for demolition.
4. Provide interior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished and adjacent facilities.

G. Protection of Personnel:

1. During demolition, continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site.
2. Provide temporary barricades and other forms of protection to protect Owner's personnel and the general public from injury due to demolition Work.
3. Provide protective measures as required to provide free and safe passage of Owner's personnel and the general public to occupied portions of the structure.

3.03 BURNING

- A. The use of burning at the Site for the disposal of refuse and debris will not be permitted.

3.04 RELOCATIONS

- A. Perform the removal and reinstallation of relocated items as indicated with workmen skilled in the trades involved. Clean all items to be relocated prior to reinstallation, to the satisfaction of Engineer. Repair items to be relocated which are damaged or replace damaged items with new undamaged items as approved by Engineer.

3.05 BACKFILL

- A. Do not use demolition debris as backfill material.
- B. Fill excavations, open basements and other hazardous openings to existing ground level or foundation level of new construction in accordance with typical backfill methods.

3.06 TITLE TO MATERIALS

- A. All salvaged equipment and materials so designated, will remain the property of Owner.
- B. With the exception of the following listed salvaged equipment and materials, all items designated to be removed shall become the property of Contractor:
- C. Title to equipment and materials resulting from demolition renovation is vested in the Contractor upon approval by Engineer of Contractor's Demolition/Renovation Plan, and the resulting authorization by Engineer to begin demolition renovation.

3.07 DISPOSITION OF MATERIAL

- A. Do not remove equipment and materials without approval of Contractor's Demolition/Renovation Plan by Project Director.
- B. Salvage equipment and material to the maximum extent possible.
- C. Remove materials and equipment that are indicated to be removed by Contractor and deliver to a storage site as directed by Owner.
- D. Remove salvaged items in a manner to prevent damage, and pack or crate to protect the items from damage while in storage or during shipment. Properly identify containers as to contents.
- E. Repair or replace, at the discretion of Owner, items damaged during removal or storage.
- F. Owner will not be responsible for the condition or loss of, or damage to, property scheduled to become Contractor's property after Owner's authorization to begin demolition and/or renovation.

3.08 REUSE OF MATERIALS AND EQUIPMENT

- A. Remove and store materials and equipment listed in Article Title To Materials to be reused or relocated to prevent damage, and reinstall as the Work progresses.
- B. Properly store and maintain equipment and materials in same condition as when removed.
- C. Store equipment and material designated to be reused in a location designated by Owner.
- D. Equipment and material designated to be reused shall be cleaned, serviced and checked for proper operability before being put back into service.

- E. Engineer will determine condition of equipment and materials prior to removal.

### 3.09 SPECIALIZED SALVAGE

- A. Historical Items: Remove in a manner to prevent damage and shall be delivered to Owner.

### 3.10 UNSALVAGEABLE MATERIAL

- A. Concrete, masonry, and other noncombustible material, except concrete permitted to remain in place, shall be disposed of by Contractor.
- B. Combustible material shall be disposed of by Contractor.
- C. Universal Waste Lamps and Thermostats: Dispose of in strict accordance with 40 CFR 273.

### 3.11 CLEANUP

- A. Debris and rubbish shall be removed and transported in a manner that prevents spillage on streets or adjacent areas. Local regulations regarding hauling and disposal shall apply.

**END OF SECTION**

## **SECTION 03 10 00**

### **CONCRETE FORMWORK**

#### **PART 1 GENERAL**

##### **1.01 SCOPE OF WORK**

- A. Furnish all labor, materials, equipment and incidentals required to design, install and remove formwork for cast-in-place concrete complete as shown on the Drawings and specified herein.
- B. Secure to forms as required or set for embedment as required, all miscellaneous metal items, sleeves, reglets, anchor bolts, inserts and other items furnished under other Sections and required to be cast into concrete, or approved in advance by the Engineer.

##### **1.02 RELATED WORK**

- A. Concrete Reinforcement is included in Section 03200.
- B. Concrete Joints and Joint Accessories are included in Section 03250.
- C. Cast-in-Place Concrete is included in Section 03300.
- D. Grout is included in Section 03600.

##### **1.03 SUBMITTALS**

- A. Submit to the Engineer, in accordance with Section 01300, shop drawings, and product data showing materials of construction and details of installation for:
  - 1. Form release agent
  - 2. Form ties
  - 3. Tapered Ties : Proposed method and products for sealing form tie hole.
- B. Samples
  - 1. Demonstrate to the Engineer on a designated area of the concrete substructure exterior surface that the form release agent will not adversely affect concrete surfaces to be painted, coated or otherwise finished and will not affect the forming materials.
- C. Certificates
  - 1. Statement of qualification for the formwork designer retained by Contractor. Formwork designer shall be a professional engineer registered in the same

state as the project site. Designer shall have at a minimum five years of experience designing the required formwork and falsework systems.

2. Certify that form release agent is suitable for use in contact with potable water after 30 days (non-toxic and free of taste and odor).

#### **1.04 REFERENCE STANDARDS**

- A. American Concrete Institute (ACI)
  1. ACI 301 – Standard Specification for Structural Concrete
  2. ACI 318 – Building Code Requirements for Reinforced Concrete
  3. ACI 347 – Formwork for Concrete
- B. American Plywood Association (APA)
  1. Material grades and designations as specified
- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### **1.05 SYSTEM DESCRIPTION**

- A. Formwork shall be designed and erected in accordance with the requirements of ACI 301 and ACI 318 and as recommended in ACI 347 and shall comply with all applicable regulations and codes. The design shall consider any special requirements due to the use of plasticized and/or retarded set concrete. Design forms and ties to withstand concrete pressures without budging, spreading, or lifting forms.
- B. Architectural Concrete is wall, slab, beam or column concrete which will have surfaces exposed to view in the finished work. It includes similar exposed surfaces in water containment structures from the top of walls to 2-ft below the normal water surface in open tanks and basins.

### **PART 2 PRODUCTS**

#### **2.01 GENERAL**

- A. The usage of a manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configurations desired.

#### **2.02 MATERIALS**

- A. General: Forms for cast in place concrete shall be made of wood, metal, or other approved material. Construct wood forms of sound lumber or plywood of suitable dimensions and free from knotholes and loose knots. Where used for exposed surfaces, dress and match boards. Sand plywood smooth and fit adjacent panels with tight joints. Metal forms may be used when approved by the Engineer and shall



be of an appropriate type for the class of work involved. All forms shall be designed and constructed to provide a flat, uniform concrete surface requiring minimal finishing or repairs.

B. Wall Forms

1. Forms for all exposed exterior and interior concrete walls shall be "Plyform" exterior grade plywood panels manufactured in compliance with the APA and bearing the trademark of that group, or equal acceptable to the Engineer. Provide B grade or better veneer on all faces to be placed against concrete during forming. The class of material and grades of interior plies shall be of sufficient strength and stiffness to provide a flat, uniform concrete surface requiring minimal finishing and grinding.
2. All joints or gaps in forms shall be taped, gasketed, plugged, and/or caulked with an approved material so that the joint will remain watertight and will withstand placing pressures without bulging.
3. Circular Structures: Use forms conforming to the circular shape of the structure. Straight panels may be substituted for circular form. Provided panels to not exceed two (2) feet in horizontal width and angular deflection is no greater than 3 ½ degrees per joint.

C. Column Forms

1. Rectangular Columns: as specified for walls
2. Circular Columns: Fabricated steel or fiber reinforced plastic with bolted together sections or spirally wound laminated fiber form internally treated with form release agent for height of columns.

D. Rustication strips shall be at the location and shall conform to the details shown on the Drawings. Moldings for chamfers and rustications shall be milled and planed smooth. Rustications and corner strips shall be of a nonabsorbent material, compatible with the form surface and fully sealed on all sides to prohibit the loss of paste or water between the two surfaces.

E. Form Release Agent

1. Coat all forming surfaces in contact with concrete using an effective, non-staining, non-residual, water based, bond-breaking form coating unless otherwise noted. Form release agents used in potable water containment structures shall be suitable for use in contact with potable water and shall be non-toxic and free of taste or odor and meet the requirements of NSF/ANSI Standard 61. Form release agent shall be Farm Fresh by Unitex or Engineer approved equal.

F. Form Ties

1. Form ties encased in concrete other than those specified in the following paragraphs shall be designed so that, after removal of the projecting part, no

metal shall remain within 1 1/2 in off the face of the concrete. The part of the tie to be removed shall be at least 1/2 in diameter or be provided with a wood or metal cone at least 1/2 in diameter and 1 1/2 in long. Form ties in concrete exposed to view shall be the cone washer type.

2. Form ties for exposed exterior and interior walls shall be as specified in the preceding paragraph except that the cones shall be of approved wood or plastic.
3. Flat bar ties for panel forms, if used, shall have plastic or rubber inserts having a minimum depth of 1-1/2-in and sufficient dimensions to permit proper patching of the tie hole.
4. Ties for liquid containment structures shall have an integral waterstop that is tightly welded to the tie.
5. Common wire shall not be used for form ties.
6. Alternate form ties consisting of tapered through-bolts at least 1-in in diameter at smallest end or through-bolts that utilize a removable tapered sleeve of the same minimum size may be used at the Contractor's option. Obtain Engineer's acceptance of system and spacing of ties prior to ordering or purchase of forming. Clean, fill and seal form tie hole with non-shrink cement grout. A vinyl plug shall be inserted into the hole to serve as a waterstop. The Contractor shall be responsible for water-tightness of the form ties and any repairs needed.

### **PART 3 EXECUTION**

#### **3.01 GENERAL**

- A. Forms shall be used for all cast-in-place concrete including sides of footings. Forms shall be constructed and placed so that the resulting concrete will be of the shape, lines, dimensions and appearance indicated on the drawings.
- B. Forms for walls shall have removable panels at the bottom for cleaning, inspection and joint surface preparation. Forms for walls of considerable height (15 feet or greater) shall have closable intermediate inspection ports. Tremies and hoppers for placing concrete shall be used to allow concrete inspection, to prevent segregation and to prevent the accumulation of hardened concrete on the forms above the fresh concrete.
- C. Molding, bevels, or other types of chamfer strips shall be placed to produce block outs, rustications, or chamfers as shown on the Drawings or as specified herein. Chamfer strips shall be provided at horizontal and vertical projecting corners to produce a 3/4-in chamfer. Rectangular or trapezoidal moldings shall be placed in locations requiring sealants where specified or shown on the Drawings. Sizes of moldings shall conform to the sealants manufacturer's recommendations.

- D. Forms shall be sufficiently rigid to withstand construction loads and vibration and to prevent displacement or sagging between supports. Construct forms so that the concrete will not be damaged by their removal. The contractor shall be entirely responsible for the adequacy of the forming system.
- E. Before form material is re-used, all surfaces to be in contact with concrete shall be thoroughly cleaned, all damaged places repaired, all projecting nails withdrawn and all protrusions smoothed. Reuse of wooden forms for other than rough finish will be permitted only if a "like new" condition of the form is maintained.

### **3.02 FORM TOLERANCES**

- A. Forms shall be surfaced, designed and constructed in accordance with the recommendations of ACI 301 and shall meet the following additional requirements for the specified finishes.
  - 1. Formed Surface Exposed to View: Edges of all form panels in contact with concrete shall be flush within 1/16-in and forms for plane surfaces shall be such that the concrete will be plane within 3/16-in in 4-ft. Forms shall be tight to prevent the passage of mortar, water and grout. The maximum deviation of the finish wall surface at any point shall not exceed 1/4-in from the intended surface as shown on the Drawings. Form panels shall be arranged symmetrically and in an orderly manner to minimize the number of seams.
  - 2. Formed surfaces not exposed to view or buried shall meet requirements of Class "C" Surface in ACI 301.
  - 3. Formed rough surfaces including mass concrete, pipe encasement, electrical duct encasement and other similar installations shall have no minimum requirements for surface smoothness and surface deflections. The overall dimensions of the concrete shall be plus or minus 1-in.

### **3.03 FORM PREPARATION**

- A. Wood forms in contact with the concrete shall be coated with an effective release agent prior to form installation.
- B. Steel forms shall be thoroughly cleaned and mill scale and other ferrous deposits shall be sandblasted or otherwise removed from the contact surface for all forms, except those utilized for surfaces receiving a rough finish. All forms shall have the contact surfaces coated with a release agent.

### **3.04 REMOVAL OF FORMS**

- A. The Contractor shall be responsible for all damage resulting from removal of forms. Forms and shoring for structural slabs or beams shall remain in place in accordance with ACI 301. Form removal shall conform to the requirements specified in Section 03300 including curing requirements.
- B. Repair all damages resulting from removal of forms.

- C. Clean, fill and seal form tie hole with non-shrink cement grout. The Contractor shall be responsible for the watertightness of the form ties holes and any repair necessary to maintain watertightness of tie holes.

**3.05 INSPECTION**

- A. The Engineer on site shall be notified when the forms are complete and ready for inspection at least 6 hours prior to the proposed concrete placement.
- B. Failure of the forms to comply with the requirements specified herein or to produce concrete complying with the requirements of Section 03300 shall be grounds for rejection of that portion of the concrete work. Rejected work shall be repaired or replaced as directed by the Engineer at no additional cost to the Owner. Such repair or replacement shall be subject to the requirements to this Section and approval of the Engineer.

**END OF SECTION.**

## **SECTION 03 20 00**

### **CONCRETE REINFORCEMENT**

#### **PART 1 GENERAL**

##### **1.01 SCOPE OF WORK**

- A. Furnish all labor, materials, equipment and incidentals required and install all concrete reinforcement complete as shown on the Drawings and as specified herein.

##### **1.02 RELATED WORK**

- A. Concrete Formwork is included in Section 03100.
- B. Cast-in-place Concrete is included in Section 03300.

##### **1.03 SUBMITTALS**

- A. Submit to the Engineer, in accordance with Section 01300, shop drawings and product data showing materials of construction and details of installation for:
  - 1. Reinforcing steel: Placement drawings shall conform to the recommendations of the CRSI Manual of Standard Practice and ACI SP-66. All reinforcement in a concrete placement shall be included on a single placement drawing or cross referenced to the pertinent main placement drawing. The main drawing shall include the additional reinforcement (around openings, at corners, etc) shown on the standard detail sheets. Bars to have special coatings and/or to be of special steel or special yield strength are to be clearly identified. For all cast-in-place concrete tanks, retaining walls, building stem walls, wall sections shall be included in the drawings.
  - 2. All splice and joint locations shall be indicated on placement drawings. Splice lengths shall be clearly dimensioned.
  - 3. Reinforcement cover shall be clearly indicated.
  - 4. Submit reinforcement shop drawing for each structure as a complete package. Submittal showing portions of a structure will not be acceptable, unless acceptable by Engineer in advance.
  - 5. Submittals consisting of schedules without accompanying placement drawings will not be acceptable, unless acceptable by Engineer in advance.
  - 6. Bar bending details. The bars shall be referenced to the same identification marks shown on the placement drawings and shipping tags. Schedules shall be located on the same sheet where the bar mark is referenced. Schedule of all placements to contain synthetic reinforcing fibers. The amount of fibers per cubic yard to be used for each of the placements shall be noted on the

schedule. The name of the manufacturer of the fibers and the product data shall be included with the submittal.

**B. Test Reports**

1. Certified copy of mill test on each steel proposed for use showing the physical properties of the steel and the chemical analysis.
2. Mechanical Reinforcing Bar Couplers. Current Evaluation Report prepared by ICC-ES or by other approved testing agency.

**C. Certificates**

1. Welder's certification. The certification shall be in accordance with AWS D1.4 when welding of reinforcement is required.
2. Weld Procedures. Provide procedure for each type of welded reinforcing splice in accordance with AWS D1.4 when welding of reinforcing is required.

**1.04 REFERENCE STANDARDS**

**A. American Society for Testing and Materials (ASTM)**

1. ASTM A82 - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
2. ASTM A184 - Standard Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement.
3. ASTM A185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
4. ASTM A496 - Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement
5. ASTM A497 - Standard Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement
6. ASTM A615 - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
7. ASTM A616 - Standard Specification for Rail-Steel Deformed and Plain Bars for Concrete Reinforcement
8. ASTM A617 - Standard Specification for Axle-Steel Deformed and Plain Bars for Concrete Reinforcement
9. ASTM A706 - Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.
10. ASTM A767 - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement

11. ASTM A775 - Standard Specification for Epoxy-Coated Reinforcing Steel Bars.
12. ASTM A884 - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Fabric for Reinforcement.
13. ASTM A934 - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars.

B. American Concrete Institute (ACI)

1. ACI 301 - Standard Specification for Structural Concrete
2. ACI 315 - Details and Detailing of Concrete Reinforcement.
3. ACI 318 - Building Code Requirements for Structural Concrete
4. ACI SP-66 - ACI Detailing Manual

C. Concrete Reinforcing Steel Institute (CRSI)

1. Manual of Standard Practice

D. American Welding Society (AWS)

1. AWS D1.4 - Structural Welding Code Reinforcing Steel

E. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

**1.05 QUALITY ASSURANCE**

- A. Provide services of a manufacturer's representative, with at least 2 years experience in the use of the reinforcing fibers for a preconstruction meeting and assistance during the first placement of the material.

**1.06 DELIVERY, HANDLING AND STORAGE**

- A. Reinforcing steel shall be substantially free from mill scale, rust, dirt, grease, or other foreign matter.
- B. Reinforcing steel shall be shipped and stored with bars of the same size and shape fastened in bundles with durable tags, marked in a legible manner with waterproof markings showing the same "mark" designations as those shown on the submitted Placing Drawings.
- C. Reinforcing steel shall be stored off the ground and kept free from dirt, oil, or other injurious contaminants

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Materials shall be new, of domestic manufacture and shall comply with the following material specifications.
- B. Deformed Concrete Reinforcing Bars: ASTM A615, Grade 60 deformed bars.
- C. Concrete Reinforcing Bars required on the Drawings to be Welded: ASTM A706.
- D. Welded Steel Wire Fabric: ASTM A185. Provide in flat sheets.
- E. Welded Deformed Steel Wire Fabric: ASTM A497. Provide in flat sheets.
- F. Welded Plain Bar Mats: ASTM A704 and ASTM A615 Grade 60 plain bars.
- G. Fabricated Deformed Steel Bar Mats: ASTM A184 and ASTM A615 Grade 60 deformed bars.
- H. Reinforcing Steel Accessories
  - 1. Plastic Protected Bar Supports: CRSI Bar Support Specifications, Class 1 - Maximum Protection.
  - 2. Stainless Steel Protected Bar Supports: CRSI Bar Support Specifications, Class 2 - Moderate Protection.
  - 3. Precast Concrete Block Bar Supports: CRSI Bar Support Specifications, Precast Blocks. Blocks shall have equal or greater strength than the surrounding concrete.
  - 4. Steel Protected Bar Supports: #4 Steel Chairs with plastic or rubber tips.
- I. Tie Wire
  - 1. Tie Wires for Reinforcement shall be 16-gauge or heavier, black annealed wire or stranded wire.
- J. Mechanical Reinforcing Bar Couplers
  - 1. General : Use only at locations indicated on the Drawings or where written approval has been obtained from the Engineer.
  - 2. Mechanical reinforcing steel butt splices shall be positive connecting taper threaded type employing a hexagonal coupler such as Lenton rebar splices as manufactured by Erico Products Inc., Solon, OH or equal. They shall meet all ACI 318 Building Code requirements. Bar ends must be taper threaded with coupler manufacturer's bar threader to ensure proper taper and thread engagement.
  - 3. Bar couplers shall be torqued to manufacturer's recommended value.
  - 4. Unless otherwise noted on the Drawings, mechanical tension splices shall be designed to produce a splice strength in tension or compression of not less than 125 percent of the ASTM specified minimum yield strength of the rebar.



5. Compression type mechanical splices shall provide concentric bearing from one bar to the other bar and shall be capable of developing the ultimate strength of the rebar in compression.
6. Form saver type mechanical couplers shall have flanges with nailing holes to positively attach coupler to formwork.

K. Fiber Reinforcement

1. Synthetic reinforcing fiber for concrete shall be 100 percent polypropylene collated, fibrillated fibers as manufactured by Fibermesh Company of Synthetic Industries Inc., Chattanooga, TN - Fibermesh or equal. Fiber length and quantity for the concrete mix shall be in strict compliance with the manufacturer's recommendations as approved by the Engineer.

**2.02 FABRICATION**

- A. Fabrication of reinforcement shall be in compliance with the CRSI Manual of Standard Practice and ACI SP-66.
- B. Bars shall be cold bent. Bars shall not be straightened or rebent.
- C. Bars shall be bent around revolving collar having a diameter of not less than that recommended by the ACI SP-66.
- D. Bar ends that are to be butt spliced, placed through limited diameter holes in metal, or threaded, shall have the applicable end(s) saw-cut. Such ends shall terminate in flat surfaces within 1-1/2 degrees of a right angle to the axis of the bar.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Surface condition, bending, spacing and tolerances of placement of reinforcement shall comply with the CRSI Manual of Standard Practice and ACI SP-66. The Contractor shall be solely responsible for providing and adequate number of bars and maintaining the spacing and clearances shown on the Drawings.
- B. Except as otherwise indicated on the Drawings, the minimum concrete cover of reinforcement shall be as follows:
  1. Concrete cast against and permanently exposed to earth: 3-in
  2. Concrete exposed to soil, water, sewage, sludge and/or weather: 2-in (Including bottom cover of slabs over water or sewage)
  3. Concrete not exposed to soil, water, sewage, sludge and/or weather:
    - a. Slabs (top and bottom cover), walls, joists, shells and folded plate members – 3/4 in.

- b. Beams and columns (principal reinforcement, ties, spirals and stirrups) – 1-1/2 in.
- C. Reinforcement which will be exposed for a considerable length of time after being placed shall be coated with a heavy coat of neat cement slurry.
- D. No reinforcing steel bars shall be welded either during fabrication or erection unless specifically shown on the Drawings or specified herein, or unless prior written approval has been obtained from the Engineer. All bars that have been welded, including tack welds, without such approval shall be immediately removed from the work. When welding of reinforcement is approved or called for, it shall comply with AWS D1.4.
- E. Reinforcing steel interfering with the location of other reinforcing steel, conduits or embedded items, may be moved within the specified tolerances or one bar diameter, whichever is greater. Greater displacement of bars to avoid interference shall only be made with the approval of the Engineer. Do not cut reinforcement to install inserts, conduits, mechanical openings or other items without the prior approval of the Engineer.
- F. Securely support and tie reinforcing steel to prevent movement during concrete placement. Secure dowels in place before placing concrete.
- G. Reinforcing steel bars shall not be field bent except where shown on the Drawings or specifically authorized in writing by the Engineer. If authorized, bars shall be cold-bent around the standard diameter spool specified in the CRSI. Do not heat bars. Closely inspect the reinforcing steel for breaks. If the reinforcing steel is damaged, replace, Cadweld or otherwise repair as directed by the Engineer. Do not bend reinforcement after it is embedded in concrete unless specifically shown otherwise on the Drawings.

### **3.02 REINFORCEMENT AROUND OPENINGS**

- A. Unless specific additional reinforcement around openings is shown on the Drawings, provide additional reinforcing steel on each side of the opening equivalent to one half of the cross-sectional area of the reinforcing steel interrupted by an opening. The bars shall have sufficient length to develop bond at each end beyond the opening or penetration.

### **3.03 SPLICING OF REINFORCEMENT**

- A. Splices designated as compression splices on the Drawings, unless otherwise noted, shall be 30 bar diameters, but not less than 12-in. The lap splice length for column vertical bars shall be based on the bar size in the column above.
- B. Tension lap splices shall be provided at all laps in compliance with ACI SP-66. Splices in adjacent bars shall be staggered. Class A splices may be used when 50 percent or less of the bars are spliced within the required lap length. Class B splices shall be used at all other locations.

- C. Splicing of reinforcing steel in concrete elements noted to be "tension members" on the Drawings shall be avoided whenever possible. However, if required for constructability, splices in the reinforcement subject to direct tension shall be welded to develop, in tension, at least 125 percent of the specified yield strength of the bar. Splices in adjacent bars shall be offset the distance of a Class B splice.
- D. Install wire fabric in as long lengths as practicable. Wire fabric from rolls shall be rolled flat and firmly held in place. Splices in welded wire fabric shall be lapped in accordance with the requirements of ACI SP-66 but not less than 12-in. The spliced fabrics shall be tied together with wire ties spaced not more than 24-in on center and laced with wire of the same diameter as the welded wire fabric. Do not position laps midway between supporting beams, or directly over beams of continuous structures. Offset splices in adjacent widths to prevent continuous splices.
- E. Mechanical reinforcing steel splicers shall be used only where shown on the Drawings. Splices in adjacent bars shall be offset by at least 30 bar diameters. Mechanical reinforcing splices are only to be used for special splice and dowel conditions approved by the Engineer.

#### **3.04 ACCESSORIES**

- A. Determine, provide and install accessories such as chairs, chair bars and the like in sufficient quantities and strength to adequately support the reinforcement and prevent its displacement during the erection of the reinforcement and the placement of concrete.
- B. Use precast concrete blocks where the reinforcing steel is to be supported over soil.
- C. Stainless steel bar supports or steel chairs with stainless steel tips shall be used where the chairs are set on forms for a concrete surface that will be exposed to weather, high humidity, or liquid (including bottom of slabs over liquid containing areas). Use of galvanized or plastic tipped metal chairs is permissible in all other locations unless otherwise noted on the Drawings or specified herein.
- D. Alternate methods of supporting top steel in slabs, such as steel channels supported on the bottom steel or vertical reinforcing steel fastened to the bottom and top mats, may be used if approved by the Engineer.

#### **3.05 INSPECTION**

- A. In no case shall any reinforcing steel be covered with concrete until the installation of the reinforcement, including the size, spacing and position of the reinforcement has been observed by the Engineer and the Engineer's release to proceed with the concreting has been obtained. The Engineer shall be given ample prior notice of the readiness of placed reinforcement for observation. The forms shall be kept open until the Engineer has finished his/her observations of the reinforcing steel.

END OF SECTION

## **SECTION 03 30 00**

### **CAST-IN-PLACE CONCRETE**

#### **PART 1 GENERAL**

##### **1.01 SCOPE OF WORK**

- A. Furnish all labor and materials required and install cast-in-place concrete complete as shown on the Drawings and as specified herein.

##### **1.02 RELATED WORK**

- A. Concrete Formwork is included in Section 03100.
- B. Concrete Reinforcement is included in Section 03200.
- C. Concrete Joints and Joint Accessories are included in Section 03250.
- D. Concrete Finishes are included in Section 03350.
- E. Grout is included in Section 03600.

##### **1.03 SUBMITTALS**

- A. Submit to the Engineer, in accordance with Section 01300, shop drawings and product data including the following:
  - 1. Sources of cement, pozzolan and aggregates.
  - 2. Material Safety Data Sheets (MSDS) for all concrete components and admixtures.
  - 3. Air-entraining admixture. Product data including catalogue cut, technical data, storage requirements, product life, recommended dosage, temperature considerations and conformity to ASTM standards.
  - 4. Water-reducing admixture. Product data including catalogue cut, technical data, storage requirements, product life, recommended dosage, temperature considerations and conformity to ASTM standards.
  - 5. High-range water-reducing admixture (plasticizer). Product data including catalogue cut, technical data, storage requirements, product life, recommended dosage, temperature considerations, retarding effect, slump range and conformity to ASTM standards. Identify proposed locations of use.
  - 6. Concrete mix for each formulation of concrete proposed for use including constituent quantities per cubic yard, water-cementitious materials ratio, concrete slump, type and manufacturer of cement. Provide either a. or b. below for each mix proposed.

- a. Standard deviation data for each proposed concrete mix based on statistical records.
  - b. The curve of water-cementitious materials ratio versus concrete cylinder strength for each formulation of concrete proposed based on laboratory tests. The cylinder strength shall be the average of the 28 day cylinder strength test results for each mix. Provide results of 7 and 14 day tests if available.
- 7. Sheet curing material. Product data including catalogue cut, technical data and conformity to ASTM standard.
- 8. Liquid curing compound. Product data including catalogue cut, technical data, storage requirements, product life, application rate and conformity to ASTM standards. Identify proposed locations of use.
- B. Samples
  - 1. Fine and coarse aggregates if requested by the Engineer.
- C. Test Reports
  - 1. Fine aggregates – Sieve analysis, physical properties, and deleterious substance.
  - 2. Coarse aggregates – Sieve analysis, physical properties, and deleterious substances.
  - 3. Cements – Chemical analysis and physical properties for each type.
  - 4. Pozzolans – Chemical analysis and physical properties.
  - 5. Proposed concrete mixes – Compressive strength, slump and air content.
- D. Certifications
  - 1. Certify admixtures used in the same concrete mix are compatible with each other and the aggregates.
  - 2. Certify admixtures are suitable for use in contact with potable water after 30 days of concrete curing.
  - 3. Certify curing compound is suitable for use in contact with potable water after 30 days (non-toxic and free of taste or odor).

#### **1.04 REFERENCE STANDARDS**

- A. American Concrete Institute (ACI).
  - 1. ACI 301 - Standard Specification for Structural Concrete
  - 2. ACI 305.1 – Standard Specification for Hot Weather Concreting.

3. ACI 306.1 - Standard Specification for Cold Weather Concreting.
  4. ACI 318 – Building Code Requirements for Structural Concrete and Commentary
- B. American Society for Testing and Materials (ASTM)
1. ASTM C31 – Standard Practice for Making and Curing Concrete Test Specimens in the Field.
  2. ASTM C33 - Standard Specification for Concrete Aggregates.
  3. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
  4. ASTM C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
  5. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
  6. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete
  7. ASTM C150 - Standard Specification for Portland Cement
  8. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete
  9. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
  10. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
  11. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
  12. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
  13. ASTM C494 - Standard Specification for Chemical Admixtures for Concrete.
  14. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
  15. ASTM C1017 - Standard Specification for Chemical Admixtures for use in Producing Flowing Concrete.
- C. Nation Ready Mixed Concrete Association (NRMCA)
- D. Where reference is made to one of the above standards, the revision in effect at the time of bid shall apply.

## **1.05 QUALITY ASSURANCE**

- A. Reinforced concrete shall comply with specifications and standards noted above. The most stringent requirement of the specifications, standards and this Section shall apply when conflicts exist.
- B. Only one source of cement and aggregates shall be used on any one structure. Concrete shall be uniform in color and appearance.
- C. Well in advance of placing concrete, discuss with the Engineer the sources of individual materials and batched concrete proposed for use. Discuss placement methods, waterstops and curing. Propose methods of hot and cold weather concreting as required. Prior to the placement of any concrete containing a high-range water-reducing admixture (plasticizer), the Contractor, accompanied by the plasticizer manufacturer, shall discuss the properties and techniques of batching and placing plasticized concrete.
- D. If, during the progress of the work, it is impossible to secure concrete of the required workability and strength with the materials being furnished, the Engineer may order such changes in proportions or materials, or both, as may be necessary to secure the desired properties. All changes so ordered shall be made at the Contractor's expense.
- E. If, during the progress of the work, the materials from the sources originally accepted change in characteristics, the Contractor shall, at his/her expense, make new acceptance tests of aggregates and establish new design mixes.
- F. Testing of the following materials shall be furnished by the Contractor to verify conformity with this Specification Section and the stated ASTM Standards.
  - 1. Fine aggregates for conformity with ASTM C33 - Sieve analysis, physical properties, and deleterious substances.
  - 2. Coarse aggregates for conformity with ASTM C33 - Sieve analysis, physical properties, and deleterious substances.
  - 3. Cements for conformity with ASTM C150 - Chemical analysis and physical properties.
  - 4. Pozzolans for conformity with ASTM C618 - Chemical analysis and physical properties.
  - 5. Proposed concrete mix designs - Compressive strength, slump and air content.
- G. Field testing and inspection services will be provided by the Owner. The cost of such work, except as specifically stated otherwise, shall be paid by the Owner. Testing of the following items shall be by the Owner to verify conformity with this Specification Section.

1. Concrete placements - Compressive strength (cylinders), compressive strength (cores), slump, and air content.
  2. Other materials or products that may come under question.
- H. All materials incorporated in the work shall conform to accepted samples.

#### **1.06 DELIVERY, STORAGE AND HANDLING**

- A. Cement: Store in weather-tight buildings, bins or silos to provide protection from dampness and contamination and to minimize warehouse set.
- B. Aggregate: Arrange and use stockpiles to avoid excessive segregation or contamination with other materials or with other sizes of like aggregates. Build stockpiles in successive horizontal layers not exceeding 3 feet in thickness. Complete each layer before the next is started. Do not use frozen or partially frozen aggregate.
- C. Sand: Arrange and use stockpiles to avoid contamination. Allow sand to drain to uniform moisture content before using. Do not use frozen or partially frozen aggregates.
- D. Admixtures: Store in closed containers to avoid contamination, evaporation or damage. Provide suitable agitating equipment to assure uniform dispersion of ingredients in admixture solutions which tend to separate. Protect liquid admixtures from freezing and other temperature changes which could adversely affect their characteristics.
- E. Pozzolan: Store in weather-tight buildings, bins or silos to provide protection from dampness and contamination.
- F. Sheet Curing Materials: Store in weather-tight buildings or off the ground and under cover.
- G. Liquid Curing Compounds: Store in closed containers.

### **PART 2 PRODUCTS**

#### **2.01 GENERAL**

- A. The use of manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.
- B. Cement: U.S. made Portland cement complying with ASTM C150. Air entraining cements shall not be used. Cement brand shall be subject to approval by the Engineer and one brand shall be used throughout the work.

#### **2.02 MATERIALS**

- A. Materials shall comply with this Section and any applicable State or local requirements.



- B. Cement: The following cement type(s) shall be used:
1. All Classes – Type I/II or Type II
- C. Fine Aggregate: Washed inert natural sand conforming to the requirements of ASTM C33.
- D. Coarse Aggregate: Well-graded crushed stone or washed gravel conforming to the requirements of ASTM C33. Grading requirements shall be as listed in ASTM C33 Table 2 for the specified coarse aggregate size number. Limits of Deleterious Substances and Physical Property Requirements shall be as listed in ASTM C33 Table 3 for severe weather regions. Size numbers for the concrete mixes shall be as shown in Table 1 herein.
- E. Water: Potable water free from injurious amounts of oils, acids, alkalis, salts, organic matter, or other deleterious substances.
- F. Admixtures: Admixtures shall be free of chlorides and alkalis (except for those attributable to water). When it is required to use more than one admixture in a concrete mix, the admixtures shall be from the same manufacturer. Admixtures shall be compatible with the concrete mix including other admixtures and shall be suitable for use in contact with potable water after 30 days of concrete curing.
1. Air-Entraining Admixture: The admixture shall comply with ASTM C260. Proportioning and mixing shall be in accordance with manufacturer's recommendations.
  2. Water-Reducing Agent: The admixture shall comply with ASTM C494, Type A. Proportioning and mixing shall be in accordance with manufacturer's recommendations.
  3. High-Range Water-Reducer (Plasticizer): The admixture shall comply with ASTM C494, Type F and shall result in non-segregating plasticized concrete with little bleeding and with the physical properties of low water/cement ratio concrete. The treated concrete shall be capable of maintaining its plastic state in excess of 2 hours. Proportioning and mixing shall be in accordance with manufacturer's recommendations. Where walls are 14 inches thick or less and the wall height exceeds 12 feet a mix including a plasticizer must be used.
  4. Admixtures causing retarded or accelerated setting of concrete shall not be used without written approval from the Engineer. When allowed, the admixtures shall be retarding or accelerating water reducing or high range water reducing admixtures.
- G. Pozzolan (Fly Ash): Pozzolan shall be Class C or Class F fly ash complying with ASTM C618 except the Loss on Ignition (LOI) shall be limited to 3% maximum.
- H. Ground-Granulated Blast Furnace Slag. Ground-granulated blast furnace slag shall conform to the following:

1. ASTM C989.
  2. Slag activity classification: Grade 100 or 120.
- I. Sheet Curing Materials. Waterproof paper, polyethylene film or white burlap-polyethylene sheeting all complying with ASTM C171.
  - J. Liquid Curing Compound. Liquid membrane-forming curing compound shall comply with the requirements of ASTM C309, Type 1-D (clear or translucent with fugitive dye) and shall contain no wax, paraffin, or oil. Curing compound shall be approved for use in contact with potable water after 30 days (non-toxic and free of taste or odor). Curing compound shall comply with Federal, State and local VOC limits.

## **2.03 MIXES**

- A. Development of mix designs and testing shall be by an independent testing laboratory acceptable to the Engineer engaged by and at the expense of the Contractor.
- B. Select proportions of ingredients to meet the design strength and materials limits specified in Table 1 and to produce concrete having proper placability, durability, strength, appearance and other required properties. Proportion ingredients to produce a homogenous mixture which will readily work into corners and angles of forms and around reinforcement without permitting materials to segregate or allowing excessive free water to collect on the surface.
- C. The design mix shall be based on standard deviation data of prior mixes with essentially the same proportions of the same constituents or, if such data is not available, be developed by a testing laboratory, acceptable to the Engineer, engaged by and at the expense of the Contractor. Acceptance of mixes based on standard deviation shall be based on the modification factors for standard deviation tests contained in ACI 318. The water content of the concrete mix, determined by laboratory testing, shall be based on a curve showing the relation between water cementitious ratio and 7 and 28 day compressive strengths of concrete made using the proposed materials. The curves shall be determined by four or more points; each representing an average value of at least three test specimens at each age. The curves shall have a range of values sufficient to yield the desired data, including the specified design strengths as modified below, without extrapolation. The water content of the concrete mixes to be used, as determined from the curve, shall correspond to strengths 16 percent greater than the specified design strengths. The resulting mix shall not conflict with the limiting values for maximum water cementitious ratio and net minimum cementitious content as specified in Table 1.
- D. Compression Tests: Provide testing of the proposed concrete mix or mixes to demonstrate compliance with the specified design strength requirements in conformity with the above paragraph.
- E. Entrained air, as measured by ASTM C231, shall be as shown in Table 1.

1. If the air-entraining agent proposed for use in the mix requires testing methods other than ASTM C231 to accurately determine air content, make special note of this requirement in the admixture submittal.
- F. Slump of the concrete as measured by ASTM C143, shall be as shown in Table 1. If a high-range water-reducer (plasticizer) is used, the slump indicated shall be that measured before plasticizer is added. Plasticized concrete shall have a slump ranging from 5 to 8 inches.
- G. Proportion admixtures according to the manufacturer's recommendations. Two or more admixtures specified may be used in the same mix provided that the admixtures in combination retain full efficiency and have no deleterious effect on the concrete or on the properties of each other.

| TABLE 1 – CONCRETE MIX REQUIREMENTS |                                                                                                                                                                      |               |                       |                         |             |                             |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------|-------------------------|-------------|-----------------------------|
| Class                               | Design Strength<br>(1)                                                                                                                                               | Cement<br>(2) | Fine Aggregate<br>(2) | Coarse Aggregate<br>(3) |             | Cementitious Content<br>(4) |
| A                                   | 2,500                                                                                                                                                                | C150 Type II  | C33                   | 57                      |             | 440 min.                    |
| B                                   | 3,000                                                                                                                                                                | C150 Type II  | C33                   | 57                      |             | 480 min.                    |
| C                                   | 4,000                                                                                                                                                                | C150 Type II  | C33                   | 57                      |             | 560 min.                    |
| D                                   | 5,000                                                                                                                                                                | C150 Type II  | C33                   | 57                      |             | 660 min.                    |
| Class                               | W/cm Ratio<br>(5)                                                                                                                                                    | Fly Ash       | AE Range<br>(6)       | WR<br>(7)               | HRWR<br>(8) | Slump Range<br>(inches)     |
| A                                   | 0.63 max                                                                                                                                                             | --            | 3.5 to 5              | Yes                     | --          | 1-4                         |
| B                                   | 0.54 max                                                                                                                                                             | --            | 3.5 to 5              | Yes                     | *           | 1-3                         |
| C                                   | 0.44 max                                                                                                                                                             | 25% max       | 3.5 to 5              | Yes                     | *           | 3-5                         |
| D                                   | 0.40 max                                                                                                                                                             | --            | 3.5 to 5              | Yes                     | *           | 3-5                         |
| <b>NOTES:</b>                       |                                                                                                                                                                      |               |                       |                         |             |                             |
| (1)                                 | Minimum compressive strength in psi at 28 days.                                                                                                                      |               |                       |                         |             |                             |
| (2)                                 | ASTM Designation.                                                                                                                                                    |               |                       |                         |             |                             |
| (3)                                 | Size number in ASTM C33.                                                                                                                                             |               |                       |                         |             |                             |
| (4)                                 | Cementitious content in pounds/cubic yard.                                                                                                                           |               |                       |                         |             |                             |
| (5)                                 | W/Cm is water-cementitious ratio by weight.                                                                                                                          |               |                       |                         |             |                             |
| (6)                                 | AE is percent air-entrainment.                                                                                                                                       |               |                       |                         |             |                             |
| (7)                                 | WR is water-reducer admixture.                                                                                                                                       |               |                       |                         |             |                             |
| (8)                                 | HRWR is high-range water-reducer admixture.                                                                                                                          |               |                       |                         |             |                             |
| *                                   | HRWR used at the Contractor's option except where walls are 14 inches thick or less and the wall height exceeds 12 feet, a mix including a plasticizer must be used. |               |                       |                         |             |                             |

### PART 3 EXECUTION

### **3.01 MEASURING MATERIALS**

- A. Concrete shall be composed of portland cement, fine aggregate, coarse aggregate, water and admixtures as specified and shall be produced by a plant acceptable to the Engineer. All constituents, including admixtures, shall be batched at the plant except a high-range water-reducer may also be added in the field.
- B. Measure materials for batching concrete by weighing in conformity with and within the tolerances given in ASTM C94 except as otherwise specified. Scales shall have been certified by the local Sealer of Weights and Measures within 1 year of use.
- C. Measure the amount of free water in fine aggregates within 0.3 percent with a moisture meter. Compensate for varying moisture contents of fine aggregates. Record the number of gallons of water as-batched on printed batching tickets.
- D. Admixtures shall be dispensed either manually using calibrated containers or measuring tanks, or by means of an automatic dispenser approved by the manufacturer of the specific admixture.
  - 1. Charge air-entraining and chemical admixtures into the mixer as a solution using an automatic dispenser or similar metering device.
  - 2. Inject multiple admixtures separately during the batching sequence.

### **3.02 MIXING AND TRANSPORTING**

- A. Batch plants shall have a current NRMCA Certification or equal.
- B. Concrete shall be ready-mixed concrete produced by equipment acceptable to the Engineer. No hand-mixing will be permitted. Clean each transit mix truck drum and reverse drum rotation before the truck proceeds under the batching plant. Equip each transit-mix truck with a continuous, nonreversible, revolution counter showing the number of revolutions at mixing speeds.
- C. Ready-mix concrete shall be transported to the site in watertight agitator or mixer trucks loaded not in excess of their rated capacities as stated on the name plate.
- D. Keep the water tank valve on each transit truck locked at all times. Any addition of water above the appropriate W/Cm ratio must be directed by the Engineer. Added water shall be incorporated by additional mixing of at least 35 revolutions. All added water shall be metered and the amount of water added shall be shown on each delivery ticket.
- E. All central plant and rolling stock equipment and methods shall comply with ACI 318 and ASTM C94.
- F. Select equipment of size and design to ensure continuous flow of concrete at the delivery end. Metal or metal-lined non-aluminum discharge chutes shall be used and shall have slopes not exceeding 1 vertical to 2 horizontal and not less than 1 vertical to 3 horizontal. Chutes more than 20-ft long and chutes not meeting slope requirements may be used if concrete is discharged into a hopper before distribution.

- G. Retempering (mixing with or without additional cement, aggregate, or water) of concrete or mortar which has reached initial set will not be permitted.
- H. Handle concrete from mixer to placement as quickly as practicable while providing concrete of required quality in the placement area. Dispatch trucks from the batching plant so they arrive at the work site just before the concrete is required, thus avoiding excessive mixing of concrete while waiting or delays in placing successive layers of concrete in the forms.
- I. Furnish a delivery ticket for ready mixed concrete to the Engineer as each truck arrives. Each ticket shall provide a printed record of the weight of cement and each aggregate as batched individually. Use the type of indicator that returns for zero punch or returns to zero after a batch is discharged. Clearly indicate the weight of fine and coarse aggregate, cement and water in each batch, the quantity delivered, the time any water is added, and the numerical sequence of the delivery. Show the time of day batched and time of discharge from the truck. Indicate the number of revolutions of the truck mixer.
- J. Temperature and Mixing Time Control
  - 1. In cold weather, do not allow the as-mixed temperature of the concrete and concrete temperatures at the time of placement in the forms to drop below 40 degrees F.
  - 2. If water or aggregate has been heated, combine water with aggregate in the mixer before cement is added. Do not add cement to mixtures of water and aggregate when the temperature of the mixture is greater than 90 degrees F.
  - 3. In hot weather, cool ingredients before mixing to maintain temperature of the concrete below the maximum placing temperature of 90 degrees F. If necessary, substitute well-crushed ice for all or part of the mixing water.
  - 4. The maximum time interval between the addition of mixing water and/or cement to the batch and the placing of concrete in the forms shall not exceed the values shown in Table 2.

| TABLE 2 – MAXIMUM TIME TO DISCHARGE OF CONCRETE      |              |
|------------------------------------------------------|--------------|
| Air or Concrete Temperature<br>(whichever is higher) | Maximum Time |
| 80 to 90 Degree F (27 to 32 Degree C)                | 45 minutes   |
| 70 to 79 Degree F (21 to 26 Degree C)                | 60 minutes   |
| 40 to 69 Degree F (5 to 20 Degree C)                 | 90 minutes   |

- 5. If an approved high-range water-reducer (plasticizer) is used to produce plasticized concrete, the maximum time interval shall not exceed 90 minutes.

### **3.03 CONCRETE APPARANCE**

- A. Concrete mix showing either poor cohesion or poor coating of the coarse aggregate with paste shall be remixed. If this does not correct the condition, the concrete shall be rejected. If the slump is within the allowable limit, but excessive bleeding, poor workability, or poor finishability are observed, changes in the concrete mix shall be obtained only by adjusting one or more of the following:
1. The gradation of aggregate.
  2. The proportion of fine and coarse aggregate.
  3. The percentage of entrained air, within the allowable limits.
- B. Concrete for the work shall provide a homogenous structure which, when hardened, will have the required strength, durability and appearance. Mixtures and workmanship shall be such that concrete surfaces, when exposed, will require no finishing. When concrete surfaces are stripped, the concrete, when viewed in good lighting from 10-ft away, shall be pleasing in appearance, and at 20-ft shall show no visible defects.

### **3.04 PLACING AND COMPACTING**

- A. Placing
1. Verify that all formwork completely encloses concrete to be placed and is securely braced prior to concrete placement. Remove ice, excess water, dirt and other foreign materials from forms. Confirm that reinforcement and other embedded items are securely in place. Have a competent workman at the location of the placement who can assure that reinforcing steel and embedded items remain in designated locations while concrete is being placed. Sprinkle semi-porous subgrades or forms to eliminate suction of water from the mix. Seal extremely porous subgrades in an approved manner.
  2. Deposit concrete as near its final position as possible to avoid segregation due to rehandling or flowing. Place concrete continuously at a rate which ensures the concrete is being integrated with fresh plastic concrete. Do not deposit concrete which has partially hardened or has been contaminated by foreign materials or on concrete which has hardened sufficiently to cause formation of seams or planes of weakness within the section. If the section cannot be placed continuously, place construction joints as specified or as approved.
  3. Pumping of concrete will be permitted. Use a mix design and aggregate sizes suitable for pumping and submit for approval.
  4. Remove temporary spreaders from forms when the spreader is no longer useful. Temporary spreaders may remain embedded in concrete only when made of galvanized metal or concrete and if prior approval has been obtained.

5. Do not place concrete for supported elements until concrete previously placed in the supporting element (columns, slabs and/or walls) has reached adequate strength.
6. Where surface mortar is to form the base of a finish, especially surfaces designated to be painted, work coarse aggregate back from forms with a suitable tool to bring the full surface of the mortar against the form. Prevent the formation of excessive surface voids.
7. Slabs
  - a. After suitable bulkheads, screeds and jointing materials have been positioned, the concrete shall be placed continuously between construction joints beginning at a bulkhead, edge form, or corner. Each batch shall be placed into the edge of the previously placed concrete to avoid stone pockets and segregation.
  - b. Avoid delays in casting. If there is a delay in casting, the concrete placed after the delay shall be thoroughly spaded and consolidated at the edge of that previously placed to avoid cold joints. Concrete shall then be brought to correct level and struck off with a straightedge. Bullfloats or darbies shall be used to smooth the surface, leaving it free of humps or hollows.
  - c. Where slabs are to be placed integrally with the walls below them, place the walls and compact as specified. Allow 1 hour to pass between placement of the wall and the overlying slab to permit consolidation of the wall concrete. Keep the top surface of the wall moist so as to prevent cold joints.
8. Formed Concrete
  - a. Place concrete in forms using tremie tubes and taking care to prevent segregation. Bottom of tremie tubes shall preferably be in contact with the concrete already placed. Do not permit concrete to drop freely more than 4-ft. Place concrete for walls in 12 to 24-in lifts, keeping the surface horizontal. If plasticized concrete is used, the maximum lift thickness may be increased to 4-ft.
9. Underwater concreting shall be performed in conformity with the recommendations of ACI 304.1. The tremie system shall be used to place underwater concrete. Tremie pipes shall be in the range of 8 to 12-in in diameter and be spaced at not more than 16-ft on centers nor more than 8-ft from an end form. Where concrete is being placed around a pipe, there shall be at least one tremie pipe on each side of each pipe. Where the tremie system is not practical, direct pumped concrete for underwater placement may be used subject to approval of the system including details by the Engineer.

B. Compacting

1. Consolidate concrete by vibration, puddling, spading, rodding or forking so that concrete is thoroughly worked around reinforcement, embedded items and openings and into corners of forms. Puddling, spading, etc, shall be continuously performed along with vibration of the placement to eliminate air or stone pockets which may cause honeycombing, pitting or planes of weakness.
2. All concrete shall be placed and compacted with mechanical vibrators. The number, type and size of the units shall be approved by the Engineer in advance of placing operations. No concrete shall be ordered until sufficient approved vibrators (including standby units in working order) are on the job.
3. A minimum frequency of 7000 rpm is required for mechanical vibrators. Insert vibrators and withdraw at points from 18 to 30-in apart. At each insertion, vibrate sufficiently to consolidate concrete, generally from 5 to 15 seconds. Do not over vibrate so as to segregate. Keep a spare vibrator on the site during concrete placing operations.
4. Concrete Slabs: Concrete for slabs less than 8-in thick shall be consolidated with vibrating screeds; slabs 8 to 12-in thick shall be compacted with internal vibrators and (optionally) with vibrating screeds. Vibrators shall always be placed into concrete vertically and shall not be laid horizontally or laid over.
5. Walls and Columns: Internal vibrators (rather than form vibrators) shall be used unless otherwise approved by the Engineer. In general, for each vibrator needed to melt down the batch at the point of discharge, one or more additional vibrators must be used to densify, homogenize and perfect the surface. The vibrators shall be inserted vertically at regular intervals, through the fresh concrete and slightly into the previous lift, if any.
6. Amount of Vibration: Vibrators are to be used to consolidate properly placed concrete but shall not be used to move or transport concrete in the forms. Vibration shall continue until:
  - a. Frequency returns to normal.
  - b. Surface appears liquefied, flattened and glistening.
  - c. Trapped air ceases to rise.
  - d. Coarse aggregate has blended into surface, but has not disappeared.

### **3.05 CURING AND PROTECTION**

- A. Protect all concrete work against injury from the elements and defacements of any nature during construction operations.
- B. Curing Methods



1. Curing Methods for Concrete Surfaces: Cure concrete to retain moisture and maintain specified temperature at the surface for a minimum of 7 days after placement. Curing methods to be used are as follows:
  - a. Water Curing: Keep entire concrete surface wet by ponding, continuous sprinkling or covered with saturated burlap. Begin wet cure as soon as concrete attains an initial set and maintain wet cure 24 hours a day.
  - b. Sheet Material Curing: Cover entire surface with sheet material. Securely anchor sheeting to prevent wind and air from lifting the sheeting or entrapping air under the sheet. Place and secure sheet as soon as initial concrete set occurs.
  - c. Liquid Membrane Curing: Apply over the entire concrete surface except for surfaces to receive additional concrete. Curing compound shall NOT be placed on any concrete surface where additional concrete is to be placed, where concrete sealers or surface coatings are to be used, or where the concrete finish requires an integral floor product. Curing compound shall be applied as soon as the free water on the surface has disappeared and no water sheen is visible, but not after the concrete is dry or when the curing compound can be absorbed into the concrete. Application shall be in compliance with the manufacturer's recommendations.
2. Specified applications of curing methods.
  - a. Slabs for Water Containment Structures: Water curing only.
  - b. Slabs on Grade and Footings (not used to contain water): Water curing, sheet material curing or liquid membrane curing.
  - c. Structural Slabs (other than water containment): Water curing or liquid membrane curing.
  - d. Horizontal Surfaces which will Receive Additional Concrete, Coatings, Grout or Other Material that Requires Bond to the substrate: Water curing.
  - e. Formed Surfaces: None if nonabsorbent forms are left in place 7 days. Water cure if absorbent forms are used. Water cure if forms are removed prior to 7 days. Exposed horizontal surfaces of formed walls or columns shall be water cured for 7 days or until next placement of concrete is made.
  - f. Surfaces of Concrete Joints: Water-cured or sheet material cured.
- C. Finished surfaces and slabs shall be protected from the direct rays of the sun to prevent checking and crazing.
- D. Cold Weather Concreting:

1. "Cold weather" is defined as a period when for more than 3 successive days, the average daily outdoor temperature drops below 40 degrees F. The average daily temperature shall be calculated as the average of the highest and the lowest temperature during the period from midnight to midnight.
2. Cold weather concreting shall conform to ACI 306.1 and the additional requirements specified herein. Temperatures at the concrete placement shall be recorded at 12 hour intervals (minimum).
3. Discuss a cold weather work plan with the Engineer. The discussion shall encompass the methods and procedures proposed for use during cold weather including the production, transportation, placement, protection, curing and temperature monitoring of the concrete. The procedures to be implemented upon abrupt changes in weather conditions or equipment failures shall also be discussed. Cold weather concreting shall not begin until the work plan is acceptable to the Engineer.
4. During periods of cold weather, concrete shall be protected to provide continuous warm, moist curing (with supplementary heat when required) for a total of at least 350 degree-days of curing.
  - a. Degree-days are defined as the total number of 24 hour periods multiplied by the weighted average daily air temperature at the surface of the concrete (eg: 5 days at an average 70 degrees F = 350 degree-days).
  - b. To calculate the weighted average daily air temperature, sum hourly measurements of the air temperature in the shade at the surface of the concrete taking any measurement less than 50 degrees F as 0 degrees F. Divide the sum thus calculated by 24 to obtain the weighted average temperature for that day.
5. Salt, manure or other chemicals shall not be used for protection.
6. The protection period for concrete being water cured shall not be terminated during cold weather until at least 24 hours after water curing has been terminated.

E. Hot Weather Concreting

1. "Hot weather" is defined as any combination of high air temperatures, low relative humidity and wind velocity which produces a rate of evaporation estimated in accordance with ACI 305.1, approaching or exceeding 0.2 lbs/sqft/hr).
2. Concrete placed during hot weather, shall be batched, delivered, placed, cured and protected in compliance with the recommendations of ACI 305.1 and the additional requirements specified herein.
  - a. Temperature of concrete being placed shall not exceed 90 degrees F and every effort shall be made to maintain a uniform concrete mix

temperature below this level. The temperature of the concrete shall be such that it will cause no difficulties from loss of slump, flash set or cold joints.

- b. All necessary precautions shall be taken to promptly deliver, to promptly place the concrete upon its arrival at the job and to provide vibration immediately after placement.
  - C. The Engineer may direct the Contractor to immediately cover plastic concrete with sheet material.
3. Discuss with the Engineer a work plan describing the methods and procedures proposed to use for concrete placement and curing during hot weather periods. Hot weather concreting shall not begin until the work plan is acceptable to the Engineer.

### **3.06 REMOVAL OF FORMS**

**PART 4** Except as otherwise specifically authorized by the Engineer, forms shall not be removed before the concrete has attained a strength of at least 70 percent of its specified design strength for beams and slabs and at least 30 percent of its specified design strength for walls and vertical surfaces, nor before reaching the following number of day-degrees of curing (whichever is the longer)

| <b>TABLE 3 – MINIMUM TIME TO FORM REMOVAL</b>              |                    |
|------------------------------------------------------------|--------------------|
| <b>Forms For</b>                                           | <b>Degree Days</b> |
| Beams and slabs                                            | 500                |
| Walls and vertical surfaces                                | 100                |
| (see definition of degree-days in Paragraph 3.05B.6 above) |                    |

- A. Shores shall not be removed until the concrete has attained at least 70 percent of its specified design strength and also sufficient strength to support safely its own weight and construction live loads.

### **4.02 INSPECTION AND FIELD TESTING**

- A. The batching, mixing, transporting, placing and curing of concrete shall be subject to the inspection of the Engineer at all times. The Contractor shall advise the Engineer of his/her readiness to proceed at least 24 hours prior to each concrete placement. The Engineer will inspect the preparations for concreting including the preparation of previously placed concrete, the reinforcing steel and the alignment, cleanliness and tightness of formwork. No placement shall be made without the inspection and acceptance of the Engineer.
- B. Sets of field control cylinder specimens will be taken by the Engineer (or inspector) during the progress of the work, in compliance with ASTM C31. The number of sets

of concrete test cylinders taken of each class of concrete placed each day shall not be less than one set per day, nor less than one set for each 150 cu yds of concrete nor less than one set for each 5,000 sq ft of surface area for slabs or walls.

1. A "set" of test cylinders consists of five cylinders: one to be tested at 7 days and two to be tested and their strengths averaged at 28 days. The fourth may be used for a special test at 3 days or to verify strength after 28 days if 28 day test results are low. The fifth is to be used at 28 days or 56 days where test results are low.
  2. When the average 28 day compressive strength of the cylinders in any set falls below the specified design strength or below proportional minimum 7 day strengths (where proper relation between seven and 28 day strengths have been established by tests); proportions, water content, or temperature conditions shall be changed to achieve the required strengths.
- C. Cooperate in the making of tests by allowing free access to the work for the selection of samples, providing an insulated closed curing box for specimens, affording protection to the specimens against injury or loss through the operations and furnish material and labor required for the purpose of taking concrete cylinder samples. All shipping of specimens will be paid for by the Owner. Curing boxes shall be acceptable to the Engineer.
- D. Slump tests will be made in the field immediately prior to placing the concrete. Such tests shall be made in accordance with ASTM C143. If the slump is greater the specified range, the concrete shall be rejected.
- E. Air Content: Test for air content shall be made on fresh concrete samples. Air content for concrete made of ordinary aggregates having low absorption shall be made in compliance with either the pressure method complying with ASTM C231 or by the volumetric method complying with ASTM C173.
- F. The Engineer may have cores taken from any questionable area in the concrete work such as construction joints and other locations as required for determination of concrete quality. The results of tests on such cores shall be the basis for acceptance, rejection or determining the continuation of concrete work.
- G. Cooperate in obtaining cores by allowing free access to the work and permitting the use of ladders, scaffolding and such incidental equipment as may be required. Repair all core holes. The work of cutting and testing the cores will be at the expense of the Owner.
- H. See Specification Section 03900 for Leak Testing.

#### **4.03 FAILURE TO MEET REQUIREMENTS**

- A. Should the strengths shown by the test specimens made and tested in compliance with the previous provisions fall below the values given in Table 1, the Engineer shall have the right to require changes in proportions outlined to apply to the remainder of the work. Furthermore, the Engineer shall have the right to require additional curing on those portions of the structure represented by the test specimens which failed.

The cost of such additional curing shall be at the Contractor's expense. In the event that such additional curing does not give the strength required, as evidenced by core and/or load tests, the Engineer shall have the right to require strengthening or replacement of those portions of the structure which fail to develop the required strength. The cost of all such core borings and/or load tests and any strengthening or concrete replacement required because strengths of test specimens are below that specified, shall be entirely at the expense of the Contractor. In such cases of failure to meet strength requirements the Contractor and Engineer shall confer to determine what adjustment, if any, can be made in compliance with Sections titled "Strength" and "Failure to Meet Strength Requirements" of ASTM C94. The "purchaser" referred to in ASTM C94 is the Contractor in this Section.

- B. When the tests on control specimens of concrete fall below the specified strength, the Engineer will permit check tests for strengths to be made by means of typical cores drilled from the structure in compliance with ASTM C42 and C39. In the case of cores not indicating adequate strength, the Engineer, in addition to other recourses, may require, at the Contractor's expense, load tests on any one of the slabs, beams, piles, caps, and columns in which such concrete was used. Tests need not be made until concrete has aged 60 days.
- C. Should the strength of test cylinders fall below 60 percent of the required minimum 28 day strength, the concrete shall be rejected and shall be removed and replaced.

#### **4.04 PATCHING AND REPAIRS**

- A. It is the intent of this Section to require quality work including adequate forming, proper mixture and placement of concrete and curing so completed concrete surfaces will require no patching.
- B. Defective concrete and honeycombed areas as determined by the Engineer shall be repaired as specified by the Engineer.
- C. As soon as the forms have been stripped and the concrete surfaces exposed, fins and other projections shall be removed; recesses left by the removal of form ties shall be filled; and surface defects which do not impair structural strength shall be repaired. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to approval of the Engineer.
- D. Immediately after removal of forms remove plugs and break off metal ties as required by Section 03100. Promptly fill holes upon stripping as follows: Moisten the hole with water, followed by a 1/16-in brush coat of neat cement slurry mixed to the consistency of a heavy paste. Immediately plug the hole with a 1 to 1.5 mixture of cement and concrete sand mixed slightly damp to the touch (just short of "balling"). Hammer the grout into the hole until dense, and an excess of paste appears on the surface in the form of a spiderweb. Trowel smooth with heavy pressure. Avoid burnishing.
- E. When patching exposed surfaces the same source of cement and sand as used in the parent concrete shall be employed. Adjust color if necessary by addition of proper amounts of white cement. Rub lightly with a fine Carborundum stone at an age of 1 to 5 days if necessary to bring the surface down with the parent concrete.

Exercise care to avoid damaging or staining the virgin skin of the surrounding parent concrete. Wash thoroughly to remove all rubbed matter.

#### **4.05 SCHEDULE**

- A. The following (Table 4) are the general applications for the various concrete classes and design strengths:

| <b>TABLE 4 – CONCRETE SCHEDULE</b> |                              |                                                                                                                |
|------------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Class</b>                       | <b>Design Strength (psi)</b> | <b>Description</b>                                                                                             |
| A                                  | 2,500                        | Concrete fill and duct encasement                                                                              |
| B                                  | 3,000                        | Concrete overlay slabs and pavements                                                                           |
| C                                  | 4,000                        | Walls, slabs on grade, suspended slab and beam systems, columns, grade beams and all other structural concrete |
| D                                  | 5,000                        | Prestressed concrete                                                                                           |

**END OF SECTION.**

## **SECTION 03 25 00**

### **CONCRETE JOINTS AND JOINT ACCESORIES**

#### **PART 1 GENERAL**

##### **1.01 SCOPE OF WORK**

- A. Furnish all labor, materials, equipment and incidentals required and install accessories for concrete joints as shown on the Drawings and as specified herein

##### **1.02 RELATED WORK**

- A. Concrete Formwork is included in Section 03100.
- B. Concrete Reinforcement is included in Section 03200.
- C. Cast-In-Place Concrete is included in Section 03300.
- D. Concrete Finishes are included in Section 03350.
- E. Grout is included in Section 03600.

##### **1.03 SUBMITTALS**

- A. Submit to the Engineer, in accordance with Section 01300, shop drawings and product data. Submittals shall include at least the following:
  - 1. Standard Waterstops: Product data including catalogue cut, technical data, storage requirements, splicing methods and conformity to ASTM standards.
  - 2. Special Waterstops: Product data including catalogue cut, technical data, location of use, storage requirements, splicing methods, installation instructions and conformity to ASTM standards.
  - 3. Premolded joint fillers: Product data including catalogue cut, technical data, storage requirements, installation requirements, location of use and conformity to ASTM standards.
  - 4. Bond breaker: Product data including catalogue cut, technical data, storage requirements, installation requirements, location of use and conformity to ASTM standards.
  - 5. Expansion joint dowels: Product data on the complete assembly including dowels, coatings, lubricants, spacers, sleeves, expansion caps, installation requirements and conformity to ASTM standards.
  - 6. Compressible joint filler: Product data including catalogue cut, technical data, storage requirements, installation requirements, location of use and conformity to ASTM standards.

7. Bonding agents: Product data including catalogue cut, technical data, storage requirements, product life, application requirements and conformity to ASTM standards.

B. Certifications

1. Certification that all materials used within the joint system is compatible with each other.
2. Certifications that materials used in the construction of joints are suitable for use in contact with potable water 30 days after installation.

**1.04 REFERENCE STANDARDS**

A. American Society for Testing and Materials (ASTM)

1. ASTM A675 -- Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties.
2. ASTM C881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
3. ASTM C1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete.
4. ASTM D 570 - Standard Test Method for Water Absorption of Plastics.
5. ASTM D 624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
6. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.
7. ASTM D 746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
8. ASTM D 747 - Standard Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam.
9. ASTM D 792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement.
10. ASTM D1751 - Standard Specification for Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction. (Nonextruding and Resilient Bituminous Types).
11. ASTM D1752 - Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

B. U.S. Army Corps of Engineers (CRD)

1. CRD C572 -- Specification for Polyvinylchloride Waterstops.



C. Federal Specifications

1. FS SS-S-210A - Sealing Compound for Expansion Joints.

D. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

**PART 2 PRODUCTS**

**2.01 GENERAL**

- A. The use of manufacturer's name and model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.
- B. All materials used together in a given joint (bond breakers, backer rods, joint fillers, sealants, etc.) shall be compatible with one another. Coordinate selection of suppliers and produce to ensure compatibility. Under no circumstances shall asphaltic bond breakers or joint fillers be used in joints receiving sealant.
- C. All chemical sealant type waterstops shall be products specifically manufactured for the purpose for which they will be used and the products shall have been successfully used on similar structures for more than five years.

**2.02 MATERIALS**

A. Standard Waterstops

1. PVC Waterstops - The waterstop shall be made by extruding elastomeric plastic compound with virgin polyvinylchloride as the basic resins. The compound shall contain no reprocessed materials. Minimum tensile strength of waterstop shall be 1750 psi. The waterstop shall conform to CRD-C572. The waterstop shall be Greenstreak Group, Inc. model No. 679 or approved equal for construction joints. The waterstop shall be Sika Greenstreak model No. 732 or approved equal for control joints and Sika Greenstreak Model No. 738 for expansion joints. Provide grommets or pre-punched holes spaced at 12 inches on center along length of waterstop.
2. Factory Fabrications: Provide factory made waterstop fabrications for all changes of direction, transitions, and intersections, leaving only straight butt joints of sufficient length for splicing in the field.

B. Special Waterstops

1. Retrofit PVC Waterstop - The waterstop shall be made by extruding elastomeric plastic compound with virgin polyvinylchloride as the basic resins. The compound shall contain no reprocessed materials. Minimum tensile strength of waterstop shall be 1750 psi. The waterstop shall conform to CRD-C572. Waterstops shall be style 667 by Sika Greenstreak or equal.
2. Preformed adhesive waterstops - The waterstop shall be a rope type preformed plastic waterstop meeting the requirements of Federal

Specification SS-S-210A. The rope shall have a cross-section of approximately one square inch unless otherwise specified or shown on the Drawings. The waterstop shall be Synko-Flex waterstop as manufactured by Henry Company, Lockstop by Sika Greenstreak, or equal. Primer and surface preparation for the material shall be as recommended by the waterstop manufacturer.

C. Expansion Joint Material

1. Joint Material at Structures - Self-expanding cork, premolded joint filler shall conform to ASTM D1752, Type III. The thickness shall be 3/4-in unless shown otherwise on the Drawings.
2. Joint Material at sidewalk and roadway concrete pavements or where fiber joint filler is specifically noted on the Drawings - The joint filler shall be asphalt-impregnated fiber board conforming to ASTM D1751. Thickness shall be 3/4-in unless otherwise shown on the Drawings.

D. Bond Breaker

1. Bond breaker tape shall be an adhesive-backed glazed butyl or polyethylene tape which will satisfactorily adhere to the premolded joint filler or concrete surface as required. The tape shall be the same width as the joint.
2. Except where tape is specifically called for on the drawings, bond breaker for concrete shall be either bond breaker tape or a nonstaining type bond prevention coating such as Maxi-Tilt with Dye by Dayton Superior, Inc.; Silcoseal 77, by SCA Construction Supply Division, Superior Concrete Accessories or equal.

E. Expansion Joint Dowels

1. Dowels shall be smooth steel conforming to ASTM A675, Grade 70. Dowels must be straight and clean, free of loose flaky rust and loose scale. Dowels may be sheared to length provided deformation from true shape caused by shearing does not exceed 0.04-in on the diameter of the dowel and extends no more than 0.04-in from the end. Bars shall be coated with a bond breaker on the expansion end of the dowel. Expansion caps shall be provided on the expansion end. Caps shall allow for at least 1-1/2-in of expansion.
2. Dowel Bar Sleeves: Provide two component Speed Dowel System by Sika, to accept 1" diameter x 12" long slip dowels. Speed Dowel System is comprised of a reusable base and a plastic sleeve. Both pieces shall be manufactured from polypropylene plastic.

F. Bonding Agent

1. Epoxy bonding agent shall be a two-component, solvent-free, moisture insensitive, epoxy resin material conforming to ASTM C881, Type II. The bonding agent shall be Sikadur 32 Hi-Mod by Sika Corporation of Lyndhurst,

N.J.; MasterEmaco ADH 326 by BASF or equal. Acrylic may be used if approved by the Engineer.

G. Compressible Joint Filler

1. The joint filler shall be a non-extruded watertight strip material use to fill expansion joints between structures. The material shall be capable of being compressed at least 40 percent for 70 hours at 68 degrees F and subsequently recovering at least 20 percent of its original thickness in the first 1/2 hour after unloading. Compressible Joint filler shall be Wabo®Evasote, by BASF, Inc., or equal.

H. Joint Sealant

1. The joint sealant shall be a 1-component, polyurethane-based, non-sag elastomeric sealant. Joint sealant shall be Sikaflex-1a or equal.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

A. Standards Waterstops

1. Install waterstops for all joints where indicated on the Drawings. Waterstops shall be continuous around all corners and intersections so that a continuous seal is provided. Provide factory made waterstop fabrications for all changes in direction, intersections and transitions leaving only straight butt joints splices for the field.
2. Horizontal waterstops in slabs shall be clamped in position by the bulkhead (unless previously set in concrete).
3. Waterstops shall be installed so that half of the width will be embedded on each side of the joint. Care shall be exercised to ensure that the waterstop is completely embedded in void-free concrete. All waterstops shall be tied to reinforcement with reinforcing tie wire through the factory provided grommets.
4. Waterstops shall be terminated 3-in below the exposed top of walls. Expansion joint waterstop center bulbs shall be plugged with foam rubber, 1-in deep, at point of termination.

B. Special Waterstops

1. Install special waterstops at joints where specifically noted on the Drawings. Waterstops shall be continuous around all corners and intersections so that a continuous seal is provided. Provide factory made waterstop fabrications for all changes in direction, intersections and transitions leaving only straight butt joints splices for the field.
2. Each piece of the waterstop shall be of maximum practicable length to provide a minimum number of connections or splices. Connections and

splices shall conform to the manufacturer's recommendations and as specified herein.

3. Waterstops shall be terminated 3-in below the exposed top of walls.

C. Construction Joints

1. Make construction joints only at locations shown on the Drawings or as approved by the Engineer. Any additional or relocation of construction joints proposed by the Contractor, must be submitted to the Engineer for written approval. Joints shall be spaced at a maximum of 40ft O.C. unless noted otherwise on the Drawings.
2. Additional or relocated joints should be located where they least impair strength of the member. In general, locate joints within the middle third of spans of slabs, beams and girders. However, if a beam intersects a girder at the joint, offset the joint a distance equal to twice the width of the member being connected. Locate joints in walls and columns at the underside of floors, slabs, beams or girders and at tops of footings or floor slabs. Do not locate joints between beams, girders, column capitals, or drop panels and the slabs above them. Do not locate joints between brackets or haunches and walls or columns supporting them.
3. All joints shall be perpendicular to main reinforcement. Continue reinforcing steel through the joint as indicated on the Drawings. When joints in beams are allowed, provide a shear key and inclined dowels as approved by the Engineer.
4. Provide sealant grooves for joint sealant where indicated on the Drawings.
5. At all construction joints and at concrete joints designated on the Drawings to be "roughened", uniformly roughen the surface of the concrete to a full amplitude (distance between high and low points or side to side) of approximately 1/4-in to expose a fresh face. Thoroughly clean joint surfaces of loose or weakened materials by water-blasting or sandblasting and prepare for bonding.
6. Provide waterstops in all wall and slab construction joints in liquid containment structures and at other locations shown on the Drawings.
7. Keyways shall not be used in construction joints unless specifically shown on the Drawings or approved by the Engineer.

D. Expansion Joints

1. Do not extend through expansion joints, reinforcement or other embedded metal items that are continuously bonded to concrete on each side of joint.
2. Position premolded joint filler material accurately. Secure the joint filler against displacement during concrete placement and compaction. Place joint filler over the face of the joint, allowing for sealant grooves as detailed on the

Drawings. Tape all joint filler splices to prevent intrusion of mortar. Seal expansion joints as shown on the Drawings.

3. Expansion joints shall be 3/4-in in width unless otherwise noted on the Drawings.
4. Where indicated on Drawings, install smooth dowels at right angles to expansion joints. Align dowels accurately with finished surface. Rigidly hold in place and support during concrete placement. Unless otherwise shown on the Drawings, apply oil or grease to one end of all dowels through expansion joints. Provide plastic expansion caps on the lubricated ends of expansion dowels.
5. Provide center bulb type waterstops in all wall and slab expansion joints in liquid containment structures and at other locations shown on the Drawings.

E. Control Joints

1. Provide sealant grooves, sealants and waterstops at control joints in slabs on grade or walls as detailed. Provide waterstops at all wall and slab control joints in water containment structures and at other locations shown on the Drawings.
2. Control joints may be sawed if specifically approved by the Engineer. If control joint grooves are sawed, properly time the saw cutting with the time of the concrete set. Start cutting as soon as concrete has hardened sufficiently to prevent aggregates from being dislodged by the saw. Complete cutting before shrinkage stresses have developed sufficiently to induce cracking. No reinforcing shall be cut during sawcutting.
3. Extend every other bar of reinforcing steel through control joints or as indicated on the Drawings. Where specifically noted on the Drawings, coat the concrete surface with a bond breaker prior to placing new concrete against it. Avoid coating reinforcement or waterstops with bond breaker at these locations.

**END OF SECTION.**

**SECTION 03 35 00**  
**CONCRETE FINISHES**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. Furnish all labor, materials, equipment and incidentals required and finish cast-in-place concrete surfaces as shown on the Drawings and as specified herein.

**1.02 RELATED WORK**

- A. Concrete Formwork is included in Section 03100.
- B. Cast-In-Place Concrete is included in Section 03300.
- C. Grout is included in Section 03600.

**1.03 SUBMITTALS**

- A. Submit to the Engineer, in accordance with Section 01300, shop drawings and product data showing materials of construction and details of installation for:
  - 1. Concrete sealer. Confirmation that the sealer is compatible with additionally applied coatings shall also be submitted.

**1.04 REFERENCE STANDARDS**

- A. American Society for Testing and Materials (ASTM)
  - 1. ASTM C33 - Standard Specification for Concrete Aggregates.
- B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

**1.05 QUALITY ASSURANCE**

- A. Finishes
  - 1. For concrete which will receive additional applied finishes or materials, the surface finish specified is required for the proper application of the specified manufacturer's products. Where alternate products are approved for use, determine if changes in finishes are required and provide the proper finishes to receive these products.
  - 2. Changes in finishes made to accommodate products different from those specified shall be performed at no additional cost to the Owner. Submit the proposed new finishes and their construction methods to the Engineer for approval.
  - 3. Services of Manufacturer's Representative

- a. Make available at no extra cost to the Owner, upon 72 hours notification, the services of a qualified field representative of the manufacturer of curing compound, sealer or hardener to instruct the user on the proper application of the product under prevailing job conditions.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Chemical hardener shall be Lapidolith by Sonneborn; Hornolith by A.C. Horn; Penalith by W.R. Meadows or equal fluosilicate base material.
- B. Concrete sealer shall be "MasterKure CC 180 WB", by Master Builders Solutions, Shakopee, MN or equal.

## **PART 3 EXECUTION**

### **3.01 FORMED SURFACES**

- A. Forms shall not be removed before the requirements of Section 03300, have been satisfied.
- B. Exercise care to prevent damaging edges or obliterating the lines of chamfers, rustications or corners when removing the forms or performing any other work adjacent thereto.
- C. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete.
- D. Rough-Form Finish
  1. Immediately after stripping forms and before concrete has changed color, carefully remove all fins and projections.
  2. Promptly fill holes left by tie cones and defects as specified in Section 03300.
- E. Rubbed Finish
  1. Immediately upon stripping forms and before concrete has changed color, carefully remove all fins. While the wall is still damp apply a thin coat of medium consistency neat cement slurry by means of bristle brushes to provide a bonding coat within all pits, air holes or blemishes in the parent concrete. Avoid coating large areas with the slurry at one time.
  2. Before the slurry has dried or changed color, apply a dry (almost crumbly) grout proportioned by volume and consisting of 1 part cement to 1-1/2 parts of clean masonry sand having a fineness modulus of approximately 2.3 and complying with the gradation requirements of ASTM C33 for such a material. Grout shall be uniformly applied by means of damp pads of coarse burlap approximately 6-in square used as a float. Scrub grout into the pits and air holes to provide a dense mortar in all imperfections.

3. Allow the mortar to partially harden for 1 or 2 hours depending upon the weather. If the air is hot and dry, keep the wall damp during this period using a fine, fog spray. When the grout has hardened sufficiently so it can be scraped from the surface with the edge of a steel trowel without damaging the grout in the small pits or holes, cut off all that can be removed with a trowel. (Note: Grout allowed to remain on the wall too long will harden and will be difficult to remove.)
4. Allow the surface to dry thoroughly and rub it vigorously with clean dry burlap to completely remove any dried grout. No visible film of grout shall remain after this rubbing. The entire cleaning operation for any area must be completed the day it is started. Do not leave grout on surfaces overnight. Allow sufficient time for grout to dry after it has been cutoff with the trowel so it can be wiped off clean with the burlap.
5. On the day following the repair of pits, air holes and blemishes, the walls shall again be wiped off clean with dry, used pieces of burlap containing old hardened mortar which will act as a mild abrasive. After this treatment, there shall be no built-up film remaining on the parent surface. If, however, such a film is present, a fine abrasive stone shall be used to remove all such material without breaking through the surface film of the original concrete. Such scrubbing shall be light and sufficient only to remove excess material without changing the texture of the concrete.
6. A thorough wash-down with stiff bristle brushes shall follow the final bagging or stoning operation. No extraneous materials shall remain on the surface of the wall. The wall shall be sprayed with a fine fog spray periodically to maintain a continually damp condition for at least 3 days after the application of the repair grout.
7. It is the intent of this finish to provide a surface that is uniform in appearance with no blemishes, imperfections, discolorations, etc.

F. Abrasive Blast Finish

1. Coordinate with Rubbed Finish application. Do not begin until Rubbed Finish operation is complete or before concrete has reached minimum 7-day strength. The Rubbed Finish application may be deleted by the Engineer if the unfinished concrete surface is of superior quality. Apply the abrasive blast finish only where indicated on Drawings.
2. Prepare a sample area of minimum 4-ft high by 16-ft wide Blast Finish as directed by Engineer on a portion of new wall construction which will not be exposed in the final work. Sample area shall contain a variety of finishes obtained with different nozzles, nozzle pressures, grit materials and blasting techniques for selection by Engineer. Final accepted sample shall remain exposed until completion of all Blast Finish operations.
3. Blast finish operation shall meet all regulatory agency requirements. Blast Finish contractor shall be responsible for obtaining all required permits and/or licenses.



4. Perform abrasive blast finishing in as continuous an operation as possible, utilizing the same work crew to maintain continuity of finish on each surface or area of work. Maintain patterns or variances in depths of blast as present on the accepted sample.
5. Use an abrasive grit of proper type and gradation as well as equipment and technique to expose aggregate and surrounding matrix surfaces as follows:
  - a. Medium: Generally expose coarse aggregate - 1/4-in to 3/8-in reveal.
6. Abrasive blast corners and edge of patterns carefully, using back-up boards, to maintain uniform corner or edge line. Determine type of nozzle, nozzle pressure and blasting techniques required to match Architect's samples.
7. Upon completion of the Blast Finish operation, thoroughly flush finished surfaces with clean clear water to remove residual dust and grit. Allow to air dry until curing of concrete is complete.
8. After the concrete has cured for a minimum of 28 days, apply a clear acrylic sealer as directed by manufacturer.

### **3.02 FLOORS AND SLABS**

#### **A. Floated Finish**

1. Machine Floating
  - a. Screed floors and slabs with straightedges to the established grades shown on the Drawings. Immediately after final screeding, a dry cement/sand shake in the proportion of two sacks of portland cement to 350 lbs of coarse natural concrete sand shall be sprinkled evenly over the surface at the rate of approximately 500 lbs /1,000 sq ft of floor. Do not sprinkle neat, dry cement on the surface.
  - b. The application of the cement/sand shake may be eliminated at the discretion of the Engineer if the base slab concrete exhibits adequate fattiness and homogeneity and the need is not indicated. When the concrete has hardened sufficiently to support the weight of a power float without its digging into or disrupting the level surface, thoroughly float the shake into the surface with a heavy revolving disc type power compacting machine capable of providing a 200 lb compaction force distributed over a 24-in diameter disc.
  - c. Start floating along walls and around columns and then move systematically across the surface leaving a matte finish.
  - d. The compacting machine shall be the "Kelly Power Float with Compaction Control" as manufactured by Kelley Industries of SSP Construction Equipment Inc., Pomona, CA or equal. Troweling machines equipped with float (shoe) blades that are slipped over the trowel blades may be used for floating. Floating with a troweling machine equipped with normal trowel blades will not be permitted. The use of any floating or troweling machine which has a water

attachment for wetting the concrete surface during finishing will not be permitted.

2. Hand Floating

- a. In lieu of power floating, small areas may be compacted by hand floating. The dry cement/sand shake previously specified shall be used unless specifically eliminated by the Engineer. Screed the floors and slabs with straightedges to the established grades shown on the Drawings. While the concrete is still green, but sufficiently hardened to support a finisher and kneeboards with no more than 1/4-in indentation, wood float to a true, even plane with no coarse aggregate visible. Use sufficient pressure on the wood floats to bring moisture to the surface.

3. Finishing Tolerances

- a. Level floors and slabs to a tolerance of plus or minus 1/8-in when checked with a 10-ft straightedge placed anywhere on the slab in any direction. Where drains occur, pitch floors to drains such that there are no low spots left undrained. Failure to meet either of the above requirements shall be cause for removal, grinding, or other correction as directed by the Engineer.

B. Broom Finish

1. Screed slabs with straightedges to the established grades indicated on the Drawings. When the concrete has stiffened sufficiently to maintain small surface indentations, draw a stiff bristle broom lightly across the surface in the direction of drainage, or, in the case of walks and stairs, perpendicular to the direction of traffic to provide a non-slip surface.

C. Steel Trowel Finish

1. Finish concrete as specified in Paragraph 3.04 and 3.05. Then, hand steel trowel to a perfectly smooth hard even finish free from high or low spots or other defects.

D. Concrete Sealer

1. Prepare and seal surfaces indicated on the room finish schedule to receive a sealer as follows:
  - a. Finish concrete as specified in the preceding paragraphs and in accordance with the Schedule in Paragraph 3.05 below.
  - b. Newly Placed Concrete: Surface must be sound and properly finished. Surface is application-ready when it is damp but not wet and can no longer be marred by walking workmen.
  - c. Newly-Cured Bare Concrete: Level any spots gouged out by trades. Remove all dirt, dust, droppage, oil, grease, asphalt and foreign matter. Cleanse with caustics and detergents as required. Rinse

thoroughly and allow to dry so that surface is no more than damp, and not wet.

- d. Aged Concrete: Restore surface soundness by patching, grouting, filling cracks and holes, etc. Surface must also be free of any dust, dirt and other foreign matter. Use power tools and/or strippers to remove any incompatible sealers or coatings. Cleanse as required, following the procedure indicated under cured concrete.
- e. Methods: Apply sealer so as to form a continuous, uniform film by spray, soft-bristle pushbroom, long-nap roller or lambswool applicator. Ordinary garden-type sprayers, using neoprene hose, are recommended for best results.
- f. Applications: For curing only, apply first coat evenly and uniformly as soon as possible after final finishing at the rate of 200 to 400 sq ft per gallon. Apply second coat when all trades are completed and structure is ready for occupancy at the rate of 400 to 600 sq ft per gallon.
- g. To meet guarantee and to seal and dustproof, two coats are required. For sealing new concrete, both coats shall be applied full-strength. On aged concrete, when renovating, dustproofing and sealing, the first coat should be thinned 10 to 15 percent with reducer per manufacturer's directions.

### **3.03 CONCRETE RECEIVING CHEMICAL HARDENER**

- A. After 28 days, minimum, concrete cure, apply chemical hardener in three applications to a minimum total coverage of the undiluted chemical of 100 sq ft per gallon and in accordance with manufacturer's recommendations as reviewed.

### **3.04 APPROVAL OF FINISHES**

- A. All concrete surfaces, when finished, will be inspected by the Engineer.
- B. Surfaces which, in the opinion of the Engineer, are unsatisfactory shall be refinished or reworked.
- C. After finishing horizontal surfaces, regardless of the finishing procedure specified, the concrete shall be cured in compliance with Section 03300 unless otherwise directed by the Engineer.

### **3.05 SCHEDULE OF FINISHES**

- A. Concrete shall be finished as specified either to remain as natural concrete to receive an additional applied finish or material under another section.
- B. Concrete for the following conditions shall be finished as noted on the Drawings and as further specified herein:
  - 1. Concrete to Receive Dampproofing: Rough-form finish. See Paragraph 3.01D above.

2. Concrete Not Exposed to View and Not Scheduled to Receive an Additional Applied Finish or Material: Rough-form finish. See Paragraph 3.01D above.
3. Exterior Vertical Concrete Above Grade Exposed to View: Rubbed finish. See Paragraph 3.01E above.
4. Interior Vertical Concrete Exposed to View Except in Water Containment Areas: Rubbed finish. See Paragraph 3.01E above.
5. Vertical Concrete in Water Containment Areas. Rubbed finish on exposed surfaces and extending to two feet below normal operating water level: Rough-form finish on remainder of submerged areas. See Paragraphs 3.01E and 3.01D above.
6. Interior and Exterior Underside of Concrete Exposed to View: Rubbed finish. See Paragraph 3.01E above.
7. Exterior surfaces exposed to view and indicated to have an abrasive blast finish. See Paragraph 3.01F above.
8. Interior or Exterior Horizontal Concrete not Requiring Floor Hardener or Sealer: Floated finish. See Paragraph 3.02A above.
9. Concrete for Exterior Walks, Interior and Exterior Stairs: Broomed finish perpendicular to direction of traffic. See Paragraph 3.02B above.
10. Concrete Slabs On Which Process Liquids Flow or In Contact with Sludge: Steel trowel finish. See Paragraph 3.02C above.
11. Concrete to Receive Hardener: See Paragraph 3.03 above.
12. Concrete to Receive Floor Sealer: See Paragraph 3.02D above.
13. Concrete tank bottoms to be covered with grout: See Section 03600.

**END OF SECTION.**

## **SECTION 03 60 00**

### **GROUT**

#### **PART 1 GENERAL**

##### **1.01 SCOPE OF WORK**

- A. Furnish all labor, materials, equipment and incidentals required and install grout complete as shown on the Drawings and as specified herein.

##### **1.02 RELATED WORK**

- A. Formwork is included in Section 03100.
- B. Concrete Reinforcement is included in Section 03200.
- C. Concrete Joints and Joint Accessories are included in Section 03350.
- D. Cast-in-Place Concrete is included in Section 03300.
- E. Masonry Grout is included in Section 04230.

##### **1.03 SUBMITTALS**

- A. Submit to the Engineer, in accordance with Section 01300, shop drawings and product data showing materials of construction and details of installation for:
  - 1. Commercially manufactured nonshrink cementitious grout. The submittal shall include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature consideration, conformity to required ASTM standards and Material Safety Data Sheet.
  - 2. Commercially manufactured nonshrink epoxy grout. The submittal shall include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature considerations, conformity to required ASTM standards and Material Safety Data Sheet.
  - 3. Cement grout. The submittal shall include the type and brand of the cement, the gradation of the fine aggregate, product data on any proposed admixtures and the proposed mix of the grout.
  - 4. Concrete grout. The submittal shall include data as required for concrete as delineated in Section 03300 and for fiber reinforcement as delineated in Section 03200. This includes the mix design, constituent quantities per cubic yard and the water/cement ratio.
- B. Laboratory Test Reports

1. Submit laboratory test data is required under Section 03300 for concrete to be used as concrete grout.

C. Certifications

1. Certify that commercially manufactured grout products and concrete grout admixtures are suitable for use in contact with potable water after 30 days curing.

D. Qualifications

1. Grout manufacturers shall submit documentation that they have at least 10 years experience in the production and use of the proposed grouts which they will supply.

#### **1.04 REFERENCE STANDARDS**

A. American Society for Testing and Materials (ASTM)

1. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical Resistant Mortars, Grouts and Monolithic Surfacing and Polymer Concretes
2. ASTM C579 - Standard Test Method for Compressive Strength of Chemical Resistant Mortars, Grouts and Monolithic Surfacing and Polymer Concretes
3. ASTM C827 - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures
4. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

B. U.S. Army Corps of Engineers Standard (CRD)

1. CRD C-621 - Corps of Engineers Specification for Nonshrink Grout

C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

#### **1.05 QUALITY ASSURANCE**

A. Qualifications

1. Grout manufacturer shall have a minimum of 10 years experience in the production and use of the type of grout proposed for the work.

B. Pre-installation Conference

1. Well in advance of grouting, hold a pre-installation meeting to review the requirements for surface preparation, mixing, placing and curing procedures for each product proposed for use. Parties concerned with grouting shall be notified of the meeting at least 10 days prior to its scheduled date.

C. **Services of Manufacturer's Representative**

1. A qualified field technician of the nonshrink grout manufacturer, specifically trained in the installation of the products, shall attend the pre-installation conference and shall be present for the initial installation of each type of nonshrink grout. Additional services shall also be provided, as required, to correct installation problems.

D. **Field Testing**

1. All field testing and inspection services required shall be provided by the Owner. The Contractor shall assist in the sampling of materials and shall provide any ladders, platforms, etc, for access to the work. The methods of testing shall comply in detail with the applicable ASTM Standards.
2. The field testing of Concrete Grout shall be as specified for concrete in Section 03300.

**1.06 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to the jobsite in original, unopened packages, clearly labeled with the manufacturer's name, product identification, batch numbers and printed instructions.
- B. Store materials in full compliance with the manufacturer's recommendations. Total storage time from date of manufacture to date of installation shall be limited to 6 months or the manufacturer's recommended storage time, whichever is less.
- C. Material which becomes damp or otherwise unacceptable shall be immediately removed from the site and replaced with acceptable material at no additional expense to the Owner.
- D. Nonshrink cement-based grouts shall be delivered as preblended, prepackaged mixes requiring only the addition of water.
- E. Nonshrink epoxy grouts shall be delivered as premeasured, prepackaged, three component systems requiring only blending as directed by the manufacturer.

**1.07 DEFINITIONS**

- A. Nonshrink Grout: A commercially manufactured product that does not shrink in either the plastic or hardened state, is dimensionally stable in the hardened state and bonds to a clean base plate.

**PART 2 PRODUCTS**

**2.01 GENERAL**

- A. The use of a manufacturer's name and product or catalog number is for the purpose of establishing the standard of quality desired.

- B. Like materials shall be the products of one manufacturer or supplier in order to provide standardization of appearance.

## **2.02 MATERIALS**

### **A. Nonshrink Cementitious Grout**

1. Nonshrink cementitious grouts shall meet or exceed the requirements of ASTM C1107, Grades B or C and CRD C-621. Grouts shall be portland cement based, contain a pre-proportioned blend of selected aggregates and shrinkage compensating agents and shall require only the addition of water. Nonshrink cementitious grouts shall not contain expansive cement or metallic particles. The grouts shall exhibit no shrinkage when tested in conformity with ASTM C827.
  - a. General purpose nonshrink cementitious grout shall conform to the standards stated above and shall be SikaGrout 212 by Sika Corp.; Set Grout by Master Builders, Inc.; Gilco Construction Grout by Gifford Hill & Co.; Euco NS by the Euclid Chemical Co.; NBEC Grout by U.S. Grout Corp. or equal.
  - b. Flowable (Precision) nonshrink cementitious grout shall conform to the standards stated above and shall be Masterflow 928 by Master Builders, Inc.; Hi-Flow Grout by the Euclid Chemical Co.; SikaGrout 212 by Sika Corp. ; Supreme Grout by Gifford Hill & Co. ; Five Star Grout by U.S. Grout Corp. or equal.

### **B. Nonshrink Epoxy Grout**

1. Nonshrink epoxy-based grout shall be a pre-proportioned, three component, 100 percent solids system consisting of epoxy resin, hardener, and blended aggregate. It shall have a compressive strength of 14,000 psi in 7 days when tested in conformity with ASTM D695 and have a maximum thermal expansion of  $30 \times 10^{-6}$  when tested in conformity with ASTM C531. The grout shall be MasterFlow 648 by Master Builders Inc.; Five Star Epoxy Grout by U.S. Grout Corp.; Sikadur 42 Grout-Pak by Sika Corp.; High Strength Epoxy Grout by the Euclid Chemical Co. or equal.

### **C. Cement Grout**

1. Cement grouts shall be a mixture of one part portland cement conforming to ASTM C150, Types I, II, or III and 1 to 2 parts sand conforming to ASTM C33 with sufficient water to place the grout. The water content shall be sufficient to impart workability to the grout but not to the degree that it will allow the grout to flow.

### **D. Concrete Grout**

1. Concrete grout shall conform to the requirements of Section 03300 except as specified herein. It shall be proportioned with cement, coarse and fine aggregates, water, water reducer and air entraining agent to produce a mix



having an average strength of 2900 psi at 28 days, or 2500 psi nominal strength. Coarse aggregate size shall be 1/2-in maximum. Slump should not exceed 5-in and should be as low as practical yet still retain sufficient workability.

2. Synthetic reinforcing fibers as specified in Section 03200 shall be added to the concrete grout mix at the rate of 1.5 lbs of fibers per cubic yard of grout. Fibers shall be added from the manufacturer's premeasured bags and according to the manufacturer's recommendations in a manner which will ensure complete dispersion of the fiber bundles as single monofilaments within the concrete grout.

E. Water

1. Potable water, free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances.

**PART 3 EXECUTION**

**3.01 PREPARATION**

- A. Grout shall be placed over cured concrete which has attained its full design strength unless otherwise approved by the Engineer.
- B. Concrete surfaces to receive grout shall be clean and sound; free of ice, frost, dirt, grease, oil, curing compounds, laitance and paints and free of all loose material or foreign matter which may effect the bond or performance of the grout.
- C. Roughen concrete surfaces by chipping, sandblasting, or other mechanical means to a minimum of 1/4" amplitude or provide a raked finish in order to ensure bond of the grout to the concrete. Remove loose or broken concrete. Irregular voids or projecting coarse aggregate need not be removed if they are sound, free of laitance and firmly embedded into the parent concrete.
  1. Air compressors used to clean surfaces in contact with grout shall be the oilless type or equipped with an oil trap in the air line to prevent oil from being blown onto the surface.
- D. Remove all loose rust, oil or other deleterious substances from metal embedments or bottom of baseplates prior to the installation of the grout.
- E. Concrete surfaces shall be washed clean and then kept moist for at least 24 hours prior to the placement of cementitious or cement grout. Saturation may be achieved by covering the concrete with saturated burlap bags, use of a soaker hose, flooding the surface, or other method acceptable to the Engineer. Upon completion of the 24 hour period, visible water shall be removed from the surface prior to grouting. The use of an adhesive bonding agent in lieu of surface saturation shall only be used when approved by the Engineer for each specific location of grout installation.
- F. Epoxy-based grouts do not require the saturation of the concrete substrate. Surfaces in contact with epoxy grout shall be completely dry before grouting.

- G. Construct grout forms or other leakproof containment as required. Forms shall be lined or coated with release agents recommended by the grout manufacturer. Forms shall be of adequate strength, securely anchored in place and shored to resist the forces imposed by the grout and its placement.
- H. Forms for epoxy grout shall be designed to allow the formation of a hydraulic head and shall have chamfer strips built into forms.
- I. Level and align the structural or equipment bearing plates in accordance with the structural requirements and the recommendations of the equipment manufacturer.
- J. Equipment shall be supported during alignment and installation of grout by shims, wedges, blocks or other approved means. The shims, wedges and blocking devices shall be prevented from bonding to the grout by appropriate bond breaking coatings and removed after grouting unless otherwise approved by the Engineer.

### **3.02 INSTALLATION – GENERAL**

- A. Mix, apply and cure products in strict compliance with the manufacturer's recommendations and this Section.
- B. Have sufficient manpower and equipment available for rapid and continuous mixing and placing. Keep all necessary tools and materials ready and close at hand.
- C. Maintain temperatures of the foundation plate, supporting concrete, and grout between 40 and 90 degrees F during grouting and for at least 24 hours thereafter or as recommended by the grout manufacturer, whichever is longer. Take precautions to minimize differential heating or cooling of baseplates and grout during the curing period.
- D. Take special precautions for hot weather or cold weather grouting as recommended by the manufacturer when ambient temperatures and/or the temperature of the materials in contact with the grout are outside of the 60 and 90 degrees F range.
- E. Install grout in a manner which will preserve the isolation between the elements on either side of the joint where grout is placed in the vicinity of an expansion or control joint.
- F. Reflect all existing underlying expansion, control and construction joints through the grout.

### **3.03 INSTALLATION - CEMENT GROUTS AND NONSHRINK CEMENTITIOUS GROUTS**

- A. Mix in accordance with manufacturer's recommendations. Do not add cement, sand, pea gravel or admixtures without prior approval by the Engineer.
- B. Avoid mixing by hand. Mixing in a mortar mixer (with moving blades) is recommended. Pre-wet the mixer and empty excess water. Add premeasured amount of water for mixing, followed by the grout. Begin with the minimum amount of water recommended by the manufacturer and then add the minimum additional

water required to obtain workability. Do not exceed the manufacturer's maximum recommended water content.

- C. Placements greater than 3-in in depth shall include the addition of clean, washed pea gravel to the grout mix when approved by the manufacturer. Comply with the manufacturer's recommendations for the size and amount of aggregate to be added.
- D. Place grout into the designated areas in a manner which will avoid segregation or entrapment of air. Do not vibrate grout to release air or to consolidate the material. Placement should proceed in a manner which will ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces. Provide grout holes as necessary.
- E. Place grout rapidly and continuously to avoid cold joints. Do not place cement grouts in layers. Do not add additional water to the mix (retemper) after initial stiffening.
- F. Just before the grout reaches its final set, cut back the grout to the substrate at a 45 degree angle from the lower edge of bearing plate unless otherwise approved by the Engineer. Finish this surface with a wood float (brush) finish.
- G. Begin curing immediately after form removal, cutback, and finishing. Keep grout moist and within its recommended placement temperature range for at least 24 hours after placement or longer if recommended by the manufacturer. Saturate the grout surface by use of wet burlap, soaker hoses, ponding or other approved means. Provide sunshades as necessary. If drying winds inhibit the ability of a given curing method to keep grout moist, erect wind breaks until wind is no longer a problem or curing is finished.

#### **3.04 INSTALLATION - NONSHRINK EPOXY GROUTS**

- A. Mix in accordance with the procedures recommended by the manufacturer. Do not vary the ratio of components or add solvent to change the consistency of the grout mix. Do not overmix. Mix full batches only to maintain proper proportions of resin, hardener and aggregate.
- B. Monitor ambient weather conditions and contact the grout manufacturer for special placement procedures to be used for temperatures below 60 or above 90 degrees F.
- C. Place grout into the designated areas in a manner which will avoid trapping air. Placement methods shall ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces. Provide grout holes as necessary.
- D. Minimize "shoulder" length (extension of grout horizontally beyond base plate). In no case shall the shoulder length of the grout be greater than the grout thickness.
- E. Finish grout by puddling to cover all aggregate and provide a smooth finish. Break bubbles and smooth the top surface of the grout in conformity with the manufacturer's recommendations.

- F. Epoxy grouts are self curing and do not require the application of water. Maintain the formed grout within its recommended placement temperature range for at least 24 hours after placing, or longer if recommended by the manufacturer.

### **3.05 INSTALLATION - CONCRETE GROUT**

- A. Screed underlying concrete to the grade shown on the Drawings. Prepare the surface according to 3.01B. Protect and keep the surface clean until placement of concrete grout.
- B. Remove the debris and clean the surface by sweeping and vacuuming of all dirt and other foreign materials. Wash the tank slab using a strong jet of water. Flushing of debris into tank drain lines will not be permitted.
- C. Saturate the concrete surface for at least 24 hours prior to placement of the concrete grout. Saturation may be maintained by ponding, by the use of soaker hoses, or by other methods acceptable to the Engineer. Remove excess water just prior to placement of the concrete grout. Place a cement slurry immediately ahead of the concrete grout so that the slurry is moist when the grout is placed. Work the slurry over the surface with a broom until it is coated with approximately 1/16 to 1/8-in thick cement paste. (A bonding grout composed of 1 part portland cement, 1.5 parts fine sand, an approved bonding admixture and water, mixed to achieve the consistency of thick paint, may be substituted for the cement slurry.)
- D. Place concrete grout to final grade using the scraper mechanism as a guide for surface elevation and to ensure high and low spots are eliminated where application is at clarifier bottom. Unless specifically approved by the equipment manufacturer, mechanical scraper mechanisms shall not be used as a finishing machine or screed.
- E. Provide synthetic reinforcing fibers in all applications unless steel reinforcement is indicated in the Drawings.
- F. Provide grout control joints as indicated on the Drawings.
- G. Finish and cure the concrete grout as specified for cast-in-place concrete.

### **3.06 SCHEDULE**

- A. The following list indicates where the particular types of grout are to be used:
- B. General purpose nonshrink cementitious grout: Use at all locations where non shrink grout is called for on the plans except for base plates greater in area than 3-ft wide by 3-ft long and except for the setting of anchor rods, anchor bolts or reinforcing steel in concrete.
- C. Flowable nonshrink cementitious grout: Use under all base plates greater in area than 3-ft by 3-ft. Use at all locations indicated to receive flowable nonshrink grout by the Drawings. The Contractor, at his/her option and convenience, may also substitute flowable nonshrink grout for general purpose nonshrink cementitious grout..

- D. Nonshrink epoxy grout: Use for the setting of anchor rods, anchor bolts and reinforcing steel in concrete and for all locations specifically indicated to receive epoxy grout.
- E. Cement grout: Cement grout may be used for grouting of incidental base plates for structural and miscellaneous steel such as post base plates for platforms, base plates for beams, etc. It shall not be used when nonshrink grout is specifically called for on the Drawings or for grouting of primary structural steel members such as columns and girders.
- F. Concrete grout: Use for overlaying the base concrete under scraper mechanisms of clarifiers to allow more control in placing the surface grade. Use at grout fillets or grout pours greater than 4" thick.

**END OF SECTION.**

**SECTION 04 22 00**  
**REINFORCED UNIT MASONRY**

**PART 1 GENERAL**

**1.01 SCOPE OF WORK**

- A. Provide all materials, equipment and labor required to complete the reinforced unit masonry construction in accordance with the Drawings and Specified herein. Coordinate all work with that of other trades.
- B. The work under this section includes, but is not necessarily limited to, the following:
  - 1. Split-face concrete masonry units (CMU)
  - 2. Reinforced CMU block and lintels
  - 3. Masonry reinforcing, ties, and anchors
  - 4. Grouting for masonry work

**1.02 SUBMITTALS**

- A. Submit shop drawings, product data, mixes, etc., in accordance with Section 01300.
- B. Submit complete shop drawings, including bar lists and placement drawings Comply with ACI 315 "Details and Detailing Concrete Reinforcement". Include elevations of all reinforced walls showing reinforcement.
- C. Submit manufacturer's certifications that all masonry units meet or exceed all specified standards.
- D. Product data for split-face CMU types indicating composition, shape, surfaces, and dimensions.
- E. Submit 3 color samples for integral colored split-faced concrete masonry units and colored mortar mixers.
- F. Submit catalog data for metal ties and anchors, joint reinforcement, and control joint material.
- G. Samples of split-face CMU illustrating face profile, color range, surface, and texture.
- H. Installation instructions.

**PART 2 PRODUCTS**

## **2.01 MASONRY UNITS**

### **A. Split-Face concrete masonry units**

1. Standard and lightweight CMU shall conform to ASTM C90, Grade N, Type I, as shown on the Drawings.
2. CMU shall be free from substances that will cause staining or pop-outs and shall be fine, even textured with straight and true edges. All units shall have been wet steam cured for at least 18-hours and then air cured in covered storage for not less than 28-days before delivery. Units shall have a maximum linear drying shrinkage of 0.25% (percent) (ASTM C426) and have a moisture content at time of delivery not exceeding 30% (percent) of total absorption.
3. Split-face CMU's for interior and exterior walls where indicated on the Drawings, shall be as manufactured by DeMaco Corporation, Rockblock, Inc., or approved equal. Units shall have 8-inch by 16-inch nominal face size. Matching end and corner units shall be selected from samples provided by the block manufacturer. Split-face units shall be high strength units having a minimum compressive strength of 1,900-psi for any 1-unit. Minimum acceptable water absorption rate shall be 6% of the oven dry weight of the masonry unit in pounds per cubic feet. Split-face CMU's shall be factory prefinished with an integral coloring agent that is added during the mixing process. The coloring agent used for this project shall be from the same lot and batch numbers. The color for the split-face CMU's shall be selected by the County from the CMU manufacturer's standard color samples.
4. CMU noted as fire rated on the Drawings shall conform to Underwriters Laboratories, Inc. Standard for Concrete Masonry Units UL618, and shall have a 2-hour fire resistant rating.
5. All split rib CMU shall have a height minimum of 7-1/2-inch equally spaced 3/4-inch deep by 3/4-inch wide bevels. The projected face shall have a rough texture.
6. Units shall be obtained from 1 manufacturer to ensure even color and texture.
7. Provide special units required by the Drawings including solid, corner, pilaster, lintels, and jamb units.
8. Split-face CMU units shall be Dillon Company, Swords Creek Virginia or DeMaco Concrete Products, Sarasota Florida.

### **B. Concrete Masonry Units**

1. CMU's for structures shall conform to ASTM C90, Grade N, Type II normal weight units with minimum compressive strength of 1,900-psi.
  2. Vertical Reinforcing: Provide as shown on the Drawings.
- C. Integral Water Repellent
1. Provide units made with integral water repellent for exposed units. Integral water repellent to be a liquid polymeric admixture that does not reduce flexural bond strength. Integral water repellent shall be ACM Chemistries; Rainbloc, Grace Construction Products; Dry-Block or equal.

## **2.02 REINFORCEMENT**

- A. Reinforcing Steel: ASTM Designation A615, Grade 60, unless otherwise specified. Single width reinforcement shall be ladder or truss type, fabricated with a single pair of galvanized 9-gauge side rods and continuous 9-gauge cross-rods spaced not more than 16-inches on center.
- B. Galvanized dovetailed anchor slots shall be Heavy Filled, Catalog Number 8334 by Vulcan Metal Products, Inc. or equal, and shall be 5-inches long, 16-gauge galvanized.
- C. Dovetail anchors shall be placed at 16-inches on center for anchorage to concrete framework or walls.
- D. Corrugated non-ferrous 16-gauge metal ties manufactured for use with the anchor slots provided shall be spaced at a maximum of 8-inches on center vertically and 16-inches on center horizontally.
- E. The Contractor shall provide and install miscellaneous anchors and attachment members required both for the anchorage of his own work and that of other trades requiring attachment to masonry, which are not specifically provided under separate sections.
- F. Control joints shall be factory extruded preformed styrene-butadiene-rubber compound, conforming to ASTM D2000 2AA805 and shall be as manufactured by Dur-O-Wal, Hohmann and Bernard, Inc., AA Wire Products or equal. Control joints shall be installed as shown on the Drawings.
- G. Weep holes shall be 1/4-inch outside diameter by 4-inches long, clear plastic tubing that will not strain brickwork, by Hohmann and Bernard, Inc., or equal.
- H. Cleaning compound shall be mild, non-caustic detergent solution such as 801 Super Real Clean by Superior Manufacturing Co., or 600 Sureclean by Process Solvent Co., Inc., or equal.



## **2.03 MASONRY LINTELS**

- A. General: Provide precast or built-in-place masonry lintels in compliance with the requirements below.
- B. Built-in-place masonry lintels:
  - 1. Built-in-place lintel to be made from lintel and bond beam concrete masonry units with reinforcing bars placed as indicated and filled with grout.
  - 2. Lintels shall be of length sufficient to bear 8" on either side of opening.
  - 3. Temporarily support all built-in-place lintels until cured.
- C. Pre-cast concrete lintels:
  - 1. U-Lintel units, minimum compressive strength: 3500 psi at 28 days.
  - 2. All units shall have sand block finish
  - 3. Manufacture and tolerances shall be in compliance with PCI MNL-116, "Manual for Quality Control for Precast and Prestressed Concrete."
  - 4. Manufacturer shall rate U-lintel units for gravity, uplift, and lateral loads in units of pounds per linear foot, and provide load vs. deflection data.
  - 5. Lintels shall be of length sufficient to bear 8" on either side of opening.

## **2.04 MORTAR AND GROUT MATERIALS**

- A. Portland Cement shall conform to ASTM C150 Type II requiring only sand and water for mixing. Masonry cements may be used for colored mortar when specifically accepted.
- B. Lime for masonry mortar shall be hydrated, conforming to ASTM C207, Type S.
- C. Sand shall be clean, durable particles, free from detrimental amounts of organic matter. The sand shall conform to the limits of ASTM C14. Sand for grout shall conform to ASTM C144 or C33 as required.
- D. Water shall be potable, free from detrimental amounts of oils, acids, alkalis, or organic matter, and shall be clean and fresh.
- E. Masonry cements used for integral colored CMU's shall be specifically approved for colored mortar. Colored mortar mixers shall be factory premixed with color pigments and Portland cement, requiring only sand and water for mixing. Colored mortar for the project shall be from the same factory lot and batch numbers. Color of the

mortar mix shall be selected by the Owner from the mortar manufacturer's standard color samples.

- F. Water repellent admixture added to mortar shall match water repellent used in manufacture of split-face CMU.
- G. Strength of mortars shall exceed 1,800-pounds per square inch, when tested with 2-inch cubes at the end of a 28-day aging period.
- H. Grout for setting bearing plates, machinery, or any other non-masonry use shall be as specified in Section 03600 "Grouting."
- I. Grout
  - 1. Portland cement shall conform to ASTM C150, Type I.
  - 2. Aggregates shall conform to ASTM C144.
  - 3. Grout for constructing CMU lintel blocks and for grouting cores to receive embedded anchors or reinforcing shall conform to ASTM C476, fine or coarse grout. Strength shall be 2,500-psi minimum at 28-days. Grout will have a slump of 10-inches, plus or minus 1-inch, at time of placement.
  - 4. Concrete grout for filling structural CMU cells shall use 3/8-inch pea rock mix with a minimum compressive strength of 3,000-psi.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Provide formwork and shores as required for temporary support of reinforced masonry elements. Design, erection, support, bracing, and maintenance of formwork are the Contractor's responsibility.
- B. Construct formwork to conform to shape, line, and dimensions shown and sufficiently tight to prevent leakage of mortar grout or concrete.
- C. Do not remove forms and shoring until reinforced masonry member has hardened sufficiently to carry its own weight and all other reasonable temporary loads that may be placed on it during construction. Do not remove forms and shoring supporting the weight of concrete in beams, slabs, and other members until concrete has attained its specified 28-day compressive strength.

#### **3.02 MORTAR**

- A. Mortar shall be machine mixed in an approved type of mixer in which the quantity of water can be accurately and uniformly controlled. The mixing time shall not be less

than 5-minutes, approximately 2-minutes of which shall be for mixing the dry materials and not less than 3-minutes for continuing the mixing after the water has been added. Where hydrated lime is used for mortar requiring lime content, the Contractor will have the option of using the dry-mix method or first converting the hydrated lime into putty.

- B. Where the dry-mix method is employed, the materials for each batch shall be well turned over together until the even color of the mixed, dry materials indicates that the cementitious material has been distributed throughout the mass, after which the water shall be gradually added until a thoroughly mixed mortar of the required plasticity is obtained.
- C. Mortar that has begun to set shall not be used.
- D. Mortar shall be used and placed in final position within 1-1/2 hours after mixing.
- E. Mortar boards and boxes shall be cleaned at the end of each days work, and all tools shall be kept clean.

### **3.03 LAYING CONCRETE BLOCK**

- A. Do not wet concrete masonry units (CMU).
- B. Masonry shall not be laid at temperatures below 40°F, without the approval of the Owner, and all work shall be done in such a manner as to insure the proper and normal hardening of all mortar. All masonry work shall be so protected and heated that the temperature at the surface will not fall below 50°F for a period of 72-hours after placing. Any completed work found to be affected by cold weather shall be taken down and rebuilt by the Contractor at his expense.
- C. All CMU shall be laid in a full bed of mortar, applied to shells only. Butter the vertical joint of unit already set in the wall and all contact faces of the unit to be set. Each unit shall be placed and shoved against the unit previously laid so as to produce a well compacted vertical mortar joint for the full shell thickness. Units shall be set with all cells in a vertical position. The moisture content of the units when laid shall not exceed 35% (percent) of the total absorption as determined by laboratory test. Split-face CMU's shall be laid with the horizontal stringline control to the inside face of block in a full bed of mortar on all 4 sides.
- D. Masonry units shall be laid in a running bond unless otherwise shown.
- E. Sizes shall be as specified and called for on the Drawings and where "Soaps" and "Splits" are used, the space between these members and the backup material shall be slushed full of mortar.
- F. Masonry joints which are exposed to view shall be tooled in accordance with the following:

1. Wait until unit mortar is thumbprint hard before tooling joint.
  2. Both vertical and horizontal joint spacing shall be uniform.
  3. Joints for CMU shall be 3/8-inch.
  4. Joints for structural block shall be 1/4-inch.
  5. Joints shall be tooled slightly concave.
  6. Joints for standard CMU shall be rubbed with a sponge to provide a flush, neat, rubbed joint.
  7. Exterior joints for split-face CMU shall be rubbed with a sponge, paddle, or Styrofoam tool to cause the joint to blend with the masonry unit's exterior split-face. Interior face joints of split-face CMU shall match standard CMU joints.
- G. Install all frames required to be set in masonry. Set masonry tightly against frames, build in and mortar in all frame anchors and fill frames solid with mortar.
- H. Control joints shall be installed at the intersection of masonry walls with structural concrete members and elsewhere as detailed on the Drawings. Joints shall be raked out to a depth of 3/4-inch for the full height or full width of the wall suitable for caulking. The maximum length, horizontally, between vertical control joints shall be 40-feet, but joints shall be located only as directed or shown. Joints shall be equal in width to the standard mortar joint.
- I. All masonry slots, chases, or openings required for the proper installation of the work of other sections shall be constructed as indicated on the Drawings or in accordance with information furnished before the work is started at the points affected. No chase shall be cut into any wall constructed of hollow units after it is built, except as directed by the County.
- J. Field cut split-face CMU with power tools to provide straight true edge and avoid damage to split-face. Do not install chipped or broken units.
- K. Exercise care that wet mortar is not splashed onto split-face during installation. Excess or splashed mortar shall be cleaned from face with a burlap wipe.
- L. During grouting, placement of foamed-in-place insulation, and application of sealants, ensures that materials are not smeared onto split-faces of CMU. Remove smeared materials as recommended by manufacturer.
- M. Surfaces shall be brushed as work progresses and maintained as clean as practical. Unfinished work shall be raked back where possible, and toothed only where

absolutely necessary. Before leaving fresh or unfinished work, walls shall be fully covered and protected against rain and wind, and before continuing work, previously laid surfaces shall be swept clean. The tops of walls or other unfinished work shall be protected against all damage by frost or the elements by means of waterproof paper, tarpaulins, boards, or other means reviewed by the County.

- N. The Contractor shall build in all miscellaneous items to be set in masonry for which placement is not specifically provided under separate Divisions, including reglets, lintels, ties, electrical panel boxes, sleeves, vents, grilles, anchors, grounds and exterior electrical conduits, and fixtures, and shall cooperate with other trades whose work is to be coordinated with the work under this Section.
- O. All anchorage, attachment, and bonding devices shall be set so as to prevent slippage and shall be completely covered with mortar or grout.
- P. All ties and reinforcing for masonry shall be furnished and installed by the Contractor.
- Q. Loose lintels shall be set in a full bed of mortar and supported by solid or mortar filled hollow concrete blocks as detailed on the Drawings.
- R. Bed and grout all items coming in contact with masonry where grouting is required, including door bucks and frames set in masonry. The Contractor shall install all anchor bolts, base plates, and seats in masonry walls, and build in all items required for the completion of the building as they apply to masonry.
- S. Block work shall be laid plumb, level, and true to line and grade. Lay block within the following tolerances from specified dimensions:
  - 1. Mortar joint thickness: Bed-1/8 inch; Head- 1/4 inch, +3/8 inch
  - 2. Variation from plumb, level, and line: 1/4 inch in 10 feet, 3/8 inch total
- T. Where solid CMU units are shown, lay units with full mortar head and bed joints.
- U. Walls
  - 1. Pattern Bond: Lay CMU wall units as specified in Section 04050 "Masonry." Bond and interlock each course at corners and intersections and use special-shaped units where shown, and as required for corners, jambs, sash, control joints, lintels, bond beams, and other special conditions.
  - 2. Maintain vertical continuity of core or cell cavities, which are to be reinforced and grouted, to provide minimum clearance and grout coverage for vertical reinforcement bars. Keep cavities free of mortar. Solidly bed webs in mortar where adjacent to reinforced cores or cells.

3. Where horizontal reinforced beams (bond beams) are shown, use special units or modify regular units to allow for placement of continuous horizontal reinforcement bars. Place small mesh expanded metal lath or wire screening in mortar joints under bond beam courses over cores or cells of non-reinforced vertical cells, or provide units with solid bottoms.
4. Option: Where all vertical cores are not shown to be grouted, Contractor may elect to fill all vertical cores with grout, in which case, requirements for mortar bedding of cross-webs and closing of core spaces below bond beams will not apply.

V. Columns, Piers, and Pilasters

1. Use CMU of the size, shape, and number of vertical core spaces shown. If not shown, provide units which provide minimum clearances and grout coverage for number and size of vertical reinforcement bars shown.
2. Provide pattern bond as shown, or if not shown, provide alternate head joints in vertical alignment.
3. Where bonded pilaster construction is shown, construct wall and pilaster units together to the maximum pour height specified.

**3.04 PLACING REINFORCEMENT**

- A. Clean reinforcement of loose rust, mill scale, earth or other materials which will reduce bond to mortar or grout. Do not use reinforcement bars with kinks or bends not shown on Drawings or final shop drawings, or bars with reduced cross-section due to excessive rusting or other causes.
- B. Place reinforcement straight, centered in cells, and tied at laps and intersection of bars. Horizontal reinforcement may be placed as the masonry work progresses. Where vertical bars are shown in close proximity, provide a clear distance between bars of not less than the nominal bar diameter or 1 inch, whichever is greater.
- C. For columns, piers, and pilasters, provide a clear distance between vertical bars as shown, but not less than 1-1/2-times the nominal bar diameter or 1-1/2-inches, whichever is greater. Provide lateral ties as shown.
- D. Splice reinforcement bars only as shown. Do not splice at other points unless approved by the Engineer. Provide lapped splices, unless otherwise shown. In splicing vertical bars or attaching to dowels, tie splices with wire.
- E. Provide not less than the minimum lap shown, or if not shown, as required by governing code.
- F. Embed metal ties in mortar joints as work progresses, with a minimum mortar cover of 5/8 inch on exterior face of walls and 1/2 inch at other locations.

- G. Anchor reinforces masonry work to supporting structure as indicated.

### **3.05 GROUTING**

- A. Use fine grout for filling spaces less than 4 inches in both horizontal directions.
- B. Use course grout for filling 4 inch spaces or larger in both horizontal directions.
- C. Place grout within 1.5 hours from introducing water in the mixture and prior to initial set.
- D. Grouting Technique: At the Contractor's option, use either low-lift or high-lift grouting techniques subject to the requirements which follow.
- E. Consolidate grout by mechanical vibration and reconsolidate by mechanical vibration after initial water loss and settlement has occurred.
- F. Low-Lift Grouting:
  - 1. Provide a minimum clear dimension of 2 inches and clear area of 8 sq. in. in vertical cores to be grouted.
  - 2. Place vertical reinforcement prior to laying of CMU. Extend vertical reinforcement above elevation of maximum pour height as required to allow for splicing and support it in position at vertical intervals not exceeding 192 bar diameters nor 10 feet.
  - 3. Lay CMU to maximum pour height. Limit pour height to 5 feet. If bond beam occurs below the 5 feet height stop, pour at course below bond beam.
  - 4. Preparation of Grout Spaces: Prior to grouting, inspect and clean out the grout spaces. Remove dust, dirt, mortar droppings, loose pieces of masonry and other foreign materials from grout spaces. Clean reinforcement and adjust to proper position. Clean top surface of structural members supporting masonry to ensure bond.
  - 5. Pour grout using container with spout or by chute and rod or vibrate during placing. Place grout continuously. Do not interrupt pouring of grout for more than one hour. Terminate grout pours 1 1/2-inches below top course of pour.
  - 6. Bond Beams: Terminate grout in vertical cells 1 1/2-inches below bond beam course. Place horizontal reinforcement in bond beams with corners and intersections lapped as shown. Place grout in bond beam course before filling vertical cores above bond beam.
- G. High-Lift Grouting:
  - 1. Do not use high-lift grouting technique for grouting of CMU unless minimum cavity dimension and area is 3 inches and 10 sq. in., respectively.

2. Provide cleanout holes in first course at all vertical cells which are to be filled with grout. Use units with one face shell removed and provide temporary supports for units above, or use header units with concrete brick supports, or cut openings in one face shell. Openings shall have a minimum area of 12 square inches and a minimum opening dimension of 3 inches.
3. Construct masonry to full height of maximum grout pour specified, prior to placing grout.
4. Limit grout lifts to a maximum height of 5 feet and grout pour to a maximum height of 24 feet.
5. Place vertical reinforcement before grouting. Tie vertical reinforcement to dowels at base of masonry where shown and thread CMU over or around reinforcement. Support vertical reinforcement at intervals not exceeding 192 bar diameters nor 10 feet.
6. Where reinforcement is prefabricated into cage units before placing, fabricate the units with vertical reinforcement bars and lateral ties of the size and spacing shown.
7. Place horizontal beam reinforcement as the masonry units are laid.
8. Embed lateral tie reinforcement in mortar joints where shown as masonry units are laid.
9. Where lateral ties are shown in contact with vertical reinforcement bars, embed additional lateral tie reinforcement in mortar joints. Place as shown, or if not shown, provide as required to prevent grout blowout or rupture of CMU face shells, but provide not less than No. 2 bars or 8-gauge wire ties spaced 16-inches on center for members with 20-inches or less side dimensions, and 8-inches on center for members with side dimensions exceeding 20-inches.
10. Preparation of Grout Spaces: Prior to grouting, inspect and clean out the grout spaces. Remove dust, dirt, mortar droppings, loose pieces of masonry and other foreign materials from grout spaces. Clean reinforcement and adjust to proper position. Clean top surface of structural members supporting masonry to ensure bond. After final cleaning and inspection, close cleanout holes and brace closures to resist grout pressures.
11. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist displacement of masonry units and breaking of mortar bond. Install shores and bracing, if required, before starting grouting operations.
12. Place grout by pumping into grout spaces unless alternate methods are acceptable to the Engineer.
13. Limit grout pours to sections which can be completed in one working day with not more than one hour interruption of pouring operation. Place grout in lifts



which do not exceed 5 feet. Allow not less than 30 minutes, nor more than one hour between lifts of a given pour. Vibrate each grout lift during pouring operation.

14. Place grout in lintels or beams over openings in one continuous pour.
15. Where bond beam occurs more than 1 course below top of pour, fill bond beam course to within 1-inch of vertically reinforced cavities during construction of masonry.
16. When more than one pour is required to complete a given section of masonry, extend reinforcement beyond masonry as required for splicing. Pour grout to within 1 1/2 inches of top course of first pour. After grouted masonry is cured, lay masonry units and place reinforcement for second pour section before grouting. Repeat sequence if more pours are required.
17. Grout for filled cells shall be tested.

### **3.06 PROTECTION**

- A. During erection: Cover top of walls with waterproof sheeting at end of day. Cover partially completed walls when work is not in progress. Extend 24-inches minimum down both sides and hold securely in place.
- B. Protect face of walls, sills, and other projections from roof run-off, water, mud, grout, and mortar.
- C. Spread sand or straw at base of walls to minimize dirt and clay splashed.
- D. Without damaging completed work, provide protective boards at exposed external corners, which may be damaged by construction activities.
- E. Clean installed block at the end of each work day.

### **3.07 CLEANING**

- A. All holes in exposed masonry shall be pointed, and defective joints shall be cut out and re-pointed with mortar of same color as that of the original and adjoining work.
- B. Exposed masonry shall be protected against staining by wall coverings, and excess mortar shall be wiped off the surface as the work progresses.
- C. All masonry shall be cleaned with approved detergent solution in accordance with manufacturer's printed directions. No acid or metal scrapers shall be used on masonry.
- D. Before applying any cleaning agent to the entire wall, it shall be applied to a sample wall area of approximately 20-square feet in a location reviewed by the County. No further cleaning work may proceed until the sample area has been reviewed by the

County, after which time the same cleaning materials and method shall be used on the remaining wall area.

- E. After cleaning, treat exposed split-face CMU surfaces and mortar joint sealer applied in accordance with manufacturer's instructions. Verify surfaces are clean and thoroughly dry prior to application.

**END OF SECTION.**

## **SECTION 09 22 00**

### **CEMENT PLASTER (STUCCO)**

#### **PART 1 - GENERAL**

##### **1.01 SCOPE OF WORK**

- A. This section includes materials and installation of the exterior stucco finish with integral color.

##### **1.02 SUBMITTALS**

- A. Submit product data including manufacturer's literature demonstrating compliance with these specifications.
- B. Submit color chart showing integral coloring options for Owner's selection.

##### **1.03 QUALITY ASSURANCE**

- A. Codes and Standards: Comply with provisions of following codes, specifications, and standards, except where more stringent requirements are shown or specified:
  - 1. FBC, Florida Building Code.
  - 2. Portland Cement Plastering Standards
- B. Use skilled workmen who are trained and experienced and who are familiar with the installation of the products specified herein.
- C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution. Mockup shall include decorative reveal panels as shown on wall section in the Drawings.

#### **PART 2 - MATERIALS**

##### **1.01 PLASTER MATERIALS**

- A. Portland cement shall conform to ASTM C150, Type I or IA.
- B. Lime shall be special finishing hydrated lime conforming to ASTM C206, Type S.
- C. Sand shall be clean, natural and free from soluble salts and organic matter, and shall comply with ASTM C35 and when dry shall pass No. 4 sieve.
- D. Fiber shall be pure manilla, glass or synthetic fiber, good quality ½ inch to 2 inches in length, free from grease, oil, dirt and other impurities. No asbestos shall be used.
- E. Water shall be clean, fresh potable water.

- F. Bonding agent shall be Acryl 60 by Harris Specialty Chemicals, Inc.

## **1.02 STUCCO ACCESSORIES**

- A. Stucco accessories shall be produced from weather proof PVC as manufactured by Vinyl Tech Accessories Plastic Components, Inc.
- B. Corner beads shall be No. 1.
- C. Casing beads shall be No. 10.
- D. Stucco reveal shall be 708-75.
- E. Stucco reveal cross intersection shall be PRC-75.
- F. Foam reveals shall be as manufactured by StyroTrim. All reveals shall be sized to match existing.

## **PART 3 - EXECUTION**

### **1.01 SURFACE CONDITIONS**

- A. Examine the areas where the cement plaster (stucco) will be installed and bring any unsatisfactory conditions to the attention of the Contractor. Do not proceed with installation until the unsatisfactory conditions are corrected.

### **1.02 INSTALLATION**

- A. Cement plaster (stucco) shall be 3 coat work on CMU or concrete with a minimum thickness of  $\frac{3}{4}$  inch. The three coats shall be scratch coat, brown coat and finish coat.
- B. Apply scratch coat in a  $\frac{3}{8}$  inch minimum thickness with sufficient pressure to force it through and completely embed metal lath or to form a good bond on masonry, and then scratch to roughen surface.
- C. Apply brown coat over scratch coat in a  $\frac{1}{4}$  inch minimum thickness with sufficient pressure to form a good bond, rodde level and left rough.
- D. Apply finish coat over brown coat in a  $\frac{1}{8}$  inch minimum thickness. Float finish to a true, even surface and as required to produce a fine texture. Finish shall be smooth finish.
- E. Moisture protection and curing. Dampen previous coats that have dried out prior to time for applications of next coat. Dampen with water as required for uniform suction.

### **1.03 CLEANUP**

- A. Clean up any loose material upon completion of installation and dispose of in designated containers or off site.

**END OF SECTION**

Appendix A

Report Of

Geotechnical Exploration

Holiday Isle Lift Station

St. Augustine Beach, Florida



Geotechnical ■ Construction Materials ■ Environmental ■ Facilities

**REPORT OF  
GEOTECHNICAL EXPLORATION  
HOLIDAY ISLAND LIFT STATION  
ST. AUGUSTINE BEACH, FLORIDA  
E&A PROJECT NO. 35-24495  
CLIENT ID: 0382**

**Prepared for:**

St. Johns County Utility Department  
1205 State Road 16  
St. Augustine, Florida 32084

**Prepared by:**

Ellis & Associates, Inc.  
7064 Davis Creek Road  
Jacksonville, Florida 32256

November 7, 2016

November 7, 2016

Mr. James Overton, P.E.  
St. Johns County Utility Department  
1205 State Road 16  
St. Augustine, Florida 32084

Reference: Report of Geotechnical Exploration  
Holiday Island Lift Station  
St. Augustine Beach, Florida  
E&A Project No. 35-24495  
Client ID: 0382

Dear Mr. Overton:

Ellis & Associates, Inc. has completed the requested geotechnical exploration in general accordance with our proposal dated October 13, 2016. The exploration was performed to evaluate the general subsurface conditions within the proposed lift station area and to provide recommendations for site preparation and foundation support. A summary of our findings and related recommendations is provided below for your convenience; however, this report should be considered in its entirety.

The results of the lift station borings generally indicate a surficial layer of topsoil underlain by loose to very dense fine sands to the termination depth of 25 feet. Based on the results of our exploration, we consider the subsurface conditions at the site adaptable for support of the proposed lift station wet well structure.

We appreciate the opportunity to be your geotechnical consultant on this phase of the project and look forward to providing the materials testing and observation that will be required during the construction phase. If you have any questions, or if we may be of any further service, please contact us.

Very truly yours,

**ELLIS & ASSOCIATES, INC.**

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Colin A. Shaw, E.I.  
Staff Engineer

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Robert W. Clark, P.E.  
Senior Project Engineer  
Registered, Florida No. 52210

Distribution: Mr. James Overton, P.E. – St. Johns County Utility Department

1 pdf



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## **1.0 PROJECT INFORMATION**

### **1.1 Site Location and Project Description**

The project site is located east of A1A Beach Boulevard at the entrance road to the Holiday Isle Oceanfront Resort in St. Augustine Beach, Florida. The general site location is shown on Figure 1.

At the time of our exploration, there was an existing lift station near the center of the explored area. The area north of the pump station was covered in maintained grass and bushes. South of the pump station was the asphalt drive to the resort and more areas of maintained grass south of the pavement.

You provided project information via several emails. We were provided with a copy of a site plan for the development. This plan indicated the existing roadways adjacent to the site, the existing pump station and the requested boring locations for the proposed pump station.

We should be contacted if any of the above project information is incorrect so that we may reevaluate our recommendations.

## **2.0 FIELD EXPLORATION**

We performed a field exploration during the period of November 1 to 3, 2016. The approximate boring locations are indicated on the attached Field Exploration Plan (Figure 2). Our personnel determined the boring locations using paced measurements from existing roadways and site features. The boring locations on the referenced Field Exploration Plan should be considered accurate only to the degree implied by the method of measurement used.

The boring south of the existing pump station was moved approximately 80 feet south of the requested location, due to overhead power lines. Also, the borings were performed in the A1A right of way, instead of east of the right of way.

We located and performed three Standard Penetration Test (SPT) borings, drilled to a depth of approximately 25 feet below the existing ground surface, in general accordance with the methodology outlined in ASTM D 1586 to explore the subsurface conditions for the proposed below-ground structure. Split-spoon soil samples recovered during performance of the boring were visually classified in the field and representative portions of the samples were transported to our laboratory for further evaluation.

### **2.1 Field permeability Tests**

We performed field permeability tests adjacent to the SPT boring locations. The field permeability tests were performed by installing a solid-walled, open-bottom PVC casing snugly fit into a 4-inch diameter auger borehole at various depths. The solid-walled PVC casing was constructed with a 18-inch long PVC slotted screen, with 0.010-inch openings, attached to the bottom of the casing. The pipe was filled to the top with water and the test was conducted as a "falling head" test in which the depth of the water within the pipe was measured in approximate one to three minute intervals.

## **3.0 VISUAL CLASSIFICATION**

A geotechnical engineer classified representative soil samples obtained during our field exploration using the Unified Soil Classification System (USCS) in general accordance with ASTM D 2488. A Key to the Soil Classification System is included in Appendix A.

#### 4.0 GENERAL SUBSURFACE CONDITIONS

##### 4.1 General Soil Profile

A graphical presentation of the generalized subsurface conditions is presented on Figure 3. Detailed boring records are included in Appendix A. It should be understood that the soil conditions will vary between the boring locations. The following table summarizes the soil conditions encountered.

| GENERAL SOIL PROFILE: COMBINED BORING LOCATIONS |     |                                         |                     |
|-------------------------------------------------|-----|-----------------------------------------|---------------------|
| TYPICAL DEPTH (ft)                              |     | SOIL DESCRIPTION                        | USCS <sup>(1)</sup> |
| FROM                                            | TO  |                                         |                     |
| 0                                               | 0.5 | Topsoil                                 | ---                 |
| 0.5                                             | 17  | Loose to Very Dense Fine Sand           | SP                  |
| 17                                              | 25  | Dense Fine Sand and Fine Sand with Silt | SP, SP-SM           |
| (1) Unified Soil Classification System          |     |                                         |                     |

##### 4.2 Groundwater Level

Groundwater was encountered at the boring location and recorded at the time of drilling at a depth of about 4 feet below the existing ground surface. We note that groundwater levels will fluctuate due to seasonal climatic variations, surface water runoff patterns, construction operations, and other interrelated factors. The groundwater depth at the boring location is noted on the Log of Boring records.

##### 4.3 Soil Permeability

The results of the permeability tests indicated the following horizontal permeabilities:

| Test Location | Test Depth (feet) | Measured Permeability (inches/hour) |
|---------------|-------------------|-------------------------------------|
| B1            | 10                | 16.2                                |
| B2            | 18                | 5.1                                 |
| B3            | 24                | $3.1 \times 10^{-2}$                |

#### 5.0 DESIGN RECOMMENDATIONS

##### 5.1 General

Our geotechnical engineering evaluation of the site and subsurface conditions at the property, with respect to the planned construction and our recommendations for site preparation and foundation support, are based on (1) our site observations, (2) the field data obtained, (3) our understanding of the project information and structural conditions as presented in this report, and (4) our experience with similar soil and loading conditions.

The discovery of any site or subsurface conditions during construction that deviate from the data obtained during this geotechnical exploration should be reported to us for our evaluation.

The recommendations in the subsequent sections of this report present design and construction techniques that are appropriate for the planned construction. We recommend that E&A be provided the opportunity to review the foundation plans and earthwork specifications to verify that our recommendations have been properly interpreted and implemented.

## **5.2 Below-Ground Structure Recommendations**

Based on the results of our exploration, we consider the subsurface conditions at the site adaptable for support of the proposed lift station wet well structure. The following sections present our recommendations for the wet well construction.

### **5.2.1 General Construction Considerations**

The need for dewatering systems should be anticipated for below-ground construction. The water table should be maintained at least 2 feet below the required excavation depth. The dewatering system should not be decommissioned until sufficient deadweight exists on the structure to prevent uplift or the uplift protection system as described below, if necessary, is in place.

### **5.2.2 Uplift Pressure**

We anticipate that the proposed structure will exert little or no net downward pressure on the soils; rather, the structure may be subject to hydrostatic uplift pressure prior to completion of construction and whenever the structure is empty. Below-ground structures should be designed to resist lateral earth pressures and hydrostatic uplift pressures appropriate for their depth below existing grade and wet season groundwater table.

The walls of the structure should be designed to resist at-rest lateral earth pressures, with equivalent fluid densities above and below the water table being as follows:

Above Water Table - Equivalent Fluid Density 58 lb/ft<sup>3</sup>

Below Water Table - Equivalent Fluid Density 88 lb/ft<sup>3</sup>

### **5.2.3 Uplift Protection**

When the water within the below-ground structure is maintained at or above the surrounding groundwater level, no net buoyancy will occur to the structure. However, in other conditions, a positive means of uplift protection may be necessary. Hydrostatic uplift forces can be resisted in several ways including:

1. Addition of dead weight to the structure.
2. Mobilizing the dead weight of the soil surrounding the structure through extension of footings outside the perimeter of the structure.

We can assist you in evaluating uplift protection requirements, at your request.

## **5.3 Settlement**

Post-construction settlements of the structure will be influenced by several interrelated factors, such as: (1) subsurface stratification and strength/compressibility characteristics; (2) bearing level, applied loads, and resulting bearing pressures beneath the foundations; and (3) site preparation and earthwork construction techniques used by the contractor.

Based on the results of the boring performed for the proposed structure area at the site, provided the site preparation and earthwork construction recommendations presented in Section 6.0 are performed, and since the proposed structure will exert little downward pressure on the soils, it is our opinion that settlement should be within tolerable magnitudes. The following sections present our recommendations for construction of the below-ground structure.

## **6.0 SITE PREPARATION AND EARTHWORK RECOMMENDATIONS**

Site preparation as outlined in this section should be performed to provide more uniform foundation bearing conditions, to reduce the potential for post-construction settlements of the planned lift station.

### **6.1 Clearing and Stripping**

Prior to construction, the location of existing underground utilities within the construction area should be established. Provisions should then be made to relocate interfering utilities to appropriate locations. Underground pipes that are not properly removed or plugged may serve as conduits for subsurface erosion, which may subsequently lead to excessive settlement of overlying structures.

The "footprint" of the proposed wet well structure plus a minimum additional margin of 5 feet should be stripped of all surface vegetation, stumps, debris, organic topsoil, or other deleterious materials. During grubbing operations, roots with a diameter greater than 0.5-inch, stumps, or small roots in a concentrated state, should be grubbed and completely removed.

Based on the results of our field exploration, it should be anticipated that 6 to 12 inches of topsoil and soils containing significant amounts of organic materials may be encountered across the site. The actual depths of unsuitable soils and materials should be determined by Ellis & Associates, Inc. using visual observation and judgment during earthwork operations. Any topsoils removed from the pavement areas can be stockpiled and used subsequently in areas to be grassed.

### **6.2 Temporary Groundwater Control**

The borings encountered groundwater at a depth of 4 feet below the existing ground surface at the time of our exploration. Temporary groundwater control measures will be required to facilitate site work and excavation. Dewatering methods should be determined by the contractor. The dewatering method should be maintained until backfilling has reached a height of 2 feet above the groundwater level at the time of construction. The site should be graded to direct surface water runoff from the construction area.

Note that discharge of produced groundwater to surface waters of the state from dewatering operations or other site activities is regulated and requires a permit from the State of Florida Department of Environmental Protection (FDEP). This permit is termed a *Generic Permit for the Discharge of Produced Groundwater From Any Non-Contaminated Site Activity*. If discharge of produced groundwater is anticipated, we recommend sampling and testing of the groundwater early in the site design phase to prevent project delays during construction. E&A can provide the sampling, testing, and professional consulting required to evaluate compliance with the regulations.

### **6.3 Excavation Protection**

Excavation work for the project will be required to meet OSHA Excavation Standard Subpart P regulations, Type C Soils. A braced sheet pile structure is anticipated for excavation support. Use of an open cut for deeper excavations is not considered practical because it will require a large excavation to preclude slope sloughing. The support structure should be designed according to OSHA sheeting and bracing requirements. We recommend a Florida registered Professional Engineer design the sheeting/bracing system.

### **6.4 Preparation of Lift Station Foundation Soils**

After installing the temporary groundwater control measures and achieving the required depth of excavation, the excavation bottom should be densified using hand-operated compaction equipment prior to the placement of replacement fill soils. Typically, the material to be compacted should exhibit moisture contents within  $\pm 2$  percent of the modified Proctor optimum moisture content (ASTM D 1557) during the

compaction operations. Compaction should continue until densities of at least 98 percent of the Modified Proctor maximum dry density (ASTM D 1557) have been achieved within the upper one foot below the exposed surface within the lift-station structure excavation.

#### **6.5 Compaction of Lift Station Structural Backfill**

Structural backfill which will also be required around the lift station structure should be placed in loose lifts not exceeding 6 inches in thickness and should be compacted with a light hand-operated compactor to a density of 95 percent of the Modified Proctor maximum dry density (ASTM D 1557). Heavy equipment should not be allowed within 5 feet of the structure to prevent overstressing of the structure walls.

#### **6.6 Structural Backfill**

Structural fill is defined as a non-plastic, inorganic, granular soil having less than 10 percent material passing the No. 200 mesh sieve and containing less than 4 percent organic material. The fine sand and fine sand with silt, without roots, as encountered in the borings, are suitable as fill materials and, with proper moisture control, should densify using conventional compaction methods. Soils with more than 10 to 12 percent passing the No. 200 sieve will be more difficult to compact, due to their nature to retain soil moisture, and may require drying. Typically, the material should exhibit moisture contents within  $\pm 2$  percent of the modified Proctor optimum moisture content (ASTM D 1557) during the compaction operations. Compaction should continue until densities of at least 95 percent of the modified Proctor maximum dry density (ASTM D 1557) have been achieved within each lift of the compacted structural fill.

### **7.0 QUALITY CONTROL TESTING**

Ellis & Associates, Inc. should be retained to perform the construction material testing and observations required for this project, to verify that our recommendations have been satisfied. We are the most qualified to address problems that may arise during construction, since we are familiar with the intent of our engineering design.

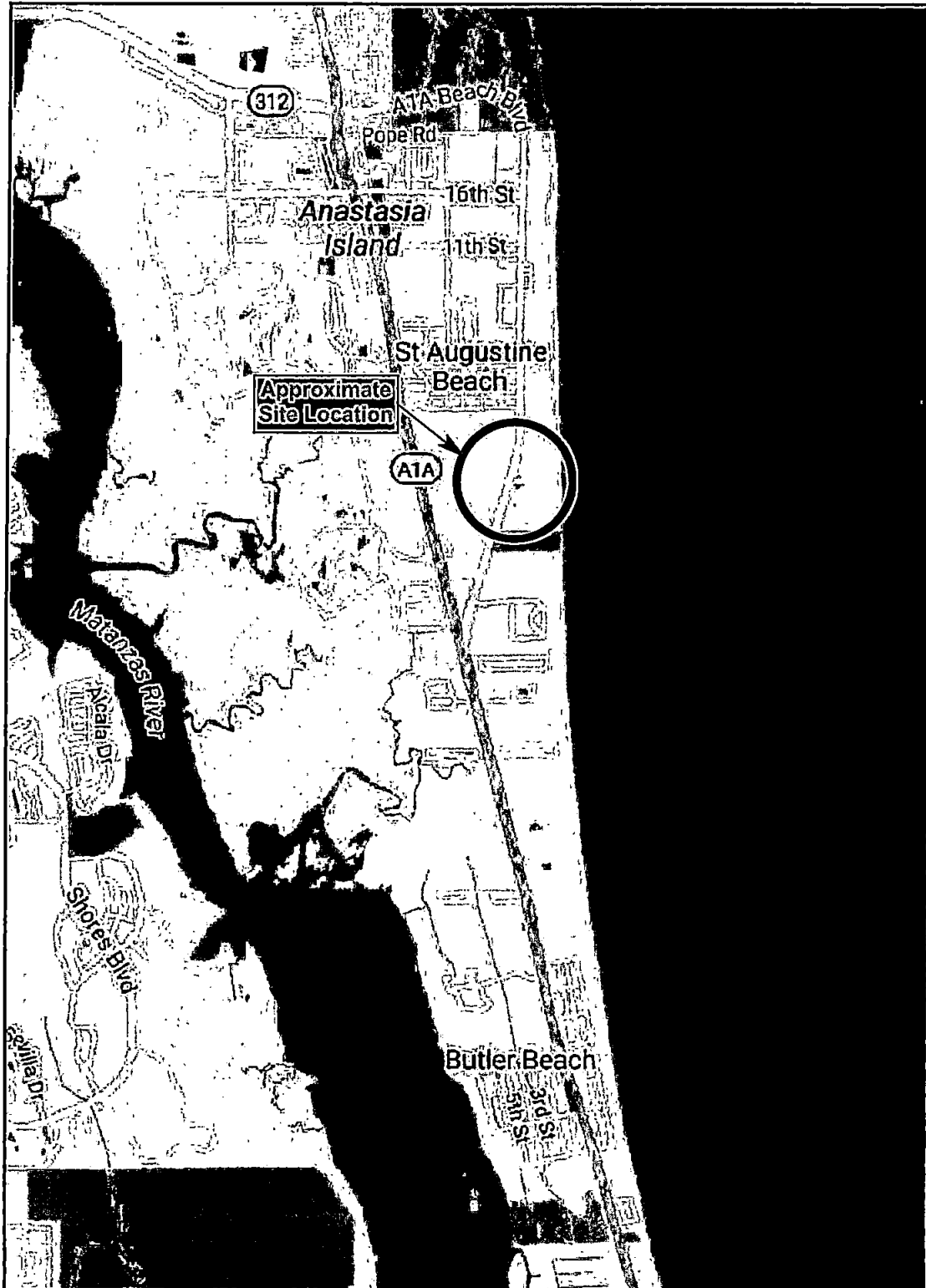
A representative number of field in-place density tests should be made in the upper 2 feet of compacted natural soils, in each lift of compacted backfill and fill, and in the upper 12 inches below the bearing levels in the footing excavations. Density tests are recommended to verify that satisfactory compaction operations have been performed. We recommend density testing be performed at each lift for the lift station.

### **8.0 REPORT LIMITATIONS**

Our geotechnical exploration has been performed, our findings obtained, and our recommendations prepared, in accordance with generally accepted geotechnical engineering principles and practices. Ellis & Associates, Inc. is not responsible for any independent conclusions, interpretation, opinions, or recommendations made by others based on the data contained in this report.

Our scope of services was intended to evaluate the soil conditions within the zone of soil influenced by the foundation system. Our scope of services does not address geologic conditions, such as sinkholes or soil conditions existing below the depth of the soil borings.

This report does not reflect any variations that may occur adjacent to or between soil borings. The discovery of any site or subsurface condition during construction that deviates from the data obtained during this geotechnical exploration should be reported to us for our evaluation. Also, in the event of any change to the location of the wet well structure, please contact us so that we can review our recommendations. We recommend that we be provided the opportunity to review the foundation plans and earthwork specifications to verify that our recommendations have been properly interpreted and implemented.



**E&A Ellis & Associates Inc.**  
**EGS Group of Companies**

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[www.ellis@ellisassoc.com](http://www.ellis@ellisassoc.com)

Site Location Plan

**Holiday Isle Lift Station**

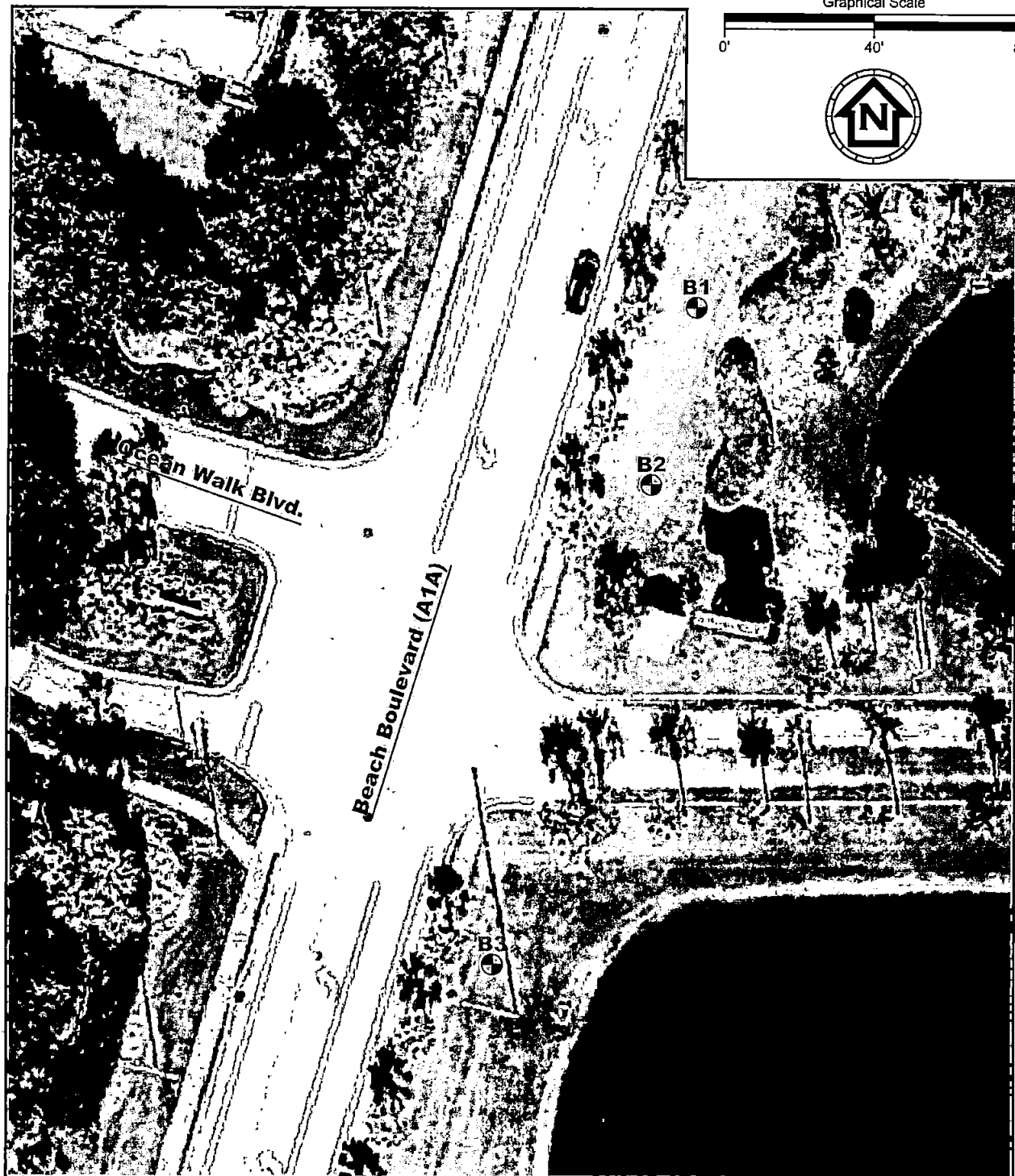
St. Augustine Beach, Florida



Date: 11/04/16

Project No.: 35-24495

Figure 1.



Graphical Scale  
0' 40' 80'



## LEGEND



Approximate Location of Standard Penetration  
Test (SPT) Boring

**EA Ellis & Associates Inc.**  
ECS Group of Companies

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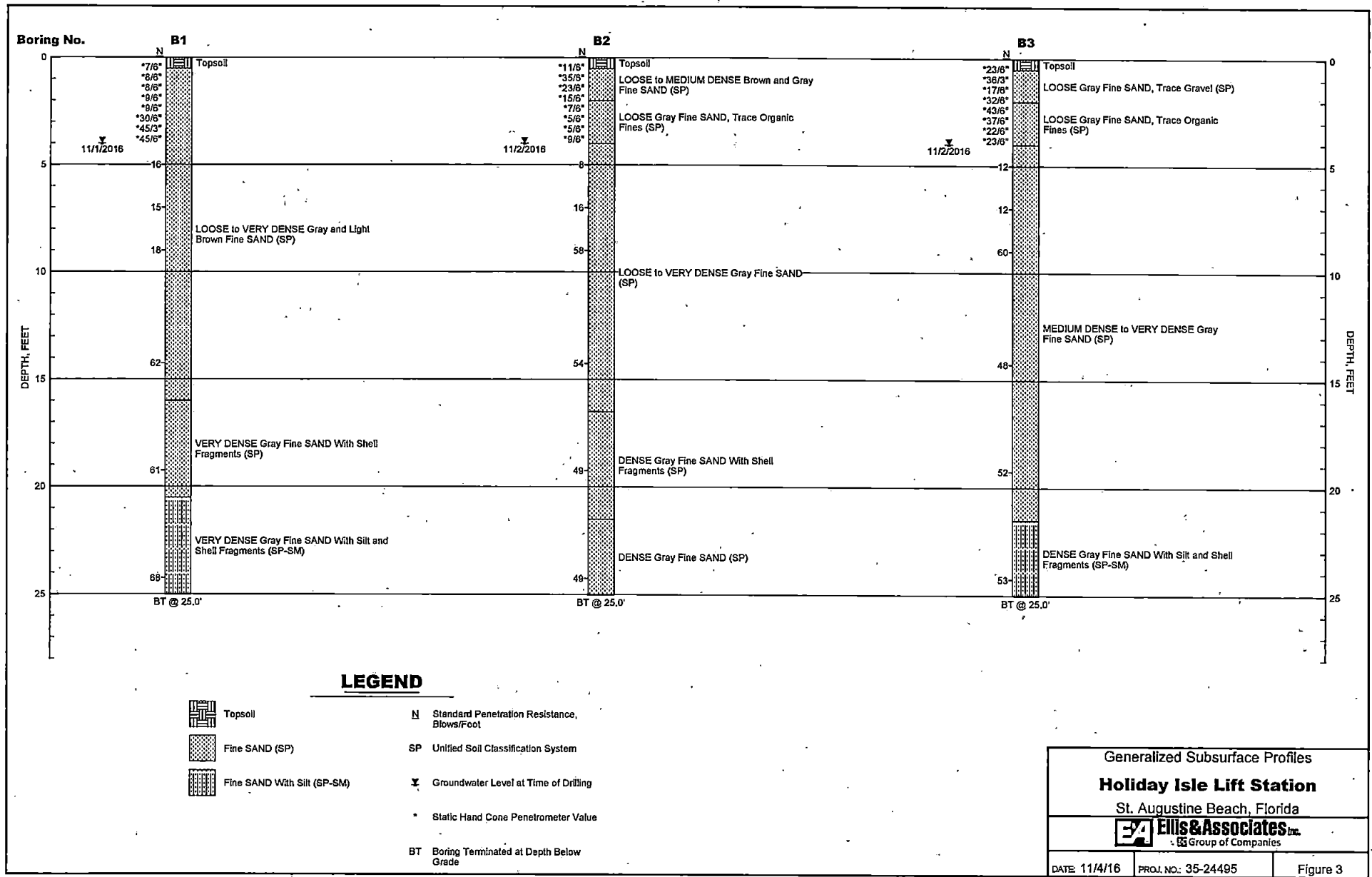
Field Exploration Plan  
**Holiday Isle Lift Station**  
St. Augustine Beach, Florida

Date: 11/04/16

Project No.: 35-24495

Figure 2





APPENDIX A

SOIL BORING LOGS  
FIELD EXPLORATION PROCEDURES  
KEY TO SOIL CLASSIFICATION



**Ellis & Associates Inc.**  
Group of Companies

## LOG OF BORING

Project No.: 35-24495  
Boring No.: B1  
Sheet 1 of 1

Project: Holiday Isle Lift Station

Client: St. Johns County Utility Department

Boring Location: See Field Exploration Plan

Drill Rig: ATV

Driller: M. Letchworth

Drill Rod: AWJ

Drill Mud: Super Gel-X

Casing Size: \_\_\_\_\_

Length of Casing: \_\_\_\_\_

Groundwater Depth: 4 ft Time: Drilling Date: 11/1/16

Boring Begun: 11/1/16

Boring Completed: 11/1/16

| SAMPLE NO.                 | DEPTH, FEET | SAMPLE TYPE | DESCRIPTION                                                     | BLOWS PER 6 IN. | N Value | PERCENT ORGANIC MATERIAL | PERCENT PASSING NO. 200 SIEVE | OPLASTIC LIMIT | MOISTURE CONTENT (%) | LIQUID LIMIT | SHEAR STRENGTH (ksf)                     |                                        |
|----------------------------|-------------|-------------|-----------------------------------------------------------------|-----------------|---------|--------------------------|-------------------------------|----------------|----------------------|--------------|------------------------------------------|----------------------------------------|
|                            |             |             |                                                                 |                 |         |                          |                               |                |                      |              | ⊙ Pocket Penetrometer Undisturbed Sample | ⊙ Pocket Penetrometer Disturbed Sample |
| 1                          | 0           |             | Topsoil                                                         | *7/6"           |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             | LOOSE to MEDIUM DENSE Gray Fine SAND (SP)                       | *8/6"           |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | *8/6"           |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | *9/6"           |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | *9/6"           |         |                          |                               |                |                      |              |                                          |                                        |
| 2                          |             |             |                                                                 | *30/6"          |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | *45/3"          |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | *45/6"          |         |                          |                               |                |                      |              |                                          |                                        |
| 3                          | 5           |             | MEDIUM DENSE Light Brown Fine SAND (SP)                         | 5               | 16      |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 7               |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 9               |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 8               |         |                          |                               |                |                      |              |                                          |                                        |
| 4                          |             |             | MEDIUM DENSE to VERY DENSE Gray Fine SAND (SP)                  | 5               | 15      |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 7               |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 8               |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 10              |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 10              |         |                          |                               |                |                      |              |                                          |                                        |
| 5                          |             |             |                                                                 | 9               | 18      |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 9               |         |                          |                               |                |                      |              |                                          |                                        |
|                            | 10          |             |                                                                 | 16              |         |                          |                               |                |                      |              |                                          |                                        |
| 6                          |             |             |                                                                 | 23              |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 30              |         |                          |                               |                |                      |              |                                          |                                        |
|                            | 15          |             |                                                                 | 32              | 62      |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 |                 |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             | VERY DENSE Gray Fine SAND With Shell Fragments (SP)             |                 |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 19              |         |                          |                               |                |                      |              |                                          |                                        |
| 7                          |             |             |                                                                 | 25              |         |                          |                               |                |                      |              |                                          |                                        |
|                            | 20          |             |                                                                 | 36              | 61      |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 |                 |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             | VERY DENSE Gray Fine SAND With Silt and Shell Fragments (SP-SM) |                 |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 19              |         |                          |                               |                |                      |              |                                          |                                        |
|                            |             |             |                                                                 | 25              |         |                          |                               |                |                      |              |                                          |                                        |
| 8                          |             |             |                                                                 | 43              | 68      |                          |                               |                |                      |              |                                          |                                        |
|                            | 25          |             |                                                                 |                 |         |                          |                               |                |                      |              |                                          |                                        |
| Boring Terminated @ 25 ft. |             |             |                                                                 |                 |         |                          |                               |                |                      |              |                                          |                                        |
| Remarks                    |             |             |                                                                 |                 |         |                          |                               |                |                      |              |                                          |                                        |

LOG OF BORING 35-24495.GPJ ELLIS ASSOCIATES.GDT 11/4/16



# Ellis & Associates Inc.

Group of Companies

## LOG OF BORING

Project No.: 35-24495  
Boring No.: B2  
Sheet 1 of 1

Project: Holiday Isle Lift Station Client: St. Johns County Utility Department  
Boring Location: See Field Exploration Plan Drill Rig: ATV Driller: M. Letchworth  
Groundwater Depth: 4 ft Time: Drilling Date: 11/2/16 Drill Rod: AWJ Drill Mud: Super Gel-X  
Casing Size: Length of Casing: Boring Begun: 11/2/16 Boring Completed: 11/2/16

| SAMPLE NO.                 | DEPTH, FEET | SAMPLE TYPE | DESCRIPTION                                         | BLOWS PER 6 IN. | N Value | PERCENT ORGANIC MATERIAL | PERCENT PASSING NO. 200 SIEVE | O PLASTIC LIMIT | MOISTURE + CONTENT (%) | LIQUID LIMIT | SHEAR STRENGTH (ksf)                                                                                                                                                                                                                                                    |  |
|----------------------------|-------------|-------------|-----------------------------------------------------|-----------------|---------|--------------------------|-------------------------------|-----------------|------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                            |             |             |                                                     |                 |         |                          |                               |                 |                        |              | <input type="radio"/> Pocket Penetrometer Undisturbed Sample<br><input type="radio"/> Pocket Penetrometer Disturbed Sample<br><input type="radio"/> Torvane<br><input type="radio"/> Unconfined Compression<br><input checked="" type="checkbox"/> Triaxial Compression |  |
| 1                          | 0           |             | Topsoil                                             | *11/6"          |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             | LOOSE to MEDIUM DENSE Brown and Gray Fine SAND (SP) | *35/6"          |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | *23/6"          |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | *15/6"          |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| 2                          |             |             | LOOSE Gray Fine SAND, Trace Organic Fines (SP)      | *7/6"           |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | *5/6"           |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | *5/6"           |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | *9/6"           |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| 3                          | 5           |             | LOOSE to VERY DENSE Gray Fine SAND (SP)             | 3               | 8       |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 3               |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 5               |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 4               |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| 4                          |             |             |                                                     | 3               | 16      |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 5               |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 11              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 17              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 10              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| 5                          |             |             |                                                     | 20              | 58      |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 38              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            | 10          |             |                                                     | 42              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| 6                          |             |             |                                                     | 18              | 54      |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 24              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            | 15          |             |                                                     | 30              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             | DENSE Gray Fine SAND With Shell Fragments (SP)      |                 |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| 7                          |             |             |                                                     | 10              | 49      |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 24              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            | 20          |             |                                                     | 25              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             | DENSE Gray Fine SAND (SP)                           |                 |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| 8                          |             |             |                                                     | 21              | 49      |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            |             |             |                                                     | 25              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
|                            | 25          |             |                                                     | 24              |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| Boring Terminated @ 25 ft. |             |             |                                                     |                 |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |
| Remarks                    |             |             |                                                     |                 |         |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                         |  |



## LOG OF BORING

Boring Begun: 11/2/16 Boring Completed: 11/2/16

| SAMPLE NO. | DEPTH, FEET | SAMPLE TYPE | DESCRIPTION                                                | BLOWS PER 6 IN.                                             | N Value                                        | PERCENT ORGANIC MATERIAL | PERCENT PASSING NO. 200 SIEVE | O PLASTIC LIMIT | MOISTURE + CONTENT (%) | LIQUID LIMIT | SHEAR STRENGTH (ksf)                                                                                                                                                                                                                                                      |  |
|------------|-------------|-------------|------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------------|--------------------------|-------------------------------|-----------------|------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|            |             |             |                                                            |                                                             |                                                |                          |                               |                 |                        |              | <input type="radio"/> Pocket Penetrometer, Undisturbed Sample<br><input type="radio"/> Pocket Penetrometer, Disturbed Sample<br><input type="radio"/> Torvane<br><input type="radio"/> Unconfined Compression<br><input checked="" type="checkbox"/> Triaxial Compression |  |
|            | 0           |             | Topsoil                                                    | *23/6"                                                      |                                                |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 1          |             |             | LOOSE Gray Fine SAND, Trace Gravel (SP)                    | *36/3"<br>*17/6"<br>*32/6"                                  |                                                |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 2          |             |             | LOOSE Gray Fine SAND, Trace Organic Fines (SP)             | *43/6"<br>*37/6"<br>*22/6"<br>*23/6"                        |                                                |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 3          | 5           |             | MEDIUM DENSE to VERY DENSE Gray Fine SAND (SP)             | 4<br>9<br>3<br>4<br>3<br>6<br>6<br>8<br>8<br>20<br>40<br>37 | 12<br><br><br><br><br>12<br><br><br><br><br>60 |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 4          |             |             |                                                            |                                                             |                                                |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 5          |             |             |                                                            |                                                             |                                                |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 6          | 15          |             |                                                            | 19<br>23<br>25                                              | 48                                             |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 7          | 20          |             |                                                            | 20<br>23<br>29                                              | 52                                             |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |
| 8          | 25          |             | DENSE Gray Fine SAND With Silt and Shell Fragments (SP-SM) | 17<br>23<br>30                                              | 53                                             |                          |                               |                 |                        |              |                                                                                                                                                                                                                                                                           |  |

Boring Terminated @ 25 ft.

Remarks

## **FIELD EXPLORATION PROCEDURES**

### **Standard Penetration Test (SPT) Borings**

The Standard Penetration Test (SPT) borings were made in general accordance with the latest revision of ASTM D 1586, "Penetration Test and Split-Barrel Sampling of Soils". The borings were advanced by rotary (or "wash-n-chop") drilling techniques. At 2 ½ to 5 foot intervals, a split-barrel sampler inserted to the borehole bottom and driven 18 inches into the soil using a 140 pound hammer falling on the average 30 inches per hammer blow. The number of hammer blows for the final 12 inches of penetration is termed the "penetration resistance, blow count, or N-value". This value is an index to several in-place geotechnical properties of the material tested, such as relative density and Young's Modulus.

After driving the sampler 18 inches (or less if in hard rock-like material), the sampler was retrieved from the borehole and representative samples of the material within the split-barrel were containerized and sealed. After completing the drilling operations, the samples for each boring were transported to our laboratory where they were examined by our engineer in order to verify the driller's field classification. The retrieved samples will be kept in our facility for a period of six (6) months unless directed otherwise.

## KEY TO SOIL CLASSIFICATION

Description of Compactness or Consistency in Relation  
To Standard Penetration Resistance

| Granular Materials |                                       |                                          |
|--------------------|---------------------------------------|------------------------------------------|
| Relative Density   | Safety Hammer SPT N-Value (Blow/Foot) | Automatic Hammer SPT N-Value (Blow/Foot) |
| Very Loose         | Less than 4                           | Less than 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 N-Value (Blow/Foot) | Automatic Hammer SPT N-Value (Blow/Foot) |
| Very Soft       | Less than 2                           | Less than 1                              |
| Soft            | 2 – 4                                 | 1 – 3                                    |
| Firm            | 4 – 8                                 | 3 – 6                                    |
| Stiff           | 8 – 15                                | 6 – 12                                   |
| Very Stiff      | 15 – 30                               | 12 – 24                                  |
| Hard            | Greater than 30                       | Greater than 24                          |

## DESCRIPTION OF SOIL COMPOSITION\*\*

(Unified Soil Classification System)

| MAJOR DIVISION                                                 |                                                                 | Group Symbol | LABORATORY CLASSIFICATION CRITERIA              |                                                                                   | SOIL DESCRIPTION                                                    |
|----------------------------------------------------------------|-----------------------------------------------------------------|--------------|-------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------|
|                                                                |                                                                 |              | FINER THAN 200 SIEVE %                          | SUPPLEMENTARY REQUIREMENTS                                                        |                                                                     |
| Coarse grained (over 50% by weight coarser than No. 200 sieve) | Gravelly soils (over half of coarse fraction larger than No. 4) | GW           | <5*                                             | $D_{60}/D_{10}$ greater than 4, $D_{30}^2 / (D_{60} \times D_{10})$ between 1 & 3 | Well graded gravels, sandy gravels                                  |
|                                                                |                                                                 | GP           | <5*                                             | Not meeting above gradation for GW                                                | Gap graded or uniform gravels, sandy gravels                        |
|                                                                |                                                                 | GM           | >12*                                            | PI less than 4 or below A-line                                                    | Silty gravels, silty sandy gravels                                  |
|                                                                |                                                                 | GC           | >12*                                            | PI over 7 above A-line                                                            | Clayey gravels, clayey sandy gravels                                |
|                                                                | Sandy soils (over half of coarse fraction finer than No. 4)     | SW           | <5*                                             | $D_{60}/D_{10}$ greater than 6, $D_{30}^2 / (D_{60} \times D_{10})$ between 1 & 3 | Well graded sands, gravelly sands                                   |
|                                                                |                                                                 | SP           | <5*                                             | Not meeting above gradation requirements                                          | Gap graded or uniform sands, gravelly sands                         |
|                                                                |                                                                 | SM           | >12*                                            | PI less than 4 or below A-line                                                    | Silty sands, silty gravelly sands                                   |
|                                                                |                                                                 | SC           | >12*                                            | PI over 7 and above A-line                                                        | Clayey sands, clayey gravelly sands                                 |
| Fine grained (over 50% by weight finer than No. 200 sieve)     | Low compressibility (liquid limit less than 50)                 | ML           | Plasticity chart                                |                                                                                   | Silts, very fine sands, silty or clayey fine sands, micaceous silts |
|                                                                |                                                                 | CL           | Plasticity chart                                |                                                                                   | Low plasticity clays, sandy or silty clays                          |
|                                                                |                                                                 | OL           | Plasticity chart, organic odor or color         |                                                                                   | Organic silts and clays of low plasticity                           |
|                                                                | High compressibility (liquid limit more than 50)                | MH           | Plasticity chart                                |                                                                                   | Micaceous silts, diatomaceous silts, volcanic ash                   |
|                                                                |                                                                 | CH           | Plasticity chart                                |                                                                                   | Highly plastic clays and sandy clays                                |
|                                                                |                                                                 | OH           | Plasticity chart, organic odor or color         |                                                                                   | Organic silts and clays of high plasticity                          |
| Soils with fibrous organic matter                              |                                                                 | PT           | Fibrous organic matter; will char, burn or glow |                                                                                   | Peat, sandy peats, and clayey peat                                  |

\* For soils having 5 to 12 percent passing the No. 200 sieve, use a dual symbol such as SP-SM.

\*\* Standard Classification of Soils for Engineering Purposes (ASTM D 2487)

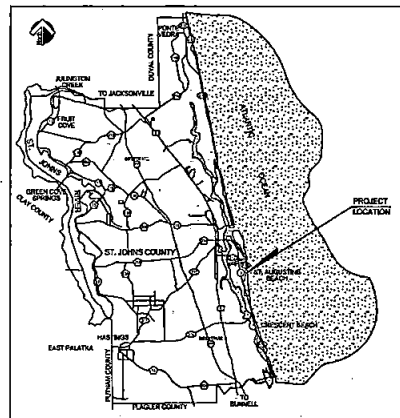
| SAND/GRAVEL DESCRIPTION MODIFIERS |                     |
|-----------------------------------|---------------------|
| Modifier                          | Sand/Gravel Content |
| Trace                             | <15%                |
| With                              | 15% to 29%          |
| Sandy/Gravelly                    | >29%                |

| ORGANIC MATERIAL MODIFIERS |                 |
|----------------------------|-----------------|
| Modifier                   | Organic Content |
| Trace                      | 1% to 2%        |
| Few                        | 2% to 4%        |
| Some                       | 4% to 8%        |
| Many                       | >8%             |

| SILT/CLAY DESCRIPTION MODIFIERS |                   |
|---------------------------------|-------------------|
| Modifier                        | Silt/Clay Content |
| Trace                           | <5%               |
| With                            | 5% to 12%         |
| Silty/Clayey                    | 13% to 35%        |
| Very                            | >35%              |

## ST. JOHNS COUNTY UTILITY DEPARTMENT

GL CODE: 4483-56302-6702-56302



### LOCATION MAP



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ST. JOHNS COUNTY UTILITY DEPARTMENT  
1205 STATE ROAD 16  
ST. AUGUSTINE, FL 32084  
(904) 209-2700

BID DOCUMENTS

JANUARY 2019



# ST. JOHNS COUNTY UTILITY DEPARTMENT (SJCD) GENERAL NOTES



ST. JOHNS COUNTY UTILITY DEPARTMENT  
1205 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 209-2700

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## GENERAL:

- TWO (2) COPIES OF THE SHOP DRAWINGS (STAMPED APPROVED BY THE ENGINEER) SHALL BE SUBMITTED TO SJCD FOR REVIEW PRIOR TO SCHEDULING THE MANDATORY PRE-CONSTRUCTION CONFERENCE. THE FINAL SHOP DRAWING REVIEW BY SJCD WILL BE COMPLETED WITHIN FIFTEEN (15) WORKING DAYS. SUBSEQUENT SHOP DRAWING REVIEWS WILL BE COMPLETED WITHIN TEN (10) WORKING DAYS.
- A PRE-CONSTRUCTION CONFERENCE IS REQUIRED WITH THE DEVELOPER, THE ENGINEER OF RECORD, THE UTILITY CONTRACTOR, AND THE SJCD PRIOR TO THE START OF ANY CONSTRUCTION. A PRE-CONSTRUCTION CONFERENCE WITH SJCD IS REQUIRED REGARDLESS OF OTHER AGENCIES REQUIREMENTS.
- ALL WATER, SEWER, AND/OR REUSE CONNECTIONS SHALL BE PERFORMED BY A CONTRACTOR LICENSED UNDER THE PROVISIONS OF CHAPTER 489, FLORIDA STATUTES. A COPY OF THE CONTRACTOR'S GENERAL LICENSE AND/OR UNDERGROUND UTILITY LICENSE SHALL BE PROVIDED AT THE PRE-CONSTRUCTION CONFERENCE.
- THE CONTRACTOR IS RESPONSIBLE FOR INSPECTING THE SITE PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL LOCATIONS & ELEVATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE CONTRACTOR(S) SHALL LOCATE, VERIFY, AND IDENTIFY ALL EXISTING UTILITIES AND UNDERGROUND UTILITIES SHOWN OR NOT SHOWN ON THE PLANS PRIOR TO ANY EXCAVATING ACTIVITIES AND TAKE ALL MEASURES NECESSARY TO PROTECT UTILITIES DURING CONSTRUCTION. SHOULD ANY UTILITY LINE OR COMPONENT BECOME DAMAGED OR REQUIRE RELOCATION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE AFFECTED UTILITY COMPANY, ENGINEER OF RECORD, COUNTY, AND SJCD.
- THE WATER, SEWER, AND/OR REUSE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SJCD APPROVED CONSTRUCTION DRAWINGS AND SPECIFICATIONS. IF THERE IS ANY DEVIATION FROM THE APPROVED CONSTRUCTION DRAWINGS OR SPECIFICATIONS, WITHOUT PRIOR AUTHORIZATION AND CONSENT FROM THE SJCD, THE CONTRACTOR SHALL REMOVE THE DEVIATION AND RESTORE IT TO THE APPROVED CONSTRUCTION DRAWING. SUBSEQUENT TO THE REVIEW OF THE CONSTRUCTION DRAWINGS FROM THE APPROVED DOCUMENTS WILL DELAY THE CONSTRUCTION PROCESS.
- THE CONTRACTOR SHALL FIELD VERIFY THE CONNECTION POINTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD AND SJCD IMMEDIATELY.
- EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED PER AVAILABLE MEANS WITHOUT EXCAVATION.
- VERTICAL LOCATIONS OF ALL UTILITIES (EXCLUDING EXISTING STORM SEWERS) SHOWN ON PLANS AND PROFILES SHALL HAVE BEEN REFERENCED TO A BENCHMARK SHOWN ON THE UTILITY PLANS. CONTRACTOR SHALL EXERCISE CAUTION DURING EXCAVATION. EXISTING UTILITIES SHOWN ON THE PLANS AND NOTIFIED THE ENGINEER IF LOCATION DIFFERS FROM THAT SHOWN ON THE PLANS BEFORE CONTINUING WITH CONSTRUCTION.
- SHOULD CONDITIONS VARY FROM THOSE SHOWN ON THESE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SJCD PRIOR TO COMMENCING CONSTRUCTION.
- THE CONTRACTOR SHALL PROTECT SURVEY MARKERS, MONUMENTS, ETC. DURING CONSTRUCTION. THE CONTRACTOR SHALL RESTORE/REPLACE, AT NO ADDITIONAL EXPENSE TO THE OWNER, ANY DAMAGE DONE BY CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY HIS OPERATIONS. ANY DAMAGE SHALL BE REPLACED/REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION AND DISPOSAL PLACEMENT WITH ALL OTHER UTILITIES CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ANY UNSUITABLE MATERIAL FROM HIS OPERATION. FURNISHING AND COMPACTING SUITABLE REPLACEMENT BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
- UNDESIRABLE MATERIALS UNDER WATER, SEWER, AND/OR REUSE MAINS SHALL BE REMOVED AND REPLACED WITH SELECTED BACKFILL PROPERLY COMPACTED TO 95% OF MAXIMUM DENSITY. BACKFILL SHALL BE COMPACTED IN A MAXIMUM OF ONE-FOOT (1) LIFTS. DENSITY TESTS SHALL BE TAKEN AFTER COMPACTION OF EVERY LIFT.
- THE CONTRACTOR(S) SHALL NOTIFY ALL APPLICABLE UTILITIES COMPANIES, THE ENGINEER OF RECORD, AND THE PROPERTY OWNER 72 HOURS PRIOR TO INITIATING ANY EXCAVATION ACTIVITIES OR AS SPECIFIED BY THE UTILITY COMPANIES AND THE PERMITS OBTAINED FOR THE WORK.
- THE ENGINEER OF RECORD AND SJCD SHALL BE GIVEN SEVENTY TWO HOURS (72) AND NOTICE OF ALL REQUESTED MEETINGS AND/OR TESTING MEASURES RELATED TO THE PROJECT.
- ALL WORK, MATERIALS, AND EQUIPMENT SHALL BE IN COMPLETE ACCORDANCE WITH ALL RELEVANT ST. JOHNS COUNTY STANDARDS AND REQUIREMENTS AS WELL AS STATE AND LOCAL REGULATIONS.
- ALL UNDERGROUND UTILITY EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE MANUAL OF WATER, WASTEWATER, AND REUSE STANDARDS & SPECIFICATIONS & ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, AND THE APPROVED SITE PLANS.
- ALL UTILITY CROSSINGS SHALL COMPLY WITH FDEP REGULATIONS (CH. 62-555.314, F.A.C.)
- ANY LANDSCAPING TREES SHALL BE PLACED AT A MINIMUM OF 7.5 FEET AWAY FROM THE EDGE OF PIPELINE TO THE EDGE OF THE TREE LINE.
- ALL ROCK AND UNSUITABLY SIZED STONES (AS DESCRIBED IN APPLICABLE ANWA AND ST. JOHNS COUNTY UTILITIES STANDARDS AND/OR PIPE MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES) FOUND IN TRENCHES FOR NEW AND RELOCATED PIPE SHALL BE REMOVED TO A DEPTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE. CONTINUOUS AND UNIFORM BEDDING SHALL BE PROVIDED FOR NEW AND RELOCATED PIPE. THE BACKFILL SHALL BE TAMPED IN LAYERS AROUND THE NEW AND RELOCATED PIPES AND TO A MINIMUM HEIGHT ABOVE SUCH PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE.

- FOR WATER, WASTEWATER, AND REUSE MAINS SMALLER THAN 12 INCHES, THE MINIMUM AND MAXIMUM COVER SHALL BE 30 INCHES AND 36 INCHES, RESPECTIVELY. IN UNPAVED AREAS AND 36 INCHES AND 42 INCHES, RESPECTIVELY. IN PAVED AREAS, OR AS REQUIRED WITHIN FOOT OR ROADWAY RIGHTS-OF-WAY, FOR MAINS GREATER THAN 12 INCHES, THE MINIMUM AND MAXIMUM COVER SHALL BE 42 INCHES AND 54 INCHES, RESPECTIVELY. EXCEPTIONS WILL BE MADE FOR CONFLICTS.
- WHERE FORCE MAINS, WATER MAINS, OR REUSE MAINS ARE LAID WITHOUT FITTINGS, THE MAXIMUM DEFLECTION SHALL BE BOX OF THAT RECOMMENDED BY THE MANUFACTURER.
- FITTINGS SHALL BE USED AT LOCATIONS INDICATED ON THE PLANS, UNLESS OTHERWISE APPROVED BY THE ENGINEER. ALL FITTINGS SHALL BE RESTRAINED PER THE RESTRAINED JOINT TABLE IN THE APPROVED PLAN SET.
- ALL UNDERGROUND VALVES SHALL BE INSTALLED WITH AN ADJUSTABLE CAST IRON VALVE BOX WITH TOP SET TO FINAL GRADE IN ACCORDANCE WITH SJCD DETAILS AND SPECIFICATIONS. ALL VALVES SHALL HAVE PEG LOCATORS (143.7 KILOWHRTS).
- CONTRACTOR IS RESPONSIBLE FOR PROPER NOTIFICATION OF INSPECTING AUTHORITIES BEFORE AND DURING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE A MINIMUM OF SEVEN (7) CALENDAR DAYS NOTICE TO SJCD PRIOR TO SCHEDULING THE FINAL INSPECTION.

## NOTICE OF PROCEDURE:

- ALL COMMERCIAL BUILDING PERMITS AND METERS PROCESSED THROUGH SJCD CUSTOMER SERVICE SHALL BE ACCOMPANIED BY A SET OF APPROVED CIVIL DESIGN PLANS.
- ALL CONNECTIONS TO THE WATER, SEWER, AND/OR REUSE SYSTEM, PLUMBING, AND PRESSURE TESTS SHALL BE PERFORMED BY THE UTILITY CONTRACTOR OR LICENSED MASTER PLUMBER MUST BE SCHEDULED AT LEAST FIVE (5) WORKING DAYS IN ADVANCE WITH THE SJCD. A SJCD INSPECTOR MUST BE PRESENT PRIOR TO THE CONNECTION BEING MADE OR TESTING.
- IT IS THE ENGINEER OF RECORD'S RESPONSIBILITY TO SECURE APPLICABLE PERMITS PRIOR TO CONSTRUCTION.
- THE PROPERTY OWNER SHALL PURCHASE THE WATER METER THROUGH THE SJCD AND ON PROGRESS OF CONSTRUCTION WITH WATER LARGER THAN ONE (1) INCH, THE OWNER'S CONTRACTOR SHALL INSTALL ALL METERS THREE (3) INCHES AND LARGER.
- WATER, SEWER, AND/OR REUSE UNIT CONNECTION FEES SHALL BE PAID AT THE TIME OF BUILDING PERMIT APPLICATION TO THE ENGINEER.
- ALL ON-SITE PRIVATE WATER, SEWER, AND/OR REUSE CONNECTION BETWEEN THE METER AND BUILDING MAY BE INSPECTED BY THE SJCD TO ENSURE COMPLIANCE WITH CONSTRUCTION.
- ALL REQUIREMENTS BY THE SJCD (I.E. FINAL INSPECTION, CORRECTION OF PUNCH LIST ITEMS, AS BUILT, TOP CERTIFICATION OF COMPLETION, ETC) MUST BE COMPLETED PRIOR TO ISSUANCE OF CERTIFICATES OF OCCUPANCY.

## POTABLE WATER SYSTEMS NOTES:

- ALL WATER MAINS 4" THROUGH 12" DIAMETER SHALL BE P.V.C. C-900, DR-15, COLOR "BLUE" WITH PUSH-ON GASKETED JOINTS OR C-900 HOPE DR 11 COLOR "BLUE" OR DIP CLASS 350.
- ALL WATER MAINS 16" THROUGH 20" DIAMETER SHALL BE P.V.C. C-905, DR-20, COLOR "BLUE" WITH PUSH-ON GASKETED JOINTS OR C-905 HOPE DR 11 COLOR "BLUE" OR DIP CLASS 250.
- ALL WATER MAINS 24" AND LARGER DIAMETER SHALL BE DUCTILE IRON PIPE.
- ALL WATER LINES 2" DIAMETER OR LESS SHALL BE HOPE CTS DR 9 COLOR "BLUE".
- ALL CURB STOPS ARE TO BE FORD BALL-TYPE OR EQUAL WITH LOCATING CAPACITY, 1" MINIMUM.
- THE SEPARATION REQUIREMENT BETWEEN POTABLE WATER MAINS AND OTHER UTILITIES SHALL BE PER CH. 62-555.340, F.A.C.
- A FULL CIRCUMFERENCE OF WATER MAIN PIPE (USUALLY 20 FEET) SHALL BE CENTERED AT THE POINT OF CROSSING OF ALL WATER AND SEWER (INCLUDING STORM) LINES AT THE POINT OF CROSSINGS REGARDLESS OF THE VERTICAL SEPARATIONS.
- WHERE SOLVENT CONTAMINATION IS FOUND IN THE TRENCH, WORK WILL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH THE APPROVAL OF THE ST. JOHNS COUNTY HEALTH DEPARTMENT, DUCTILE IRON PIPE, FITTINGS AND APPROVED SOLVENT RESISTANT CASSETT MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE WILL EXTEND AT LEAST 100 FEET BEYOND ANY DISCOVERED CONTAMINATION.
- NO CONNECTION TO EXISTING POTABLE WATER SYSTEM SHALL BE ALLOWED UNTIL ALL PROPOSED WATER LINES HAVE BEEN PRESSURE TESTED, DISINFECTED, CLEARED FOR SERVICE AND ACCEPTED FOR MAINTENANCE BY THE SJCD AND FDEP.
- JUMPER CONNECTIONS WITH BACKFLOW PREVENTION DEVICE SHALL BE USED TO FILL OR FLUSH WATER MAINS.
- ALL NEW AND RELOCATED WATER MAIN PIPE, FITTINGS, VALVES, AND FIRE HYDRANTS SHALL BE IN CONFORMANCE WITH APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND SJCD STANDARDS.
- ALL NEW AND RELOCATED WATER MAIN PIPE AND FITTINGS WILL COMPLY WITH THE LATEST FDEP AND AWWA STANDARDS FOR LEAD CONTENT.
- ALL NEW AND RELOCATED WATER MAINS SHALL BE PRESSURE TESTED AND STATIONED IN ACCORDANCE WITH AWWA STANDARD C905, LATEST EDITION.
- ALL NEW AND RELOCATED WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C951 AND RULE 62-555.340, F.A.C.
- ALL NEW AND RELOCATED WATER SERVICES SHALL BE IN CONFORMANCE WITH THE STATE PLUMBING CODE AND SJCD STANDARDS.
- THE BACTERIOLOGICAL SAMPLE POINTS SHALL BE INDICATED ON THE AS BUILT DRAWINGS. THE SAMPLE POINT NUMBERING AND STATIONING SHALL CONFORM TO THOSE ON THE BACTERIOLOGICAL SAMPLE CHAIN OF CUSTODY FORM.

## WASTEWATER SYSTEM NOTES:

- INTERIOR LINES ARE REQUIRED ON JUNCTION MANHOLES WITH THREE OR MORE MAINS. INTERIOR LINES SHALL BE ADEQUATE, SCHED 40, SWEETENED, OR EQUAL AS APPROVED BY SJCD.
- SANITARY SEWER LINE TO DEPTHS OF 10' SHALL BE 300-35 P.V.C. PIPE CONFORMING TO ASTM D-3034 COLORED GREEN. SANITARY SEWER LINE OF DEPTHS TO 18" SHALL BE 300-28 P.V.C. ALL SANITARY SEWER LINES SHALL BE GREEN AND CLEARLY MARKED ON THE PIPE.
- SANITARY SEWER FORCE MAIN 4" AND LARGER SHALL BE C900 C925 P.V.C. PIPE CONFORMING TO ASTM D-3034, D-1784, D-1785, AND D-2241. DUCTILE IRON PIPE SHALL ONLY BE USED WITH PRIOR APPROVAL BY THE SJCD. SANITARY FORCE MAIN SHALL BE COLORED COATED GREEN AND CLEARLY MARKED.
- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD AND SJCD ALL WELD LOGS, WRITTEN REPORTS, AND DEFLECTION TEST RESULTS FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL CONTACT SJCD PRE-TREATMENT DEPARTMENT AT (904) 471-8486 EXT. 225 FOR INSPECTION AFTER INSTALLATION OF GRADE TRAPS, INTERCEPTORS, AND/OR OIL-WATER SEPARATORS.

## AS-BUILTS:

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PRODUCE, SUBMIT AND OBTAIN APPROVAL OF REPRODUCIBLE "AS-BUILT" DRAWINGS FROM JURISDICTIONAL AGENCIES AS MAY BE REQUIRED.
- "AS-BUILT" INFORMATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL EMPLOY THE SERVICES OF A SURVEYOR REGISTERED IN THE STATE OF FLORIDA TO OBTAIN ALL "AS-BUILT" INFORMATION. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE UP TO SIX COPIES AND THE CAD FILE OF AS-BUILT DRAWINGS TO THE ENGINEER.
- A MINIMUM OF FIVE WORKING DAYS PRIOR TO THE FINAL INSPECTION, TWO (2) SETS OF PRELIMINARY "AS-BUILT" INFORMATION, AND COPY ON DISK IN AUTOCAD FORMAT SHOWING THE REQUIRED INFORMATION, SHALL BE SUBMITTED TO SJCD THROUGH ST. JOHNS COUNTY ENGINEER OF RECORD.
- THE RECORD OR "AS-BUILT" DRAWINGS TO BE PREPARED BY THE CONTRACTOR AND SUBMITTED AT THE TIME OF THE REQUEST FOR A LETTER OF RELEASE TO THE SJCD. THE CONSTRUCTION INTO SERVICE WILL CLEARLY DEPICT THE VERTICAL CLEARANCES BETWEEN WATER, SEWER (INCLUDING STORM) AND REUSE LINES AT ALL CROSSINGS AND PARALLEL RUNS WHERE THE HORIZONTAL SEPARATION IS LESS THAN 10 FEET. IN ADDITION, THE CENTERING OF UNICUT LENGTHS OF PIPE (USUALLY 20 FEET) AT POINTS OF CROSSING OR PARALLEL RUNS SHALL BE SHOWN ON THE DRAWINGS AND ALL MITIGATING CONSTRUCTION MEASURES CLEARLY DEPICTED. IN CASES WHERE A CASES WHERE A MINIMUM 10' HORIZONTAL CLEARANCE BETWEEN THE WATER AND SEWER (INCLUDING STORM) LINES IS NOT POSSIBLE.
- AFTER SJCD HAS APPROVED PRELIMINARY "AS-BUILT" THREE (3) SETS OF BLACKLINE AS-BUILTS (SIGNED AND SEALED), ONE SET OF MYRARS AS BUILT (SIGNED AND SEALED) AND COPY ON DISK IN AUTOCAD FORMAT SHOWING THE REQUIRED INFORMATION, SHALL BE SUBMITTED TO SJCD THROUGH ST. JOHNS COUNTY ENGINEER OF RECORD.

## STANDARD WATER/SEWER/RECLAIMED WATER SEPARATION SYSTEMS:

- THE CONTRACTOR SHALL INSTALL ALL MAINS IN ACCORDANCE WITH THE REQUIREMENTS OF RULE 62-555.314, F.A.C. BELOW THE CONTRACTOR SHALL NOTIFY SJCD IN ANY INSTANCE WHERE THE BELOW REQUIREMENTS CANNOT BE MET PRIOR TO INSTALLATION OF THE PIPELINE.
- 62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.
- FOR THE PURPOSE OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED WASTEWATER OR POTABLE WATER, AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.
- (1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.
- (A) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART OF CHAPTER 62-610, F.A.C.
- (B) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE THREE FEET, WITH THE BOTTOM OF THE WATER MAIN BEING AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
- (C) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART OF CHAPTER 62-610, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE THREE FEET, WITH THE BOTTOM OF THE WATER MAIN BEING AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
- (D) NEW OR RELOCATED UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS" AS DEFINED IN SECTION 381.009(2), F.A.C., AND RULE 64C-8.002, F.A.C.
- (E) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, AND RECLAIMED WATER PIPELINES.
- (A) NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY TEN INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
- (B) NEW OR RELOCATED UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

- (C) AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) ABOVE, THE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED OVER THE CROSSING. THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST FIVE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART OF CHAPTER 62-610, F.A.C. AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART OF CHAPTER 62-610, F.A.C.
- (3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES.
- (A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.
- (B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE. IF IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY DOSSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER AND WHERE AN ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY DOSSIBLE, THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES, BUT SUPPLIES OF WATER OR FLOODING PROPOSED TO CONSTRUCT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT IN ACCORDANCE WITH PART V OF THIS CHAPTER AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

- TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.
- A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.
- ASSURANCE OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-PARAGRAPHS (A) THROUGH (D) BELOW.
- A EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE WATERSTOP JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLEMENT BETWEEN THE MAIN AND THE MANHOLE.
- B WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERSTOP CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).
- C EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED TO ALLOW FOR EASY CLEANING OF THE MANHOLE.
- D GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLES.
- (4) SEPARATION BETWEEN PIPE HYDRANT DOWNS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. NEW OR RELOCATED PIPE, OR EXISTING PIPE, SHALL BE LAID SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART OF CHAPTER 62-610, F.A.C. AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART OF CHAPTER 62-610, F.A.C. AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.009(2), F.A.C., AND RULE 64C-8.002, F.A.C.
- (5) EXCEPTIONS WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY DOSSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS IF SUPPLIERS OF WATER OR CONSTRUCTION PERMIT APPLICATION PROVIDES TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDES ALTERNATIVE CONSTRUCTION FEATURES THAT AFFORD A SIMILAR LEVEL OF RELIABILITY AND PUBLIC HEALTH PROTECTION. ACCEPTABLE ALTERNATIVE CONSTRUCTION FEATURES INCLUDE THE FOLLOWING:
- (A) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE.
1. USE OF PRESSURE-RAISED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARD INCORPORATED INTO RULE 62-555.310, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY- OR VACUUM-TYPE PIPELINE.
2. USE OF WELDED, FUSED, OR OTHERWISE RESTRAINED JOINTS FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.
3. USE OF WATERSTOP CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.
- (B) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE.
1. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN AND THE OTHER PIPELINE.
2. USE OF PIPE, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.

## HYDROSTATIC TESTING NOTES:

- AFTER ALL PRESSURE PIPES ARE INSTALLED, THE JOINTS COMPLETED, AND THE TRENCH BACKFILLED, THE NEWLY LAID PIPE AND APPURTENANCES SHALL BE SUBJECTED TO A HYDROSTATIC TEST FOR A PERIOD OF AT LEAST TWO (2) HOURS. THE ENGINEER AND THE SJCD MUST BE NOTIFIED AT LEAST 72 HOURS BEFORE A TEST IS TO BE PERFORMED. THE TEST SHALL BE AS SET FORTH IN AWWA STANDARD C905. ANY LEAKS DETECTED SHALL BE CORRECTED AND THE SECTION OF PIPELINE RETESTED. THE TWO HOUR TEST PERIOD SHALL BEGIN WHEN ALL JOINTS HAVE BEEN DETERMINED TO BE WATER TIGHT. LEAKAGE SHALL BE LIMITED TO THAT ALLOWANCE SET FORTH IN SECTION 4 OF AWWA STANDARD C905 LATEST EDITION. HYDROSTATIC AND LEAKAGE TEST AND BLOW-DOWN (CIRCUIT OF GASES) MUST OCCUR BEFORE SAMPLING FOR BACTERIOLOGICAL TEST. THE MAXIMUM ALLOWABLE PRESSURE LOSS IS 5 PSI.

HOLIDAY USE LIST STATION  
IMPROVEMENTS  
GENERAL NOTES

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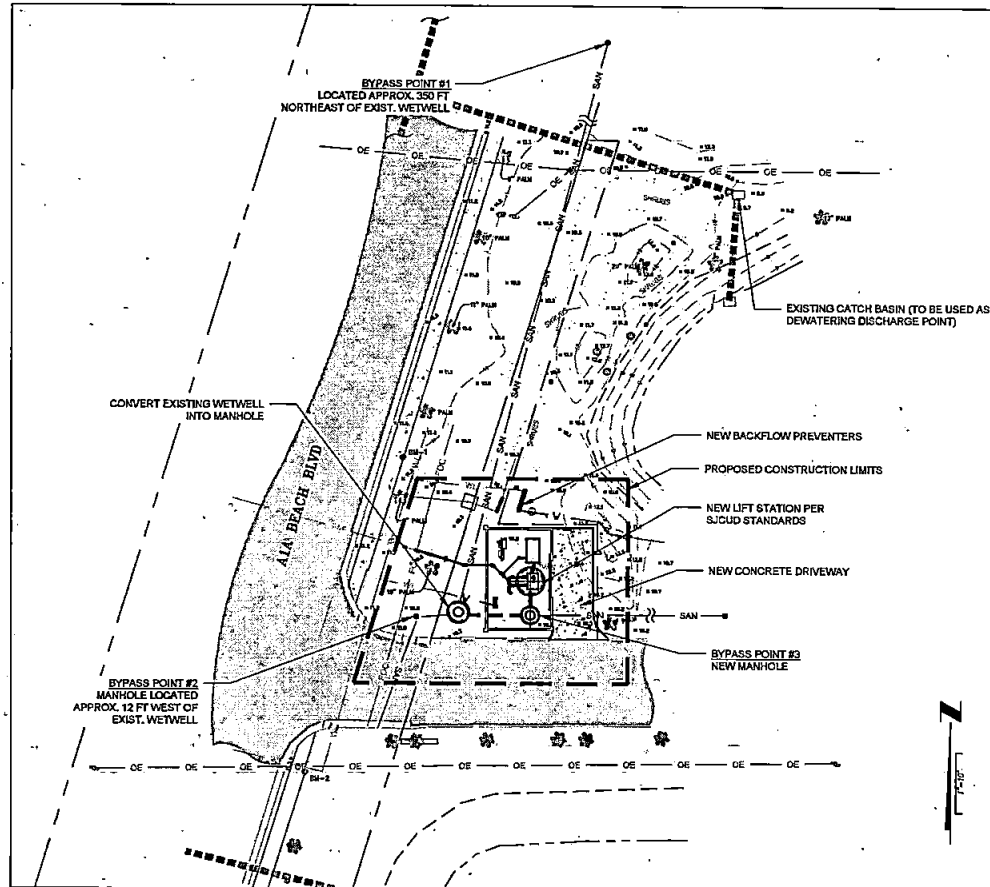
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# GENERAL NOTES:

1. THE FOLLOWING WILL BE FURNISHED BY SJUCD TO BE INSTALLED BY THE CONTRACTOR:
  - 1.1. (2) NP3153 HT-484 SUBMERSIBLE PUMPS (20HP/3PH/230V) W/ GUIDE RAILS ACCESSORIES
  - 1.2. (1) 200A CONTROL PANEL PER SJUCD STANDARDS
  - 1.3. (2) ROSE+BOPLA JUNCTION BOXES PER SJUCD STANDARDS
  - 1.4. (1) 200A DISCONNECT SWITCH W/ SS ENCLOSURE PER SJUCD STANDARDS
  - 1.5. (1) MOTOROLA ACES300 RTU W/ ENCLOSURE, ANTENNA AND ANTENNA MAST PER SJUCD STANDARDS
  - 1.6. (1) WIKI FORCE MAIN PRESSURE TRANSMITTER
  - 1.7. (1) GOWAN CD100M DRI PRIME PUMP W/ SOUND ATTENUATED ENCLOSURE
2. WETWELL INSTALLATION ALTERNATIVES:
  - 2.1. OPTION 1: THE CONTRACTOR MAY OPT FOR THE TRADITIONAL SHORING, DEWATERING AND EXCAVATION INSTALLATION WITH A PRECAST OR POUR-IN-PLACE BOTTOM SLAB.
  - 2.2. OPTION 2: THE CONTRACTOR MAY OPT FOR A CAISSON-METHOD INSTALLATION WITH A POUR-IN-PLACE BOTTOM SLAB THAT IS BALLASTED EQUIVALENT TO THE TYPICAL INSTALLATION DEPICTED IN THE SJUCD STANDARD LIFT STATION DETAIL. EITHER METHOD MUST NOT DISRUPT NORMAL TRAFFIC IN AND OUT OF THE PROPERTY.
3. THE PRECAST CONCRETE TOP SLAB SHALL BE MIN. 4000 PSI CONCRETE (8" MIN) WITH REINFORCING (SEE SHEET CD-3).
4. THE POUR-IN-PLACE CONCRETE SLAB SHALL BE MIN. 3000 PSI CONCRETE (8" MIN) WITH 6X6 WWM OR FIBER MESH.
5. THE POUR-IN-PLACE CONCRETE DRIVEWAY SHALL BE MIN. 3000 PSI CONCRETE (10" MIN) WITH 6X6 WWM OR FIBER MESH.
6. THE EXISTING WETWELL CONCRETE TOP SLAB SHALL BE REMOVED AND REPLACED WITH A NEW 8"-THICK REINFORCED PRECAST TOP SLAB WITH MANHOLE RING AND COVER PER SJUCD STANDARDS.
7. REFER TO THE SJUCD PUMP STATION STANDARD DETAIL (SEE SHEET CD-1) FOR REQUIRED MECHANICAL EQUIPMENT SCHEDULE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A VACCON TRUCK AND DISPOSE OF ALL SEWAGE AND DEBRIS FROM THE EXISTING WETWELL.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BYPASS PUMPING DURING CONSTRUCTION TO ENSURE THAT THE COLLECTION SYSTEM FUNCTIONS UNDER NORMAL CONDITIONS. THE TEMPORARY BYPASS PUMPS SHALL BE OUTFITTED WITH AN AUTOCLEANER TO CONTACT THE CONTRACTOR IN THE EVENT OF A HIGH LEVEL OR PUMP FAILURE.
10. THE EXISTING WETWELL INTERIOR SHALL BE BLAST CLEANED AND COATED WITH RAVEN 405 OR AN APPROVED EQUIVALENT LINER. MINOR LEAKS SHALL BE REPAIRED AT NO ADDITIONAL COST TO SJUCD. IF MAJOR LEAKS ARE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE SJUCD ENGINEER IMMEDIATELY AND A DETERMINATION SHALL BE MADE ON THE MOST COST-EFFECTIVE REPAIR METHOD.

## SEQUENCE OF CONSTRUCTION:

1. INSTALL NEW WETWELL, "DOGHOUSE"/POUR-IN-PLACE MANHOLE, PIPING AND ELECTRICAL EQUIPMENT RACK PER PLAN.
2. SET UP BYPASS PUMPS AT LOCATIONS SHOWN IN THE OVERALL SITE PLAN. MANIFOLD TEMPORARY PIPING AS NECESSARY WITHIN THE EXISTING WETWELL TO LIMIT THE NUMBER OF BYPASS PUMPS REQUIRED.
3. DEMO EXISTING LIFT STATION (BUILDING, PIPING, EQUIPMENT, ETC.). REMOVE WETWELL TOP SLAB, BACKFILL WITH CLEAN SAND, POUR NEW BENCH AND COAT WITH RAVEN 405 EPOXY OR APPROVED EQUAL. REMOVE APPROXIMATELY 18 LF OF THE EXISTING 8" PVC GRAVITY SEWER AND INSTALL NEW 10" SDR26 PVC GRAVITY SEWER WITH 0.4% SLOPE PER PLAN. SEAL MANHOLE CONNECTIONS. COAT NEW MANHOLE WITH RAVEN 405 EPOXY OR APPROVED EQUAL, AND CUT EXISTING PIPE WITHIN NEW MANHOLE.
4. COORDINATE WITH TPA TO ENERGIZE NEW LIFT STATION.
5. DISCONTINUE BYPASS PUMPING AND REDIRECT FLOW TO NEW LIFT STATION.



**OVERALL SITE PLAN**  
SCALE 1" = 20'

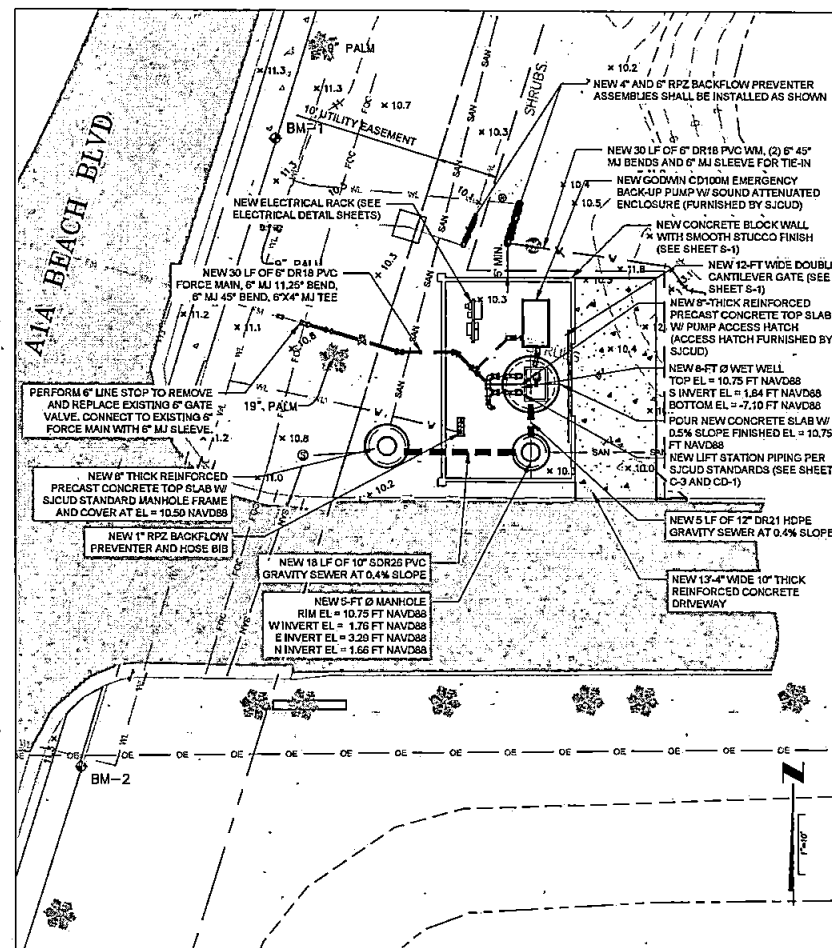
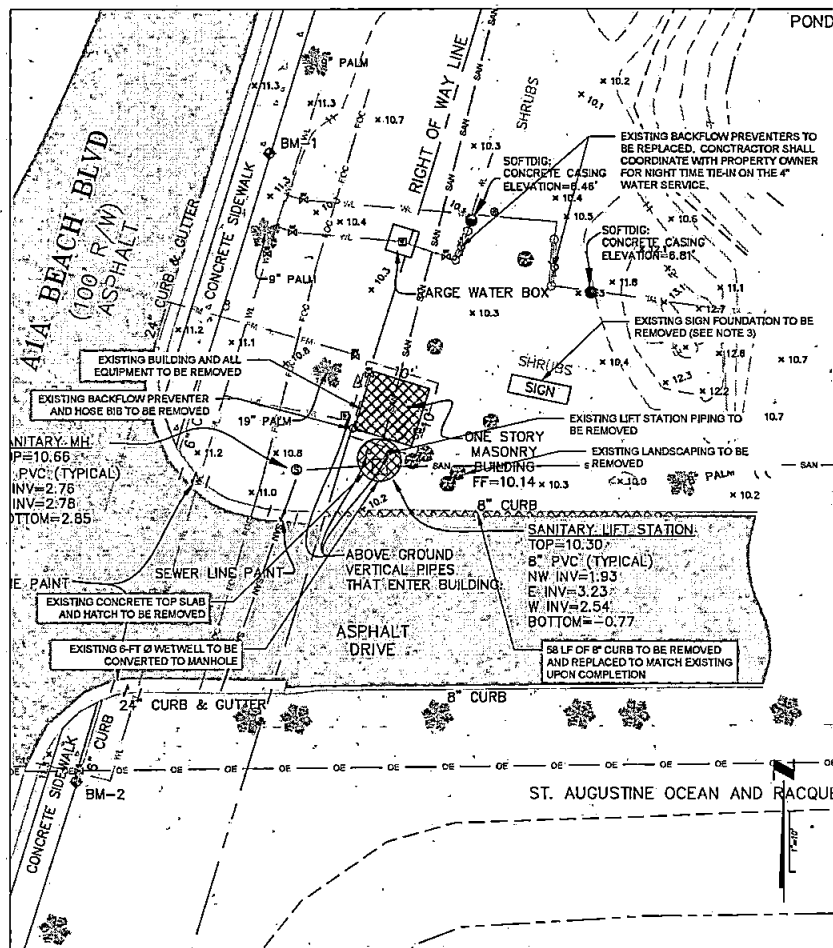


ST. JOHNS COUNTY UTILITY DEPARTMENT  
1205 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 209-2700

| AMENDMENTS | Date: 10/12/2016 | Drawn By: JAO | Checked By: JAO | Sign: BY: JAO |
|------------|------------------|---------------|-----------------|---------------|
|            |                  |               |                 |               |
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HOLIDAY ISLE LIFT STATION  
IMPROVEMENTS  
OVERALL SITE PLAN

DRAWN BY: JAO  
FILE NUMBER: 8702  
SHEET NO. C-1



ST. JOHNS COUNTY UTILITY DEPARTMENT  
1205 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 209-2700

| DATE       | DESIGNED BY | CHECKED BY | DATE |
|------------|-------------|------------|------|
|            |             |            |      |
| 10/12/2018 | ASD         | ASD        | ASD  |
|            |             |            |      |
|            |             |            |      |
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|                                       |                               |
|---------------------------------------|-------------------------------|
| HOLIDAY LEE LIFT STATION IMPROVEMENTS | EXISTING & PROPOSED SITE PLAN |
| DESIGNED BY: ASD                      | FILE NUMBER: 8702             |
| CHECKED BY: ASD                       | SHEET NO. C-2                 |
| DATE: 10/12/2018                      |                               |



ST. JOHNS COUNTY UTILITY DEPARTMENT  
1234 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 209-2700

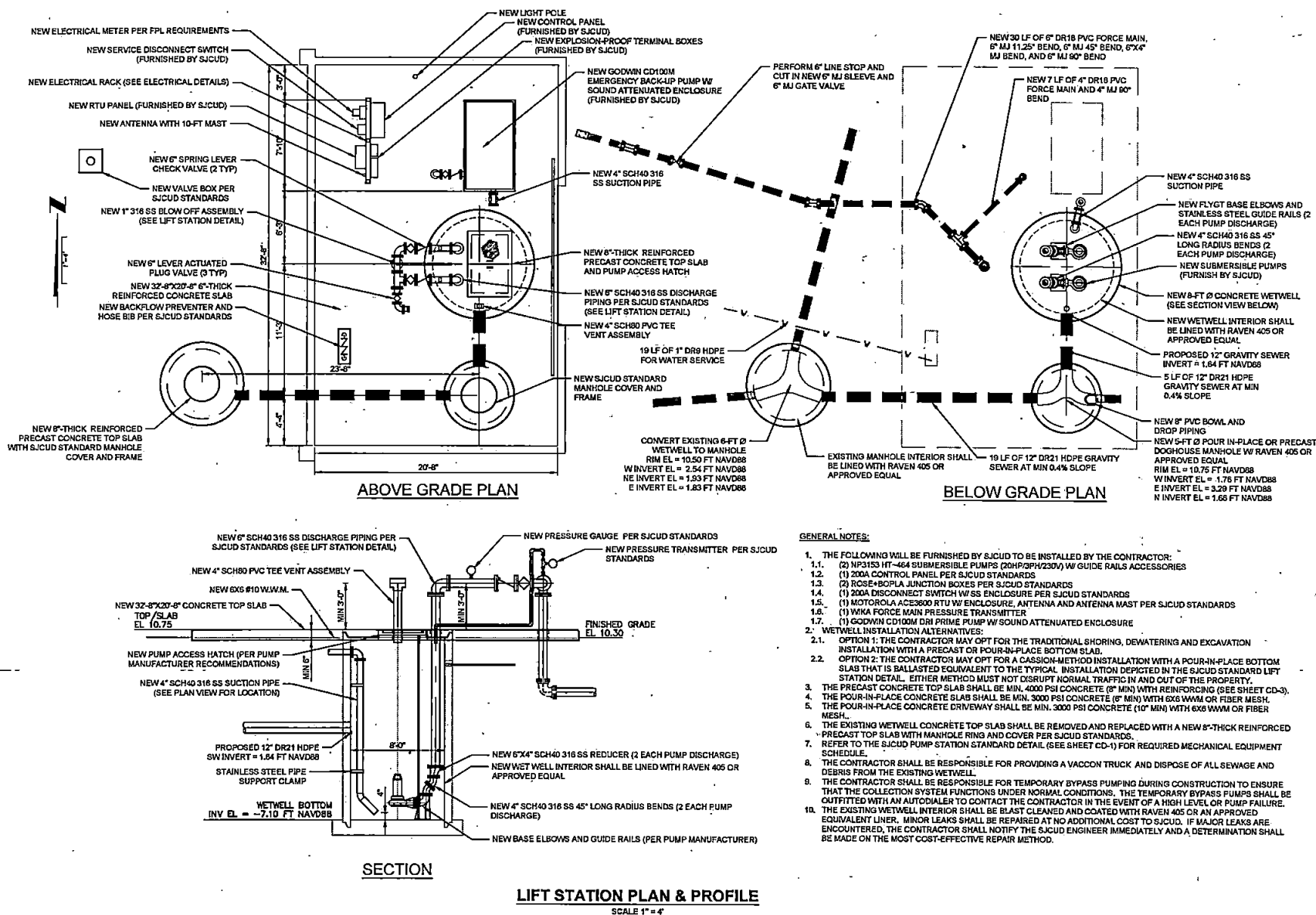
DATE: 10/22/2018  
DESIGNED BY: JAO  
DRAWN BY: JAO  
CHECKED BY: JAO  
SCALE: AS SHOWN

AMENDMENTS

HOLIDAY ISLE LIFT STATION  
IMPROVEMENTS

LIFT STATION PLAN & PROFILE

DRAWN BY: JAO  
FILE NUMBER: 8102  
SHEET NO. C-3



**GENERAL NOTES:**

1. THE FOLLOWING WILL BE FURNISHED BY SJUCD TO BE INSTALLED BY THE CONTRACTOR:
  - 1.1. (2) NP3153 HT-464 SUBMERSIBLE PUMPS (20HP/20HP/230V) W/ GUIDE RAILS ACCESSORIES
  - 1.2. (1) 200A CONTROL PANEL PER SJUCD STANDARDS
  - 1.3. (2) ROSE+BOPLA JUNCTION BOXES PER SJUCD STANDARDS
  - 1.4. (1) 200A DISCONNECT SWITCH W/ SS ENCLOSURE PER SJUCD STANDARDS
  - 1.5. (1) MOTOROLA ACES800 RTU W/ ENCLOSURE, ANTENNA AND ANTENNA MAST PER SJUCD STANDARDS
  - 1.6. (1) WKA FORCE MAIN PRESSURE TRANSMITTER
  - 1.7. (1) GODWIN CD100M DRI PRIME PUMP W/ SOUND ATTENUATED ENCLOSURE
2. WETWELL INSTALLATION ALTERNATIVES:
  - 2.1. OPTION 1: THE CONTRACTOR MAY OPT FOR THE TRADITIONAL SHORING, DEWATERING AND EXCAVATION INSTALLATION WITH A PRECAST OR POUR-IN-PLACE BOTTOM SLAB.
  - 2.2. OPTION 2: THE CONTRACTOR MAY OPT FOR A CASSION-METHOD INSTALLATION WITH A POUR-IN-PLACE BOTTOM SLAB THAT IS BALLASTED EQUIVALENT TO THE TYPICAL INSTALLATION DEPICTED IN THE SJUCD STANDARD LIFT STATION DETAIL. EITHER METHOD MUST NOT DISRUPT NORMAL TRAFFIC IN AND OUT OF THE PROPERTY.
3. THE PRECAST CONCRETE TOP SLAB SHALL BE MIN. 4000 PSI CONCRETE (8" MIN) WITH REINFORCING (SEE SHEET CD-3).
4. THE POUR-IN-PLACE CONCRETE SLAB SHALL BE MIN. 3000 PSI CONCRETE (8" MIN) WITH 6X6 WWM OR FIBER MESH.
5. THE POUR-IN-PLACE CONCRETE DRIVEWAY SHALL BE MIN. 3000 PSI CONCRETE (10" MIN) WITH 6X6 WWM OR FIBER MESH.
6. THE EXISTING WETWELL CONCRETE TOP SLAB SHALL BE REMOVED AND REPLACED WITH A NEW 8" THICK REINFORCED PRECAST TOP SLAB WITH MANHOLE RING AND COVER PER SJUCD STANDARDS.
7. REFER TO THE SJUCD PUMP STATION STANDARD DETAIL (SEE SHEET CD-1) FOR REQUIRED MECHANICAL EQUIPMENT SCHEDULE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A VACCON TRUCK AND DISPOSE OF ALL SEWAGE AND DEBRIS FROM THE EXISTING WETWELL.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BYPASS PUMPING DURING CONSTRUCTION TO ENSURE THAT THE COLLECTION SYSTEM FUNCTIONS UNDER NORMAL CONDITIONS. THE TEMPORARY BYPASS PUMPS SHALL BE OUTFITTED WITH AN AUTOCLEANER TO CONTACT THE CONTRACTOR IN THE EVENT OF A HIGH LEVEL OR PUMP FAILURE.
10. THE EXISTING WETWELL INTERIOR SHALL BE BLAST CLEANED AND COATED WITH RAVEN 405 OR AN APPROVED EQUIVALENT LINER. MINOR LEAKS SHALL BE REPAIRED AT NO ADDITIONAL COST TO SJUCD. IF MAJOR LEAKS ARE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE SJUCD ENGINEER IMMEDIATELY AND A DETERMINATION SHALL BE MADE ON THE MOST COST-EFFECTIVE REPAIR METHOD.



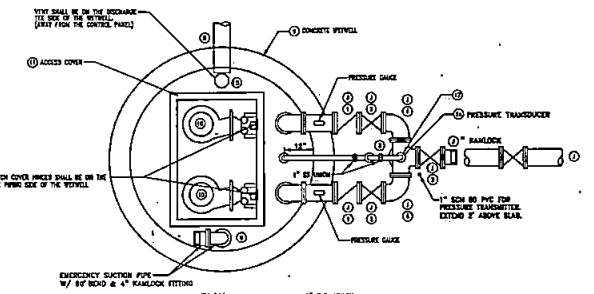
ST. JOHNS COUNTY UTILITY DEPARTMENT  
1205 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 209-2700

Drawn By: JJO  
Checked By: JJO  
Scale: As Shown

AMENDMENTS

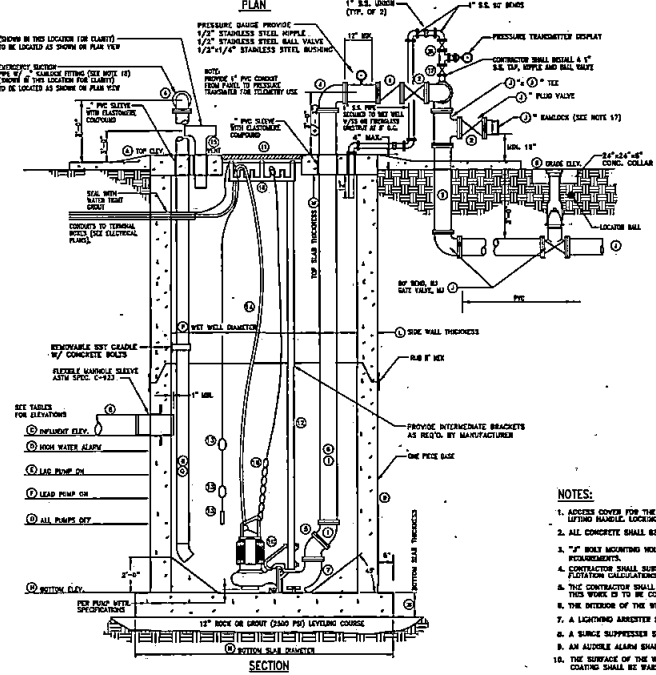
HOLIDAY ISLE LIFT STATION  
IMPROVEMENTS  
SJCD STANDARD LIFT STATION DETAIL

DRAWN BY: JJO  
FILE NUMBER: 8702  
SHEET NO. CD-1



| LIFT STATION                    |                   |
|---------------------------------|-------------------|
| STATION ELEVATIONS              |                   |
| 1. TOP ELEVATION                | 10.25 FT. HWS     |
| 2. GRADE ELEVATION              | 10.25 FT. HWS     |
| 3. INFLUENT INVERT              | 1.84 FT. HWS      |
| 4. HIGH WATER ALARM             | 3.14 FT. HWS      |
| 5. LEAD PUMP ON (HWS)           | 0.84 FT. HWS      |
| 6. LEAD PUMP ON (HWS)           | 0.84 FT. HWS      |
| 7. LEAD PUMP OFF                | 0.84 FT. HWS      |
| 8. BOTTOM OF WET WELL           | 0.84 FT. HWS      |
| STATION INFORMATION             |                   |
| 1. PUMP DISCHARGE PIPING SIZE   | 8"                |
| 2. FORCE MAIN PIPING SIZE       | 8"                |
| 3. TOP SLAB THICKNESS (MIN)     | 8"                |
| 4. SIDE WALL THICKNESS (MIN)    | 8"                |
| 5. BOTTOM SLAB THICKNESS        | 12"               |
| 6. BOTTOM SLAB DIAMETER (MIN)   | 10'-0"            |
| 7. WET WELL DIAMETER            | 8'-0"             |
| 8. EMERGENCY SUCTON PIPING SIZE | 4"                |
| PUMP INFORMATION                |                   |
| NUMBER OF PUMPS                 | 2                 |
| PUMP MANUFACTURER               | SJCD              |
| PUMP MODEL                      | NP3153 HT-454     |
| DISCHARGE                       | 15/16" NPT        |
| WARRANTY                        | 3 YEARS           |
| WARRANTY COV.                   | 480 GPM AT 25' TD |
| WARRANTY COV.                   | 480 GPM AT 45' TD |
| PUMP ACCESS HATCH SIZE          | 48" x 48"         |

| MECHANICAL EQUIPMENT SCHEDULE                                             |  |
|---------------------------------------------------------------------------|--|
| 1. CHECK VALVE, SHUT OFF, LEVER AND SPRING OPERATED, 8" BORE, 150# FLANGE |  |
| 2. PLUG VALVE, CAST IRON BODY, LEVER ACTUATED                             |  |
| 3. CONTRACTOR TO INSTALL                                                  |  |
| 4. 1" STAINLESS STEEL BALL VALVE                                          |  |
| 5. 1/2" STAINLESS STEEL BALL VALVE                                        |  |
| 6. 1/2" STAINLESS STEEL BALL VALVE                                        |  |
| 7. 1/2" STAINLESS STEEL BALL VALVE                                        |  |
| 8. 1/2" STAINLESS STEEL BALL VALVE                                        |  |
| 9. 1/2" STAINLESS STEEL BALL VALVE                                        |  |
| 10. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 11. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 12. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 13. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 14. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 15. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 16. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 17. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 18. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 19. 1/2" STAINLESS STEEL BALL VALVE                                       |  |
| 20. 1/2" STAINLESS STEEL BALL VALVE                                       |  |

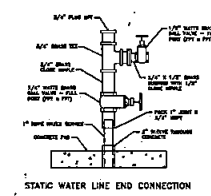


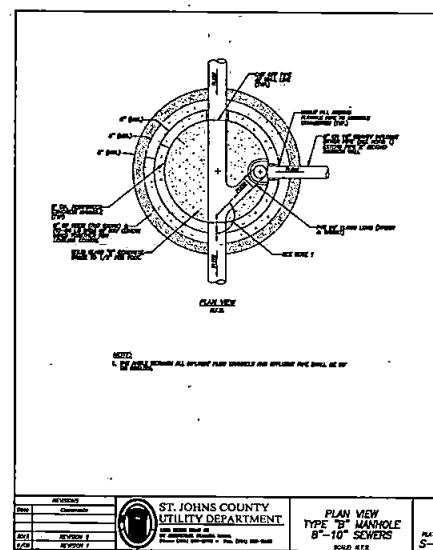
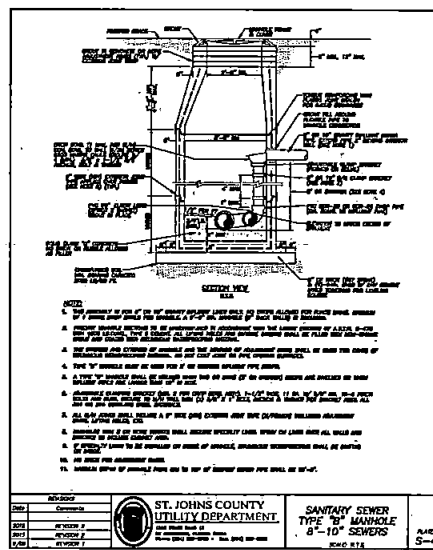
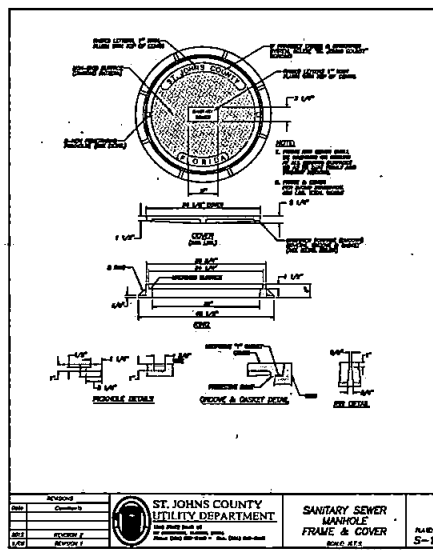
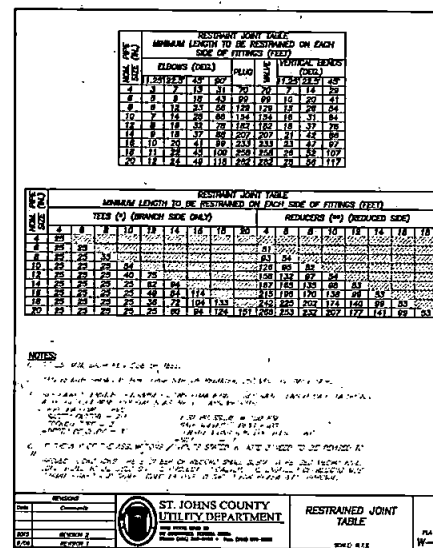
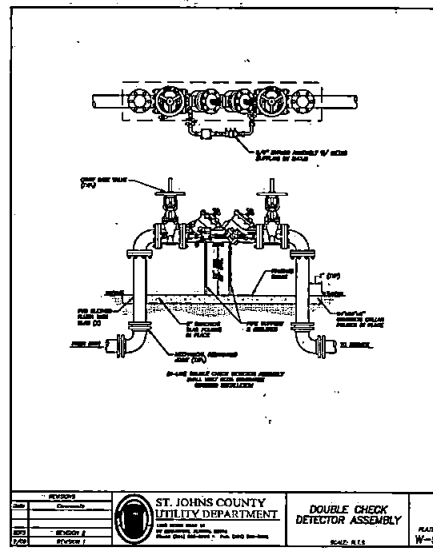
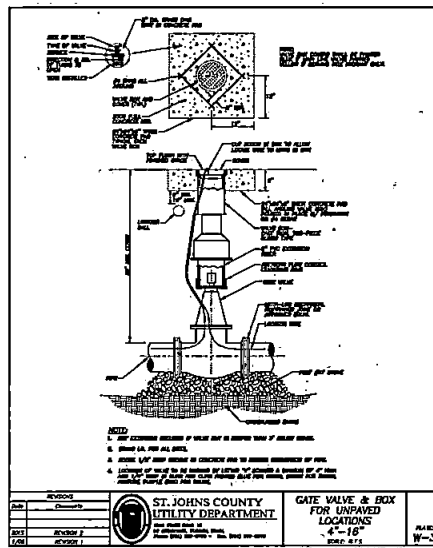
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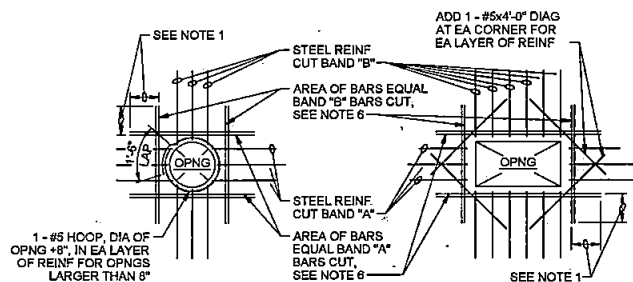
1. ACCESS COVER FOR THE WETWELL SHALL BE 1/4" ALUM. TREAD PLATE WITH STAINLESS STEEL HARDWARE. COVER SHALL BE PROVIDED WITH LIFTING HANDLE, LOCKING LATCH AND SAFETY LATCH TO HOLD COVER OPEN. OPENING IN WETWELL SLAB AS PER MANUFACTURER'S SPECIFICATIONS.
2. ALL CONCRETE SHALL BE 4" THICK AND REINFORCED WITH 8 # 18/16 W/16 EXCEPT OTHERWISE NOTED WHICH SHALL BE 12" THICK.
3. 1" BOLT MOUNTING HOLE AND CONDUIT HOLES SHALL BE COR'D DRILLED IN THE FIELD AS PER SHOP DRAWINGS OR ACTUAL FIELD REQUIREMENTS.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PRECAST WETWELL. SHOP DRAWINGS SHALL INCLUDE ALL NECESSARY STRUCTURAL AND FINISHING CALCULATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ELECTRICAL POWER TO THE PUMPING STATION. THREE PHASE POWER IS REQUIRED.
6. THE INTERIOR OF THE WET WELL AND RECEIVING MANHOLE SHALL BE COATED WITH LINER BY APPROVED MANUFACTURER.
7. A LIGHTNING ARRESTER SHALL BE SUPPLIED AND INSTALLED BY THE "SYSTEM" SUPPLIER.
8. A SURGE SUPPRESSOR SHALL BE SUPPLIED AND INSTALLED BY THE "SYSTEM" SUPPLIER.
9. AN ALARMS ALARM SHALL BE SUPPLIED AND INSTALLED BY THE "SYSTEM" SUPPLIER.
10. THE SURFACE OF THE WET WELL SHALL FIRST BE PREPARED BY GRINDING THE WET WELL AS REQUIRED TO OBTAIN A SMOOTH SURFACE. THE COATING SHALL BE TRANSPARENT TO A MINIMUM OF 10% TO ALLOW FOR MATERIAL AND WORKMANSHIP.
11. PLUG VALVE OPERATOR SHALL BE MOUNTED PARALLEL TO GROUND AND FACE OUTWARD.

GENERAL NOTES:

1. THE FOLLOWING WILL BE FURNISHED BY SJCD TO BE INSTALLED BY THE CONTRACTOR:
  - 1.1. (2) NP3153 HT-454 SUBMERSIBLE PUMPS (20HP/2PH/230V) W/ GUIDE RAILS ACCESSORIES
  - 1.2. (1) 200A CONTROL PANEL PER SJCD STANDARDS
  - 1.3. (2) ROSE+BOPLA JUNCTION BOXES PER SJCD STANDARDS
  - 1.4. (1) 200A DISCONNECT SWITCH W/ SS ENCLOSURE PER SJCD STANDARDS
  - 1.5. (1) MOTOROLA ACE3600 RTU W/ ENCLOSURE, ANTENNA AND ANTENNA MAST PER SJCD STANDARDS
  - 1.6. (1) WKA FORCE MAIN PRESSURE TRANSMITTER
  - 1.7. (1) GDDWIN CD100M DRI PRIME PUMP W/ SOUND ATTENUATED ENCLOSURE
2. WETWELL INSTALLATION ALTERNATIVES:
  - 2.1. OPTION 1: THE CONTRACTOR MAY OPT FOR THE TRADITIONAL SHORING, DEWATERING AND EXCAVATION INSTALLATION WITH A PRECAST OR POUR-IN-PLACE BOTTOM SLAB.
  - 2.2. OPTION 2: THE CONTRACTOR MAY OPT FOR A CASSION-METHOD INSTALLATION WITH A POUR-IN-PLACE BOTTOM SLAB THAT IS BALLASTED EQUIVALENT TO THE TYPICAL INSTALLATION DEPICTED IN THE SJCD STANDARD LIFT STATION DETAIL. EITHER METHOD MUST NOT DISRUPT NORMAL TRAFFIC IN AND OUT OF THE PROPERTY.
3. THE PRECAST CONCRETE TOP SLAB SHALL BE MIN. 4000 PSI CONCRETE (8" MIN) WITH REINFORCING (SEE SHEET CD-3).
4. THE POUR-IN-PLACE CONCRETE SLAB SHALL BE MIN. 3000 PSI CONCRETE (8" MIN) WITH 6X6 WWM OR FIBER MESH.
5. THE POUR-IN-PLACE CONCRETE DRIVEWAY SHALL BE MIN. 3000 PSI CONCRETE (10" MIN) WITH 6X6 WWM OR FIBER MESH.
6. THE EXISTING WETWELL CONCRETE TOP SLAB SHALL BE REMOVED AND REPLACED WITH A NEW 8"-THICK REINFORCED PRECAST TOP SLAB WITH MANHOLE RING AND COVER PER SJCD STANDARDS.
7. REFER TO THE SJCD PUMP STATION STANDARD DETAIL (SEE SHEET CD-1) FOR REQUIRED MECHANICAL EQUIPMENT SCHEDULE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A VACCON TRUCK AND DISPOSE OF ALL SEWAGE AND DEBRIS FROM THE EXISTING WETWELL.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BYPASS PUMPING DURING CONSTRUCTION TO ENSURE THAT THE COLLECTION SYSTEM FUNCTIONS UNDER NORMAL CONDITIONS. THE TEMPORARY BYPASS PUMPS SHALL BE OUTFITTED WITH AN AUTODIALER TO CONTACT THE CONTRACTOR IN THE EVENT OF A HIGH LEVEL OR PUMP FAILURE.
10. THE EXISTING WETWELL INTERIOR SHALL BE BLAST CLEANED AND COATED WITH RAVEN 405 OR AN APPROVED EQUIVALENT LINER. MINOR LEAKS SHALL BE REPAIRED AT NO ADDITIONAL COST TO SJCD. IF MAJOR LEAKS ARE ENCOUNTERED, THE CONTRACTOR SHALL NOTIFY THE SJCD ENGINEER IMMEDIATELY AND A DETERMINATION SHALL BE MADE ON THE MOST COST-EFFECTIVE REPAIR METHOD.



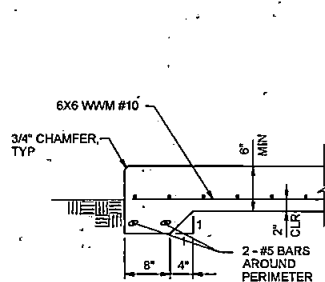




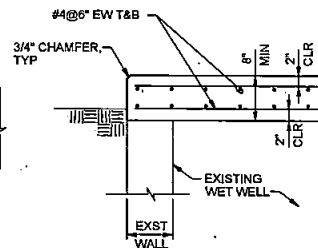
**NOTES:**

1. PROVIDE MINIMUM LAP, SEE GENERAL STRUCTURAL NOTES.
2. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS OF BELOW GRADE AND HYDRAULIC STRUCTURES AND ALL STRUCTURAL CONCRETE SLABS UNLESS INDICATED OTHERWISE ON PLANS.
3. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.
4. PROVIDE A MINIMUM OF 2 "A" BARS AND 2 "B" BARS EACH SIDE OF OPENING (1 EACH FACE).
5. FOR OPENINGS LARGER THAN 8'-0", REINFORCE SAME AS FOR 8'-0" OPENINGS.
6. SPACE AT 3 BAR DIAMETERS (OR 3" MINIMUM) ON CENTER.
7. HOLES FOR PIPE PENETRATIONS IN NEW TOP SLABS SHALL BE PREFORMED AND REINFORCING ADJUSTED TO CLEAR THE OPENING BY 2".

TYPICAL OPENING REINFORCING DETAIL



TYPE "A"



TYPE "B"

**NOTE:**

SEE PLANS FOR SPECIFIC CONDITIONS AND APPLICABLE EDGE OF SLAB TYPE.

TYPICAL SLAB AND EDGE DETAILS



ST. JOHNS COUNTY UTILITY DEPARTMENT  
12045 STATE ROAD 16  
ST AUGUSTINE, FLORIDA 32084  
Phone (904) 209-2700

|            |                  |
|------------|------------------|
| AMENDMENTS | Revised By: JJO  |
|            | Checked By: JJO  |
|            | Design By: JJO   |
|            | Date: 10/12/2018 |

|                                        |                       |
|----------------------------------------|-----------------------|
| HOLIDAY ISLE LIFT STATION IMPROVEMENTS | MISCELLANEOUS DETAILS |
|                                        |                       |

DRAWN BY: JJO  
FILE NUMBER: 0702

## GENERAL STRUCTURAL NOTES

### GENERAL CONDITIONS

- ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL, CIVIL, ELECTRICAL, MECHANICAL, AND SHOP DRAWINGS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL REVIEW AND VERIFY DIMENSIONS SHOWN IN ALL PLANS AND REVIEW ALL FIELD CONDITIONS THAT MAY AFFECT THE WORK DEPICTED ON THE DRAWINGS. SHOULD DISCREPANCIES APPEAR, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING TO OBTAIN ENGINEER'S CLARIFICATION BEFORE COMMENCING WITH THE WORK.
- FOR ALL ITEMS EMBEDDED IN OR PASSING THROUGH CONCRETE, THE CONTRACTOR SHALL INITIALLY REFER TO MECHANICAL, HVAC, AND PLUMBING DRAWINGS FOR TYPE, SIZE, LOCATION, AND SPECIAL INSTALLATION REQUIREMENTS FOR THESE ITEMS.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING STRUCTURES FROM DAMAGE WHEN WORKING IN AND AROUND EXISTING STRUCTURES PERFORMING WORK SUCH AS DEMOLITION, FOUNDATION EXCAVATIONS, AND OTHERS.
- SIZE AND LOCATION OF EQUIPMENT PADS AND ANCHOR BOLTS SHALL BE PER EQUIPMENT MANUFACTURER'S REQUIREMENTS.
- ALL DETAILS AND SECTIONS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL BE CONSIDERED TO APPLY TO ANY SIMILAR SITUATION ELSEWHERE ON THE PROJECT, EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.
- STANDARD DETAILS APPLY TO ALL SIMILAR SITUATIONS ON THE PROJECT EXCEPT WHERE A DIFFERENT DETAIL IS SHOWN.

### DESIGN CRITERIA

#### BUILDING CODES AND REFERENCES:

- 2017 FLORIDA BUILDING CODE (FBC), SIXTH EDITION
- REINFORCED CONCRETE: ACI 318-11 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
- LIVE LOADS:  
SLAB-ON-GRADE: 300 PSF
- WIND DESIGN CRITERIA:  
RISK CATEGORY (SITE SCREEN WALL) B  
ULTIMATE DESIGN WIND SPEED,  $V_{ult}$  131 MPH  
NOMINAL DESIGN WIND SPEED,  $V_{nom}$  121 MPH  
EXPOSURE CATEGORY C

### CONCRETE (CAST-IN-PLACE)

- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318 REQUIREMENTS.
- ALL CONCRETE SHALL BE AIR-ENTRAINED WITH A MINIMUM OF 6,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS UNLESS OTHERWISE NOTED.
- WATER REDUCING AGENT SHALL BE IN ACCORDANCE WITH ASTM C494.
- ALL CONCRETE SURFACES EXPOSED TO AIR, UNLESS OTHERWISE NOTED IN THE SPECIFICATIONS, SHALL BE TREATED WITH AN APPROPRIATE CURING COMPOUND AS SOON AS FINISHING IS COMPLETED OR FORMS ARE REMOVED.
- ALL EXPOSED CORNERS SHALL HAVE A MINIMUM CHAMFER OF 3/4" UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL FOR THE LOCATIONS OF CONSTRUCTION JOINTS THAT ARE NOT SHOWN ON THE DRAWINGS.

### REINFORCING STEEL

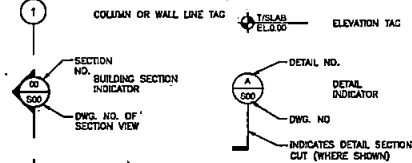
- REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 60 REQUIREMENTS. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A315 REQUIREMENTS. ALL ACCESSORIES SHALL BE IN CONFORMANCE WITH ACI 318 REQUIREMENTS.
- REINFORCING STEEL SHALL HAVE THE FOLLOWING CLEAR COVER UNLESS OTHERWISE NOTED:
  - CONCRETE CAST AGAINST EARTH 3"
  - FORMED SURFACE IN CONTACT WITH SOIL, SEWAGE, WATER OR EXPOSED TO WEATHER 2"
- LAP SPLICES SHALL BE AS SHOWN ON THE DRAWINGS. FOR LAP SPLICES NOT SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL.
- THE CONTRACTOR SHALL PREPARE PLACING DRAWINGS AND SCHEDULES IN CONFORMANCE WITH ACI 315 REQUIREMENTS.

### MASONRY

- MASONRY DESIGN COMPRESSIVE STRENGTH AT 28 DAYS,  $f'_m = 1500$  PSI MINIMUM.
- MATERIALS:
  - BLOCK: CONFORM TO ASTM C90 - LOAD BEARING, NORMAL WEIGHT TWO-CELL, 8"x8"x16", 12"x8"x16".
  - MORTAR: CONFORM TO ASTM C270, TYPE S. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 1800 PSI. UTILIZE TYPE S CEMENT AND TYPE S LIME. MASONRY CEMENT WILL NOT BE CONSIDERED.
  - GROUT: CONFORM TO ASTM C478, COARSE GROUT, MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 2500 PSI.
  - STEEL: BOND BEAM AND FILLED CELL REINFORCEMENT AS NOTED ON DRAWINGS (ASTM A615, GRADE 60). DURED-O-WALL OR EQUAL JOINT REINFORCEMENT AT EVERY OTHER COURSE (16" O.C.).
- CONSTRUCTION:
  - THE GROUT FOR FILLED CELLS SHALL BE ROODED OR PULVERIZED DURING PLACEMENT TO INSURE COMPLETE FILLING TO THE BLOCK CORE.
  - PROVIDE CLEAN OUT AND INSPECTION BLOCK OUT IN CELLS CONTAINING REINFORCEMENT FOR GROUT LIFTS EXCEEDING 5'-4".

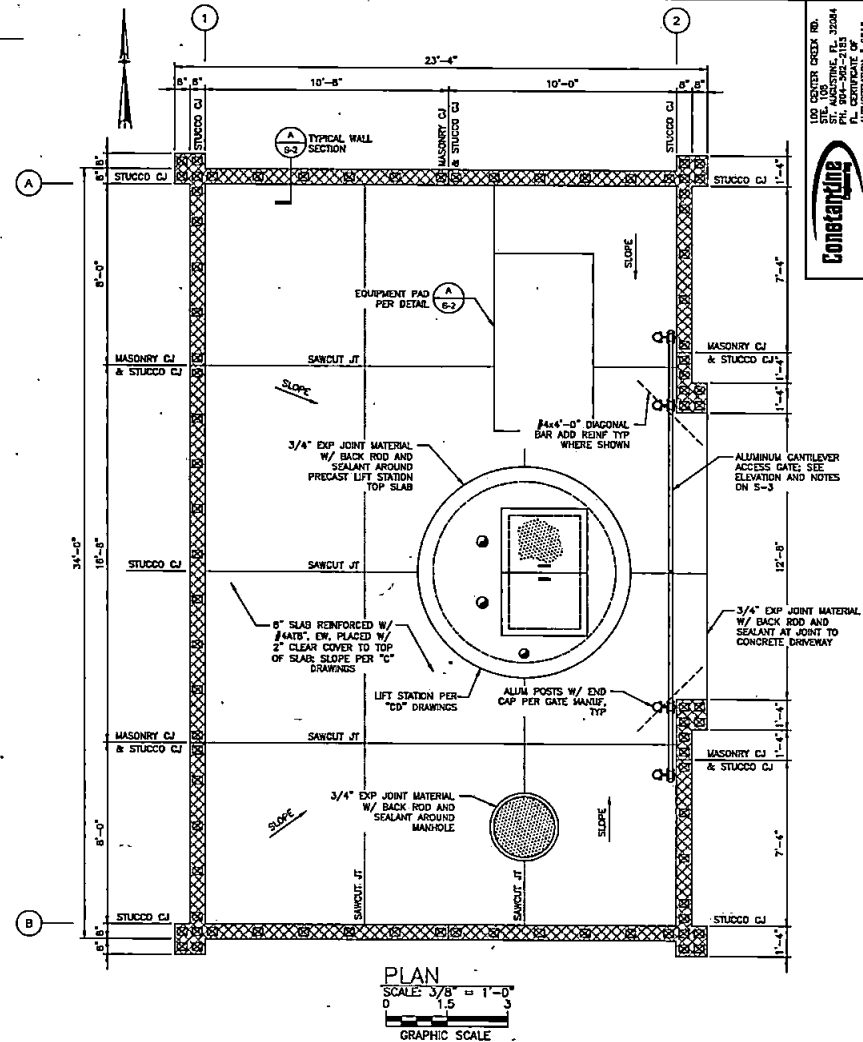
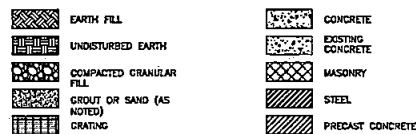
### SYMBOLS

SYMBOLS APPLY TO "S" SHEETS ONLY



### LEGEND

STRUCTURAL LEGEND APPLIES TO "S" SHEETS ONLY



### CMU WALL REINFORCEMENT

- DENOTES FILLED CELL. PROVIDE FILLED CELLS AT ALL CORNERS, OPENINGS PER STANDARD DETAILS AND WHERE SHOWN ON PLAN.
- 8" CMU WALL FILLED CELL REINFORCING TO BE (1) - #5 VERT BAR, CTR. MAXIMUM 24" O.C., MIN LAP LENGTH 30", UNO.
- PROVIDE DURED-O-WALL OR EQUAL GALVANIZED LADDER TYPE HORIZONTAL JOINT REINFORCEMENT AT EVERY OTHER COURSE (16" O.C.)
- PROVIDE HORIZONTAL BOND BEAMS AT A SPACING NO GREATER THAN 48" O.C. AND WHERE SHOWN ON DRAWINGS.

### SAWCUT NOTE:

- SAWCUT 1 1/2" DEEP JOINTS AS SHOWN ON PLAN.
- SAWCUTTING TO BE PERFORMED IMMEDIATELY AFTER PLACEMENT, AS SOON AS THE CONCRETE IS FIRM ENOUGH TO SUPPORT THE SAW AND TO NOT BE TORN OR DAMAGED BY THE BLADE.

100 CENTER CROSS RD.  
ST. AUGUSTINE, FL 32084  
TEL: 904-342-2183  
FAX: 904-342-2183  
AUTOMATIC  
3/18/2019

**Constellation**

ST. JOHNS COUNTY UTILITY DEPARTMENT  
1500 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 203-2700

DATE: 1/25/2019  
DESIGNED BY: JPS  
DRAWN BY: JPS  
CHECKED BY: DSM  
SIGNED BY: [Signature]

PROJECT NO. 17-007

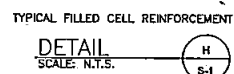
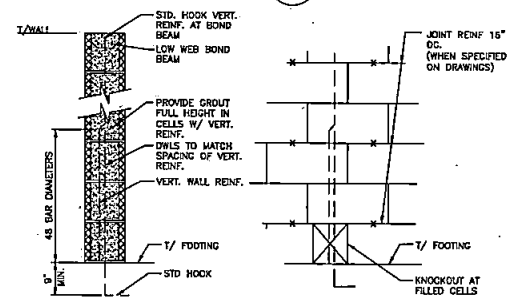
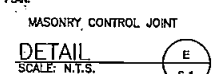
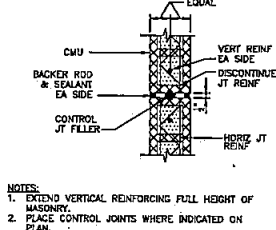
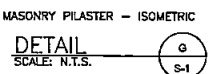
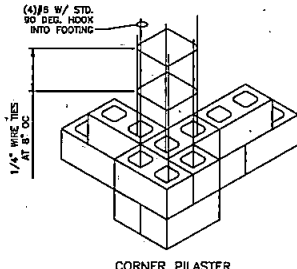
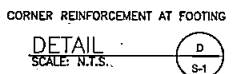
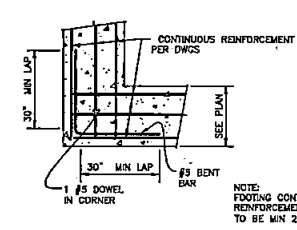
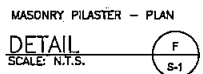
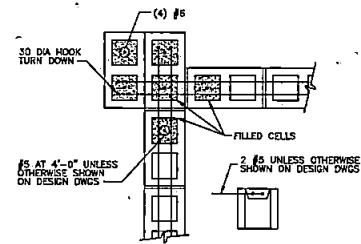
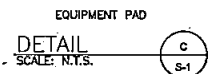
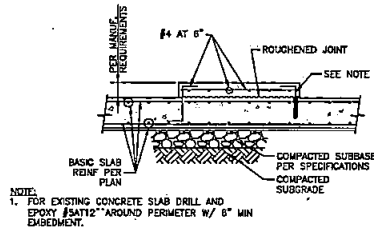
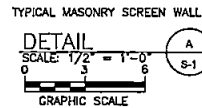
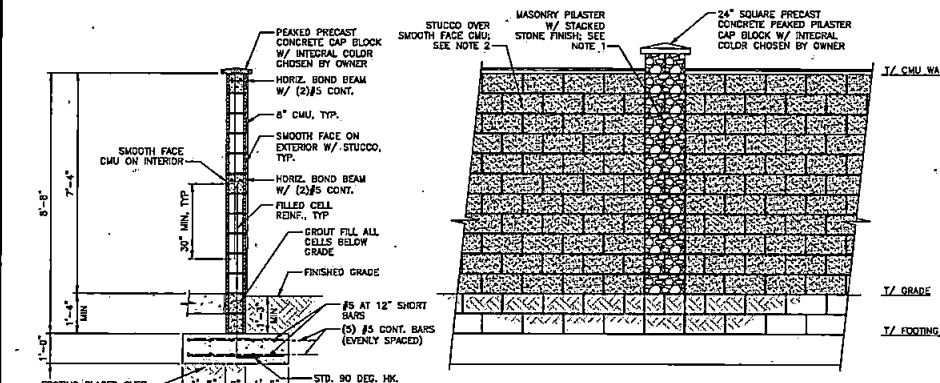
AMENDMENTS

STRUCTURAL GENERAL NOTES  
ABBREVIATIONS, LEGEND AND SITE PLAN

PROJECT NO. 17-007  
FILE NUMBER: 6702

SHEET NO. 9-1





| REBAR MINIMUM TENSION DEVELOPMENT & LAP LENGTHS |                           |            |                             |            |          |
|-------------------------------------------------|---------------------------|------------|-----------------------------|------------|----------|
| CONCRETE STRENGTH $f'_c = 4,000$ PSI OR GREATER |                           |            |                             |            |          |
| BAR SIZE                                        | DEVELOPMENT LENGTH, $l_d$ |            | LAP LENGTH (CLASS B SPLICE) |            | BAR SIZE |
|                                                 | TOP BARS                  | OTHER BARS | TOP BARS                    | OTHER BARS |          |
| #3                                              | 1'-3"                     | 1'-3"      | 2'-0"                       | 1'-7"      | #3       |
| #4                                              | 2'-1"                     | 1'-7"      | 2'-8"                       | 2'-0"      | #4       |
| #5                                              | 2'-7"                     | 2'-0"      | 3'-4"                       | 2'-7"      | #5       |
| #6                                              | 3'-1"                     | 2'-4"      | 4'-0"                       | 3'-1"      | #6       |
| #7                                              | 4'-8"                     | 3'-8"      | 5'-10"                      | 4'-8"      | #7       |
| #8                                              | 5'-8"                     | 5'-11"     | 6'-8"                       | 5'-2"      | #8       |
| #9                                              | 5'-10"                    | 6'-8"      | 7'-5"                       | 5'-10"     | #9       |
| #10                                             | 6'-8"                     | 8'-0"      | 8'-8"                       | 6'-8"      | #10      |
| #11                                             | 7'-3"                     | 9'-7"      | 9'-8"                       | 7'-3"      | #11      |

NOTES:

- GRADE 60 UNCOATED REINFORCEMENT
- SPLICE LENGTHS GIVEN ABOVE ARE TO BE USED UNLESS NOTED OTHERWISE ON DESIGN DRAWINGS.

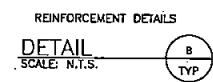
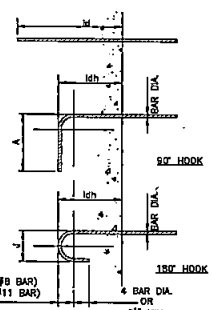
MAXIMUM BAR SPACING AT NON-CONTACT LAPS:

MIN. LAP LENGTH

\*SPACING NOT TO BE GREATER THAN 1/5 LAP LENGTH OR 6IN. WHICHEVER IS LESS

| STANDARD HOOK DEVELOPMENT LENGTH |                  |                   |                              |
|----------------------------------|------------------|-------------------|------------------------------|
| BAR SIZE                         | 90° STD HOOK "A" | 180° STD HOOK "B" | DEVELOPMENT LENGTH, $l_{dh}$ |
| #3                               | 8"               | 3"                | 8"                           |
| #4                               | 8"               | 4"                | 7"                           |
| #5                               | 10"              | 5"                | 9"                           |
| #6                               | 1'-0"            | 6"                | 10"                          |
| #7                               | 1'-2"            | 7"                | 1'-0"                        |
| #8                               | 1'-4"            | 8"                | 1'-2"                        |
| #9                               | 1'-7"            | 11"               | 1'-3"                        |
| #10                              | 1'-10"           | 1'-11"            | 1'-5"                        |
| #11                              | 2'-0"            | 1'-2"             | 1'-7"                        |

\*FOR STD HOOK BAR GEOMETRY NOT SHOWN REFER TO MINIMUM ACI REQUIREMENTS



100' CENTER CREEK RD.  
ST. AUGUSTINE, FL 32084  
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FAX: 904-882-2116  
AUTOCAD: 2004  
AUTOCAD: 2004

**Constanline**



ST. JOHNS COUNTY UTILITY DEPARTMENT  
1205 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 208-2700

| AMENDMENTS | Date: 1/25/2019 | Drawn By: JVS | Checked By: JVS | Scale: N.T.S. |
|------------|-----------------|---------------|-----------------|---------------|
|            |                 |               |                 |               |
|            |                 |               |                 |               |
|            |                 |               |                 |               |

HOLIDAY ISLE LIFE STATION IMPROVEMENTS

STRUCTURAL GENERAL NOTES  
ABBREVIATIONS, LEGEND AND SITE PLAN

[illegible]



ST. JOHNS COUNTY UTILITIES DEPARTMENT  
12005 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 205-5700

| AMENDMENTS | DATE       | DESCRIPTION      | DESIGNED BY | DRAWN BY | CHECKED BY | SIGNED BY |
|------------|------------|------------------|-------------|----------|------------|-----------|
|            | 03/05/2018 | Revised for well |             |          |            |           |
|            |            | Revised for well |             |          |            |           |
|            |            | Revised for well |             |          |            |           |
|            |            | Revised for well |             |          |            |           |

HOLIDAY ISLE LIFT STATION  
IMPROVEMENTS  
ELECTRICAL SINGLE LINE DIAGRAM

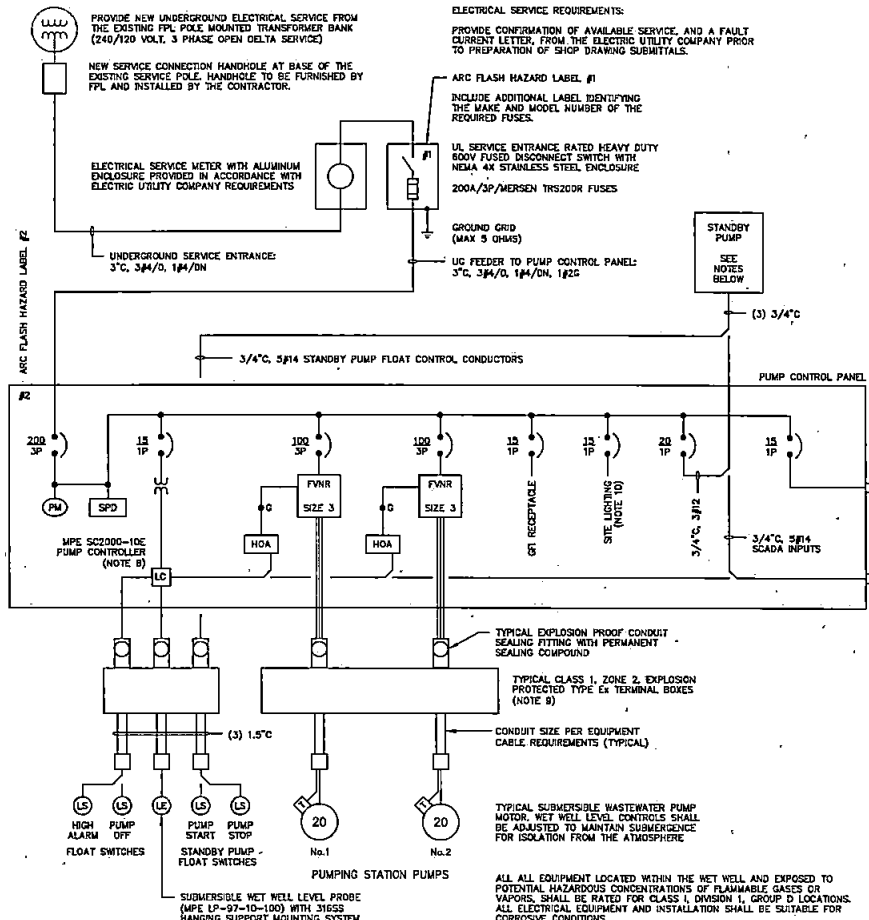
DRAWN BY: WEL  
FILE NUMBER: 8702  
SHEET NO. 1-1

NOTES:

- DESIGN DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW THE GENERAL REQUIREMENTS. ALL EQUIPMENT AND INSTALLATION SHALL BE IN ACCORDANCE WITH ST. JOHNS COUNTY DESIGN STANDARDS AND SPECIFICATIONS.
- ALL MATERIAL SHALL BE NEW AND SHALL CONFORM WITH THE STANDARDS OF THE UNDERWRITERS' LABORATORIES, INC., AMERICAN NATIONAL STANDARDS INSTITUTE, NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION, INSULATED POWER CABLE ENGINEERS ASSOCIATION, AND INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, IN EVERY CASE WHERE SUCH A STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIALS IN QUESTION.
- THE INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE REGULATIONS OF THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, APPLICABLE CITY, STATE, AND LOCAL CODES AND REGULATIONS AND OTHER APPLICABLE CODES, INCLUDING UTILITY COMPANY CODES.
- ALL PERMITS REQUIRED BY STATE OR LOCAL ORDINANCES SHALL BE OBTAINED, AND AFTER COMPLETION OF THE WORK, A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTOR SHALL BE FURNISHED TO THE OWNER. ALL PERMITS FOR INSTALLATION, INSPECTIONS, CONNECTIONS, ETC., SHALL BE TAKEN OUT AND PAID FOR BY THE CONTRACTOR AS PART OF THE WORK UNDER THIS SECTION.
- ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED TO BE FREE FROM DEFECTS. ANY PART OF THE SYSTEM CONSIDERED DEFECTIVE BY THE ENGINEER WITHIN THE GUARANTEE PERIOD SHALL BE IMMEDIATELY REPAIRED OR CORRECTED TO THE ENGINEER'S SATISFACTION WITHOUT FURTHER EXPENSE TO THE OWNER.
- THE PROJECT'S GROUNDING SYSTEM SHALL CONSIST OF A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC SPECIFICATIONS, BONDED TO A MAIN GROUND BUS INTERCONNECTING ALL POWER DISTRIBUTION EQUIPMENT. GROUND ROD SECTIONS SHALL BE COUPLED AND DRIVEN TO ESTABLISH A MAXIMUM RESISTANCE TO GROUND OF 5 OHMS THROUGHOUT THE GROUNDING SYSTEM.
- UNLESS OTHERWISE INDICATED, ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA 12/3R ALUMINUM OR 316 STAINLESS STEEL. CONDUCTORS SHALL BE STRANDED AND TYPE XHHW-2 COPPER. UNDERGROUND CONDUIT SHALL BE SCH 40 PVC. EXPOSED CONDUIT SHALL BE SCH 40 PVC. CONDUIT INTO THE WET WELL SHALL BE PVC COATED RIGID ALUMINUM. SUPPORT CHANNEL AND MOUNTING STRUT SHALL BE MINIMUM 1.5" x 1.5" ALUMINUM. ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL, INCLUDING BUT NOT LIMITED TO NUTS, BOLTS, WASHERS, BRACKETS, ETC. NUTS AND BOLTS WITH ANTI-SEIZE COMPOUND SHALL BE USED. SCREWS ARE NOT ALLOWED. ALL MATERIALS AND INSTALLATION SHALL BE SUITABLE FOR "CORROSIVE ATMOSPHERES".
- THE PUMP CONTROL PANEL, NET WELL LEVEL CONTROL SYSTEM SHALL INCLUDE A MULTIFLEX PUMP CONTROLLER AND SUBMERSIBLE MULTI-POINT LEVEL PROBE FOR AUTOMATIC LEAD/LAG PUMP CONTROL AND ALTERNATION; AND 24V CONTROL POWER TRANSFORMER AND HIGH/OFF LEVEL FLOAT SWITCHES FOR HIGH LEVEL, ALARM AND BACKUP PUMP CONTROL.
- DUCT SEAL IS REQUIRED AT ALL CONDUIT CONNECTIONS IN AND OUT OF THE EQUIPMENT CABLE TERMINAL BOXES. ADDITIONALLY, DUCT SEAL IS REQUIRED AT ALL CONDUIT CONNECTIONS IN AND OUT OF THE PUMP CONTROL PANEL.
- PROVIDE SITE LIGHT POLE WITH SERVICE FROM THE PUMP CONTROL PANEL (3/4" C, 3P/2). PROVIDE WP DUPLEX GFI RECEPTACLE WITH CAST ALUMINUM BOX AND COVER, MOUNTED ADJACENT TO THE PUMP CONTROL PANEL. SITE LIGHT POLE SHALL BE FIBERGLASS DIRECT BURIED POLE WITH BLACK FINISH. LUMINAIRE SHALL BE A3L WOOD LENS-LUC-KVLD-1-R-BA-SH WITH 18" LONG ALUMINUM SPOKE BRACKET ARM. LUMINAIRE MOUNTING HEIGHT SHALL BE 12'. LOCATE LIGHT POLE ON RIGHT-HAND SIDE OF THE PUMP CONTROL PANEL.
- IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE NEW PUMP CONTROL PANEL, EXPLOSION PROTECTED TYPE EX TERMINAL BOXES, NET WELL LEVEL CONTROLS, AND UL SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH SHALL BE FURNISHED BY SUCUD AND SHALL BE INSTALLED BY THE CONTRACTOR.
- IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE SCADA SYSTEM RTU, ANTENNA MAST, AUTOMATED FORCE MAIN PRESSURE TRANSMITTER SHALL BE FURNISHED BY SUCUD AND SHALL BE INSTALLED BY THE CONTRACTOR.

ELECTRICAL SYSTEMS ANALYSIS:

- THE CONTRACTOR SHALL INCLUDE A BID ALLOWANCE IN THE AMOUNT OF \$2,000.00 TO OBTAIN THE SERVICES OF AN INDEPENDENT SPECIALTY ENGINEERING FIRM TO PROVIDE A PRELIMINARY AND A FINAL SHORT CIRCUIT, DEVICE EVALUATION, PROTECTIVE DEVICE COORDINATION, AND ARC FLASH STUDY OF THE COMPLETE ELECTRICAL DISTRIBUTION SYSTEM, IN ACCORDANCE WITH SUCUD STANDARDS.
- THE CONTRACTOR SHALL PROVIDE, WITH THE SHOP DRAWING SUBMITTALS, A LISTING OF THE FOLLOWING INFORMATION FOR EACH POWER DISTRIBUTION FEEDER: CONDUIT SIZE, CONDUIT TYPE, CONDUCTOR SIZE, CONDUCTOR TYPE, CONDUCTOR LENGTH.
- THE SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH FUSE SELECTION SHALL BE IN ACCORDANCE WITH THE SUCUD STANDARDIZED FUSES. FERRAZ SHAWMUT TRISDOR AND TRISDOR, HOWEVER, SELECTION OF AN INTERMEDIATE TRIS-R FUSE SHALL BE UTILIZED WHEN POSSIBLE TO REDUCE THE DOWNSTREAM HAZARD RISK CATEGORY.
- THE CONTRACTOR SHALL PROVIDE THE SERVICE ENTRANCE FUSE SIZE DETERMINED BY THE FINAL APPROVED ELECTRICAL SYSTEMS ANALYSIS.



HOLIDAY ISLE LIFT STATION - SINGLE LINE DIAGRAM

FPL ALLOWANCE:

- THE CONTRACTOR SHALL INCLUDE A BID ALLOWANCE IN THE AMOUNT OF \$1,500 AS A CONTRIBUTION IN AID OF CONSTRUCTION PAYMENT TO FPL TO PROVIDE THE MODIFICATIONS TO THE EXISTING ELECTRICAL SERVICE.

ELECTRICAL SERVICE REQUIREMENTS:

PROVIDE CONFIRMATION OF AVAILABLE SERVICE, AND A FAULT CURRENT LETTER, FROM THE ELECTRIC UTILITY COMPANY PRIOR TO PREPARATION OF SHOP DRAWING SUBMITTALS.

ARC FLASH HAZARD LABEL #1  
INCLUDE ADDITIONAL LABEL IDENTIFYING THE MAKE AND MODEL NUMBER OF THE REQUIRED FUSES.

UL SERVICE ENTRANCE RATED HEAVY DUTY 800V FUSED DISCONNECT SWITCH WITH NEMA 4X STAINLESS STEEL ENCLOSURE  
200A/3P/MERSEN TRISDOR FUSES

GROUND GRID (MAX 5 OHMS)  
UG FEEDER TO PUMP CONTROL PANEL: 3" C, 3P/4/0, 1P/1/0, 1/2"

3/4" C, 3P/4 STANDBY PUMP FLOAT CONTROL CONDUCTORS

3/4" C, 3P/4 SCADA INPUTS

3/4" C, 3P/4 SCADA SYSTEM RTU PER ST. JOHNS COUNTY UTILITY DEPT. STANDARDS

SCADA SYSTEM EQUIPMENT

SCADA SYSTEM RTU PER ST. JOHNS COUNTY UTILITY DEPT. STANDARDS

SCADA SYSTEM EQUIPMENT

SCADA SYSTEM EQUIPMENT

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SCADA SYSTEM EQUIPMENT

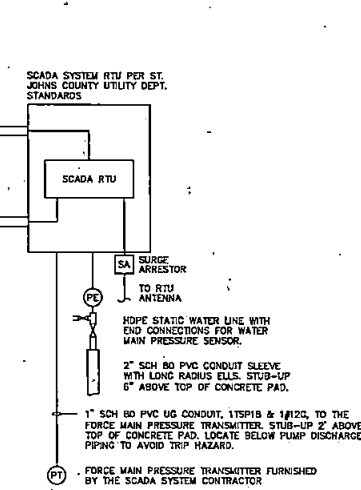
SCADA SYSTEM EQUIPMENT

SCADA SYSTEM EQUIPMENT

ELECTRICAL LEGEND:

- CIRCUIT BREAKER (TRIP RATING/POLES)
- 240V MAIN BREAKER, "EOP" EMERGENCY BREAKER
- "PGB" PUMP MOTOR BREAKER
- MAGNETIC TYPE COMBINATION MOTOR STARTER
- NEMA SIZE AS INDICATED ("FV" FULL VOLTAGE, "RV" REDUCED VOLTAGE, "N" NON-REVERSING, "SS" SOLID STATE, "ST" START, "VFD" VARIABLE FREQUENCY DRIVE)
- MOTOR (NUMERAL INDICATES HORSEPOWER)
- TRANSFORMER ("CT" CURRENT TRANSFORMER, "PT" CONTROL POWER TRANSFORMER)
- GREEN "RUNNING" PILOT LIGHT (LED TYPE)
- HAND OFF AUTO SELECTOR SWITCH
- AUTOMATIC ALTERNATOR
- THREE PHASE POWER MONITOR
- LEVEL SWITCH
- LEVEL CONTROLLER
- SURGE PROTECTION DEVICE

- 100 3P
- FVNR
- SIZE 1
- 10
- CT
- HOA
- AA
- PM
- LS
- LC
- SPD



SCADA SYSTEM EQUIPMENT

ELECTRICAL LOAD CALCULATIONS

| DESCRIPTION                  | UNIT  | AMPS     |
|------------------------------|-------|----------|
| LIFT STATION PUMP NO.1       | 20 HP | 52 AMPS  |
| LIFT STATION PUMP NO.2       | 20 HP | 52 AMPS  |
| TOTAL MOTOR LOAD             |       | 104 AMPS |
| LIGHTING AND CONTROLS        | 5 KVA | 42 AMPS  |
| TOTAL CONNECTED LOAD         |       | 146 AMPS |
| TOTAL NON-COINCIDENTAL LOAD  |       | 0 AMPS   |
| PEAK DEMAND AMPS             |       | 146 AMPS |
| 0.25 X LARGEST MOTOR         |       | 13 AMPS  |
| MIN SERVICE CAPACITY 3 PHASE |       | 159 AMPS |
| MIN MAIN BREAKER SIZE        |       | 163 AMPS |

ELECTRICAL SERVICE:  
200 AMP, 240/120 VOLT, 3 PHASE



ST. JOHNS COUNTY UTILITY DEPARTMENT

1600 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084

ST. AUGUSTINE, FLORIDA  
Phone (904) 289-2700

DESIGNED BY: JWB  
CHECKED BY: JWB  
DATE: 03/05/2018

FILE NUMBER: 8703

HOLIDAY ISLE LIFT STATION  
IMPROVEMENTS

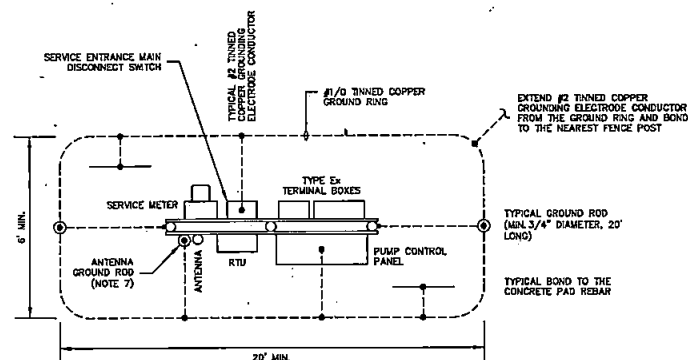
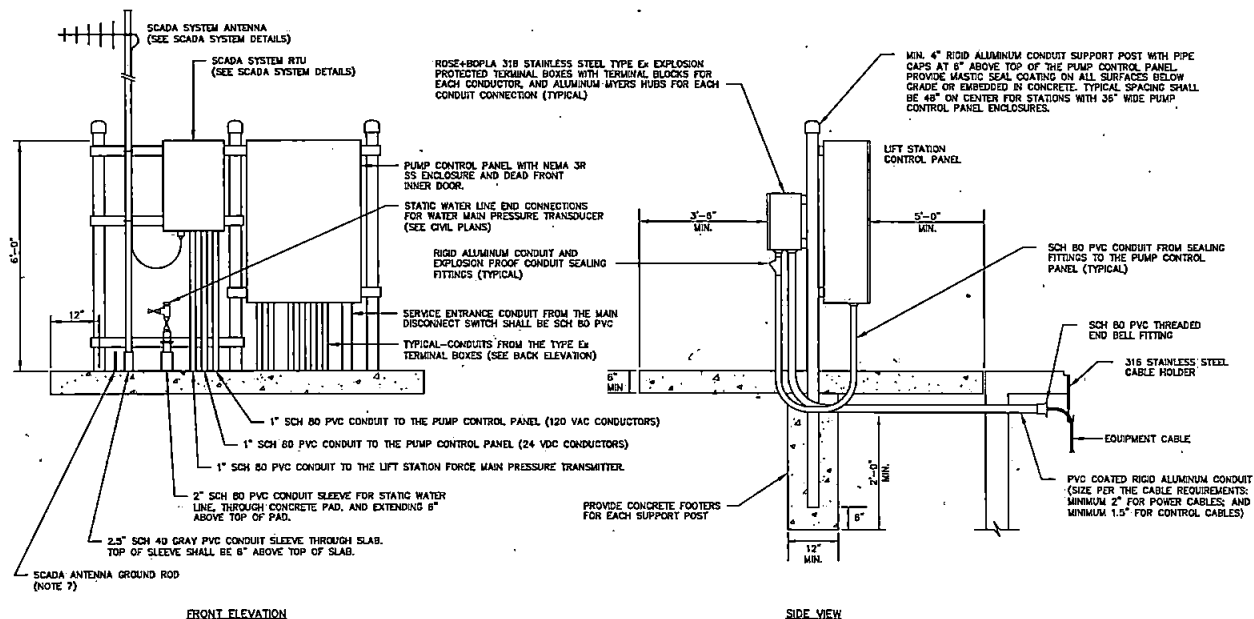
ELECTRICAL DETAILS

DESIGNED BY: JWB  
FILE NUMBER: 8703

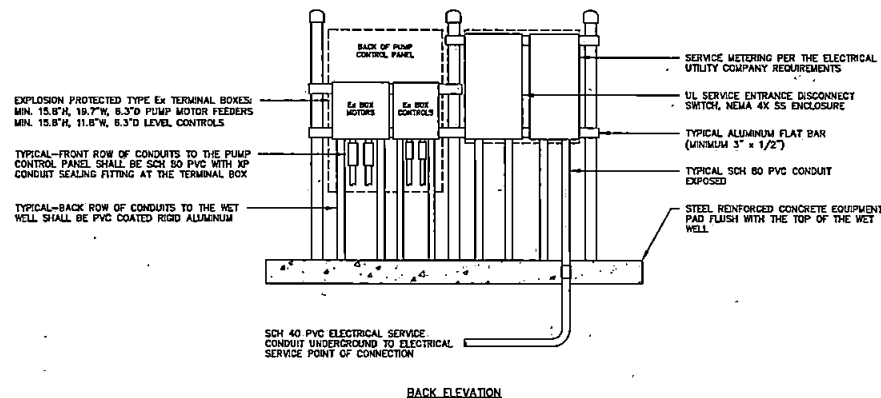
SHEET NO. 8-2

#### NOTES:

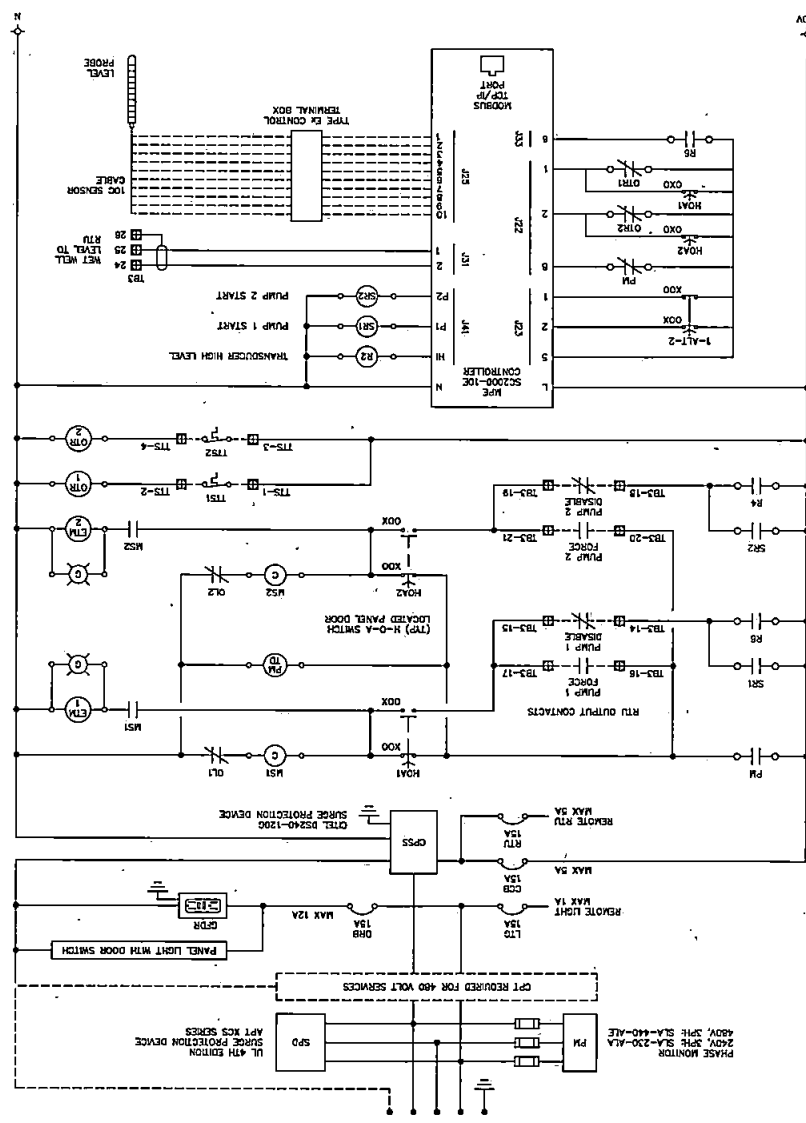
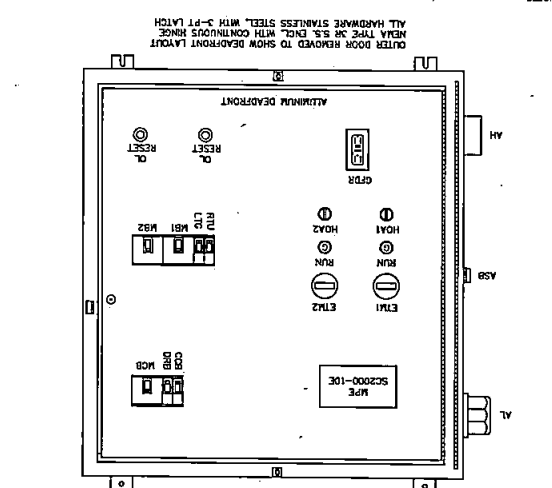
1. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL PRE-CONSTRUCTION COORDINATION SITE MEETING WITH SJCD AND THE ELECTRICAL DESIGN ENGINEER TO COORDINATE SITE SPECIFIC REQUIREMENTS OF THE ELECTRICAL EQUIPMENT INSTALLATION.
2. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL ROUGH-IN SITE INSPECTION WITH SJCD AND THE ELECTRICAL DESIGN ENGINEER TO INSPECT THE ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO POURING CONCRETE.
3. GROUNDING ELECTRODE SYSTEM: PROVIDE A GROUND RING PER NEC 250.52, ENVELOPING THE ELECTRICAL SERVICE EQUIPMENT, CONSISTING OF CONTINUOUS #1/0 TINNED COPPER CONDUCTOR AT 30" BELOW GRADE.
4. PROVIDE GROUND RODS (MINIMUM 3/4" DIAMETER, 20' LONG COPPER CLAD STEEL) BONDED TO EACH END OF THE GROUND RING, AT LEAST 20' APART. GROUND ROD SECTIONS SHALL BE COUPLED AND DRIVEN TO ESTABLISH A MAXIMUM RESISTANCE TO GROUND OF 5 OHMS THROUGHOUT THE GROUNDING ELECTRODE SYSTEM.
5. GROUNDING ELECTRODE CONDUCTOR: PROVIDE MINIMUM #2 TINNED COPPER GROUNDING ELECTRODE CONDUCTOR FROM THE GROUND RING TO THE SERVICE ENTRANCE DISCONNECT SWITCH, PUMP CONTROL PANEL, RTU, SCADA SYSTEM ANTENNA TOWER, ELECTRICAL EQUIPMENT RACK END POSTS, AND FENCE. USE GROUND CLAMPS RATED FOR CONNECTIONS TO END POSTS AND FENCE POSTS. GROUND CLAMPS SHALL BE RATED FOR DIRECT BURIAL. INSTALL GROUNDING ELECTRODE CONDUCTORS IN 3/4" SCH 80 PVC CONDUIT SLEEVE FOR MECHANICAL PROTECTION.
6. THE CONTRACTOR SHALL REVIEW THE SCADA SYSTEM DETAILS AND SHALL MAKE ALL PROVISIONS REQUIRED FOR THE INSTALLATION OF THE SCADA SYSTEM RTU AND ANTENNA INCLUDING: SLEEVE FOR THE ANTENNA MAST, GROUND ROD FOR THE ANTENNA MAST, RTU POWER AND CONTROL CONDUITS, FORCE MAIN PRESSURE TRANSMITTER CONDUIT, AND THE WATER MAIN PRESSURE TRANSMITTER STATIC WATER LINE.
7. THE TOP OF THE GROUND ROD FOR THE SCADA SYSTEM ANTENNA SHALL EXTEND NO MORE THAN 6" AND NO LESS THAN 4" ABOVE THE CONCRETE SLAB.



ELECTRICAL EQUIPMENT GROUNDING SYSTEM DETAIL  
NOT TO SCALE



TYPICAL LIFT STATION ELECTRICAL EQUIPMENT INSTALLATION DETAIL  
NOT TO SCALE

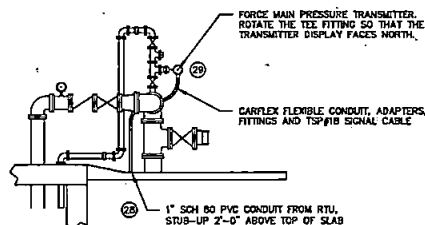




ST. JOHNS COUNTY UTILITY DEPARTMENT  
1205 STATE ROAD 16  
ST. AUGUSTINE, FLORIDA 32084  
Phone (904) 209-2700

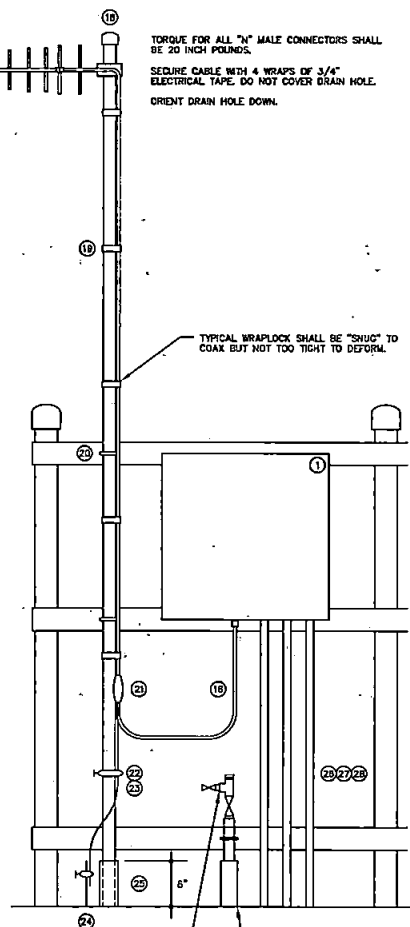
#### SCADA SYSTEM NOTES:

1. SCJD SHALL EMPLOY THE SERVICES OF A SCJD PRE-APPROVED SCADA SYSTEM INTEGRATOR TO PERFORM ALL SCADA SYSTEM ADJUSTMENTS AND MODIFICATIONS INCLUDING: NEW RTU, ANTENNA, AND ANTENNA MAST.
2. THE SCADA SYSTEM SUPPLIER SHALL MODIFY AND UPGRADE THE EXISTING SCJD MASTER SCADA SYSTEM AS REQUIRED TO INCORPORATE THE NEW FACILITIES.
3. THE CONTRACTOR AND THE SCADA SYSTEM SUPPLIER SHALL COORDINATE ALL SCADA SYSTEM INSTALLATION WITH THE SCJD SCADA SYSTEM SUPERVISOR.
4. THE SCADA SYSTEM RTU SHALL BE A SCJD STANDARD LIFT STATION RTU WITH MOTOROLA ACE3600 RTU CONFIGURED WITH MIXED I/O MODULES AS INDICATED. PROVIDE POWER AND SIGNAL LINE SURGE PROTECTION.
5. PRIOR TO SHOP DRAWING SUBMITTALS, THE SCADA SYSTEM SUPPLIER SHALL CONFIRM RADIO/ANTENNA SELECTION WITH THE SCJD SCADA SYSTEM SUPERVISOR.
6. IN ORDER TO MAINTAIN FCC PART 15 COMPLIANCE, ALL ANTENNA WORK MUST BE PERFORMED OR CERTIFIED BY AN FCC CERTIFIED TECHNICIAN. THE SCJD SCADA SUPERVISOR WILL INSPECT AND CERTIFY (AT NO CHARGE) BUT WILL NOT PERFORM CORRECTIVE ACTIONS.
7. ANTENNA MAST GROUND ROD SHALL BE BONDED (UNDERGROUND) TO THE STATION ELECTRICAL SYSTEM GROUNDING GRID.
8. ALL GROUNDING CONDUCTORS SHALL HAVE AN EVEN SLOPE FROM POINT OF CONTACT TO THE GROUND ROD (NO 90° BENDS).
9. ALL GROUND CONTACT POINTS SHALL BE PROTECTED BY AN ANTI-OXIDATION COMPOUND.
10. ALL RF CONNECTORS SHALL BE TIGHTENED TO MANUFACTURER SPECIFICATIONS, AND SHALL BE PROPERLY SEALED. COLD SHRINK IS NOT ACCEPTABLE.
11. DRAIN HOLES ON ANTENNAS MUST BE ORIENTED DOWN.
12. ALL THREADED CONNECTIONS, EXCEPT ANTENNA CONNECTIONS, SHALL BE PROTECTED WITH ANTI-SEIZE TREATMENT.
13. THE "POWER" CONDUIT FROM THE RTU TO THE PUMP CONTROL PANEL SHALL BE USED FOR ALL 120 VAC CONDUCTORS, INCLUDING THE RTU INPUT POWER AND THE DIGITAL OUTPUT CONDUCTORS.
14. THE "CONTROL" CONDUIT FROM THE RTU TO THE PUMP CONTROL PANEL SHALL BE USED FOR ONLY 24 VDC CONDUCTORS, INCLUDING THE DIGITAL INPUT SIGNAL CONDUCTORS AND THE ANALOG INPUT SIGNAL CABLES. PROVIDE TSP#18 CABLE FOR EACH ANALOG INPUT SIGNAL.
15. PROVIDE DIN RAIL ON BACK PLATE AT THE RTU RADIO MOUNTING LOCATION FOR THE 4RF RADIO MOUNTING BRACKET, MOUNT THE DIN RAIL USING EXISTING TAPPED SCREW HOLES. DO NOT DRILL AND TAP NEW HOLES.
16. THE SCADA SYSTEM SUPPLIER SHALL PROVIDE THE FORCE MAIN PRESSURE TRANSMITTER, INCLUDING ASHROFT TYPE 330 FLUSH DIAPHRAGM SEAL AND ALUMINUM M20X1.5 METRIC TO 1/2" NPT CONDUIT CONNECTION ADAPTER.



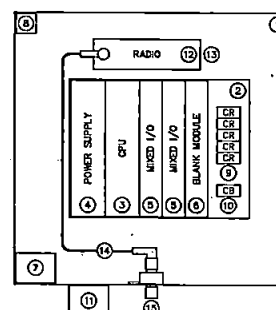
FORCE MAIN PRESSURE TRANSMITTER DETAIL  
NOT TO SCALE

PROVIDE 1" HOPE STATIC WATER LINE WITH 1" 3/4" NPT ADAPTER, 3/4" FPT WATTS BRASS FULL PORT BALL VALVE, 3/4" FPT BRASS TEE, 3/4" x 1/2" BRASS BUSHING, 1/2" FPT WATTS BRASS FULL PORT BALL VALVE AND 3/4" NPT PLUG.



SCADA SYSTEM ANTENNA DETAIL  
NOT TO SCALE

| SCADA SYSTEM EQUIPMENT SCHEDULE |                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------|
| ITEM                            | DESCRIPTION                                                                                       |
| 1                               | RTU ENCLOSURE, SCHAEFER'S ELECTRICAL ENCLOSURE MODEL SPN4AL-20208-735. DO NOT SUBSTITUTE.         |
| 2                               | NEWA 12/3R ALUMINUM ENCLOSURE, PADLOCK PROVISIONS, ALUMINUM TOP, SIDES, AND DOOR SUN SHIELDS      |
| 3                               | MOTOROLA ACE3600 METAL CHASSIS WITH 3 I/O SLOT FRAME V214/M103                                    |
| 4                               | MOTOROLA ACE3600 RTU WITH UPGRADE TO CPU3600 AND SECURITY ENABLE OPTION F7509/V448/VAD0360AA      |
| 5                               | MOTOROLA CPU PLUS-IN ETHERNET 10/100 M PORT V212                                                  |
| 6                               | MOTOROLA ACE3600 AC POWER SUPPLY WITH BATTERY CHARGER V281                                        |
| 7                               | MOTOROLA ACE3600 MIXED I/O MODULE 16DI, 4DO EE, 4AI, ±20 mA WITH FLOATING POWER SUPPLY V245/V250  |
| 8                               | MOTOROLA ACE3600 BLANK I/O MODULE V20                                                             |
| 9                               | MOTOROLA BATTERY POWER CABLE FKNB378                                                              |
| 10                              | BATTERY BACKUP 12V, 7AH, SEALED RECHARGEABLE SLA BATTERY, TOYO-USP 6FM57                          |
| 11                              | INTRUSION SWITCH WITH PULL TO DEFEAT FEATURE HONEYWELL MICRO SWITCH 1DM401                        |
| 12                              | DIN RAIL MOUNTED DIGITAL OUTPUT CONTROL RELAYS OMRON G2R-1-SNI-DC12-S, 12VDC, SPDT, PTT           |
| 13                              | DIN RAIL MOUNTED CIRCUIT BREAKER SUPPLEMENTARY PROTECTOR EATON FAZ-G10/1-SP                       |
| 14                              | DITEK DTK-120HW SURGE PROTECTION DEVICE 120VAC                                                    |
| 15                              | 4RF DIGITAL RADIO MODEL APSQ-N220-SSC-HD-22-ENAA                                                  |
| 16                              | 4RF DIGITAL RADIO DIN RAIL MOUNTING BRACKET APSB-MBRK-DIN (NOTE 15)                               |
| 17                              | RADIO POWER CABLE 12VDC WITH PLUG COMPATIBLE WITH MOTOROLA POWER SUPPLY                           |
| 18                              | RADIO COMMUNICATION CABLE TYPE 568B ETHERNET CABLE, 1M                                            |
| 19                              | LMR-195 FLEXIBLE COAX, RIGHT ANGLE N MALE/RIGHT ANGLE TNC MALE CONNECTORS, 36" LONG               |
| 20                              | TIMES MICROWAVE LP-HBK-NFF COAX SURGE ARRESTER                                                    |
| 21                              | TIMES MICROWAVE LMR-400-D9 COAX, TYPE N MALE CONNECTORS EZ-400-NMH-D                              |
| 22                              | ASTRON MODEL 220-SH ANTENNA (Contact: Marina Burgstahler MBurgstahler@asmllc.com)                 |
| 23                              | AMPHENOL PROCOM 7042220 YAGI ANTENNA & BRACKET KIT 0300064/00 (Contact: TESSCO 800-742-7373)      |
| 24                              | COMTECO YS6250HD YAGI ANTENNA (Contact: Technical Field Service, Inc. 934-591-9579)               |
| 25                              | ANTENNA MAST 2" x 20' LONG SCHEDULE 40 ALUMINUM PIPE, WHITE PVC CAP                               |
| 26                              | 1/2" SS WRAPLOCK BANDS, 3' ON CENTER. THE WRAPS ARE NOT ACCEPTABLE.                               |
| 27                              | 3/8" SS U-BOLTS, ANTI-SEIZE MUST BE USED ON ALL THREADS.                                          |
| 28                              | TESSCO CK-S38 COAX GROUND KIT                                                                     |
| 29                              | GROUNDING CLAMP RATED FOR DIRECT BURIAL                                                           |
| 30                              | NO.2 AWG SOLID TINNED COPPER CONDUCTOR                                                            |
| 31                              | COPPER CLAD STEEL GROUND ROD, 3/4" DIAMETER, 20' LONG                                             |
| 32                              | 2.5" SCHEDULE 40 GRAY PVC CONDUIT SLEEVE THROUGH SLAB                                             |
| 33                              | 1" SCH 80 PVC "POWER" CONDUIT TO PUMP CONTROL PANEL, 120 VAC CONDUCTORS                           |
| 34                              | 1" SCH 80 PVC "CONTROL" CONDUIT TO PUMP CONTROL PANEL, 24 VDC CONDUCTORS                          |
| 35                              | 1" SCH 80 PVC CONDUIT TO THE LIFT STATION FORCE MAIN PRESSURE TRANSMITTER                         |
| 36                              | FORCE MAIN PRESSURE TRANSMITTER: WKA UPT-20 WITH OPTIONAL STAINLESS STEEL ENCLOSURE (SEE NOTE 16) |



SCADA SYSTEM RTU DETAIL  
NOT TO SCALE

| RTU I/O SCHEDULE |                        |                  |                     |
|------------------|------------------------|------------------|---------------------|
| MIXED I/O MODULE |                        | MIXED I/O MODULE |                     |
| DI               | SIGNAL DESCRIPTION     | DI               | SIGNAL DESCRIPTION  |
| 01               | RTU INTRUSION SWITCH   | 01               | SIGNAL DESCRIPTION  |
| 02               | HIGH LEVEL             | 02               | ALARM SILENCE       |
| 03               | PHASE FAILURE          | 03               | SIGNAL DESCRIPTION  |
| 04               | PUMP 1 RUNNING         | 04               | WET WELL LEVEL      |
| 05               | PUMP 2 RUNNING         | 05               | FORCE MAIN PRESSURE |
| 06               | PUMP 1 FAIL            | 06               | WATER MAIN PRESSURE |
| 07               | PUMP 2 FAIL            | 07               | SIGNAL DESCRIPTION  |
| 08               | CONTROL POWER          | 08               | SPARE               |
| 09               | PUMP 1 OVERTEMP        | 09               | SPARE               |
| 10               | PUMP 2 OVERTEMP        | 10               | SPARE               |
| 11               | TRANSOUCCER HIGH LEVEL | 11               | SPARE               |
| 12               | SPARE                  | 12               | SPARE               |
| 13               | SPARE                  | 13               | SPARE               |
| 14               | SPARE                  | 14               | SPARE               |
| 15               | SPARE                  | 15               | SPARE               |
| 16               | SPARE                  | 16               | SPARE               |
| DI               | SIGNAL DESCRIPTION     | DO               | SIGNAL DESCRIPTION  |
| 01               | PUMP 1 DISABLE         | 01               | ALARM SILENCE       |
| 02               | PUMP 2 DISABLE         | 02               | SPARE               |
| 03               | PUMP 1 REMOTE RUN      | 03               | SPARE               |
| 04               | PUMP 2 REMOTE RUN      | 04               | SPARE               |
| AI               | SIGNAL DESCRIPTION     | AI               | SIGNAL DESCRIPTION  |
| 01               | WET WELL LEVEL         | 01               | SPARE               |
| 02               | FORCE MAIN PRESSURE    | 02               | SPARE               |
| 03               | WATER MAIN PRESSURE    | 03               | SPARE               |
| 04               | SPARE                  | 04               | SPARE               |

AMENDMENTS

HOLIDAY ISLE LIFT STATION  
IMPROVEMENTS

SCADA SYSTEM DETAILS

DATE: 07/05/2019  
DESIGNED BY: WEL  
DRAWN BY: WEL  
CHECKED BY: JLD  
SIGNED BY: WEL

FILE NUMBER: 87702

SHEET NO. E-4



## St. Johns County Board of County Commissioners

Purchasing Division

March 20, 2019

### ADDENDUM #1

**To:** Prospective Bidders  
**From:** St. Johns County Purchasing Department  
**Subject:** Bid No. 19-53, Holiday Isle Lift Station Improvements

This Addendum #1 is issued for further respondent's information and is hereby incorporated into the Bid documents. Each respondent will ascertain before submitting a proposal that he/she has received all Addenda. Please return an original copy of this signed Addendum with your proposal to the St. Johns County Purchasing Department, David E. Pyle, CPPB; 500 San Sebastian View; St. Augustine, FL 32084.

#### Questions:

1. Request code 9258812

**Answer:** All bids are posted and advertised on Demand Star. Once they are posted we cannot add or change codes for that bid posting.

#### For Pipe Construction:

2. What are the approximate lengths, sizes and types of the pipes to be installed on the project?

**Answer:** The project is the construction of a new lift station to replace the existing lift station that has insufficient capacity and is in need of rehabilitation. The installation of underground pipe is limited to approximately 30 LF of 6" PVC water main, 8 LF of 4" PVC force main, 30 LF of 6" PVC force main and 23 LF of 10" PVC gravity sewer. The remaining pipe is above grade 6"/4"/1" SCH40 316 stainless steel pipe, fittings and valves per SJCUD lift station standards and 6"/4"/1" backflow assemblies for water services.

3. Are there any portions of the project that will need to be Bored?

**Answer:** No.

4. Are the crossings to be Jack & Bored or Directionally Bored?

**Answer:** No.

5. What are the approximate lengths and diameters of the portions to be bored?

**Answer:** Not applicable.

For Manhole Rehabilitation:

6. How many manholes will be rehabilitated on the project?

**Answer: The existing 6' diameter wetwell shall be rehabilitated and converted into a receiving manhole. A new 5' diameter manhole and 8' diameter wetwell is proposed for the new lift station.**

7. What type of rehabilitation will be used on the manholes?

**Answer: Pouring a new bench at the specified elevation, setting a new top slab with ring and cover, interior cleaning and surface preparation, and coating the interior with the Raven 405 epoxy.**

8. How much is the required bid bond for the project?

**Answer: The bid bond shall be 5% of the Total Lump Sum.**

9. How much is the cost estimate of the project?

**Answer: The engineers estimate is \$455,000 for the work included in the plans and specifications.**

10. Do you have any further details you wish to provide?

**Answer: No.**

**THE BID DUE DATE REMAINS April 24, 2019 AT 2:00 P.M.**

**Acknowledgment**

**Sincerely,**

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

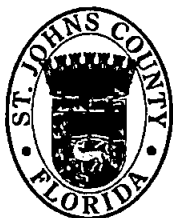
David E. Pyle, CPPB  
Procurement Coordinator

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

\_\_\_\_\_  
Company Name (Print)

**END OF ADDENDUM NO. 1**





## St. Johns County Board of County Commissioners

Purchasing Division

March 27, 2019

### ADDENDUM #2

**To: Prospective Bidders**  
**From: St. Johns County Purchasing Department**  
**Subject: Bid No. 19-53, Holiday Isle Lift Station Improvements**

This Addendum #2 is issued for further respondent's information and is hereby incorporated into the Bid documents. Each respondent will ascertain before submitting a proposal that he/she has received all Addenda. **Please return an original copy of this signed Addendum with your proposal to the St. Johns County Purchasing Department, David E. Pyle, CPPB; 500 San Sebastian View; St. Augustine, FL 32084.**

#### Questions:

1. GML Coatings would like to be considered "as equal" to the Raven liner systems.

**Answer:** The Green Monster Structural system manufactured by GML Coatings is an approved equal to the Raven 405 system manufactured by Raven Lining Systems.

**THE BID DUE DATE REMAINS April 24, 2019 AT 2:00 P.M.**

**Acknowledgment**

**Sincerely,**

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

David E. Pyle, CPPB  
Procurement Coordinator

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

\_\_\_\_\_  
Company Name (Print)

**END OF ADDENDUM NO. 2**



## St. Johns County Board of County Commissioners

Purchasing Division

April 17, 2019

### ADDENDUM #3

**To:** Prospective Bidders  
**From:** St. Johns County Purchasing Department  
**Subject:** Bid No. 19-53, Holiday Isle Lift Station Improvements

This Addendum #3 is issued for further respondent's information and is hereby incorporated into the Bid documents. Each respondent must ascertain before submitting a proposal that he/she has received all Addenda and submit one (1) original and two (2) copies of each signed addendum with the bid proposal.

### Questions:

1. **Question:** What are the Average and Peak Flow Rates?

**Answer:** The average flow rate is 100 gpm and the peak hour flow rate is 350 gpm. The pump design point is 460 gpm at 73 ft TDH.

2. **Question:** The Bid Plans specify that the County is furnishing certain equipment on Sheets C-1, C-3 and C-4. Can SJCUD provide information from Xylem on the equipment furnished?

**Answer:** Attached is a list of equipment provided by Xylem Water Solutions USA, Inc., (please note that the Motorola ACE3600 RTU, antenna, force main pressure transmitter, water pressure sensor and Godwin CD100M bypass pump are not included in Xylem's proposal but will be furnished by SJCUD per the notes in the Bid Plans). The Contractor is required to install all furnished equipment.

3. **Question:** Is permitting required to be performed by the Contractor?

**Answer:** Yes, the Contractor is responsible for all permitting and coordination with outside entities (i.e. City of St Augustine Beach (COSAB) Building and Electrical Permits and FPL coordination) as stated within General Conditions, section 7.08 and Project Specifications.

4. **Question:** Who is responsible for SCADA installation and programming?

The Contractor shall employ the services of a pre-approved SJCUD SCADA System Integrator (Curry Controls, Revere Control Systems, CDM Smith, Star Controls, and ITG) to install, program and commission the SJCUD furnished Motorola ACE3600 RTU, antenna and instrumentation mentioned above.

5. **Question:** Is a Geotechnical Report included in the bid documents?

**Answer:** Yes, please refer to Appendix A at the end of the Project Specifications.

6. **Question:** Does SJCUD have another location for laydown area and storage of excess material from the excavation?

The proposed limits of construction are shown on Sheet C-1. The entrance to the Resort shall remain open at all times. Work with the entrance driveway shall be temporary and notification shall be provided in advance to Resort

management. In the event that equipment and excess materials cannot be stored within the limits of construction in a clean and safe manner, the Contractor may use the Anastasia Island WWTP located at 860 W 16<sup>th</sup> Street, St Augustine, FL 32080 (approximately 3 miles from the lift station site) or arrange another temporary laydown area closer to the site.

**Clarifications:**

1. **Clarification:** The Sequence of Construction is provided on Sheet C-1. The Sequence of Construction is assumed to be the most efficient method of constructing the new lift station and decommissioning the existing lift station to limit bypass pumping. The Contractor shall ultimately determine the construction sequence and the best methods to deliver the project.
2. **Clarification:** The Bid Plans specify Raven 405 or approved equal for the wet well liner. Please note that Green Monster by GML Coatings was approved per Addendum #2. SpectraShield and Agru-Liner are also approved liners for wet well applications.
3. **Clarification:** The proposed bypass requires the flow coming from the north to have a bypass pump setup within the median of the Ocean Villas condominium entrance and will require a road ramp crossing and approximate 350 ft of hose to pump into the forcemain/manhole near the lift station. It is also assumed that the flow from the Resort can be manifolded within the wet well to gravity feed to the manhole to the west of the existing wet well. Ultimately, the Contractor shall be responsible for the bypass pumping plan while the demo and modifications are made to divert flow to the new lift station.

**Revision:**

Minimum Qualifications shall be revised as follows "Prime bidder must be fully licensed to do business in the State of Florida and hold either a current Certified General Contractor's license and/or a current Certified Underground Utility Contractor's license. Bidders must have successfully completed, as a Prime or Sub-contractor, at least three (3) projects, in the past five (5) years, of similar type, size and dollar value of the project described herein."

**THE BID DUE DATE REMAINS April 24, 2019 AT 2:00 P.M.**

**Acknowledgment**

**Sincerely,**

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

David E. Pyle, CPPB  
Procurement Coordinator

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

\_\_\_\_\_  
Company Name (Print)

**END OF ADDENDUM NO. 3**