RESOLUTION NO. 2018 - 153

A RESOLUTION BY THE BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA, AUTHORIZING THE COUNTY ADMINISTRATOR, OR DESIGNEE, TO AWARD BID NO. 18-57 AND TO EXECUTE AN AGREEMENT FOR OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES

RECITALS

WHEREAS, the County desires to enter into a contract with G&H Underground Construction, Inc. to complete the Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades; and

WHEREAS, The project includes upgrades and modifications to three (3) wastewater lift stations located at various locations within St. Johns County and general include: mobilization/demobilization, site work, removal/replacement of existing lift station infrastructure, replacement of piping, replacement of pumps, replacement of wet well top slab and application of wet well liner, bypass pumping, all instrumentation and electrical, testing, and all permits associated with lift station modifications, per technical specifications and drawings.

The lift station are located at the following addresses:
1. Ocean Oaks Pump Station (PS 53); located at 10 Beach St., St. Augustine, FL 32080
2. Food Lion Pump Station (PS 79); located at 160 Lewis Point Rd, St. Augustine, FL 32086
3. Cypress Lakes Pump Station (PS 125); located at 4399 Cypress Links Blvd, Elkton, FL 32033

WHEREAS, through the County's formal Bid process, G&H Underground Construction, 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 18-57; Ocean Oaks, Food Lion, Cypress Lakes Lift Station Upgrades to G&H Underground Construction, 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 18-57.

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 5th day of June, 2018.

BOARD OF COUNTY COMMISSIONERS OF ST. JOHNS COUNTY, FLORIDA

By: _____
Henry Dean, Chair

RENDITION DATE 6/7/18

ATTEST: Hunter S. Conrad, Clerk
By: Pam Patterman
Deputy Clerk

ST. JOHNS COUNTY FLORIDA

STANDARD AGREEMENT
BETWEEN
OWNER AND CONTRACTOR
(1992 EDITION, REVISED 12/18/13)

This Contract Agreement ("Agreement") is made as of _____, 2018 by and between **St. Johns County, FL** ("Owner"), a political subdivision of the State of Florida, whose principal offices are located at 500 San Sebastian View, St. Augustine, FL 32084, and **G&H Underground Construction, Inc** ("Contractor"), with offices located at: 2200 N Ponce De Leon Blvd, Suite 11, St. Augustine, FL 32084, Phone: (904) 829-8199, Fax: (904) 810-0531, and E-mail: ghunderground@bellsouth.net, under seal for Construction of **Bid No: 18-57, Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades**, hereinafter referred to as the "Project".

The Owner and the Contractor hereby agree as follows:

ARTICLE I
THE CONTRACT AND THE CONTRACT DOCUMENTS

1.1 The Contract

1.1.1 The Contract between the Owner and the Contractor, of which this Agreement is a part, consists of the Contract Documents. It shall be effective on the date this Agreement is executed by the last party to execute it.

1.2 The Contract Documents

1.2.1 The Contract Documents consist of this Agreement, the Bid Documents and Bid Forms, Specifications, all Change Orders and Field Orders issued hereafter and executed by the parties and the Engineers, any other amendments hereto executed by the parties hereafter, together with the following: Bid Documents, Addendum 1, Bonds and Insurance.

Documents not enumerated in this Paragraph 1.2.1 are not Contract Documents and do not form part of this Agreement.

1.3 Entire Agreement

1.3.1 The Contract, together with the Contractor's Public Construction Bond for the Project, constitutes the entire and exclusive agreement between the Owner and the Contractor with reference to this Project. Specifically, but without limitation, this Agreement supersedes any Bid Documents not listed among the Contract Documents described above and all prior written or oral communications, representations and negotiations, if any, between the Owner and Contractor.

1.4 No Privity with Others

1.4.1 Nothing contained in this Agreement shall create, or be interpreted to create, privity or any other contractual agreement between the Owner and any person or entity other than the Contractor.

1.5 Intent and Interpretation

1.5.1 The intent of this Agreement is to require complete, correct and timely execution of the Work. Any work that may be required implied or inferred by the Contract Documents, or any one or more of them, as necessary to produce the intended result shall be provided by the Contractor for the Contract Price.

1.5.2 The Contract is intended to be an integral whole and shall be interpreted as internally consistent. What is required by any one Contract Document shall be considered as required by the Contract.

1.5.3 When a word, term or phrase is used in this Agreement, it shall be interpreted or construed; first, as defined herein; second, if not defined, according to its generally accepted meaning in the construction industry; and third, if there is no generally accepted meaning in the construction industry, according to its common and customary usage.

1.5.4 The words "include," "includes" or "including," as used in this Agreement, shall be deemed to be followed by the phrase "without limitation."

1.5.5 The specification herein of any act, failure, refusal, omission, event, occurrence, or condition as constituting a material breach of this Agreement shall not imply that any other, non-specified act, failure, refusal, omission, event, occurrence, or condition shall be deemed not to constitute a material breach of this Agreement.

1.5.6 Words or terms used as nouns in this Agreement shall be inclusive of their singular and plural forms, unless the context of their usage clearly requires a contrary meaning.

1.5.7 The Contractor shall have a continuing duty to read, carefully study and compare each of the Contract Documents, the Shop Drawings and the Product Data and shall give written notice to the Engineer and the Owner of any inconsistency, ambiguity, error or omission which the Contractor may discover with respect to these documents before proceeding with the affected Work. The issuance, or the express or implied approval by the Owner or the Engineer of the Contract Documents, Shop Drawings, or Product Data shall not relieve any such approval by evidence of the Contractor's compliance with the Contract. The Owner has requested the Engineer to only prepare documents for the Project, including the Drawings and Specifications for the Project, which are accurate, adequate, consistent, coordinated, and sufficient for construction. HOWEVER, THE OWNER MAKES NO REPRESENTATION OR WARRANTY OF ANY NATURE WHATSOEVER TO THE CONTRACTOR CONCERNING SUCH DOCUMENTS. By the execution hereof, the Contractor acknowledges and represents that it has received, reviewed and carefully examined such documents, has found them to be complete, accurate, adequate, consistent, coordinated and sufficient for construction, and that the Contractor has not, does not, and shall not rely upon any representation or warranties by the Owner concerning such documents as no such representation or warranties have been or are hereby made.

1.5.8 As between numbers and scaled measurements on the Drawings and in the Design, the numbers shall govern; as between larger scale and smaller scale drawings, the larger scale shall govern.

1.5.9 Neither the organization of any of the Contract Documents into divisions, sections, paragraphs, articles, (or other categories), nor the organization or arrangement of the Design, shall control the Contractor in dividing the Work or in establishing the extent or Scope of Work to be performed by Subcontractors.

1.6 Ownership of Contract Documents

1.6.1 The Contract Documents, and each of them, shall remain the property of the Owner. The Contractor shall have the right to keep one record set of the Contract Documents upon completion of the Project; provided, however, that in no event shall Contractor use, or permit to be used, any or all of such Contract Documents on other projects without Owner's prior written authorization.

ARTICLE II
THE WORK

2.1 Scope of Work

The Contractor shall perform all of the Work required, implied, or reasonably inferable from, this Agreement.

2.1.1 The term "Work" shall mean whatever is done by or required of the Contractor to perform and complete its duties under this Agreement, including the following: construction of the whole or a designated part of the Project in the manner set forth in the Contract Documents; furnishing of any required Surety Bonds and insurance; and the provision or furnishing of labor, supervision, services, materials, supplies, equipment, fixtures, appliances, facilities, tools, transportation, storage, power, permits and licenses required of the Contractor, fuel, heat, light, cooling and all other utilities as required by this Agreement. The Work to be performed by the Contractor is generally described as follows:

The project includes upgrades and modifications to three (3) wastewater lift stations located at various locations within St. Johns County and general include: mobilization/demobilization, site work, removal/replacement of existing lift station infrastructure, replacement of piping, replacement of pumps, replacement of wet well top slab and application of wet well liner, bypass pumping, all instrumentation and electrical, testing, and all permits associated with lift station modifications, per technical specifications and drawings.

The lift station are located at the following addresses:

1. Ocean Oaks Pump Station (PS 53); located at 10 Beach St., St. Augustine, FL 32080
2. Food Lion Pump Station (PS 79); located at 160 Lewis Point Rd, St. Augustine, FL 32086
3. Cypress Lakes Pump Station (PS 125); located at 4399 Cypress Links Blvd, Elkton, FL 32033

All work shall be performed in accordance with the plans and specifications under Bid No. 18-57.

ARTICLE III
CONTRACT TIME

3.1 Time and Liquidated Damages

3.1.1 The Contractor shall commence the Work within **ten (10)** days upon receipt of the Notice to Proceed and shall Substantially Complete all Work within **Two Hundred Seventy (270)** consecutive calendar days. Final Completion shall be reached by or before **Thirty (30)** consecutive calendar days after Substantial Completion.

The number of calendar days from the date on which the Work is permitted to proceed, through the date set forth for Final Completion, shall constitute the "Contract Time."

3.1.2 The Contractor shall pay the Owner the sum of **$1,584.00** per day for each and every calendar day of unexcused delay in achieving Substantial Completion beyond the date set forth herein for Substantial Completion of the Work. Any sum's due and payable hereunder by the Contractor shall be payable, not as a penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing this Agreement. When the Owner reasonably believes that Substantial Completion shall be inexcusably delayed the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Substantial Completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds withheld, but no longer applicable, as liquidated damages.

3.2 Substantial Completion

3.2.1 "Substantial Completion" shall mean that stage in the progression of the Work when the Work is sufficiently complete in accordance with this Agreement that the Owner can enjoy beneficial use or occupancy of the Work and can utilize the Work for its intended purpose.

3.3 Time is of the Essence

3.3.1 All limitations of time set forth in the Contract Documents are of the essence of this Agreement.

ARTICLE IV
CONTRACT PRICE

4.1 The Contract Price

4.1.1 The Owner shall pay, and the Contractor shall accept, as full and complete payment for all the Work required herein a total Lump Sum price of **Six Hundred Eighty Thousand Five Hundred Dollars ($680,500.00).**

The sum set forth in the Paragraph 4.1 shall constitute the Contract Price, which shall not be modified except by Change Order as provided in this Agreement.

ARTICLE V
PAYMENT OF THE CONTRACT PRICE

5.1 Schedule of Values

5.1.1 Within ten (10) calendar days of the effective date hereof, the Contractor shall submit to the Owner and to the Project Director a Schedule of Values allocating the Contract Price to the various portions of the Work. The Contractor's Schedule of Values shall be prepared in such form, with such detail, and supported by such data as the Project Director or the Owner may require to substantiate its accuracy. The Contractor shall not imbalance its Schedule of Values nor artificially inflate any element thereof. The violation of this provision by the Contractor shall constitute a material breach of this Agreement. The Schedule of Values shall be used only as a basis for the Contractor's Applications for Payment and shall only constitute such basis after it has been agreed upon in writing by the Project Director and the Owner. The Owner may terminate this Agreement without liability of any kind if the Schedule of Values is not agreed upon within fifteen (15) calendar days of the effective date hereof.

5.2 Payment Procedure

5.2.1 The Owner shall pay the Contract Price to the Contractor as provided below.

5.2.2 Progress Payments - On or before the fifteen (15) day of each month after commencement of the Work, the Contractor shall submit an Application for Payment for the period ending the thirtieth (30th) day of the previous month to the Project Director in such form and manner, and with such supporting data and content, as the Project Director may require. Therein, the Contractor may request payment based upon the amount of work done or completed. All partial estimates and payments shall be subject to correction when submitted. Based upon the Contractor's Applications for Payment submitted to the Project Director and upon Certificates for Payment subsequently issued to the Owner by the Project Director, payments will be made in accordance with the Local Government Prompt Payment Act.

5.2.3 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 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.

5.2.4 Each Application for Payment shall be signed by the Contractor and shall constitute the Contractor's representation that the Work has progressed to the level for which payment is requested that the Work has been properly installed or performed in full accordance with this Agreement, and that the Contractor knows of no reason why payment should not be made as requested. Thereafter, the Project Director and Engineer shall review the Application for Payment and may also review the Work at the project site or elsewhere to determine whether the quantity and quality of the Work is as represented in the Application for Payment and is as required by this Agreement. The Project Director shall determine and certify to the Owner the amount properly owing to the Contractor. The Owner shall make partial payments on accounts of the Contract Price within thirty (30) days following the Project Director's receipt of each Application for Payment. The amount of each partial payment shall be the amount certified for payment by the Project Director less such amounts, if any, otherwise owing by the Contractor to the Owner or which the Owner shall have the right to withhold as authorized by this Agreement. The Project Director's certification of the Contractor's Application for Payment shall not preclude the Owner from the exercise of any of its rights as set forth in Paragraph 5.3 herein below.

5.2.5 The Contractor warrants that title to all Work covered by an Application shall pass to the Owner no later than time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which payments have been received from the Owner shall be free and clear of liens, claims, security interest or other encumbrances in favor of the Contractor or any other person or entity whatsoever.

5.2.6 The Contractor shall promptly pay each Subcontractor out of the amount paid to the Contractor on account of such Subcontractor's Work, the amount to which such Subcontractor is entitled. In the event the Owner becomes informed that the Contractor has not paid a Subcontractor as herein provided, the Owner shall have the right, but not the duty, to issue future checks in payment to the Contractor of amounts otherwise due hereunder naming the Contractor and such Subcontractor as joint hereunder naming the Contractor and such Subcontractor as joint payees. Such joint check procedure, if employed by the Owner, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit the Owner to repeat the procedure in the future.

5.2.7 No progress payment, nor any use or occupancy of the Project by the Owner, shall be interpreted to constitute an acceptance of any Work not in strict accordance with this Agreement.

5.3 Withheld Payment

5.3.1 Owner may decline to make payment, may withhold funds and, if necessary, may demand the return of some or

all of the amounts previously paid to the Contractor, to protect the Owner from loss because of:

a) Defective Work not remedied by the Contractor and, in the opinion of the Owner, not likely to be remedied by the Contractor;
b) claims of third parties against the Owner or the Owner's property;
c) Failure by the Contractor to pay Subcontractors or others in a prompt and proper fashion;
d) Evidence that the balance of the Work cannot be completed in accordance with the Contract for unpaid balance of the Contract Price;
e) Evidence that the Work shall not be completed in the time required for Substantial or Final Completion;
f) Persistent failure to carry out the Work in accordance with the Contract;
g) Damage to the Owner or a third party to whom the Owner is, or may be, liable.

In the event that the Owner makes written demand upon the Contractor for amounts previously paid by the Owner as contemplated in this Subparagraph 5.3.1, the Contractor shall promptly comply with such demand.

5.4 Unexcused Failure to Pay

5.4.1 If within ten (10) days after the date established herein for payment to the Contractor by the Owner, the Owner, without cause or basis hereunder, fails to pay the Contractor any amount due and payable to the Contractor, then the Contractor may after seven (7) additional days, written notice to the Owner and the Project Director, and without prejudice to any other available rights or remedies it may have, stop the Work until payment of those amounts due from the Owner have been received. Any payment not made within ten (10) days after the date due shall bear interest at the rate of 12 percent (12%) per annum.

5.5 Substantial Completion

5.5.1 When the Contractor believes the Work is Substantially Complete, the Contractor shall submit to the Project Director a list of items to be completed or corrected. When the Project Director on the basis of an inspection determines that the Work is in fact Substantially Complete, he shall prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall state the responsibilities of the Owner and the Contractor for Project security, maintenance, heat, utilities, damage to the Work, and insurance, and shall fix the time within which the Contractor shall complete the items listed therein. Guarantees required by the Contract shall commence on the date of Substantial Completion of the Work. The Certificate of Substantial Completion shall be submitted to the Owner and the Contractor for their written acceptance of the responsibilities assigned to them in such certificate.

Until Final Completion and acceptance of the Work by the Owner, the Owner shall pay the Contractor an amount equal to ninety percent (90%) of the Contract price. Ten Percent (10%) of the Contract Price shall be retained until Final Completion, acceptance of the Work by the Owner, and Final Payment to the Contractor.

5.6 Final Completion and Final Payment

5.6.1 When all the Work is finally complete and the Contractor is ready for a Final Inspection, it shall notify the Owner and the Project Director thereof in writing. Thereupon, the Project Director shall make Final Inspection of the Work and, if the Work is complete in full accordance with this Agreement and this Agreement has been fully performed, the Project Director shall promptly issue a Final Certificate for Payment and if required to repeat its Final Inspection of the Work, the Contractor shall bear the cost of such repetition of the Work, the Contractor shall bear the cost of such repeat Final Inspection(s) which cost may be deducted by the Owner and all other Authorities having jurisdiction under Florida Laws or regulations.

5.6.1.1 If the Contractor fails to achieve Final Completion within the time fixed therefore by the Engineer in its Certificate of Substantial Completion, the Contractor shall pay the Owner liquidated damages at the sum shown in Paragraph 3.1.2. per day for each and every calendar day of unexcused delay in achieving Final Completion beyond the date set forth herein for Final Completion of the Work. Any sum's due and payable hereunder by the Contractor shall be payable, not as penalty, but as liquidated damages representing an estimate of delay damages likely to be sustained by the Owner, estimated at or before the time of executing the Contract. When the Owner reasonably believes that Final Completion shall be inexcusably delayed, the Owner shall be entitled, but not required, to withhold from any amounts otherwise due the Contractor an amount then believed by the Owner to be adequate to recover liquidated damages applicable to such delays. If and when the Contractor overcomes the delay in achieving Final Completion, or any part thereof, for which the Owner has withheld payment, the Owner shall promptly release to the Contractor those funds

withheld, but no longer applicable, as liquidated damages.

5.6.2 The Contractor shall not be entitled to Final Payment unless and until it submits to the Project Director its affidavit that all payrolls, invoices for materials and equipment, and other liabilities connected with the Work for which the Owner, or the Owner's property might be responsible, have been fully paid or otherwise satisfied; releases and waivers of claims and lien from all Subcontractors of the Contractor and of any and all other parties required by the Project Director or the Owner; consent of Surety, if any, to Final Payment. If any third party fails or refuses to provide a release of claim or waiver of a lien as required by Owner the Contractor shall furnish a bond satisfactory to the Owner to discharge any such lien or indemnify the Owner from liability.

5.6.3 The Owner shall make Final Payment of all sums, due the Contractor within thirty (30) days of the Project Director's execution of a Final Certificate for Payment.

5.6.4. Acceptance of Final Payment shall constitute a waiver of all claims against the Owner by the Contractor except for those claims previously made in writing against the Owner by the Contractor, pending at the time of Final Payment, and identified in writing by the Contractor as unsettled at the time of its request for Final Payment.

ARTICLE VI
THE OWNER

6.1 Information, Services and Things Required from Owner

6.1.1 The Owner shall furnish to the Contractor, at the time of executing this Agreement, any and all written and tangible material in its possession concerning conditions below ground at the site of the Project. Such written and tangible material is furnished to the Contractor only in order to make complete disclosure of such material and for no other purpose. By furnishing such material, the Owner does not represent, warrant, or guarantee its accuracy either in whole, in part, implicitly, or at all, and shall have no liability therefore. The Owner shall also furnish surveys, legal limitations and utility locations (if known), and a legal description of the Project site. Copies may be provided instead of originals.

6.1.2 Excluding permits and fees normally the responsibility of the Contractor, the Owner shall obtain all approvals, easements, and the like required for construction.

6.1.3 The Owner shall furnish the Contractor, free of charge, 5 copies of the Contract Documents for execution of the Work. The Contractor shall be charged, and shall pay the Owner $25.00 per additional set of Contract Documents which it may require.

6.2 Right to Stop Work

6.2.1 If the Contractor persistently fails or refuses to perform the Work in accordance with this Agreement, the Owner may order the Contractor to stop the Work, or any described portion thereof, until the cause for stoppage has been corrected, no longer exists, or the Owner orders that Work be resumed. In such event, the Contractor shall immediately obey such order.

6.3 Owner's Right to Perform Work

6.3.1 If the Contractor's Work is stopped by the Owner under Paragraph 6.2, and the Contractor fails within seven (7) days of such stoppage to provide adequate assurance to the Owner that the cause of such stoppage shall be eliminated or corrected, the Owner may, without prejudice to any other rights or remedies the Owner may have against the Contractor, proceed to carry out the subject Work.

In such a situation, an appropriate Change Order shall be issued deducting from the Contract Price the cost of correcting the subject deficiencies, and compensation for the Owner's additional services and expenses necessitated thereby, if any. If the unpaid portion of the Contract Price is insufficient to cover the amount due the Owner, the Contractor shall pay the difference to the Owner.

ARTICLE VII
THE CONTRACTOR

7.1 The Contractor is again reminded of its continuing duty set forth in Subparagraph 1.5.7. The Contractor shall

perform no part of the Work at any time without adequate Contract Documents or, as appropriate, approved Shop Drawings, Product Data or Samples for such portion of the Work. If the Contractor performs any of the Work where Contractor knows or should know such work involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Project Director and the Owner, the Contractor shall bear responsibility for such performance and shall bear the cost of correction.

7.2 The Contractor shall perform the Work strictly in accordance with this Agreement.

7.3 The Contractor shall supervise and direct the Work using the Contractor's best skill, effort and attention. The Contractor shall be responsible to the Owner for any and all acts or omissions of the Contractor, its employees and other engaged in the Work on behalf of the Contractor.

7.4. Warranty

7.4.1 The Contractor warrants to the Owner that all labor furnished to progress the Work under this Agreement shall be competent to perform the tasks undertaken, that the product of such labor shall yield only first-class results, that materials and equipment furnished shall be of good quality, free from faults and defects and in strict conformance with this Agreement. This warranty shall survive termination of this Agreement and shall not be affected by Final Payment hereunder. All Work not conforming to these requirements may be considered defective.

7.5 Contractor shall obtain and pay for all permits, fees and licenses necessary and ordinary for the Work. The Contractor shall comply with all lawful requirements applicable to the Work and shall give and maintain any and all notices required by applicable law pertaining to the Work.

7.6 Supervision

7.6.1 The Contractor shall employ and maintain at the Project site only competent supervisory personnel. Absent written instruction from the Contractor to the contrary, the superintendent shall be deemed the Contractor's authorized representative at the site and shall be authorized to receive and accept any and all communications from the Owner or Assignees.

7.6.2 Key supervisory personnel assigned by the Contractor to this Project are as follows:

Name	**Function**

So long as the individuals named above remain actively employed or retained by the Contractor, they shall perform the functions indicated next to their names unless the Owner agrees to the contrary in writing. In the event one or more individuals not listed above subsequently assume one or more of those functions listed above, the Contractor shall be bound by the provisions of this Subparagraph 7.6.2 as though such individuals have been listed above.

7.7 The Contractor, prior to commencing the Work, shall submit to the Project Director for his information, the Contractor's schedule for completing the Work. The Contractor's schedule shall be revised no less frequently than monthly (unless the parties otherwise agree in writing) and shall be revised to reflect conditions encountered from time to time and shall be related to the entire Project. Each sum revision shall be furnished to the Project Director. Failure by the Contractor to strictly comply with the provisions of this Paragraph 7.7 shall constitute a material breach of this Agreement.

7.8 The Contractor shall continuously maintain at the site, for the benefit of the Project Director, one record copy of this Agreement marked to record on a current basis changes, selections and modifications made during construction. Additionally, the Contractor shall maintain at the site for the Project Director the approved Product Data, Samples and other similar required submittals. Upon Final Completion of the Work, all of these record documents shall be delivered to the Owner.

7.9 Product Data and Samples

7.9.1 Product Data, Samples and other submittals from the Contractor do not constitute Contract Documents. Their purpose is merely to demonstrate the manner in which the Contractor intends to implement the Work in conformance with the information received from the Contract Documents. All Product Data, Samples and other submittals shall belong to the Owner and shall be delivered, or returned to Owner, as applicable, prior to Submittals shall belong to Owner and shall be delivered, or returned to Owner, as applicable, prior to Substantial Completion.

7.10 Cleaning the Site and the Project

7.10.1 The Contractor shall keep the site reasonably clean during performance of the Work. Upon Final Completion of the Work, the Contractor shall clean the site and the Project and remove all waste, together with all of the Contractor's property therefrom.

7.11 Access to Work

7.11.1 The Owner and the Project Director shall have access to the Work at all times from commencement of the Work through Final Completion. The Contractor shall take whatever steps necessary to provide access when requested.

7.12 Indemnity

7.12.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, employees and officials from, and against, any, and all, administrative/legal/equitable liability, claims, damages, losses and expenses, including attorneys' fees, arising out of or resulting from performance of the work, noted in either the Scope of Work, or the Contract Documents, that are referenced and considered a part of this Agreement. It is specifically noted that such liability, claims, damages, loss or expense includes any of those referenced instances attributable to bodily injury, sickness, disease, or death, or to injury to, or destruction of, personal and/or real property, including the loss of use resulting therefrom or incident to, connected with, associated with or growing out of direct and/or indirect negligent or intentional acts or omissions by the Contractor, a Subcontractor, or anyone directly, or indirectly employed by them, or anyone for whose acts the Contractor or Subcontractor may be liable, regardless of whether or not such liability, claim, damage, loss or expense is caused in part by a party indemnified hereunder.

7.12.2 In claims against any person or entity indemnified under this Paragraph 7.12 by an employee of the Contractor, a Subcontractor, any one directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Paragraph 7.12 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 benefit acts.

7.13 Safety

7.13.1 The Contractor shall be responsible for supervising all safety precautions, including initiating and maintaining such programs in connection with the performance of the Contract and for adequate maintenance of traffic.

7.13.2 The Contractor shall designate a member of the on-site construction team whose duty shall be the prevention of accidents. Unless notified otherwise in writing by the Contractor to the Owner and the Engineer, this person shall be the Contractor's Superintendent.

ARTICLE VIII
CONTRACT ADMINISTRATION

8.1 Project Director

8.1.1 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.

8.1.2 The Owner and the Contractor shall communicate with each other in the first instance through the Project Director.

8.1.3 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.

8.1.4 The 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.

8.1.5 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 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.

8.1.6 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.

8.1.7 The Project Director shall prepare Change Orders and may authorize minor changes in the Work by field order as provided elsewhere herein.

8.1.8 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.

8.1.9 The Project Director's decision in matters relating to aesthetic effect shall be final if consistent with the intent of this Agreement.

8.2 Claims by the Contractor

8.2.1 All Contractor claims shall be initiated by written notice and claim to the Project Director. Such written notice and claims must be furnished within seven (7) days after occurrence of the event, or the first appearance of the condition, giving rise to the claim.

8.2.2 Pending final resolution of any claim of the Contractor, the Contractor shall diligently proceed with performance of this Agreement and the Owner shall continue to make payments to the Contractor in accordance with this Agreement. The resolution of any claim under this Paragraph 8.2 shall be reflected by a Change Order executed by the Project Director and the Contractor.

8.2.3 Claims for Concealed and Unknown Conditions - Should concealed and unknown conditions encountered in the performance of the Work (a) below the surface of the ground or (b) in an existing structure be at variance with the conditions indicated by this Agreement, or should unknown conditions of an usual nature differing materially from those ordinarily encountered in the area and generally recognized as inherent in Work of the character provided for in this Agreement, be encountered, wherein the Contract Documents or Standard Construction industry practices have not placed the responsibility of discovering such concealed and unknown conditions upon the Contractor prior to the Contractor submitting his Bid for the Work, the Contract Price shall be equitably adjusted by Change Order upon the written notice and claim by either party made within seven (7) days after the first observance of the condition. As a condition precedent to the Owner having any liability to the Contractor for concealed or unknown conditions, the Contract must give the Project Director written notice of, and an opportunity to observe, the condition prior to disturbing it. The failure by the Contractor to make the written notice and claim as provided in this Subparagraph shall constitute a waiver by the Contractor of any claim arising out of or relating to such concealed or unknown condition.

8.2.4 Claims for Additional Costs - If the Contractor wishes to make a claim for an increase in the Contract Price, as a condition precedent to any liability of the Owner therefore, the Contractor shall give the Project Director written notice of such claim within seven (7) days after the occurrence of the event, or the first appearance of the condition, giving arise to such claim. Such notice shall be given by the Contractor before proceeding to execute any additional or changed Work. The failure by the Contractor to give such notice prior to executing the Work shall constitute a waiver of any claim for additional compensation.

8.2.4.1 In connection with any claim by the Contractor against the Owner for compensation in excess of the Contract Price, any liability of the Owner for the Contractor's costs shall be strictly limited to direct costs incurred by the Contractor and shall in no event include indirect costs or consequential damages of the Contractor.

The Owner shall not be liable to the Contractor for claims of third parties, including Subcontractors, unless and until liability of the Contractor has been established therefore in a court of competent jurisdiction.

8.2.5 Claims for Additional Time - If the Contractor is delayed in progressing any task which at the time of the delay is then critical or which during the delay becomes critical, as the sole result of any act or neglect to act by the Owner or someone acting in the Owner's behalf, or by changes ordered in the Work, unusual delay in transportation, unusually adverse weather conditions not reasonably anticipated, fire or any causes beyond the Contractor's control, then the date for achieving Substantial Completion of the Work shall be extended upon the written notice and claim of the Contractor to the Project Director, for such reasonable time as the Project Director may determine.

Any notice and claims for an extension of time by the Contractor shall be made not more than seven (7) days after the occurrence of the event or the first appearance of the condition giving the rise to the claim and shall set forth in detail the Contractor's basis for requiring additional time in which to complete the Project. In the event the delay to the Contractor is continuing one, only one notice and claim for additional time shall be necessary. If the Contractor fails to make such claim for an extension shall be waived. This paragraph shall not be deemed to waive any damages for delay that are covered by insurance.

8.2.5.1 Delays and Extensions of Time - An extension of Contract Time shall not be given due to weather conditions unless such weather conditions more severe than average have caused a delay. In requesting extension of time for weather conditions; Contractor shall present complete records and such requests shall document how weather conditions delayed progress of Work.

8.3 Field Orders

8.3.1 The Project Director shall have authority to order minor changes in the Work not involving a change in the Contract Price or in Contract Time and not inconsistent with the intent of the Contract. Such changes shall be effected by field order and shall be binding upon the Contractor. The Contractor shall carry out such field orders promptly.

ARTICLE IX
SUBCONTRACTORS

9.1 Definition

9.1.1 A Subcontractor is an entity, which has a direct Contract with the Contractor to perform a portion of the Work.

9.2 Award of Subcontracts

9.2.1 Upon execution of the Contract, the Contractor shall furnish the Project Director, in writing, the names of persons or entities proposed by the Contractor to act as a Subcontractor on the Project. The Project Director shall promptly reply to the Contractor, in writing, stating any objections the Project Director may have to such proposed Subcontractor. The Contractor shall not enter into a Subcontract with a proposed Subcontractor with reference to whom the Project Director has made a timely objection.

9.2.2 All subcontracts shall afford the Contractor rights against the Subcontractor, which correspond to those rights afforded to the Owner by Subparagraph 12.2.1 below.

ARTICLE X
CHANGES IN THE WORK

10.1 Changes Permitted

10.1.1 Changes in the Work within the general scope of this Agreement, consisting of additions, deletions, revisions, or any combination thereof, may be ordered without invalidating this Agreement, by Change Order or by Field Order.

10.1.2 Changes in the Work shall be performed under applicable provisions of this Agreement and the Contractor shall proceed promptly with such changes.

10.2 Change Order Defined

10.2.1 Change Order shall mean a written order to the Contractor executed by the Project Director, issued after execution of this Agreement, authorizing and directing a change in the Work or an adjustment in the Contract Price or the Contract

Time, or any combination thereof. Only the Change Order may change the Contract Price and the Contract Time.

10.3 Changes in the Contract Price

10.3.1 Any change in the Contract Price resulting from a Change Order shall be determined as follows: (a) by mutual agreement between the Owner and the Contractor as evidenced by (1) the change in the Contract Price being set forth in the Change Order, (2) such change in the Contract Price, together with any conditions or requirements related thereto, being initialed by both parties and (3) the Contractor's execution of the Change Order, or (b) if no mutual agreement occurs between the Owner and the Contractor, then, as provided in Subparagraph 10.3.2 below.

10.3.2 If no mutual agreement occurs between the Owner and the Contractor as contemplated in Subparagraph 10.3.1 above, the change in the Contract Price, if any, shall than be determined by the Project Director on the basis of the reasonable expenditures or savings of those performing, deleting or revising the Work attributable to the change, including, in the case of an increase or decrease in the Contract Price, a reasonable allowance for direct job site overhead and profit. In such case, the Contractor shall present, in such form and with such content as the Owner or the Project Director requires, an itemized accounting of such expenditures or savings shall be limited to the following: reasonable costs of materials, supplies, or equipment including delivery costs, reasonable costs of labor, including social security, old age and unemployment insurance, fringe benefits required by a pre-existing agreement or by custom, and workers' compensation insurance, reasonable costs of premiums for all Bonds and insurance, permit fees, and sales, use or other taxes related to the Work and paid by the Contractor, and reasonable costs of directly attributable to the change. In no event shall any expenditure or savings associated with the Contractor's home office or other non-jobsite overhead expenses be included in any change in the Contract Price. Pending final determination of reasonable expenditures or savings to the Owner, payments on account shall be made to the Contractor on the Owner's Certificate of Payment.

10.3.3 If Unit Prices are provided in the Contract, and if the quantities contemplated are so changed in proposed Change Order that application of such Unit Prices to the quantities of Work proposed shall cause substantial inequity to the Owner or to the Contractor, that applicable Unit Prices shall be equitable adjusted.

10.4 Minor Changes

10.4.1 The Project Director shall have authority to order minor changes in the Work not involving a change in the Contract Price or an extension of the Contract Time and not inconsistent with the intent of this Agreement. Such minor changes shall be made by written Field Order, and shall be binding upon the Owner and the Contractor. The Contractor shall promptly carry out such written Field Orders.

10.5 Effect of Executed Change Order

10.5.1 The execution of a Change Order by the Contractor shall constitute conclusive evidence of the Contractor's agreement to the ordered changes in the Work, this Agreement as thus amended, the Contract Price and the Contract Time. The Contractor, by executing the Change Order, waives and forever releases any claim against the Owner for additional time or compensation for matters relating to or arising out or resulting from the Work included within or affected by the executed Change Order.

10.6 Notice to Surety; Consent

10.6.1 The Contractor shall notify and obtain the timely consent and approval of the Contractor's surety with reference to all Change Orders if such notice, consent or approval is required by the Contractor's surety or by law. The Contractor's warranty to the Owner that the surety has been notified of and consents to, such Change Order and the surety shall be conclusively deemed to have been notified of such Change Order and to have expressly consented thereto.

ARTICLE XI
UNCOVERING AND CORRECTING WORK

11.1 Uncovering Work

11.1.1 If any of the Work is covered contrary to the Project Director's request or to any provision of this Agreement, it shall, if required by the Project Director, be uncovered for the Project Director's inspection and shall be properly replaced at the Contractor's expense without change in the Contract Time.

11.1.2 If any of the Work is covered in a manner not described in Subparagraph 11.1.1 above, it shall, if required by the by the Project Director or Owner, be uncovered for the Project Director's inspection. If such Work conforms strictly to

this Agreement, costs of uncovering and proper replacement shall by Change Order be charged to the Owner. If such Work does not strictly conform to this Agreement, the Contractor shall pay the costs of uncovering and proper replacement.

11.2 Correcting Work

11.2.1 The Contractor shall immediately proceed to correct Work rejected by the Project Director as defective or failing to conform to this Agreement. The Contractor shall pay all costs and expenses associated with correcting such rejected Work, including any additional testing and inspections, and reimbursement to the Owner for the Project Director's services and expenses made necessary thereby.

11.2.2 If within one (1) year after Substantial Completion of the Work, if any of the Work is found to be defective or not in accordance with this Agreement, the Contractor shall correct it within seven (7) days at the Contractor's expense upon receipt of written notice from the Owner. This obligation shall survive Final Payment by the Owner and termination of this Agreement. With respect to Work first performed and completed after Substantial Completion, this one (1) year obligation to specifically correct defective and nonconforming Work shall be extended by the period of time which elapses between Substantial Completion and completion of the subject Work.

11.2.3 Nothing contained in this Paragraph 11.2 shall establish any period of limitation with respect to other obligations, which the Contractor has under this Agreement. Establishment of the one (1) year time period in Subparagraph 11.2.2 relates only to the duty of the Contractor to specifically correct the Work, and has no relationship to the time which the obligation to comply with the Contract Documents may be sought to be enforced.

11.3 Owner May Accept Defective or Nonconforming Work

11.3.1 If the Owner chooses to accept defective or nonconforming Work, the Owner may do so. In such events, the Contract Price shall be reduced by the greater of (a) the reasonable cost of removing and correcting the defective or nonconforming Work, and (b) the difference between the fair market value of the Project had it not been constructed in such manner as to include defective or nonconforming Work. If the remaining portion of the unpaid Contract Price, if any, is insufficient to compensate the Owner for its acceptance or defective or nonconforming Work, the Contractor shall, upon written demand from the Owner, pay the Owner such remaining compensation for accepting defective or nonconforming Work.

ARTICLE XII
CONTRACT TERMINATION

12.1 Termination by the Contractor

12.1.1 If the Work is stopped for a period of ninety (90) days by an order of any court or as a result of an act of the Government, through no fault of the Contractor or any person or entity working directly or indirectly for the Contractor, the Contractor may, upon ten (10) days written notice to the Owner, terminate performance under this Agreement and recover from the Owner payment for the actual reasonable expenditures of the Contractor (as limited in Subparagraph 10.3.2 above) for all Work executed and for materials, equipment, tools, construction equipment and machinery actually purchased or rented solely for the Work, less any salvage value of any such items.

12.1.2 If the Owner shall persistently or repeatedly fail to perform any material obligation to the Contractor for a period of fifteen (15) days after receiving written notice from the Contractor of its intent to terminate if such failure is not substantially corrected within fifteen (15) days, the Contractor may terminate performance under this Agreement by written notice to the Project Director. In such event, the Contractor shall be entitled to recover from the Owner as though the Owner had terminated the Contractor's performance under this Agreement for convenience pursuant to Subparagraph 12.2.1 hereunder.

12.2 Termination by the Owner

12.2.1 For Convenience

12.2.1.1 The Owner may terminate this Agreement for convenience. In such instance, the Owner shall provide written notice of such termination to the Contractor specifying when termination shall become effective.

12.2.1.2 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.

12.2.1.3 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.

12.2.1.4 (a) 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 (c) below.

(b) The Owner and the Contractor may agree to compensation, if any, due to the Contractor hereunder.

(c) Absent agreement to the amount due to the Contractor, the Owner shall pay the Contractor the following amounts;

(d) Contract prices for labor, materials, equipment, and other services accepted under this Agreement;

(e) Reasonable costs incurred in preparing to perform and in performing a portion of the Work prior to termination and not included in (d) or (e), 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;

(f) Reasonable costs of settling and paying claims arising out of the termination of Subcontracts or orders pursuant to Subparagraph 12.2.1.2 of this Paragraph. These costs shall not include amounts paid in accordance with other provisions hereof.

The total sum to be paid the Contractor under this Subparagraph 12.2.1 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.

12.2.2 For Cause

12.2.2.1 If the Contractor persistently or repeatedly refuses or fails to perform the Work in a timely manner, supply enough properly skilled Workers, supervisory personnel or proper equipment or materials, or if it fails to make prompt payment to Subcontractors, or for materials or labor, or persistently disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, or otherwise substantially violates a material provision of this Agreement, then the Owner may, by written notice to the Contractor, without prejudice to any other right or remedy, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and may finish the Work by whatever methods it may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the Work is finished.

12.2.2.2 If the unpaid balance of the Contract Price less any liquidated damages due under this Agreement, exceeds the cost of finishing the Work, including compensation for the Project Director's additional services and expenses made necessary thereby, such exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive the termination of the Contract.

12.2.2.3 In the event the employment of the Contractor is terminated by the Owner for cause pursuant to Subparagraph 12.2.2 and it is subsequently determined by a Court of competent jurisdiction that such termination was without cause, such termination shall thereupon be deemed a Termination for Convenience under Subparagraph 12.2.1 and the provisions of Subparagraph 12.2.1 shall apply.

ARTICLE XIII
INSURANCE

13.1 Contractor's 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 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 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 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.

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.

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

ARTICLE XIV
MISCELLANEOUS

14.1 Governing Law & Venue

14.1.1 The Contract shall be governed by the laws of the State of Florida. Venue for any administrative and/or legal action arising under the Contract shall be St. Johns County, Florida.

14.2 Successors and Assigns

14.2.1 The Owner and Contractor bind themselves, their successors, assigns and legal representatives to the other party hereto and to successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in this Agreement. The Contractor shall not assign this Agreement without written consent of the Owner.

14.3 Surety Bonds

14.3.1 The Contractor shall furnish a separate Public Construction Bond to the Owner. Such Bonds shall set forth a penal sum in an amount not less than the Contract Price. The Bond furnished by the Contractor shall incorporate by

reference the terms of this Agreement as fully as though they were set forth verbatim in such Bonds. The Public Construction Bond shall provide that in the event the Contract Price is adjusted by Change Order executed by the Contractor. The Public Construction Bond furnished by the Contractor shall be in form suitable to the Owner and shall be executed by a Surety, or Sureties, reasonably suitable to the Owner.

14.4. Safety of Persons and Property

14.4.1 When existing utility lines shown on the Drawings are to be removed or relocated, the Contractor shall notify the Engineer in ample time for taking measures for prevention of the interruption of any required services prior to the beginning of operations. In the event that the Contractor damages any existing utility lines not shown on the Drawings, the location of which is not known to the Contractor report thereof shall be made immediately to the Engineer.

14.4.2 Locations of existing utility lines shown on the Drawings are based on the best information available to the Engineer, but shall not be considered exact either as to location or number of such lines.

14.4.3 Contractor shall protect utility lines constructed under terms of the agreement and those discovered or shown on Drawings to be existing. Damage occurring to utility lines due to Contractor's operations shall be repaired at no cost to the Owner.

ARTICLE XV
EQUAL EMPLOYMENT OPPORTUNITY

15.1 Contractor's Employment Opportunity

15.1.1 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.

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.

15.1.2 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.

ARTICLE XVI
APPRENTICESHIP LAW REQUIREMENTS

16.1 Apprenticeship Law (Chapter 446, Florida Statutes)

16.1.1 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.

16.1.2 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.

16.1.3 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.

16.1.4 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 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.

16.1.5 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.

16.1.6 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.

16.1.7 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.

ARTICLE XVII
PUBLIC RECORDS

17.1 Public Records

17.1.1 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.

17.1.2 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

(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.

17.1.3 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.

17.1.4 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.

BID NO: 18-57, Ocean Oaks, Food Lion, Cypress Lakes Lift Station Upgrades

Owner:

St. Johns County, FL (Seal)
(Typed Name)

By: _____
Signature of Authorized Representative

Jaime T. Locklear, MPA, CPPB, FCCM
Printed Name

Purchasing Manager
Title

_____
Date of Execution

Contractor:

G&H Underground Construction, Inc (Seal)
(Typed Name)

By: _____
Signature of Authorized Representative

_____
Printed Name & Title

_____
Date of Execution

ATTEST:
St. Johns County, FL
Clerk of Courts

By: _____
Deputy Clerk

_____
Date of Execution

Legally Sufficient:

_____
Deputy County Attorney

_____
Date of Execution

St. Johns County Board of County Commissioners

Purchasing Division

NOTICE OF INTENT TO AWARD

May 2, 2018

RE: Bid No: 18-57 – Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades

Please be advised that the Purchasing Department of St. Johns County is issuing this notice of its Intent to Award a contract to G&H Underground Construction, Inc. as the lowest responsive, responsible bidder for Bid No: 18-57 – Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades. This notice will remain posted **St. Johns County Purchasing Department bulletin board** until 3:00 PM, Monday, May 7, 2018.

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 a contract.

Please forward all correspondence, requests or inquiries directly to my attention at the information provided below.

Sincerely,
St. Johns County
Board of County Commissioners

County Representative Signature

Date: 5/8/18

Leigh A. Daniels, CPPB,
Procurement Supervisor
(904) 209-0154 – Direct
(904) 209-0155 – Fax
ldaniels@sjcfl.us

ST. JOHNS COUNTY
PURCHASING DEPARTMENT

500 San Sebastian View
St. Augustine, Florida 32084

INTEROFFICE MEMORANDUM

TO: Scott Trigg, P.E., Chief Engineer – Capital Projects

FROM: Leigh Daniels, CPPB, Procurement Supervisor

SUBJECT: Department Approval for Bid No. 18-57, Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades - JACOBS - Group II

DATE: April 25, 2018

Attached is a copy of the technical proposal review summary sheet.

Please review, evaluate and make a written recommendation for this project. Also, indicate the budgeted amount for this item along with the appropriate charge code and return at your earliest convenience. We will prepare the agenda item and contract.

Please let me know if I can assist your department in any other way.

Department Head Approval Scott Trigg

Date 4/30/18

Budget Amount $700,000.00

Account Funding Title 2016 Liftstation Rehab - Group II

Funding Charge Code 4488-56302-65006-56302

Award to G+H Underground Constructors, Inc.

Award Amount $680,500.00

ST JOHNS COUNTY
MAY 02 '18
PURCHASING

ST. JOHNS COUNTY
BID TABULATION

BID TITLE OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES

BID NUMBER 18-57

OPENING DATE/TIME April 25, 2018 2:00 PM

POSTING DATE/TIME FROM 04/25/18 3:00 PM — UNTIL 04/30/18 3:00 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 LEIGH DANIELS
TABULATED BY BRYAN MATUS
VERIFIED BY

BIDDERS	BASE BID PRICE	ARC FLASH ALLOWANCE	FPL ALLOWANCE	TOTAL BID PRICE	BID BOND	ATTENDED MANDATORY PRE-BID MEETING	ADDENDUM # 1
G&H UNDERGROUND CONSTRUCTION, INC	$667,000.00	$6,000.00	$7,500.00	$680,500.00	YES	YES	YES
SAWCROSS, INC	$861,000.00	$6,000.00	$7,500.00	$874,500.00	YES	YES	YES
US WATER SERVICES CORPORATION	$731,275.00	$6,000.00	$7,500.00	$744,775.00	YES	YES	YES
HINTERLAND GROUP, INC	$810,280.00	$6,000.00	$7,500.00	$823,780.00	YES	YES	YES

BID AWARD DATE - _____

BID NO: 18-57

OFFICIAL COUNTY BID FORM
ST. JOHNS COUNTY, FLORIDA

PROJECT: **OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES**

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

DATE SUBMITTED: 4-25-2018

BID PROPOSAL OF

G&H Undrground Construction,Inc
Full Legal Company Name

2200 N Ponce De Leon Blvd., St 11 St Augustine, FL. 32084 | 904-829-8199 | 94-810-0531
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: 18-57, OCEAN OKAS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES 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: OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES
as per plans and specifications.

BASE BID PRICE:

$ 667,000.00
Base Bid Price (Numerical)

Six hundred sixty seven thousand dollars /100 Dollars
Base 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.

ARC FLASH ALLOWANCE*:

$ 6,000.00
Total Testing Service Allowance Price (Numerical)

Six Thousand and Zero /100 Dollars
(Amount written or typed in words)

**$2,000.00 for each lift station.*

FPL ALLOWANCE*:

$ 7,500.00
Total FPL Allowance (Numerical)

Seven Thousand and Five Hundred /100 Dollars
(Amount written or typed in words)

**The allowance shown is an estimated unit price allowance and will be adjusted (+/-) upon receipt of an invoice from FPL. $1,500 for Ocean Oaks Lift Station and $6,000.00 for Food lion Lift Station.*

TOTAL BID PRICE (Base Bid + Allowances):

$ 680,500.00
Total Bid Price (Numerical)

Six hundred eighty thousand five hundred dollars /100 Dollars
Total Bid Price (Amount written or typed 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: 4-3-18

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 Lump Sum 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: G&H Underground Construction,Inc (Seal)

By: _____ Wade Gibby, President
Signature of Authorized Representative (Name & Title typed or printed)

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

Address: 2200 N Ponce De Leon Blvd., Ste 11 St Augustine, Fl. 32084
Telephone No.: (904)829-8199 Fax No.: (904) 810-0531

Email Address for Authorized Company Representative: ghunderground@bellsouth.net
Federal I.D. Tax Number: 06-1747700 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 Unit Price 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" – Experience of Bidder 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.: 18-57

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 Wade Gibby who being duly sworn, deposes and says he is President (Title) of the firm of G&H Underground Construction,Inc Bidder submitting the attached proposal for the services covered by the bid documents for Bid No: 18-57: Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades, in St. Johns County, Florida.

The affiant further states that no more that 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.

G&H Underground Construction,Inc
(Bidder)

By: Wade Gibby

President
(Title)

Sworn and subscribed to me this 25 day of April, 2018.

Notary Public: Jennifer Smith
Signature

Jennifer Smith
Printed

My commission Expires: 12-6-2021

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

BID NO.: 18-57

ATTACHMENT "B"
CERTIFICATES AS TO CORPORATE PRINCIPAL

I, Wade Gibby, certify that I am the Secretary of the Corporation named as Principal in the attached bond; that Wade Gibby 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 it's governing body.

Secretary Corporate Seal

(STATE OF FLORIDA
COUNTY OF ST. JOHNS)

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared Ben Powe to me well known, who being by me first duly sworn upon oath, says that he is the Attorney-In-Fact, for the Surety and that he has been authorized by Merchants Bonding 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 25th day of April, 2018, A.D.

NOTARY PUBLIC
State of Florida-at-large

JENNIFER LEE SMITH
Notary Public – State of Florida
Commission # GG 158991
My Comm. Expires Dec 6, 2021
Bonded through National Notary Assn.

My Commission Expires: 12-6-2021

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

BID NO.: 18-57

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
Underground Utility and Excavation	CUC1224124	Dept of Business and Professional Regulation	8-31-18
St Johns County Local Business Tax Receipt		St Johns County	9-30-18
FDOT approved Drainage, Flexible Paving, Grading, Grassing, Sodding, Sidewalk, Water, and Sewer		Florida Dept of Transportation	6-30-18

THIS RECEIPT IS ISSUED PURSUANT TO COUNTY ORDINANCE 87-30

2017/2018 ST. JOHNS COUNTY LOCAL BUSINESS TAX RECEIPT

MUST BE DISPLAYED IN A CONSPICUOUS PLACE

ACCOUNT 25043

EXPIRES September 30, 2018

TYPE OF BUSINESS 000264 LAND CLEARING SERVICE

BUSINESS ADDRESS 2200 N PONCE DE LEON BLVD STE 11
ST. AUGUSTINE, FL 32084

X NEW BUSINESS
TRANSFER
ORIGINAL TAX 22.00

AMOUNT 22.00
PENALTY .00
COLLECTION COST
TOTAL 22.00

BUSINESS NAME G & H CONSTRUCTION
OWNER GIBBY WADE D& HARDWICK JEFFERY

MAILING ADDRESS 2200 N PONCE DE LEON BLVD #11
ST. AUGUSTINE, FL 32084

THIS FORM BECOMES A RECEIPT ONLY WHEN VALIDATED
PAID-81545.73.0001-0001 901 09/20/2017 22.00

DENNIS W. HOLLINGSWORTH
ST. JOHNS COUNTY TAX COLLECTOR

This receipt does not constitute a franchise an agreement, or permission or authority to perform the services or operate the business described hereon when a franchise, agreement, or other county commission, state or federal permission or authority is required by county, state or federal law.

RICK SCOTT, GOVERNOR

KEN LAWSON, SECRETARY

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

LICENSE NUMBER
CUC1224124

The UNDERGROUND UTILITY & EXCAVATION CO
Named below IS CERTIFIED
Under the provisions of Chapter 489 FS.
Expiration date: AUG 31, 2018

HARDWICK, JEFFERY L
G & H UNDERGROUND CONSTRUCTION INC
4980 PORTER ROAD
ST. AUGUSTINE FL 32095

ISSUED: 06/22/2016

DISPLAY AS REQUIRED BY LAW

SEQ # L1606220001195

FDOT

Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

RACHEL D. CONE
INTERIM SECRETARY

May 9, 2017

G&H UNDERGROUND CONSTRUCTION INC
2200 N PONCE DE LEON BLVD
ST AUGUSTINE, FL

RE: CERTIFICATE OF QUALIFICATION

Dear Sir/Madam:

The Department of Transportation has qualified your company for the type of work indicated below. Unless your company is notified otherwise, this Certificate of Qualification will expire 6/30/2018. However, the new application is due 4/30/2018.

In accordance with S.337.14 (1) F.S. your next application must be filed within (4) months of the ending date of the applicant's audited annual financial statements.

If your company's maximum capacity has been revised, you can access it by logging into the Contractor Prequalification Application System via the following link:
HTTPS://fdotwp1.dot.state.fl.us/ContractorPreQualification/

Once logged in, select "View" for the most recently approved application, and then click the "Manage" and "Application Summary" tabs.

FDOT APPROVED WORK CLASSES:
DRAINAGE, FLEXIBLE PAVING, GRADING, GRASSING, SEEDING AND SODDING, SIDEWALK, Underground Utilities (Water & Sewer).

You may apply for a Revised Certificate of Qualification at any time prior to the expiration date of this certificate according to Section 14-22.0041(3), Florida Administrative Code (F.A.C.), by accessing your most recently approved application as shown above and choosing "Update" instead of "View." If certification in additional classes of work is desired, documentation is needed to show that your company has done such work with your own forces and equipment or that experience was gained with another contractor and that you have the necessary equipment for each additional class of work requested.

All prequalified contractors are required by Section 14-22.006(3), F.A.C., to certify their work underway monthly in order to adjust maximum bidding capacity to available bidding capacity. You can find the link to this report at the website shown above.

Sincerely,

Alan Autry, Manager
Contracts Administration Office

AA:cj

BID NO.: 18-57

ATTACHMENT "D"
LIST OF PROPOSED SUBCONTRACTORS/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:

Company Name	Division/Discipline	Primary Contact Name	Contact Number and Email Address
Burchfield Electric	Electric	Brian Burchfield	904-829-5735 bei@aug.com
Ferguson	pipe and fittings	Gordon Spottwood	904-885-3400 gordon.spottswood@ferguson.com
Xylem	Pumps & Scada	David Williams	239-825-8384 david.williams@xyleminc.com
Hardwick Fence	Fence	Donna Sparks	904-599-8644 donna@hardwickfence.com

BID NO.: 18-57

ATTACHMENT "E"

St. Johns County Board of County Commissioners
Conflict of Interest Disclosure Form

Project (RFQ, RFP, BID) Number/Description: Bid No 18-57: Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades

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: G&H Underground Construction, Inc

Authorized Representative(s):

Signature	Print Name/Title
[signature]	Wade Gibby, Pres.
Signature	Print Name/Title

BID NO.: 18-57

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: _____

G&H Underground Construction, Inc
Bidder

4-25-18
Date

_____
Authorized Signature

BID NO.: 18-57

ATTACHMENT "G"

CERTIFICATE OF INSURANCE

INSERT CERTIFICATE OF INSURANCE HERE

G&HUNDE-01 JSMITH

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 06/07/2017

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).

PRODUCER	CONTACT NAME: Joanne Smith, CIC	
Cecil W. Powell & Company 219 N. Newnan Street Jacksonville, FL 32202	PHONE (A/C, No, Ext): (904) 353-3181	FAX (A/C, No): (904) 353-5722
	E-MAIL ADDRESS: Jsmith@cwpowellins.com	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Southern Owners Ins Co	10190
INSURER B : Owners Insurance Co	32700
INSURER C : Bridgefield Casualty Ins Co	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED

G & H Underground Construction, Inc.
1176 Woodlawn Rd.
St. Augustine, FL 32084

COVERAGES CERTIFICATE NUMBER: 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 INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR	X	X	7824226117	06/07/2017	06/07/2018	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 100,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	X POLICY PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
B	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO			5124226100	06/07/2017	06/07/2018	BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS						BODILY INJURY (Per accident)	$
	HIRED AUTOS ONLY / NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
							Pers Inj Protec	$ 10,000
A	X UMBRELLA LIAB X OCCUR						EACH OCCURRENCE	$ 1,000,000
	EXCESS LIAB CLAIMS-MADE			5124226101	06/07/2017	06/07/2018	AGGREGATE	$ 1,000,000
	DED RETENTION $							$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						X PER STATUTE / OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N/A		19643270	06/07/2017	06/07/2018	E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							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)
St. Johns County Board of County Commissioners is an additional insured and a waiver of subrogation applies with respect to general liability per the attached policy forms.

CERTIFICATE HOLDER

St. Johns County Board of County Commissioners
500 San Sebastian View
Saint Augustine, FL 32084

CANCELLATION

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
Susan Jordan

BID NO.: 18-57

ATTACHMENT "H"

EXPERIENCE OF BIDDER

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

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.

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

By: G&H Underground Construction, Inc _____ 4/25/18
Bidder Date

Authorized Signature

DATE OF CONTRACT	CLIENT'S NAME, ADDRESS, PHONE AND EMAIL	CONTRACT AMOUNT	PROJECT AND LOCATION
April 2016 - on going	City of St Augustine PO Box 210 St Augustine, Fl. 32085	1,000,000.00	City of St Aguustine Annual Construction Services for Roadway, Drainage, and Utilities St Augustine, FL
March 2017 - November 2017	Uniflorida IV, LLC 295 Seloy Dr St Augustine, Fl. 32084	1,382,822.90	Villages of Seloy Phase 2B St Augustine, Fl
May 2013 - July 2017	City of Jacksonville Beach 1460A Shetter Ave Jacksonville, Fl. 32250	3,286,488.32	Willams Coastal Blvd and South Beach Infrastructure Jacksonville Beach

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

Length of time in business: 13 Years Years

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

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

BID NO.: 18-57

BID BOND

STATE OF FLORIDA
COUNTY OF ST. JOHNS

KNOW ALL MEN BY THESE PRESENTS, that G & H Underground Construction, Inc. as Principal, and * as Surety, are held and firmly bound unto St. Johns County, Florida, in the penal sum of Dollars ($ 5% of Total Amount Bid) lawful money of the United States, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.
*Merchants Bonding Company

THE CONDITION OF THIS OBLIGATIONS IS SUCH that whereas the Principal has submitted the accompanying Bid, dated 25th of April, 2018.

For
OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES
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 25th day of April A.D., 2018, 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.

BID NO.: 18-57

WITNESSES:

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

WITNESSES:

Jennifer Smith

Jeff Tarbell

PRINCIPAL:

G & H Underground Construction, Inc.
NAME OF FIRM:

SIGNATURE OF AUTHORIZED OFFICER (AFFIX SEAL)

President
TITLE

2200 N. Ponce de Leon Blvd., Ste. 11
BUSINESS ADDRESS

St. Augustine, FL 32084
CITY STATE

WITNESS:

Kassandra S. Sullins, Witness

SURETY:

Merchants Bonding Company
CORPORATE SURETY

ATTORNEY-IN-FACT (AFFIX SEAL)
Benjamin K. Powell
P.O. Box 14498
BUSINESS ADDRESS

Des Moines, IA 50306
CITY STATE

Cecil W. Powell & Company
NAME OF LOCAL INSURANCE AGENCY

ATTACHMENT C
CERTIFICATES AS TO CORPORATE PRINCIPAL

I, Wade Gibby, certify that I am the Secretary of the Corporation named as Principal in the attached bond; that Wade Gibby who signed the said bond on behalf of the Principal, was then President 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 it's governing body.

Wade Gibby
Secretary Corporate Seal

(STATE OF FLORIDA
COUNTY OF ST. JOHNS)

Before me, a Notary Public duly commissioned, qualified and acting, personally appeared Benjamin K. Powell to me well known, who being by me first duly sworn upon oath, says that he is the Attorney-In-Fact, for the Merchants Bonding Company and that he has been authorized by Merchants Bonding 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 25th day of April, 2018, A.D.

Kassandra S. Sullins
NOTARY PUBLIC
State of Florida-at-large

My Commission Expires: 06/22/22

KASSANDRA S. SULLINS
Notary Public, State of Florida
My Comm. Expires 06/22/2022
Commission No. GG202445

KASSANDRA S. SULLINS
Notary Public, State of Florida
My Comm. Expires 06/22/2022
Commission No. GG202445

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

MERCHANTS
BONDING COMPANY

POWER OF ATTORNEY

Know All Persons By These Presents, that MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., both being corporations of the State of Iowa (herein collectively called the "Companies") do hereby make, constitute and appoint, individually,

Benjamin Powell; Fitzhugh K Powell Jr; Robert T Theus; Susan W Jordan

their true and lawful Attorney(s)-in-Fact, to sign its name as surety(ies) and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

This Power-of-Attorney is granted and is signed and sealed by facsimile under and by authority of the following By-Laws adopted by the Board of Directors of Merchants Bonding Company (Mutual) on April 23, 2011 and amended August 14, 2015 and adopted by the Board of Directors of Merchants National Bonding, Inc., on October 16, 2015.

"The President, Secretary, Treasurer, or any Assistant Treasurer or any Assistant Secretary or any Vice President shall have power and authority to appoint Attorneys-in-Fact, and to authorize them to execute on behalf of the Company, and attach the seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof."

"The signature of any authorized officer and the seal of the Company may be affixed by facsimile or electronic transmission to any Power of Attorney or Certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually fixed."

In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and aut hority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.

In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner-Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

In Witness Whereof, the Companies have caused this instrument to be signed and sealed this 27th day of April , 2017 .

MERCHANTS NATIONAL BONDING, INC. -o- 2003

MERCHANTS BONDING COMPANY (MUTUAL) INCORPORATED -o- 1933

MERCHANTS BONDING COMPANY (MUTUAL)
MERCHANTS NATIONAL BONDING, INC.

By Larry Taylor
President

STATE OF IOWA
COUNTY OF DALLAS ss.
On this this 27th day of April 2017 , before me appeared Larry Taylor, to me personally known, who being by me duly sworn did say that he is President of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC.; and that the seals affixed to the foregoing instrument are the Corporate Seals of the Companies; and that the said instrument was signed and sealed in behalf of the Companies by authority of their respective Boards of Directors.

NOTARIAL SEAL IOWA

ALICIA K. GRAM
Commission Number 767430
My Commission Expires
April 1, 2020

Alicia K. Gram
Notary Public

(Expiration of notary's commission does not invalidate this instrument)

I, William Warner, Jr., Secretary of MERCHANTS BONDING COMPANY (MUTUAL) and MERCHANTS NATIONAL BONDING, INC., do hereby certify that the above and foregoing is a true and correct copy of the POWER-OF-ATTORNEY executed by said Companies, which is still in full force and effect and has not been amended or revoked.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the Companies on this 25th day of April , 2018 .

MERCHANTS NATIONAL BONDING, INC. -o- 2003

MERCHANTS BONDING COMPANY (MUTUAL) INCORPORATED -o- 1933

William Warner Jr.
Secretary

St. Johns County Board of County Commissioners

Purchasing Division

April 3, 2018

ADDENDUM #1

To: **Prospective Bidders**
From: **St. Johns County Purchasing Department**

Subject: **Bid No. 18-57, Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades**

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 proposal to the St. Johns County Purchasing Department, Leigh A. Daniels, CPPB; 500 San Sebastian View; St. Augustine, FL 32084.**

Questions;

1. Drawing #5 C1.03, #8 C1.06, and #11 C1.09 all say note 13 "level stick, High and Low alarm floats provided by pump manufacturer" some sights have 4 floats switches. Are the float switches by the submersible Pump Section 43 21 39.13?

   Answer: Drawing #5 C-1.03 revised – Ocean Oaks Lift Station will have four float switches furnished with submersible pumps (See E-1)

   Drawing #8 C-1.06 revised – Food Lion Lift Station will have four float switches furnished with submersible pumps (See E-2)

   Drawing #11 C-1.09 – Cypress Lakes Lift Station will have a level probe and two float switches furnished with the submersible pumps (See E-3)

2. Drawing E-4 note on front elevation "future SCADA RTU by SJCUD note 6" Is the SJCUD going to furnish the RTU, SCADA equipment for the three sites?

   Answer: Replace the bid drawing with the attached revised sheet E-4. The Contractor is responsible for all SCADA system equipment at all three sites, including the RTU's, Antennas, Antenna Masts, and Force Main Pressure Transmitters.

3. The Summary of work requires a temporary pressure monitoring RTU that is to be provided by the SJCUD. Is there any instruments and or SCADA RTU required on this project?

   Answer: The Contractor is responsible for all permanent SCADA system equipment at the site including the RTU, Antenna, Antenna Mast, and Force Main Pressure Transmitter.

4. Please provide the approved SCADA companies that are under contract with St. Johns County.

   Answer: Companies approved are Star Controls, Curry, CDM Smith, Revere and ITG.

Changes to the Drawings:

1. Remove Sheet C-1.03 and replace with Addendum #1 Attachment #1: Ocean Oaks (PS53) Plan, Section, and Details
2. Remove Sheet C-1.06 and replace with Addendum #1 Attachment #2: Food Lion (79) Plan, Section, and Details
3. Remove Sheet E-4 and replace with Addendum #1 Attachment #3: SJCUD Standard Lift Station Electrical Details

Attachments:

Attachment #1 – Drawing sheet #5 (C-1.03): Ocean Oaks (PS53) Plan, Section, and Details

Attachment#2 – Drawing sheet #8 (C-1.06): Food Lion (79) Plan, Section, and Details

Attachment #3 – Drawing sheet #21 (E-4): SJCUD Standard Lift Station Electrical Details

THE BID DUE DATE REMAINS April 25, 2018 AT 2:00 P.M.

Acknowledgment

4-25-18
Signature and Date

Wade Gibby, Pres.
Printed Name/Title

G+H Underground Const. Inc
Company Name (Print)

Sincerely,

Leigh A. Daniels, CPPB
Procurement Supervisor

END OF ADDENDUM NO. 1

CONSTRUCTORS QUALIFICATION QUESTIONNAIRE
ORGANIZATION AND BACKGROUND

Name: G & H Underground Construction Inc.

Address: 2200 N Ponce De Leon Blvd Ste 11 **City, State, Zip:** St. Augustine, Florida 32084

Phone: 904-829-8199 **Fax:** 904-810-0531

Fed I.D.# 06-1747700 **Contractors License Number:** CUC1224124

Date business formed: May 5, 2005 **Date Incorporated:** May 5, 2005

PRINCIPLE OFFICERS OF THE COMPANY

Name: Wade Gibby
Position: President / Owner
% of ownership: 50%
Experience: 40 years Sup. & GM

Name: Jeffery Hardwick
Position: Treasurer / Owner
% of Ownership: 50%
Experience: 36 years Sup. & GM

TYPE OF WORK PERFORMED:

Commercial	Roadwork
Excavation	Water System
Sewers	Storm Systems

GEOGRAPHICAL AREAS OF OPERATION:

St. Johns County	Volusia County
Duval County	Flagler County
Clay County	

LIST OF MOST RECENT CONTRACTS IN LAST TEN YEARS:

Uniflorida IV LLC 5975 Sunset Drive Miami, Fl. 33143	Contract Amount: 3,798,772.34 March 2017 - Present	Project: Villages of Seloy 3A & 3B
St Johns County Purchasing 500 San Sebastian View St Augustine, Fl .32084	Contract Amount:1,141,950.00 July 2017 - Present	Project: 16th Street Reclaimed Water Main & Force Main Improvements
St Johns County Purchasing 500 San Sebastian View St Augustine, Fl .32084	Contract Amount:530,240.00 June 30 2017 – Present	Project: Ocean Village Club Raintree, & Anastasia Oaks Lift Station
St Johns County Purchasing 500 San Sebastian View St Augustine, Fl .32084	Contract Amount:476,360.00 June 30 2017 – Present	Project: Ponce De Leon Villas, Raintree, & Anastasia Oaks Lift Station
St Johns County Purchasing 500 San Sebastian View St Augustine, Fl .32084	Contract Amount:362,942.97 March 2017 – November 2017	Project:Six Mile 1 Master Lift Station Improvements

Uniflorida IV LLC 5975 Sunset Drive Miami, Fl. 33143	Contract Amount: 1,343,702.90 March 2017 - Present	Project: Villages of Seloy 2B
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount: 561,213.72 February 2017- July 2017	Project: Davenport Park / County Library
St Johns County Purchasing 500 San Sebastian View St Augustine, Fl .32084	Contract Amount:191,816.05 November 2016 – July 2017	Project: Stone Gate Lift Station Improvements
R.B. Gay Construction P.O. Box 3995 Jacksonville, FL 32206 Contact: Alan Reeves	Contract Amount: $319,623.00 January 2017 - Present Phone: 904-354-8201	Project: 2nd St North Parking Lot Improvements Jacksonville Beach
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount: 267,799.20 July 2016 – January 2017	Project: Pump Station 50-51 Water Main Improvements
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount: 441,611.34 June 2016 - Jan 2017	Project: Sidney Storm Water Improvements
Petticoat Schmitt Civil Contractors 6380 Philips Hwy Jacksonville, Fl. 32216	Contract Amount:238,041.28 June 2016 – November 2016	Project: Racetrack Road Widening
Coastal Contracting 3491 Pall Mall Dr Ste 201 Jacksonville, FL. 32257	Contract Amount:397,704.51 April 2016 – September 2016	Project: Gates of St Johns
Uniflorida IV LLC 5975 Sunset Drive Miami, Fl. 33143	Contract Amount: 1,215,823.20 August 2016 - Present	Project: Villages of Seloy 2A
Uniflorida IV LLC 5975 Sunset Drive Miami, Fl. 33143	Contract Amount: 265,000 April 2016- Present	Project: Villages of Seloy Lift Station 1
St Johns County Purchasing 500 San Sebastian View St Augustine, Fl .32084	Contract Amount:294,305.00 April 2016 - Present	Project: Lift Station Imp Osprey & Sawgrass Marriott

Flores Construction Co. 5470 East Busch Blvd #511	Contract Amount: 280,521.00 March 2016 – Present	Project: City of Jacksonville Beach South Beach Park Pond Removal
City of Jacksonville Beach 11th North ThirdSt Jacksonville Beach, Fl. 32250	Contract Amount $ 1,303,131.40	Project: Ocean Forest Drainage Improvements
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount: 185,961.00	Project: Isla Drive Drainage Improvements
City of Atlantic Beach 1200 Sandpiper Lane Atlantic Beach. Fl. 32233	Contract Amount: 91,150.00	Project: Russell Park Multi Purpose Path
City of Atlantic Beach 1200 Sandpiper Lane Atlantic Beach. Fl. 32233	Contract Amount: 380,000.00	Project: Salt Air Neighborhood Storm Water Improvements
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount: 957,551.00	Project: Magnolia Ave Area Water Main Improvements
Petticoat Schmitt Civil Contractors 6380 Philips Hwy Jacksonville, Fl. 32216	Contract Amount: 807,729.08 November 2014 – September 2015	Project: Dobbs Rd / Kings Estate Rd
City of Jacksonville Beach 11th North ThirdSt Jacksonville Beach, Fl. 32250 Beach Infra.	Contract Amount $ 3,597,507.20 May 2013 – March 2015	Project: Williams Coastal Blvd Heights & South
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount $605,209.98	Project: Abbott Tract Utility Imp.
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount $50,842.00 July 2014 - September 2014	Project: Palmetto Ave City of St Augustine Maintenance

City of Jacksonville Beach 11th North Third St Jacksonville Beach, Fl. 32250	Contract Amount $ 865,868.86 February 2014 – January 2015	Project: Phase IIIB Improvements
City of St Augustine 75 King St St Augustine, Fl. 32085	Contract Amount $169,105.50	Project: North City Imp Old Mission Ave Water Main
C&D Construction, Inc P.O. Box 236577 Cocoa, Fl. 32923-6577	Contract Amount $445,369.53	Project: Avenida Menendez Seawall
City of Jacksonville Beach 11 North Third St Jacksonville, Fl. 32250	Contract Amount $633,010.00	Project : 12th Ave South Erosion Control
City of St Augustine 75 King St St Augustine , Fl. 32084	Contract Amount : $340,587.01	Project: Palmer St water Main Upgrade
City of Jacksonville Beach 11 North third St Jacksonville., Fl. 32250	Contract Amount $ 171,162.00	Project: Water main Valve Rep. Various Locations
City of St Augustine 75 King St St Augustine, Fl. 32084	Contract Amount $467,990.00	Project: Lincolnville Water Main Improvements
City of Jacksonville Beach 11 North Third St Jacksonville, Fl. 32250	Contract Amount $521,116.70 June 2012 – May 2013	Project : Duval Drive Roadway & Drainage Improvement
City of St Augustine 75 King St St Augustine , Fl. 32084	Contract Amount : $ 719,080.00	Project: Lift Station 51 & 52
City of Jacksonville Beach 11 North third Street Jacksonville, Fl. 32250	Contract Amount : $532,515.00	Project: Modification to LS # 3

City of St Augustine 75 King St St Augustine , Fl. 32084	Contract Amount : $ 268,275.00	Project: Storm Water Upgrades
City of Jacksonville Beach 11 North Third Street Jacksonville, FL 32250 Contact Junior Lilly	Contract Amount: $455,000.00 Phone: 904-247-6286	Project: Lake Mildred Storm Water Pump station
City of Jacksonville Beach 11 North Third Street Jacksonville, FL 32250 Contact Junior Lilly	Contract Amount: $455,000 Phone: 904-247-6286	Project: 2nd & 4th Ave North Water Main Imp.
City Of St Augustine 75 King Street St Augustine Fl, 32084 Attn: Marcus Pinson	Contract Amount: $44,750.00 Contract Amount:$55,559.00 Contract Amount: $37,391.00 Marcus Pinson: 904-209-4278	Project: Ribault Project: Andreas Project: North Matanzas
City Of St Augustine 75 King Street St Augustine Fl, 32084 Attn: Marcus Pinson	Contract Amount: $72,000.00 Phone: 904-209-4278	Project: Pump Station No 2 Rehabilitation
St Johns County 2446 Dobbs Rd St Augustine, Fl. 32086 Aaron Zambo	Contract Amount: $413,953.00 Phone: 904-209-2628	Project: Sevilla Gardens Sewer System Improvements
St Johns County 2446 Dobbs Rd St Augustine, Fl. 32086 Aaron Zambo	Contract Amount: $838,393.40 Phone: 904-260-6288	Project: Woodland West Subdivision . Sewer System Imp.
City Of Palatka 201 North 2nd St Palatka, Fl. 32177 Daryl Myers	Contract Amount: $819,419.72 Phone: 904-260-6288	Project: Dunham Street Water Main Extension
Pat Cook Construction 1904 Manatee Ave W #300 Bradenton, FL 34205 Mark Coyne	Contract Amount: $100,650.00 Phone: 941-749-1959	Project: Wards Creek & Timberlin Creek Elementary Sewer/Gravity

City of Atlantic Beach Project 800 Seminole Road Atlantic Beach, FL 32233 Contact: Rick Carper	Contract Amount: $39,252.68 Phone: 904-247-5834	Project: George Street Sidewalk and Drainage CDBG
St. Johns County BOCC 2740 Industry Center Road St. Augustine, FL 32084 Contact Joan Anderson	Contract Amount: $195,011.00 Phone: 904-209-0128	Project: Shores Blvd Pipe Replacement
St. Johns County BOCC 1205 SR 16 St. Augustine, FL 32084 Contact Robert Zammataro, PE	Contract Amount: $490,761.98 Phone: 904-209-2604	Project: Treasure Beach Water Main Improvements
City of St. Augustine P.O. Box 210 St. Augustine, FL 32085 Contact: Paul Spangler	Contract Amount: $21.529.00 Phone: 904-825-1042	Project: Pump Station 23 Repairs
City of Jacksonville Beach 11 North Third Street Jacksonville, FL 32250 Contact Junior Lilly	Contract Amount: $1,519,325.95 Phone: 904-247-6286	Project: Infrastructure Improvements Parts A, B & C
R.B. Gay Construction P.O. Box 3995 Jacksonville, FL 32206 Contact: Alan Reeves	Contract Amount: $778,727.87 Phone: 904-354-8201	Project: EOC
Ruggeri Construction 815 S.R. 206 East St. Augustine, FL 32086	Contract Amount: $156,960.00 Phone: 904-797-0201	Project: Forest Oaks
Halifax Paving P.O. Box 730549 Ormond Beach, FL. 32173 Contact: Ruth	Contract Amount: $ 2,350,000	Project: Conservatory
PCI 3702 Olson Drive Daytona Beach, FL. 32124 Contact: Cathy Cobb	Contract Amount: $ 1,070,000 Phone: 386-258-3807	Project: Old Kings Road Tymber Creek
R.B. Gay Construction P.O. Box 3995 Jacksonville, FL. 32206 Contact: George Durance	Contract Amount: $ 1,010,000 Phone: 904-354-8201	Project: St. Johns Co. Fire & Rescue

Cats Paw Marina Contract Amount: $ 327,000 Project: Cats Paw Marina
220 Nix Boat Yard Rd.
St. Augustine, FL. 32086
Contact: Sonya Jenson Phone: 904-829-0840

Lucas Marine Contract Amount: $ 172,400 Project: FLA # *8 Shoreline
1100 Shelter Ave.
Jacksonville, FL. 32250
Contact: Frank Subjenski Phone: 904-246-6017

Largest work on-hand position of company, at any one time was $ 2,500,000

ADDITIONAL REFERENCES:

Dennis Deprise
11 North Third St
City of Jacksonville Beach
Jacksonville Beach, 32250
Email : ddupries@jaxbchfl.net
904-247-6286

Bill Mendez
City of St Augustine
75 King St
St Augustine. Fl. 32085
Email: bmendez@citystaug.com
904-825-1040

Rueben Franklin
City of St Augustine
75 King St
St Augustine, Fl. 32085
Email: rfranklin@citystaug.com
904-209-4279

Marcus Pinson
City of St Augustine
75 King St
St Augustine, Fl. 32085
Email: mpinson@citystaug.com
904-823-2204

Brian Hepburn
Edmunds & Associates
1100 Cesery Terrace
Jacksonville, Fl. 32211
Email: bhepburn@jonesedmunds.com
904-744-5401

April 3, 2018

ADDENDUM #1

To: **Prospective Bidders**
From: **St. Johns County Purchasing Department**

Subject: **Bid No. 18-57, Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades**

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3. Remove Sheet E-4 and replace with Addendum #1 Attachment #3: SJCUD Standard Lift Station Electrical Details

Attachments:

Attachment #1 – Drawing sheet #5 (C-1.03): Ocean Oaks (PS53) Plan, Section, and Details

Attachment#2 – Drawing sheet #8 (C-1.06): Food Lion (79) Plan, Section, and Details

Attachment #3 – Drawing sheet #21 (E-4): SJCUD Standard Lift Station Electrical Details

THE BID DUE DATE REMAINS April 25, 2018 AT 2:00 P.M.

Acknowledgment

_____
Signature and Date

_____
Printed Name/Title

_____
Company Name (Print)

Sincerely,

Leigh A. Daniels, CPPB
Procurement Supervisor

END OF ADDENDUM NO. 1

Attachment #1

Ocean Oaks (PS 53)

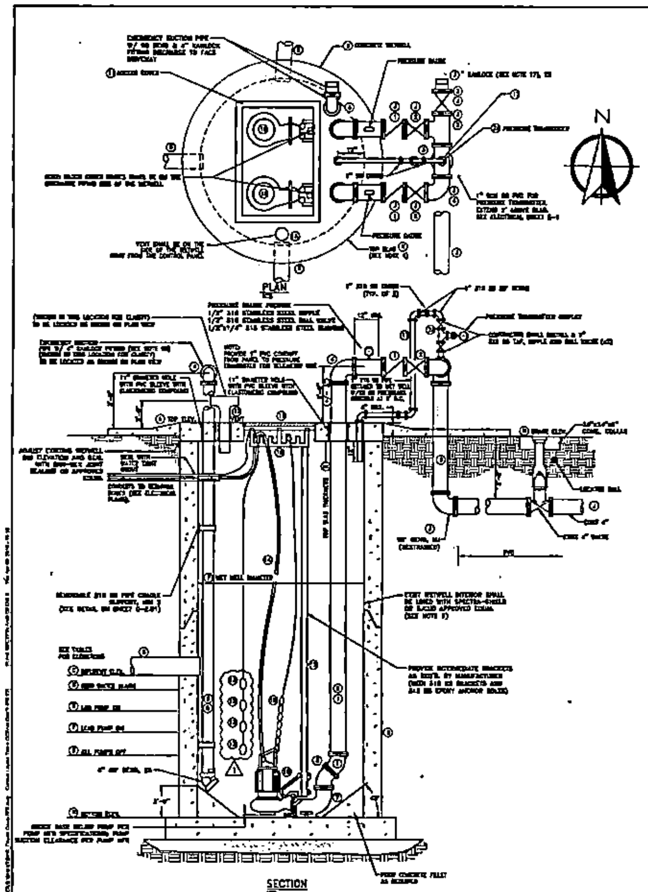
Plan, Section, and Details

Sheet No: 5

Addendum #1

Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades

Bid No. 18-57



LIFT STATION

STATION ELEVATIONS

STATION INFORMATION

PUMP INFORMATION

MECHANICAL EQUIPMENT SCHEDULE

REVISIONS

JACOBS

St. Johns County Utility Department

OCEAN OAKS (PS 53)
PLAN, SECTION AND DETAILS

Attachment #2

Food Lion (79)

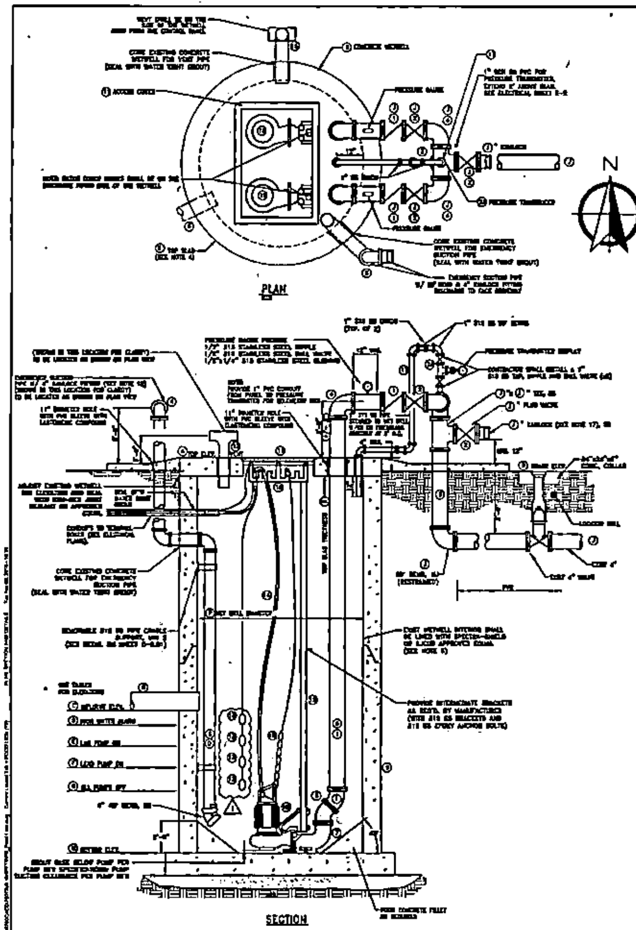
Plan, Section, and Details

Sheet No: 8

Addendum #1

Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades

Bid No. 18-57



LIFT STATION

STATION ELEVATIONS

STATION INFORMATION

PUMP INFORMATION

MECHANICAL EQUIPMENT SCHEDULE

NOTES:

REVISIONS		

JACOBS

St. Johns County
Utility Department

FOOD LION (79)
PLAN, SECTION AND DETAILS

C-1.08

Attachment #3

SJCUD Standard Lift Station

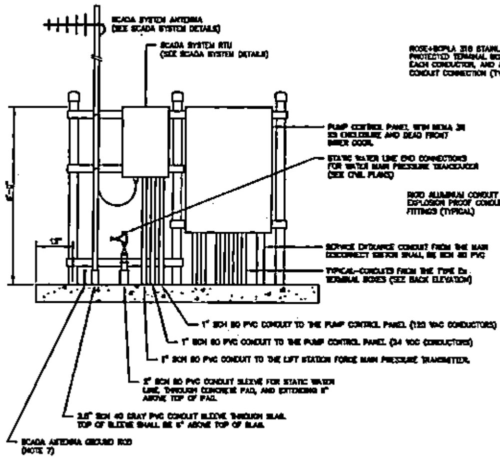
Electrical Details

Sheet No: 21

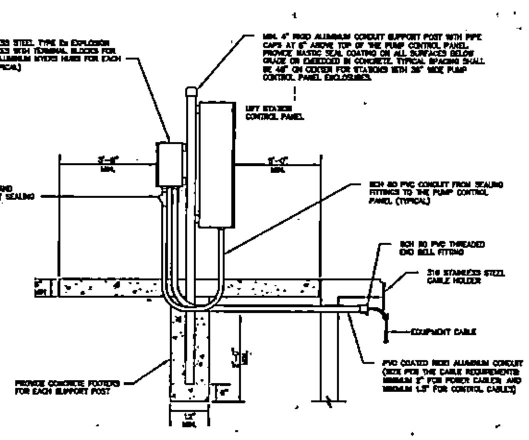
Addendum #1
Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades
Bid No. 18-57

NOTES

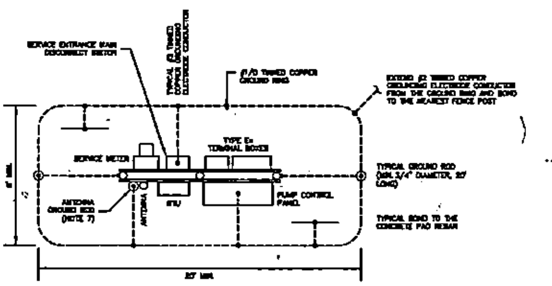
1. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL PRE-CONSTRUCTION COORDINATION SITE MEETING WITH SJCUD AND THE ELECTRICAL DESIGN ENGINEER TO COORDINATE SITE SPECIFIC REQUIREMENTS OF THE ELECTRICAL EQUIPMENT INSTALLATION.
2. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL ROUGH-IN SITE INSPECTION WITH SJCUD 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 250.53, ENCIRCLING THE ELECTRICAL SERVICE EQUIPMENT, CONSISTING OF CONTINUOUS #2/0 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. 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.



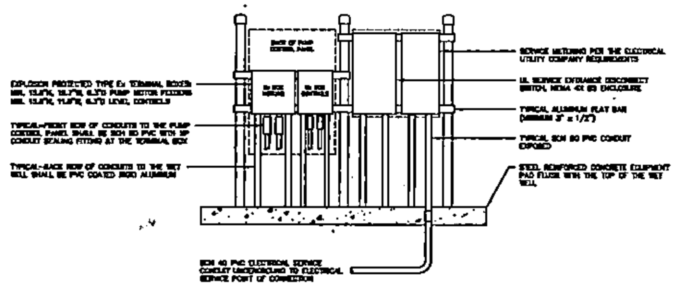
FRONT ELEVATION



SIDE VIEW



ELECTRICAL EQUIPMENT GROUNDING SYSTEM DETAIL
NOT TO SCALE



BACK ELEVATION

TYPICAL LIFT STATION ELECTRICAL EQUIPMENT INSTALLATION DETAIL
NOT TO SCALE

NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS

St. Johns County Utility Department

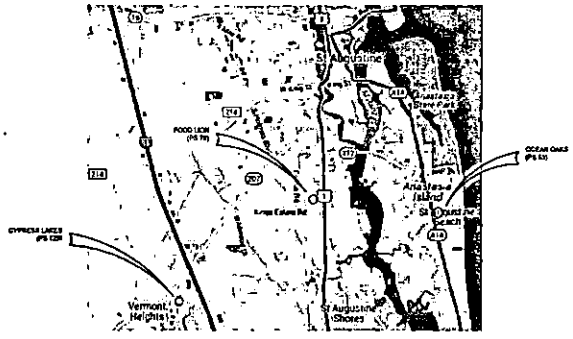
SJCUD STANDARD LIFT STATION
ELECTRICAL DETAILS

OCEAN OAKS (PS 53), FOOD LION (PS 79), CYPRESS LAKES (PS 125) LIFT STATION UPGRADES

PREPARED FOR

ST. JOHNS COUNTY UTILITY DEPARTMENT

ST. JOHNS COUNTY, FL



Vicinity Map

UTILITIES

PREPARED BY:

JACOBS

JACOBS ENGINEERING GROUP INC.
200 W. FORSYTH STREET, SUITE 1520
JACKSONVILLE, FL 32202
PHONE: 904.636.5422
FAX: 904.636.5433
COA#2822

811 FOR BURIED UTILITY INFORMATION THREE (3) BUSINESS DAYS BEFORE YOU DIG CALL 811

ISSUED FOR BID

MARCH 2018

NO	BY	DATE	SYMBOL	REVISIONS

JACOBS

St. Johns County Utility Department

COVER SHEET

GENERAL SITE NOTES:

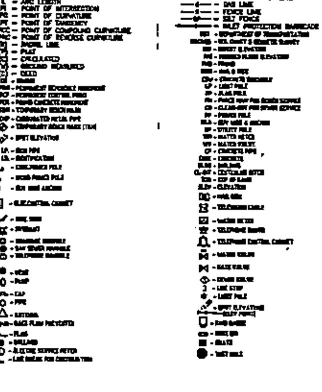
1. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER. ALL SAFETY RULES AND GUIDELINES OF OSHA SHALL BE FOLLOWED. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ANY INJURIES OF HIS EMPLOYEES, AND FOR ANY DAMAGE TO PRIVATE PROPERTY OR PERSONS DURING THE COURSE OF THIS PROJECT. ALL COSTS ASSOCIATED WITH COMPLYING WITH OSHA REGULATIONS AND THE FLORIDA TRENCH SAFETY ACT MUST BE INCLUDED IN THE CONTRACTORS BID.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE JOB SITE PRIOR TO PREPARING THE BID FOR THE PURPOSE OF FAMILIARIZING HIMSELF WITH THE NATURE AND EXTENT OF THE WORK AND LOCAL CONDITIONS, EITHER SURFACE OR SUB-SURFACE, WHICH MAY AFFECT THE WORK TO BE PERFORMED, AND THE EQUIPMENT, LABOR AND MATERIALS REQUIRED. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE PERFORMANCE UNDER THE CONSTRUCTION CONTRACT. THE CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA (811) FOR UTILITY LOCATES IN ACCORDANCE WITH STATE LAW PRIOR TO EXCAVATING. THE CONTRACTOR IS ALSO URGED TO TAKE COLOR PHOTOGRAPHS ALONG THE ROUTE OF OR WITHIN THE PROJECT TO RECORD EXISTING CONDITIONS PRIOR TO CONSTRUCTION, AND TO AID IN RESOLVING POSSIBLE FUTURE ISSUES THAT MAY OCCUR DUE TO THE CONSTRUCTION OF THE PROJECT.
3. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING STRUCTURES, IMPROVEMENTS, UTILITIES, PROPERTY LINES, AND CONFIRM ALL PROPOSED DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCING ANY CONSTRUCTION OR ORDERING ANY MATERIALS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING A PERMANENT STAND OF SOD AND/OR GRASS PER ST. JOHNS COUNTY LDC AND STANDARDS AND MEETING THE NPDES FINAL STABILIZATION REQUIREMENTS.
5. THE LOCATION OF ALL EXISTING UTILITIES, STRUCTURES AND IMPROVEMENTS SHOWN ON THE DRAWINGS IS BASED ON LIMITED INFORMATION AND MAY NOT HAVE BEEN FIELD VERIFIED. THE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL NOTIFY RESPECTIVE UTILITY OWNERS AND FIELD VERIFY LOCATIONS OF EXISTING UTILITIES AND OTHER IMPROVEMENTS PRIOR TO COMMENCING ANY CONSTRUCTION. IF THE LOCATIONS SHOWN ARE CONTRARY TO THE ACTUAL LOCATIONS, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF THE DISCREPANCY. THIS DISCREPANCY SHALL BE RESOLVED PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN AREAS NEAR EXISTING UTILITIES AND IMPROVEMENTS SHALL BE RESPONSIBLE FOR AND SHALL REPAIR OR PAY FOR ALL DAMAGE MADE TO EXISTING UTILITIES OR OTHER IMPROVEMENTS. CONTRACTOR SHALL VERIFY ALL GRADES, INVERTS AND TYPE OF MATERIAL OF EXISTING UTILITIES TO WHICH HE SHALL CONNECT, AND NOTIFY THE OWNER AND ENGINEER OF ANY DISCREPANCIES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSURANCE REQUIRED FOR THE PROJECT INCLUDING ST. JOHNS COUNTY RIGHT-OF-WAY PERMITS FOR WORK IN THE COUNTY RIGHT-OF-WAY OR EASEMENT. CONTRACTOR IS RESPONSIBLE FOR CONTROL OF SEDIMENTATION AND RUNOFF RESULTING FROM RAINFALL EVENTS DURING THE CONSTRUCTION OF THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH REGULATORY PERMITS ISSUED FOR THE PROJECT.
7. THE CONTRACTOR SHALL COORDINATE THE WORK WITHIN RIGHT-OF-WAY WITH THE APPROPRIATE AGENCIES FOR MAINTENANCE OF TRAFFIC AND METHOD OF CONSTRUCTION & REPAIR.
8. IF DEWATERING CAPACITY REQUIRES A CONSUMPTIVE USE PERMIT (C.U.P.) IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE PERMIT THROUGH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND THE ENGINEER FOR APPROVAL OF ALL DEWATERING OPERATIONS PRIOR TO COMMENCEMENT.
9. PRIOR TO ANY DISCHARGE OF GROUND WATER (DEWATERING) FROM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT TO WATERS OF THE STATE (INCLUDING, BUT NOT LIMITED TO , WETLANDS, SWALES AND MUNICIPAL STORM SEWERS), THE CONTRACTOR SHALL TEST THE EFFLUENT (WATER TO BE DISCHARGED) IN ACCORDANCE WITH RULE 62-621.300(2), F.A.C. IF THE TEST RESULTS ON THE EFFLUENT ARE BELOW THE SCREENING VALUES OF RULE 62-621.300(2), F.A.C., THE CONTRACTOR SHALL SUBMIT A SUMMARY OF THE PROPOSED CONSTRUCTION ACTIVITY AND THE TEST RESULTS TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION DISTRICT OFFICE, WITHIN ONE (1) WEEK AFTER DISCHARGE BEGINS. THE CONTRACTOR SHALL CONTINUE TO SAMPLE THE EFFLUENT AS REQUIRED THROUGHOUT THE PROJECT AND COMPLY WITH ALL CONDITIONS OF RULE 62-621.300(2), F.A.C. IF THE GROUND WATER EXCEEDS THE SCREENING VALUES OF RULE 62-621.300(2), F.A.C., THE CONTRACTOR SHALL COMPLY WITH OTHER APPLICABLE RULES AND REGULATIONS PRIOR TO DISCHARGE OF THE EFFLUENT (GROUND WATER) TO SURFACE WATERS OF THE STATE.
10. ALL DEBRIS RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF OFF-SITE BY CONTRACTOR.
11. FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS REFER TO SHEETS C-2.03 AND C-2.04. THE CONTRACTOR IS TO COORDINATE WITH AUTHORITY FOR INSPECTIONS PRIOR TO CLEARING OPERATIONS.
12. ELEVATIONS ARE BASED ON N.A.V.D. 1988.
13. ALL WORK AND MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH ALL RELATIVE SECTIONS OF THE PROJECT SPECIFICATIONS AND ALL CURRENT ST. JOHNS COUNTY UTILITY DEPARTMENT MANUAL OF WATER, WASTEWATER, AND REUSE DESIGN STANDARDS & SPECIFICATIONS AND STANDARD DETAILS AND REQUIREMENTS OF OTHERS HAVING JURISDICTION.
14. ALL UNSUITABLE MATERIAL AND EXCESS SUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR UNLESS DIRECTED OTHERWISE BY THE ENGINEER OR OWNER.
15. WITHIN 48 HOURS PRIOR TO START OF CLEARING OR CONSTRUCTION ACTIVITIES, THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING THE NPDES NOTICE OF COMMENCEMENT AND NOTICE OF TERMINATION APPLICATIONS TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL PLANT MATERIAL REMOVED OR DAMAGED DURING CONSTRUCTION ACTIVITIES INCLUDING, BUT NOT LIMITED TO: TREES, SHRUBS, GRASSES, TURF, MULCHING, ETC.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL IRRIGATION SYSTEMS REMOVED OR DAMAGED DURING CONSTRUCTION ACTIVITIES.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY DAMAGED PAVEMENT, CURB & GUTTER, DRIVEWAYS, OR SIDEWALK.
19. THE CONTRACTOR SHALL INSTITUTE A MAINTENANCE OF TRAFFIC PLAN FOR THE ROAD AND SIDEWALK THAT MINIMIZES DISRUPTION TO RESIDENTS AND PROVIDES FOR THEIR SAFETY.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TRAFFIC (TEMPORARY TRAFFIC CONTROL) IN ACCORDANCE WITH THE CURRENT EDITION OF THE FEDERAL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND FDOT DESIGN STANDARDS 600 SERIES. THE CONTRACTOR SHALL MAINTAIN TRAFFIC IN ACCORDANCE WITH AN APPROVED MAINTENANCE OF TRAFFIC (MOT) PLAN ("MOT PLAN") SUBMITTED BY THE CONTRACTOR, ON STREETS, ROADS, PRIVATE WAYS, AND WALKS. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR THE ADEQUACY AND SAFETY OF PROVISIONS MADE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PLACEMENT, MAINTENANCE AND REMOVAL OF THE MINIMUM NUMBER OF DEVICES REQUIRED BY THE MOT PLAN, OR SPECIFIED BY THE FDOT, FOR THE CONTROL OF TRAFFIC AT THE WORK LOCATION INCLUDING, BUT NOT LIMITED TO SIGNS, CONES, LIGHTS, BARRICADES, CONCRETE BARRIER WALLS, POLICE OFFICERS, FLAGGERS, ETC. ("MOT ITEMS").

UTILITY NOTES:

1. CONTRACTOR SHALL REFER TO SHEET GN-01 FOR SJCUD GENERAL NOTES. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCY BETWEEN SJCUD GENERAL NOTES AND THESE NOTES. THE MORE STRINGENT SHALL BE USED.
2. CONTRACTOR SHALL FURNISH AND INSTALL LOCATE WIRING ON ALL PVC FORCE MAINS. INSTALLATION SHALL BE IN ACCORDANCE WITH SJCUD STANDARDS AND SPECIFICATIONS, LATEST EDITION.
3. A SJCUD PRE-CONSTRUCTION CONFERENCE MUST BE HELD PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL CONTACT SJCUD TO SCHEDULE THIS CONFERENCE.
4. ALL ELECTRICAL CONDUIT WORK SHALL BE COMPLETED PRIOR TO THE PRESSURE TESTING OF FORCE MAINS. ALL PRESSURE TESTING SHALL BE WITNESSED BY SJCUD AND THE ENGINEER.
5. CONTRACTOR SHALL PRESSURE TEST FORCE MAINS IN ACCORDANCE WITH SJCUD MANUAL OF WATER, WASTEWATER AND REUSE DESIGN STANDARDS AND SPECIFICATIONS SECTION 3.8.1.
6. ALL UTILITY MAINS SHALL BE FLUSHED IN ACCORDANCE WITH AND UNDER THE DIRECTION OF SJCUD.
7. ALL GATE VALVES SHALL MEET SJCUD'S MANUAL OF WATER, WASTEWATER, AND REUSE DESIGN STANDARDS AND SPECIFICATIONS PART III SECTION 3.13. VALVES SHALL BE MECHANICAL JOINT, CAST IRON, BRONZE FITTED WITH RESILIENT SEAT. ALL VALVES SHALL OPEN BY TURNING TO THE LEFT.
8. IF SOLVENT CONTAMINATION IS FOUND IN THE PIPE TRENCH, WORK SHALL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH APPROVAL OF THE PERMITTING AGENCY, DUCTILE IRON PIPE, FITTINGS AND SOLVENT RESISTANT GASKET MATERIAL SUCH AS FLUOROCARBON SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE SHALL EXTEND AT LEAST 100 FEET BEYOND ANY SOLVENT NOTED. ANY CONTAMINATED SOIL THAT IS EXCAVATED SHALL BE PLACED ON AN IMPERMEABLE MAT AND COVERED WITH A WATERPROOF COVERING. THE PROPER AUTHORITIES WILL BE NOTIFIED AND THE CONTAMINATED SOIL HELD FOR PROPER DISPOSAL.
9. ALL UTILITY MAINS ARE DESIGNED TO FINISHED GRADES AND SHALL BE PROTECTED UNTIL WORK IS COMPLETED AND ACCEPTED BY SJCUD.
10. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING SILT FENCE, HAY BALES, AND FILTER FABRIC INSIDE DRAINAGE STRUCTURES SHALL BE REMOVED PRIOR TO FINAL INSPECTION, UNLESS OTHERWISE DIRECTED BY THE OWNER OR ENGINEER.
11. THESE DRAWINGS MAY NOT SHOW ALL OF THE STANDARD DETAILS REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY THAT THE CONSTRUCTION IS IN ACCORDANCE WITH ALL CURRENT ST. JOHNS COUNTY AND SJCUD STANDARD DETAILS AND SPECIFICATIONS. THE CONTRACTOR SHALL OBTAIN A COPY OF THE ST. JOHNS COUNTY STANDARD DETAILS AND SPECIFICATIONS FROM THE DEPARTMENT OF PUBLIC WORKS AS WELL AS A COPY OF THE ST. JOHNS COUNTY UTILITIES STANDARD DETAILS AND SPECIFICATIONS PRIOR TO BEGINNING CONSTRUCTION.
12. ALL JOINTS SHALL BE RESTRAINED ON NEW PIPING, INCLUDING AT CONNECTIONS TO EXISTING PIPING.
13. THE INSTALLATION OF BELL HARNESS RESTRAINTS AT PVC JOINTS SHALL BE COMPLETED PER THE MANUFACTURERS RECOMMENDATION, WHICH INCLUDES NOT OVER TIGHTENING THE PARALLEL RODS/NUTS. THESE NUTS SHOULD ONLY BE SNUG TIGHT. THE HOME MARKS ON THE PIPE SHOULD ALWAYS BE VISIBLE AFTER THE RESTRAINT IS INSTALLED. OVERHOMING THE JOINT MAY CAUSE A FAILURE AT THE BELL RESULTING IN A SERVICE OUTAGE.

ABBREVIATIONS:

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	OC	ON CENTER
APPROX	APPROXIMATE	OHE	OVERHEAD ELECTRIC
ARV	AIR RELEASE VALVE	PLCD	PEDESTRIAN LONGITUDINAL CHANNELIZING DEVICE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	PVC	POLYVINYL CHLORIDE
CLR	CLEAR	PS	PUMP STATION
CONC	CONCRETE	PSI	POUNDS PER SQUARE INCH
CONT	CONTINUOUS	RJ	RESTRAINED JOINT
DBH	DIAMETER AT BREAST HEIGHT	RPZ	REDUCED PRESSURE ZONE
DI	DUCTILE IRON	R/W	RIGHT-OF-WAY
DIA	DIAMETER	SAN	SANITARY SEWER
DR	DIMENSION RATIO	SCH	SCHEDULE
EL	ELEVATION	SF	SQUARE FEET
EW	EACH WAY	SJC	ST. JOHNS COUNTY
EXIST	EXISTING	SJCUD	ST. JOHNS COUNTY UTILITY DEPARTMENT
FL	FLANGE	SS, SST	STAINLESS STEEL
FM	FORCE MAIN	T&B	TOP AND BOTTOM
FPL	FLORIDA POWER AND LIGHT	TYP	TYPICAL
LF	LINEAR FEET	UE	UNDERGROUND ELECTRIC
LG	LONG	WWF	WELDED WIRE FABRIC
MAX	MAXIMUM	WWR	WELDED WIRE REINFORCEMENT
MES	MITERED END SECTION	XFMR	TRANSFORMER
MFR	MANUFACTURER		
MIN	MINIMUM		
MJ	MECHANICAL JOINT		
N.A.V.D.	NORTH AMERICAN VERTICAL DATUM		
NPT	NATIONAL PIPE THREAD		
NTS	NOT TO SCALE		



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NO.	BY	DATE	SYMBOL	REVISIONS

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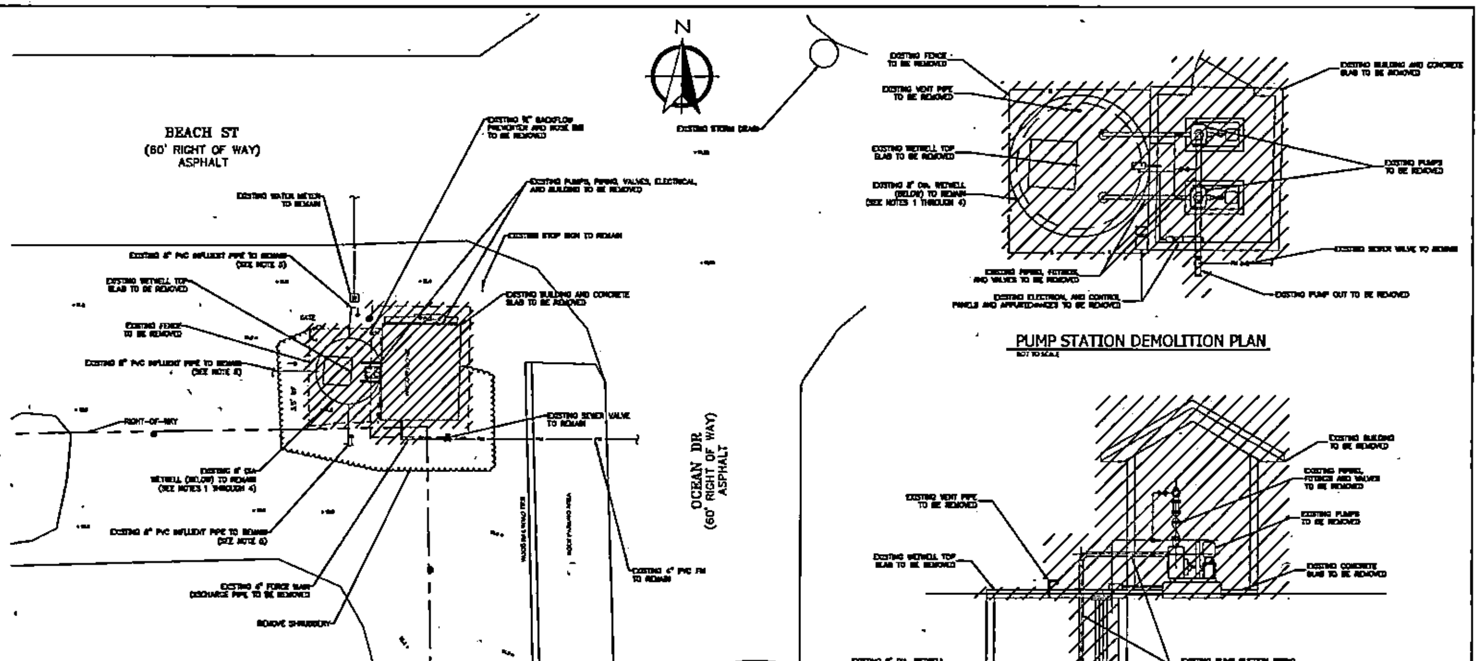
St. Johns County Utility Department

GENERAL NOTES, ABBREVIATIONS AND LEGEND



NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BYPASS PUMPING DURING THE INTERRUPTION OF FLOWS AND CONNECTIONS WITH THE EXISTING WASTEWATER SYSTEM TO ENSURE THAT THE COLLECTION SYSTEM FUNCTIONS CONTINUOUSLY UNDER NORMAL CONDITIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS PLAN TO SJCUD FOR APPROVAL PRIOR TO IMPLEMENTATION BY THE CONTRACTOR. THE TEMPORARY BYPASS PUMPS SHALL BE EQUAL TO OR GREATER THAN THE EXISTING PUMP CAPACITY AND A 100% BACKUP REDUNDANT PUMP ONSITE TO ENSURE CONTINUOUS OPERATION OF BYPASS PUMP SYSTEM. THE TEMPORARY BYPASS PUMPS SHALL BE OUTFITTED WITH AN AUTODIALER TO CONTACT THE CONTRACTOR IN THE EVENT OF A HIGH LEVEL OR PUMP FAILURE. THE CONTRACTOR SHALL ROUTE BYPASS PIPING TO MAINTAIN TRAFFIC AND PEDESTRIAN FLOW AND NOT ADVERSELY AFFECT THE REMAINING SANITARY SEWER SYSTEM. THE CONTRACTOR IS RESPONSIBLE TO ADDRESS ANY SPILL IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
2. SJCUD CAN PROVIDE UP TO 2 DAYS OF VACTOR TRUCK SERVICE FOR THE CONTRACTOR'S BYPASSING OPERATIONS DURING THE WETWELL LINER INSTALLATION. THE CONTRACTOR SHALL PROVIDE SJCUD A MINIMUM OF 5 DAYS NOTICE FOR VACTOR TRUCK SERVICE NEEDS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A VACUUM TRUCK TO PROPERLY DISPOSE OF ALL SEWAGE AND DEBRIS FROM THE WETWELL.
4. ALL EXISTING EQUIPMENT TO BE REMOVED SHALL BE CLEANED AND RETURNED TO SJCUD UNLESS OTHERWISE DIRECTED.
5. PIPES APPEAR TO BE 8" DIAMETER, CONTRACTOR TO VERIFY.
6. SEE SITE PLAN SHEET C-1.02 FOR EROSION AND SEDIMENT CONTROL.

NO.	BY	DATE	SYMBOL	REVISIONS

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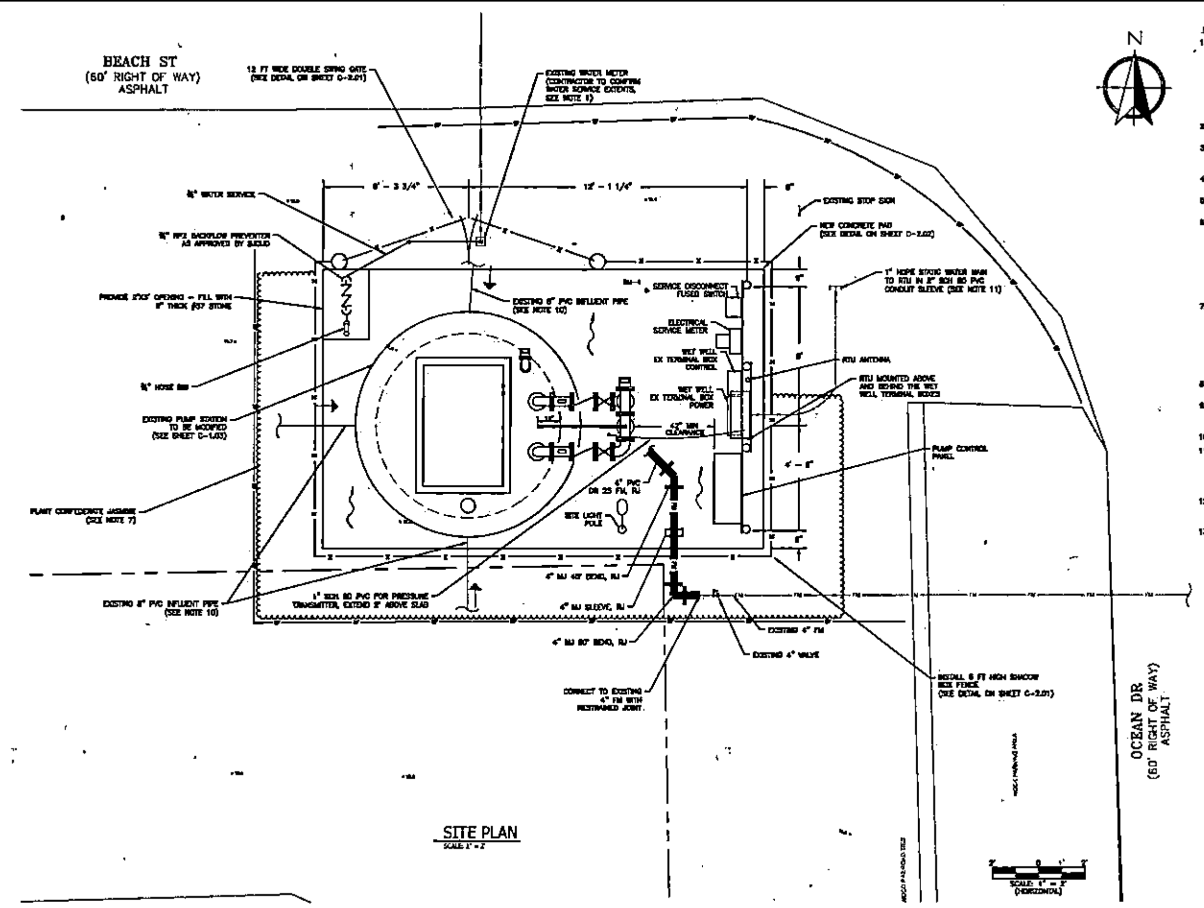
St. Johns County Utility Department

OCEAN OAKS (PS 53)
DEMOLITION PLANS AND SECTION

NO. SHEETS	24
SHEET NO.	3
DRAWING NO.	D-1.01



SITE PLAN
SCALE: 1" = 2'

NOTES:

1. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OR ORDERING ANY MATERIALS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR EXISTING UTILITIES. CONTRACTOR SHALL MAINTAIN MINIMUM COVER AND SEPARATION REQUIREMENTS AT ALL CROSSINGS AND SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGED UTILITIES. EXISTING UTILITIES INCLUDE, BUT ARE NOT LIMITED TO: RECLAIMED WATER MAIN, FORCE MAINS, GAS MAIN, WATER MAIN AND SERVICE LINE, AND UNDERGROUND ELECTRIC.
2. SEE SHEETS C-2.03 & C-2.04 FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS.
3. INLETS WITHIN 500 FT OF THE SITE TO BE PROTECTED. CONTRACTOR TO VERIFY INLET LOCATIONS PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL INSTALL SYNTHETIC HAY BALES OR SEDIMENT FILTER AROUND EACH INLET.
5. CONTRACTOR SHALL PROVIDE SYNTHETIC HAY BALES AT ALL DEWATERING SUMPS.
6. SILT FENCE, SYNTHETIC HAY BALES, AND OTHER ELEMENTS SHOWN HEREON ARE GRAPHICAL REPRESENTATIONS AND ARE NOT MEANT TO BE EXACT. GENERALLY, THESE OBJECTS ARE INSTALLED OUTSIDE LIMITS OF UPLAND BUFFERS, WITHIN PROJECT BOUNDARY AND OUTSIDE LIMITS OF CONSERVATION AREAS. IT IS UP TO THE CONTRACTOR TO LOCATE ALL UPLAND BUFFERS PRIOR TO CLEARING. CONTRACTOR SHALL PLACE THESE ELEMENTS AS CLOSE AS PRACTICAL WITHOUT DISTURBING UPLAND BUFFERS OR ADJACENT PROPERTIES.
7. CONTRACTOR SHALL REMOVE EXISTING FOLIAGE AS INDICATED ON DRAWING C-1.01. CONTRACTOR TO PLANT CONFEDERATE JASMINE ALONG THE FENCE ON THE WEST, SOUTH AND HALF OF THE EAST SIDE WITH THE INTENT THAT THE JASMINE WILL EVENTUALLY GROW AROUND THE FENCE. CONTRACTOR SHALL INSTALL SEVEN (7) GALLON PLANTS WITH TRELLISES AND THREE VINES PER PLANT. THE PLANTS SHALL BE INSTALLED FOUR (4) FEET ON CENTER AND WATERED BY THE CONTRACTOR UNTIL THEY ARE ESTABLISHED.
8. CONTRACTOR SHALL SOD ALL DISTURBED AREAS WITH MATERIAL MATCHING THE EXISTING TURF.
9. CONTRACTOR SHALL TAKE MEASURES TO KEEP ROAD CLEAR OF SEDIMENT. IF EXCESS SEDIMENT IS ON ROADWAY, CONTRACTOR SHALL USE STREET SWEEPER TO REMOVE.
10. PIPES APPEAR TO BE 8" DIAMETER, CONTRACTOR TO VERIFY.
11. 2" SCH 80 PVC CONDUIT SLEEVE FOR STATIC WATER LINE, THROUGH CONCRETE PAD, AND EXTENDING TO 6" ABOVE TOP OF PAD, LONG RADIUS ELLS ONLY. SEE SHEET E-1 FOR LOCATION. FOR RTU END CONNECTION SEE DETAIL ON SHEET C-2.01; CAP OTHER END FOR FUTURE CONNECTION.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL IRRIGATION SYSTEMS REMOVED OR DAMAGED DURING CONSTRUCTION ACTIVITIES.
13. THE CONTRACTOR SHALL HAVE A FLORIDA REGISTERED SURVEYOR LOCATE AND STAKE THE PROPERTY LINES AND EASEMENT LINES PRIOR TO ANY SITE WORK COMMENCING.

NO.	BY	DATE	SYMBOL	REVISIONS

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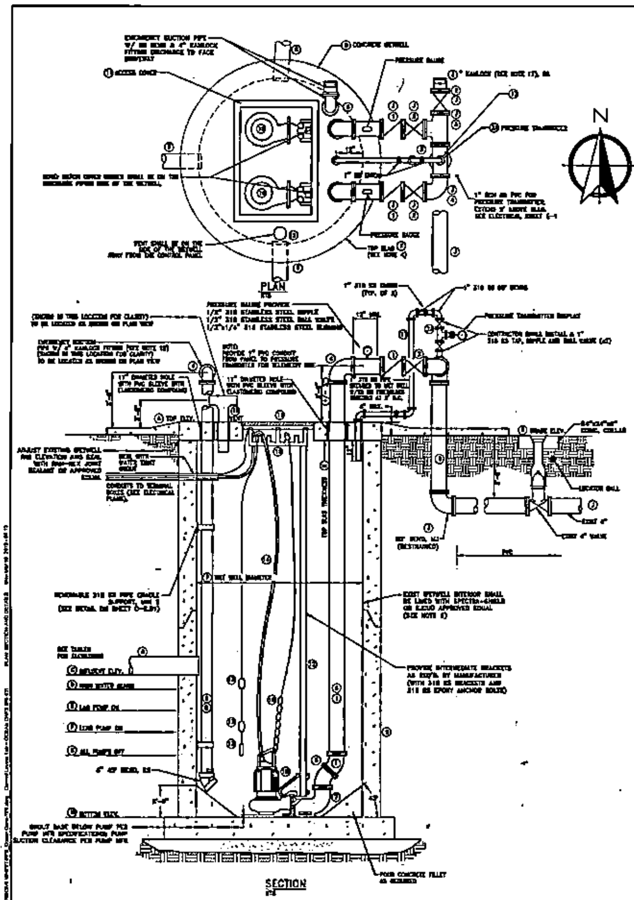
St. Johns County Utility Department

OCEAN OAKS (PS 53)
SITE PLAN

NO. SHEETS 24
SHEET NO. 4
DRAWING NO. C-1.02



LIFT STATION

STATION ELEVATIONS	
(A) TOP ELEVATION	[illegible] +/-
(B) GRADE ELEVATION	11.8' +/-
(D) INFLUENT INVERT 1, 2, 3	[illegible]
(E) HIGH WATER ALARM	SEE NOTE 21
(C) LAG PUMP ON (NO. 2)	SEE NOTE 21
(F) LEAD PUMP ON (NO. 1)	SEE NOTE 21
(G) ALL PUMPS OFF	SEE NOTE 21
(H) BOTTOM OF WET WELL	[illegible]
STATION INFORMATION	
(I) PUMP DISCHARGE PIPING SIZE	4"
(J) FORCE MAIN PIPING SIZE	4"
(K) TOP SLAB THICKNESS (MIN)	8"
(L) SIDE WALL THICKNESS (MIN)	(EXIST)
(M) BOTTOM SLAB THICKNESS	(EXIST)
(N) BOTTOM SLAB DIAMETER (MIN)	(EXIST)
(P) WET WELL DIAMETER	6' DIA (EXIST)
(R) EMERGENCY SUCTION PIPING SIZE	4"

PUMP INFORMATION	
NUMBER OF PUMPS	2
PUMP MANUFACTURER	FLYGT
	[illegible]
PUMP MODEL	[illegible]
IMPELLER ID	[illegible]
DISCHARGE	[illegible] MOTOR RPM [illegible]
[illegible] HP [illegible] VOLTS [illegible] PHASE [illegible] HZ	
MANIFOLD COND.	[illegible] GPM AT [illegible] FT.TDH
RUN-OUT COND.	[illegible] GPM AT [illegible] FT.TDH
PUMP ACCESS HATCH SIZE	[illegible]
ELECTRICAL SERVICE AMPS (100 or 200)	[illegible]

MECHANICAL EQUIPMENT SCHEDULE

1. CHECK VALVE, [illegible] LEVER [illegible], LEVER AND SPRING OPERATED, IRON BODY, [illegible] MOUNTED
2. PLUG VALVE, CAST IRON BODY, LEVER ACTUATED (SEE NOTE 11)
3. CONTRACTOR TO INSTALL: (2)-1" 316 STAINLESS STEEL BALL VALVES [illegible] 316 STAINLESS STEEL TEE [illegible] DIAPHRAGM SEAL - SEE INSTRUMENTATION 1/2" X1/2" MALE TO MALE NIPPLE
4. 316 STAINLESS STEEL TEE, FLANGED
5. 316 STAINLESS STEEL SHORT RADIUS 90° BEND, FLANGED
6. 316 STAINLESS STEEL 45° BEND, FLANGED
7. 316 STAINLESS STEEL PIPE (SCH 40), FLANGED
8. DUCTILE IRON PUMP BASE
9. EXISTING PVC INFLUENT PIPES (SEE PLANS)
10. EXISTING CONCRETE WETWELL
11. PUMP (AS APPROVED BY ST. JOHNS COUNTY UTILITY DEPARTMENT)
12. ALUMINUM WETWELL ACCESS COVER (OPENING PER PUMP MANUFACTURER)
13. 316 STAINLESS STEEL GUIDE RAILS
14. LEVEL STICK, HIGH AND LOW ALARM FLOATS PROVIDED BY PUMP MANUFACTURER
15. PUMP MOTOR CABLE
16. 4" TEE SCHEDULE 80 PVC AIR VENT WITH PROTECTIVE SCREEN
17. 316 STAINLESS STEEL CABLE HOLDER
18. 1" STAINLESS BLOW OFF LINE TO WETWELL-[illegible] LINE TO WETWELL [illegible]
19. 1/4" STAINLESS STEEL [illegible] OF [illegible] (FLYGT [illegible] CONNECTOR).

NOTES:

1. ACCESS COVER FOR THE WETWELL SHALL BE A MINIMUM 1/4" ALUM. TREAD PLATE WITH STAINLESS STEEL HARDWARE. COVER SHALL BE RATED FOR 300 POUNDS PER SQUARE FOOT LOAD. COVER SHALL BE PROVIDED WITH LIFTING HANDLE, LOCKING HASP AND SAFETY LATCH TO HOLD COVERS OPEN. COVERS AND FRAME SHALL BE MANUFACTURED BY U.S. FOUNDRY CORP. OR APPROVED EQUAL. OPENING IN WETWELL SLAB AS PER MANUFACTURES SPECIFICATIONS.
2. ALL CONCRETE SHALL BE IN ACCORDANCE WITH THE STRUCTURAL DETAILS.
3. "J" BOLT MOUNTING HOLE AND CONDUIT HOLES SHALL BE CORE DRILLED IN THE FIELD AS PER SHOP DRAWINGS OR ACTUAL FIELD REQUIREMENTS.
4. THE CONCRETE TOP SLAB SHALL BE MINIMUM 4,000 PSI CONCRETE PRECAST WITH REINFORCED IN ACCORDANCE WITH THE STRUCTURAL DETAILS. THE PRECAST TOP SLAB SHALL INCORPORATE THE PUMP ACCESS HATCH PROVIDED BY THE PUMP MANUFACTURER AND HOLES AS SHOWN IN THE DRAWINGS FOR PIPE PENETRATIONS. THE ALUMINUM PUMP ACCESS HATCH SHALL BE ORIENTED SO THE HATCH OPENS TOWARDS THE DISCHARGE PIPING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE PRECAST WETWELL TOP.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ELECTRICAL POWER TO THE PUMPING STATION. THREE PHASE POWER IS REQUIRED. THIS WORK IS TO BE COORDINATED WITH FLORIDA POWER AND LIGHT.
6. CLEAN AND PREPARE THE SURFACE OF THE WETWELL IN ACCORDANCE WITH SPECIFICATION SECTION 09 90 00 AND THE APPROVED PROTECTIVE COATING SYSTEM MANUFACTURER'S RECOMMENDATIONS. SJCUD WILL MAKE THE DETERMINATION WHETHER STRUCTURAL RESTORATION IS REQUIRED PRIOR TO THE PROTECTIVE COATING APPLICATION. AFTER WETWELLS HAVE BEEN CLEANED AND PREPARED NOTIFY SJCUD FOR A STRUCTURAL RESTORATION DETERMINATION. LINE THE INTERIOR OF THE WETWELL WITH APPROVED PROTECTIVE COATING SYSTEM IN ACCORDANCE WITH SECTION 09 90 00 AND MANUFACTURER'S RECOMMENDATIONS. WHERE JOINT FILLER HAS DETERIORATED, APPLY SUFFICIENT BASE COAT MATERIAL TO BRING THE WETWELL BACK TO THE ORIGINAL DIMENSION. INSTALL WETWELL STRUCTURAL RESTORATION MATERIALS AND PROTECTIVE COATING SYSTEM PRIOR TO EQUIPMENT, PIPING, OR PUMP SUCTION PIPING INSTALLATION. THE COATING SYSTEM SHALL BE WARRANTED FOR A MINIMUM OF 10 YEARS FOR MATERIAL AND WORKMANSHIP.
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 AUDIBLE ALARM SHALL BE SUPPLIED AND INSTALLED BY THE "SYSTEM" SUPPLIER.
10. NOT USED.
11. PLUG VALVE OPERATOR SHALL BE MOUNTED PARALLEL TO GROUND AND FACE OUTWARD.
12. PLUG VALVE SEAT SHALL BE INSTALLED ADJACENT TO CHECK VALVE REGARDLESS OF FLOW ARROW ON VALVE.
13. RPZ BACKFLOW PREVENTER PIPING ABOVE GRADE SHALL BE THREADED BRASS WITH BRASS OR STAINLESS STEEL FITTINGS AND VALVES.
14. SITE GRADING SHALL PROVIDE FOR DRAINAGE OF WATER TO THE DRIVEWAY SIDE OF SITE.
15. SIZES SHOWN IN "STATION INFORMATION" ABOVE ARE MINIMUMS AND MAY NEED TO BE LARGER BASED ON SPECIFIC SITE DESIGN.
16. ALL ABOVE GRADE VALVES SHALL BE PAINTED FOREST GREEN (OIL BASED).
17. FOR PUMPS 47 HP AND LARGER, USE 6" STAINLESS STEEL KAMLOCK FITTINGS. FOR PUMPS LESS THAN 47 HP, USE 4" STAINLESS STEEL KAMLOCK FITTINGS.
18. ONE STAINLESS STEEL SUPPORT SHALL BE INSTALLED UNDER EACH PLUG VALVE. PROVIDE 1/4" NEOPRENE PAD BETWEEN PLUG VALVE AND SUPPORT.
19. ALL PIPE AND FITTINGS ABOVE GRADE AND WITHIN WETWELL SHALL BE FLANGED. ALL PIPE AND FITTINGS BELOW GRADE SHALL BE RESTRAINED MECHANICAL JOINT.
20. IN ADDITION TO THE SUBMERSIBLE PUMPS, THE PUMP SUPPLIER SHALL PROVIDE AN ACCESS HATCH, GUIDE RAILS W/ ACCESSORIES, PUMP BASES, CONTROL PANEL, LEVEL PROBE, FLOATS, TERMINAL BOXES, FUSED DISCONNECT SWITCH, AND ALL ANCILLARY EQUIPMENT PER SJCUD STANDARDS.
21. PUMP FLOAT ELEVATIONS AND OPERATING ELEVATIONS SHALL BE COORDINATED WITH SJCUD DURING CONSTRUCTION.
22. ALL STAINLESS STEEL PIPE AND FITTINGS MUST BE SCHEDULE 40. ALL HARDWARE AND ANCHOR BOLTS SHALL BE TYPE 316 STAINLESS STEEL.
23. ROTATE THE PRESSURE TRANSMITTER DISPLAY TO MATCH THE HORIZONTAL INSTALLATION. ROTATE THE PRESSURE TRANSMITTER MOUNTING TEE SUCH THAT THE PRESSURE TRANSMITTER DISPLAY FACES NORTH.

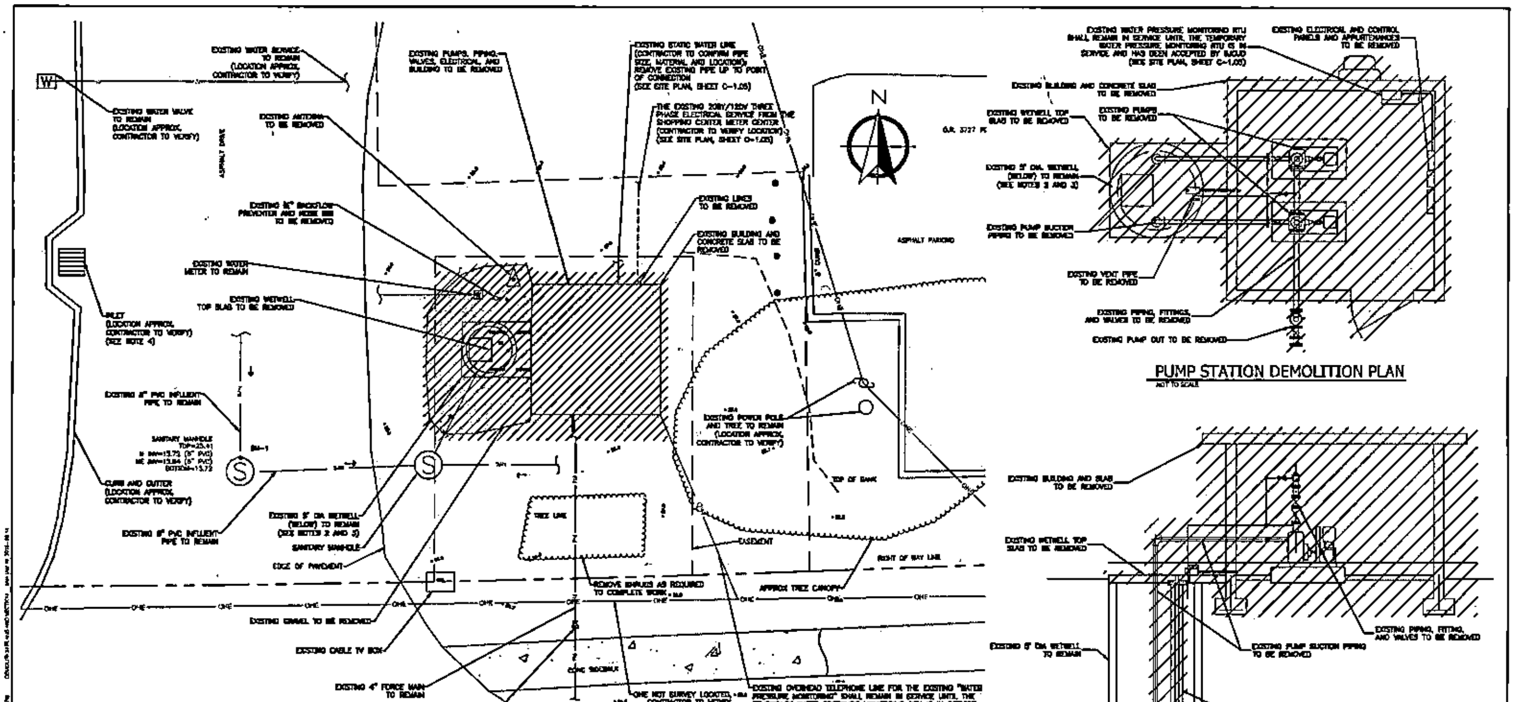
NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS — JACOBS PROJECT NO. [illegible], 200 W. FORSYTH STREET, SUITE 1520, JACKSONVILLE, FL 32202, PHONE: [illegible], COA [illegible]

St. Johns County Utility Department — 1205 STATE ROAD 16, ST. AUGUSTINE, FL 32084, PHONE: [illegible] FAX: [illegible]

OCEAN OAKS (PS 53)
PLAN, SECTION AND DETAILS

NO. SHEETS 24 — SHEET NO. 5 — DRAWING NO. C-1.03



NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BYPASS PUMPING DURING THE INTERRUPTION OF FLOWS AND CONNECTIONS WITH THE EXISTING WASTEWATER SYSTEM TO ENSURE THAT THE COLLECTION SYSTEM FUNCTIONS CONTINUOUSLY UNDER NORMAL CONDITIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS PLAN TO SJCUD FOR APPROVAL PRIOR TO IMPLEMENTATION BY THE CONTRACTOR. THE TEMPORARY BYPASS PUMPS SHALL BE EQUAL TO OR GREATER THAN THE EXISTING PUMP CAPACITY AND A 100% BACKUP REDUNDANT PUMP ONSITE TO ENSURE CONTINUOUS OPERATION OF BYPASS PUMP SYSTEM. THE TEMPORARY BYPASS PUMPS SHALL BE OUTFITTED WITH AN AUTODIALER TO CONTACT THE CONTRACTOR IN THE EVENT OF A HIGH LEVEL OR PUMP FAILURE. THE CONTRACTOR SHALL ROUTE BYPASS PIPING TO MAINTAIN TRAFFIC AND PEDESTRIAN FLOW AND NOT ADVERSELY AFFECT THE RECEIVING SANITARY SEWER SYSTEM. THE CONTRACTOR IS RESPONSIBLE TO ADDRESS ANY SPILL IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A VACUUM TRUCK TO PROPERLY DISPOSE OF ALL SEWAGE AND DEBRIS FROM THE WETWELL.
3. ALL EXISTING EQUIPMENT TO BE REMOVED SHALL BE CLEANED AND RETURNED TO SJCUD UNLESS OTHERWISE DIRECTED.
4. SEE SITE PLAN SHEET C-1.05 FOR EROSION AND SEDIMENTATION CONTROL.
5. SEE SITE PLAN SHEET C-1.05 FOR TEMPORARY RTU AND WATER MAIN PRESSURE TRANSMITTER.

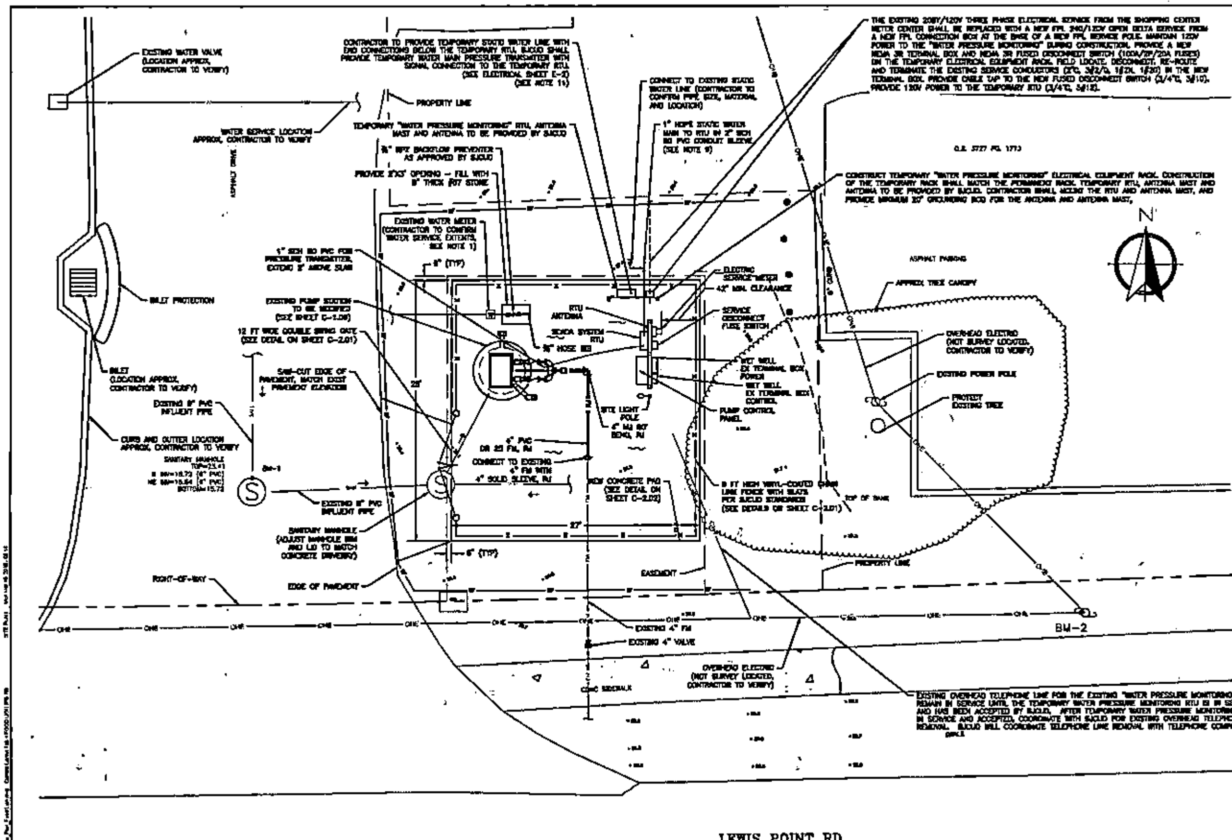
NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS

St. Johns County Utility Department

FOOD LION (PS 79)
DEMOLITION PLANS AND SECTION

DRAWING NO. C-1.04



NOTES:

1. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OR ORDERING ANY MATERIALS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR EXISTING UTILITIES. CONTRACTOR SHALL MAINTAIN MINIMUM COVER AND SEPARATION REQUIREMENTS AT ALL CROSSINGS AND SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGED UTILITIES. EXISTING UTILITIES INCLUDE, BUT ARE NOT LIMITED TO: RECLAIMED WATER MAIN, FORCE MAINS, GAS MAIN, WATER MAIN AND SERVICE LINE, AND UNDERGROUND ELECTRIC.
2. SEE SHEETS C-2.03 & C-2.04 FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS.
3. INLETS WITHIN 100 FT OF THE SITE TO BE PROTECTED. CONTRACTOR TO VERIFY INLET LOCATIONS PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL INSTALL SYNTHETIC HAY BALES OR SEDIMENT FILTER AROUND EACH INLET.
5. CONTRACTOR SHALL PROVIDE SYNTHETIC HAY BALES AT ALL DEWATERING SUMPS.
6. SILT FENCE, SYNTHETIC HAY BALES, AND OTHER ELEMENTS SHOWN HEREON ARE GRAPHICAL REPRESENTATIONS AND ARE NOT MEANT TO BE EXACT. GENERALLY, THESE OBJECTS ARE INSTALLED OUTSIDE LIMITS OF UPLAND BUFFERS, WITHIN PROJECT BOUNDARY AND OUTSIDE LIMITS OF CONSERVATION AREAS. IT IS UP TO THE CONTRACTOR TO LOCATE ALL UPLAND BUFFERS PRIOR TO CLEARING. CONTRACTOR SHALL PLACE THESE ELEMENTS AS CLOSE AS PRACTICAL WITHOUT DISTURBING UPLAND BUFFERS OR ADJACENT PROPERTIES.
7. CONTRACTOR SHALL SOD ALL DISTURBED AREAS WITH MATERIAL MATCHING THE EXISTING TURF.
8. CONTRACTOR SHALL TAKE MEASURES TO KEEP ROAD CLEAR OF SEDIMENT. IF EXCESS SEDIMENT IS ON ROADWAY, CONTRACTOR SHALL USE STREET SWEEPER TO REMOVE.
9. 2" SCH 80 PVC CONDUIT SLEEVE FOR STATIC WATER LINE, THROUGH CONCRETE PAD, AND EXTENDING TO 6" ABOVE TOP OF PAD, LONG RADIUS ELLS ONLY. SEE SHEET E-2 FOR LOCATION. FOR RTU END CONNECTION SEE DETAIL ON SHEET C-2.01; CONNECT OTHER END TO EXISTING STATIC WATER LINE (CONTRACTOR TO CONFIRM PIPE SIZE, MATERIAL, AND LOCATION).
10. THE CONTRACTOR SHALL HAVE A FLORIDA REGISTERED SURVEYOR LOCATE AND STAKE THE PROPERTY LINES AND EASEMENT LINES PRIOR TO ANY SITE WORK COMMENCING.
11. WATER MAIN PRESSURE MONITORING SHALL BE CONTINUOUS THROUGHOUT CONSTRUCTION. ANY MOMENTARY OUTAGES ON THE WATER MAIN PRESSURE MONITORING SHALL BE COORDINATED WITH AND APPROVED BY SJCUD. A MINIMUM NOTICE OF 5 WORKING DAYS IS REQUIRED FOR ANY MOMENTARY OUTAGES. WHEN THE NEW PUMP STATION AND PERMANENT RTU IS OPERATIONAL AND ACCEPTED BY SJCUD, REMOVE AND RETURN THE TEMPORARY RTU, TEMPORARY ANTENNA MAST AND ANTENNA, AND TEMPORARY WATER MAIN PRESSURE TRANSMITTER TO SJCUD.

LEWIS POINT RD
(COUNTY RIGHT OF WAY VARIES)
ASPHALT

SITE PLAN
SCALE: 1" = 5'

SCALE: 1" = 5' (HORIZONTAL)

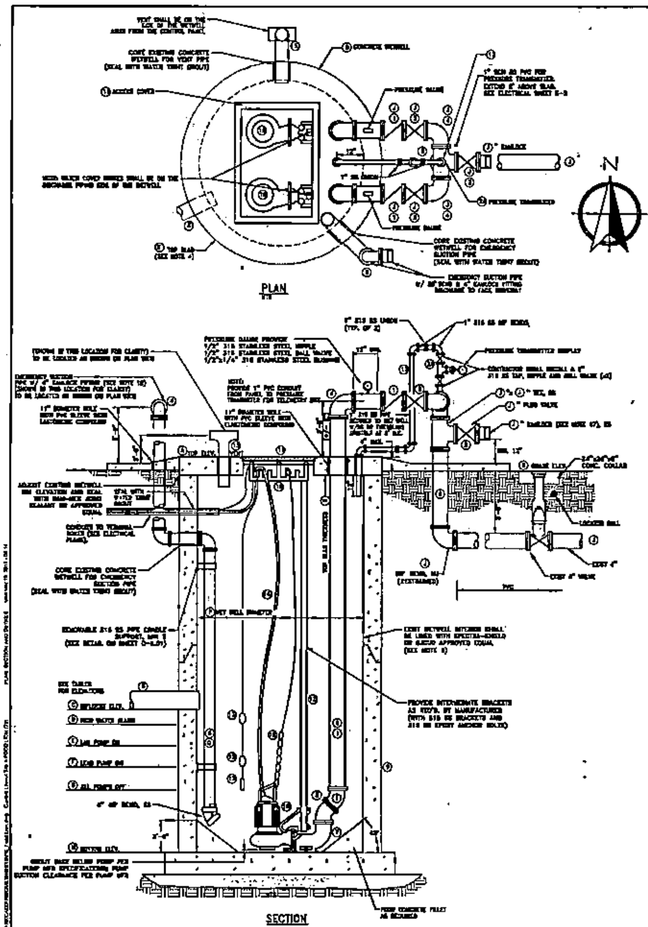
NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084

FOOD LION (PS 79)
SITE PLAN

DRAWING NO. C-1.05



LIFT STATION

STATION ELEVATIONS

STATION INFORMATION

PUMP INFORMATION

MECHANICAL EQUIPMENT SCHEDULE

NOTES:

JACOBS

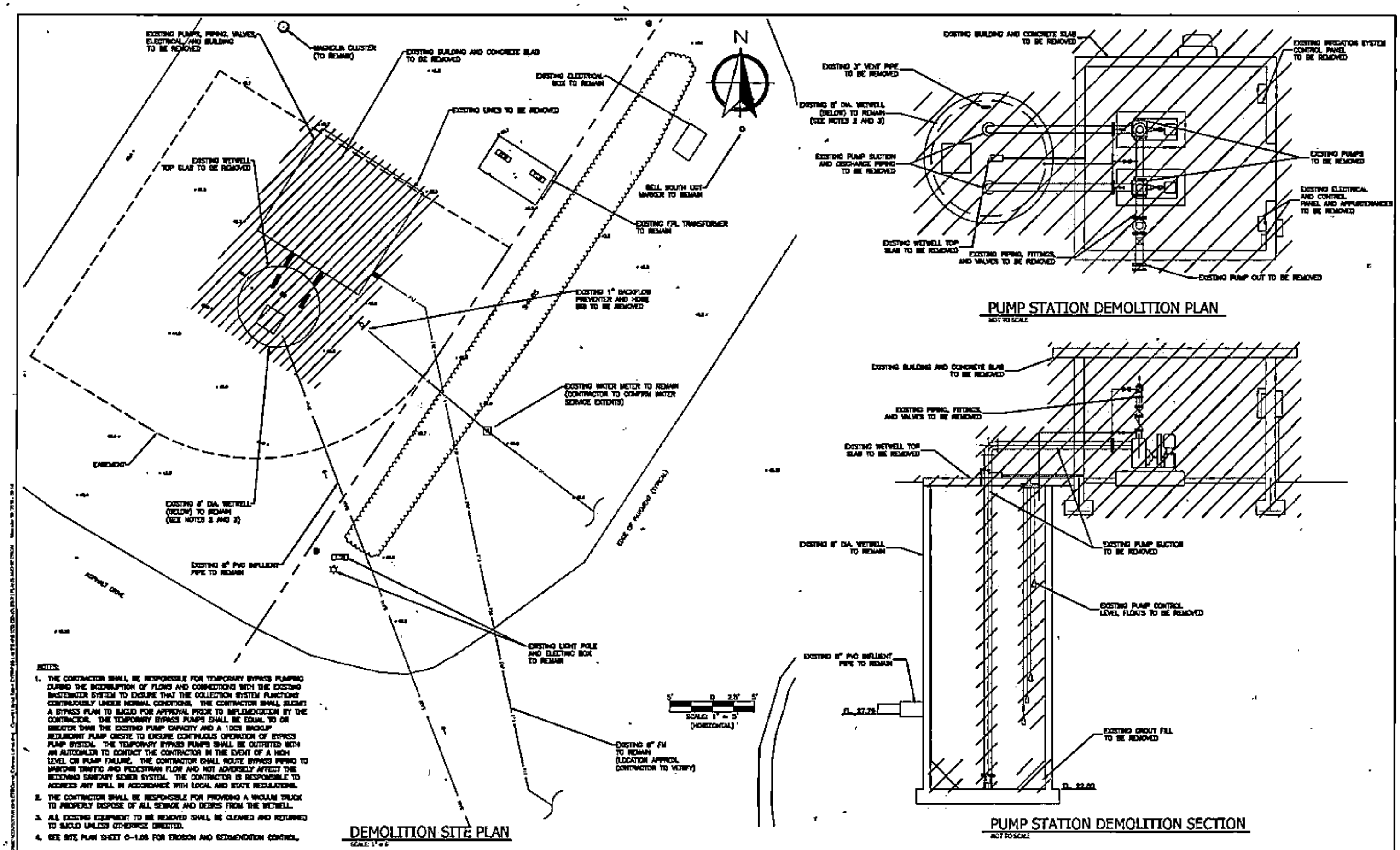
St. Johns County
Utility Department

FOOD LION (79)
PLAN, SECTION AND DETAILS

NO. SHEETS 24

SHEET NO. 8

DRAWING NO. C-1.06



NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY BYPASS PUMPING DURING THE INTERRUPTION OF FLOWS AND CONNECTIONS WITH THE EXISTING WASTEWATER SYSTEM TO ENSURE THAT THE COLLECTION SYSTEM FUNCTIONS CONTINUOUSLY UNDER NORMAL CONDITIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS PLAN TO SJCUD FOR APPROVAL PRIOR TO IMPLEMENTATION BY THE CONTRACTOR. THE TEMPORARY BYPASS PUMPS SHALL BE EQUAL TO OR GREATER THAN THE EXISTING PUMP CAPACITY AND A 100% BACKUP REDUNDANT PUMP ONSITE TO ENSURE CONTINUOUS OPERATION OF BYPASS PUMP SYSTEM. THE TEMPORARY BYPASS PUMPS SHALL BE OUTFITTED WITH AN AUTODIALER TO CONTACT THE CONTRACTOR IN THE EVENT OF A HIGH LEVEL OR PUMP FAILURE. THE CONTRACTOR SHALL ROUTE BYPASS PIPING TO MAINTAIN TRAFFIC AND PEDESTRIAN FLOW AND NOT ADVERSELY AFFECT THE RECEIVING SANITARY SEWER SYSTEM. THE CONTRACTOR IS RESPONSIBLE TO ADDRESS ANY SPILL IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A VACUUM TRUCK TO PROPERLY DISPOSE OF ALL SEWAGE AND DEBRIS FROM THE WETWELL.
3. ALL EXISTING EQUIPMENT TO BE REMOVED SHALL BE CLEANED AND RETURNED TO SJCUD UNLESS OTHERWISE DIRECTED.
4. SEE SITE PLAN SHEET C-1.08 FOR EROSION AND SEDIMENTATION CONTROL.

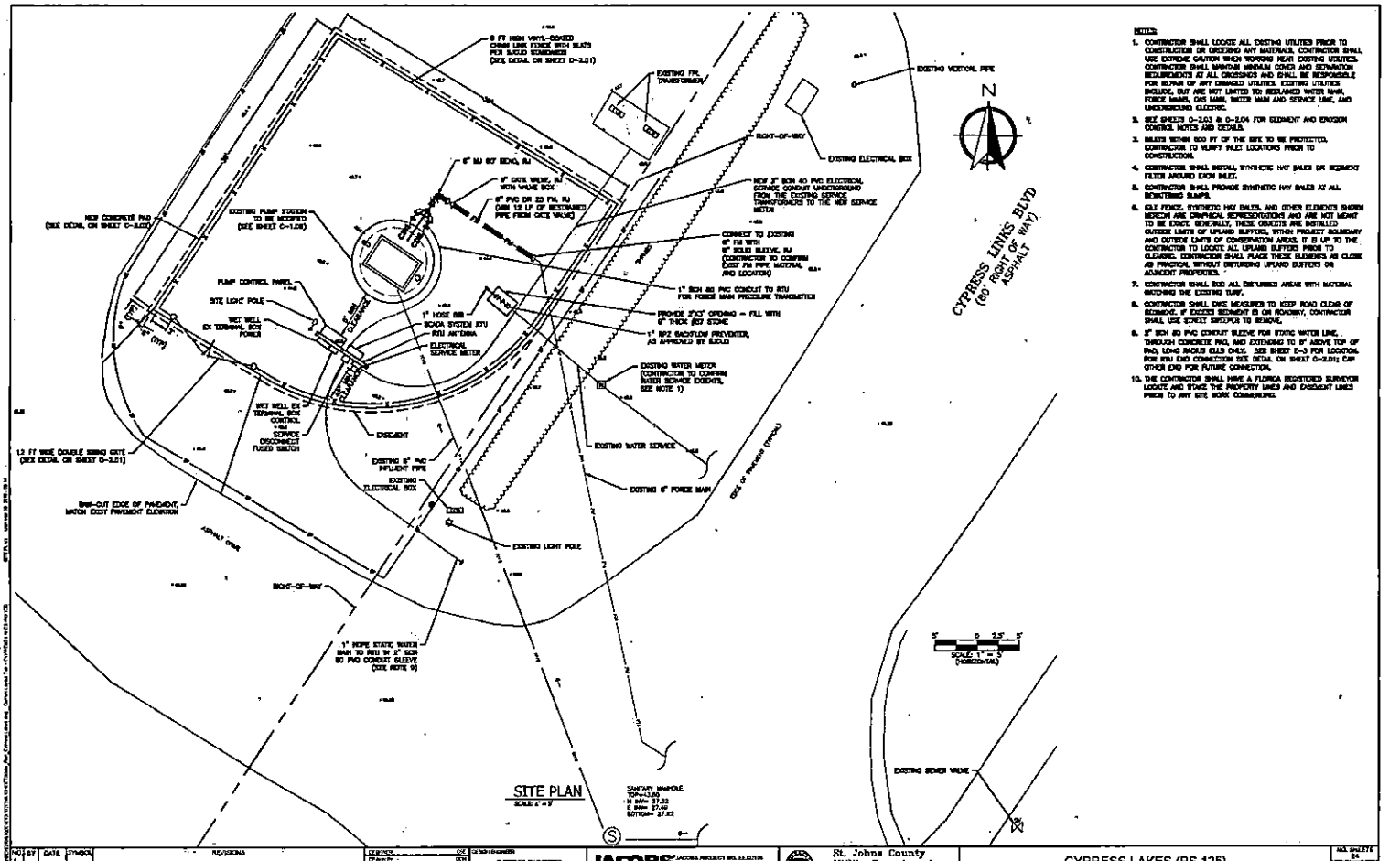
NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS — JACOBS PROJECT NO. [illegible] — 200 W. FORSYTH STREET, SUITE 1520, JACKSONVILLE, FL 32202 — PHONE 904.636.5432 — COA [illegible]

St. Johns County Utility Department — 1205 STATE ROAD 16, ST. AUGUSTINE, FL 32084 — PHONE: (904) 209-2626 FAX (904) 209-2627

CYPRESS LAKES (PS 125) DEMOLITION PLANS AND SECTION

NO. SHEETS 24 — SHEET NO. 5 — DRAWING NO. C-1.07



NOTES:

1. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION OR CROSSING ANY MATERIALS. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING NEAR EXISTING UTILITIES. CONTRACTOR SHALL MAINTAIN MINIMUM COVER AND SEPARATION REQUIREMENTS AT ALL CROSSINGS AND SHALL BE RESPONSIBLE FOR REPAIR OF ANY DAMAGED UTILITIES. EXISTING UTILITIES INCLUDE, BUT ARE NOT LIMITED TO: RECLAIMED WATER MAIN, FORCE MAINS, GAS MAIN, WATER MAIN AND SERVICE LINE, AND UNDERGROUND ELECTRIC.
2. SEE SHEETS C-3.03 & C-3.04 FOR SEDIMENT AND EROSION CONTROL NOTES AND DETAILS.
3. INLETS WITHIN 500 FT OF THE SITE TO BE PROTECTED. CONTRACTOR TO VERIFY INLET LOCATIONS PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL INSTALL SYNTHETIC HAY BALES OR SEDIMENT FILTER AROUND EACH INLET.
5. CONTRACTOR SHALL PROVIDE SYNTHETIC HAY BALES AT ALL DEWATERING SUMPS.
6. SILT FENCE, SYNTHETIC HAY BALES, AND OTHER ELEMENTS SHOWN HEREIN ARE GRAPHICAL REPRESENTATIONS AND ARE NOT MEANT TO BE EXACT. GENERALLY, THESE OBJECTS ARE INSTALLED OUTSIDE LIMITS OF UPLAND BUFFERS, WITHIN PROJECT BOUNDARY AND OUTSIDE LIMITS OF CONSERVATION AREAS. IT IS UP TO THE CONTRACTOR TO LOCATE ALL UPLAND BUFFERS PRIOR TO CLEARING. CONTRACTOR SHALL PLACE THESE ELEMENTS AS CLOSE AS PRACTICAL WITHOUT DISTURBING UPLAND BUFFERS OR ADJACENT PROPERTIES.
7. CONTRACTOR SHALL SOD ALL DISTURBED AREAS WITH MATERIAL MATCHING THE EXISTING TURF.
8. CONTRACTOR SHALL TAKE MEASURES TO KEEP ROAD CLEAR OF SEDIMENT. IF EXCESS SEDIMENT IS ON ROADWAY, CONTRACTOR SHALL USE STREET SWEEPER TO REMOVE.
9. 3" SCH 80 PVC CONDUIT SLEEVE FOR STATIC WATER LINE, THROUGH CONCRETE PAD, AND EXTENDING TO 6" ABOVE TOP OF PAD. LONG RADIUS ELLS ONLY. SEE SHEET C-3 FOR LOCATION. FOR RTU END CONNECTION SEE DETAIL ON SHEET C-3.01; CAP OTHER END FOR FUTURE CONNECTION.
10. THE CONTRACTOR SHALL HAVE A FLORIDA REGISTERED SURVEYOR LOCATE AND STAKE THE PROPERTY LINES AND EASEMENT LINES PRIOR TO ANY SITE WORK COMMENCING.

NO.	BY	DATE	SYMBOL	REVISIONS

DESIGNED	CJC
DRAWN BY	CJC
DATE	3/2011
CHECKED BY	JFC
DATE	7/2011

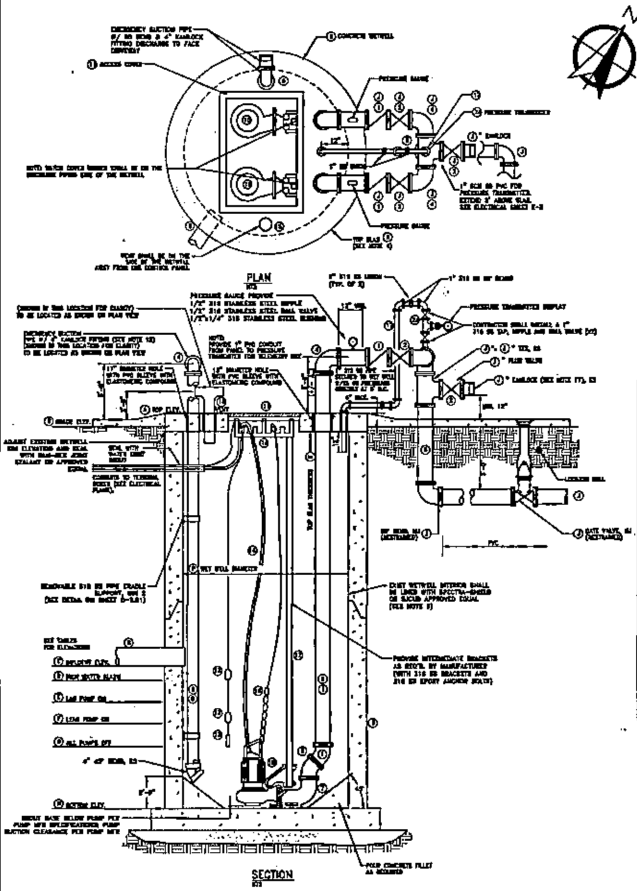
CJC 53011 ENGINEER
CHRISTINE S. CLEMENTEY
FLORIDA REGISTERED PROFESSIONAL
ENGINEER

JACOBS
JACOBS PROJECT NO. E2C02124
320 W. FORSYTH STREET, SUITE 1400
JACKSONVILLE, FL 32202
PHONE: 904.256.2500
COA #3823

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084
PHONE: (904) 209-2626 FAX: (904) 209-2627

CYPRESS LAKES (PS 125)
SITE PLAN

NO. SHEETS	34
SHEET NO.	10
DRAWING NO.	C-1.08



LIFT STATION

STATION ELEVATIONS	
(A) TOP ELEVATION	[illegible] +/-
(B) GRADE ELEVATION	[illegible] +/-
(C) INFLUENT INVERT	[illegible]
(D) HIGH WATER ALARM	SEE NOTE 21
(E) LAG PUMP ON (NO. 2)	SEE NOTE 21
(F) LEAD PUMP ON (ONLY)	SEE NOTE 21
(G) ALL PUMPS OFF	SEE NOTE 21
(H) BOTTOM OF WET WELL	[illegible]

STATION INFORMATION	
(I) PUMP DISCHARGE PIPING SIZE	[illegible]
(J) FORCE MAIN PIPING SIZE	[illegible]
(K) TOP SLAB THICKNESS (MIN)	[illegible]
(L) WET WELL THICKNESS (MIN)	[illegible]
(M) BOTTOM SLAB THICKNESS	[illegible]
(N) BOTTOM SLAB DIAMETER (MIN)	[illegible]
(O) WET WELL DIAMETER	[illegible]
(P) EMERGENCY SUCTION PIPING SIZE	[illegible]

PUMP INFORMATION	
NUMBER OF PUMPS	2
PUMP MANUFACTURER	FLYGT
PUMP MODEL	[illegible]
IMPELLER	[illegible]
DISCHARGE	[illegible]
MANUFACTURER COND.	[illegible]
RUN-OUT COND.	[illegible]
PUMP ACCESS HATCH SIZE	[illegible]
ELECTRICAL SERVICE AMPS	[illegible]

MECHANICAL EQUIPMENT SCHEDULE

1. CHECK VALVE, SWING-TYPE LEVER FACING OUTWARD, LEVER AND SPRING OPERATOR, IRON BODY, BRONZE SEATED
2. PLUG VALVE, CAST IRON BODY, LEVER ACTUATED (SEE NOTE 18)
3. CONTRACTOR TO INSTALL: (2)-1" 316 STAINLESS STEEL BALL VALVES; 1"x1" 316 STAINLESS STEEL TEE; 1"x1/2" DIAPHRAGM SEAL – SEE INSTRUMENTATION; 1/2"x1/2" MALE TO MALE NIPPLE
4. 316 STAINLESS STEEL TEE, FLANGED
5. 316 STAINLESS STEEL SHORT RADIUS 90° BEND, FLANGED
6. 316 STAINLESS STEEL 45° BEND, FLANGED
7. 316 STAINLESS STEEL PIPE (SCH 40), FLANGED
8. DUCTILE IRON PUMP BASE
9. EXISTING 8" PVC INFLUENT PIPE (SEE PLANS)
10. EXISTING CONCRETE WETWELL
11. PUMP (AS APPROVED BY ST. JOHNS COUNTY UTILITY DEPARTMENT), SEE NOTE 16.
12. ALUMINUM WETWELL ACCESS COVER (OPENING PER PUMP MANUFACTURER)
13. 316 STAINLESS STEEL GUIDE RAILS
14. LEVEL STICK, HIGH AND LOW ALARM FLOATS PROVIDED BY PUMP MANUFACTURER
15. PUMP MOTOR CABLE
16. 4" TEE SCHEDULE 80 PVC AS VENT WITH PROTECTIVE SCREENS
17. 316 STAINLESS STEEL CABLE HOLDER
18. 1" STAINLESS WASH OFF LINE TO WETWELL; LINE TO WETWELL SLAB WITH [illegible]
19. 1/4" STAINLESS STEEL CHAIN WITH 10" OF CHAIN LINKS (TURN SHOP TYPE CONNECTORS).

NOTES:

1. ACCESS COVER FOR THE WETWELL SHALL BE A MINIMUM 1/4" ALUM. TREAD PLATE WITH STAINLESS STEEL HARDWARE. COVER SHALL BE RATED FOR 300 POUNDS PER SQUARE FOOT LOAD. COVER SHALL BE PROVIDED WITH LIFTING HANDLE, LOCKING HASP AND SAFETY LATCH TO HOLD COVERS OPEN. COVERS AND FRAME SHALL BE MANUFACTURED BY U.S. FOUNDRY CORP. OR APPROVED EQUAL. OPENING IN WETWELL SLAB AS PER MANUFACTURES SPECIFICATIONS.
2. ALL CONCRETE SHALL BE IN ACCORDANCE WITH THE STRUCTURAL DETAILS.
3. "J" BOLT MOUNTING HOLE AND CONDUIT HOLES SHALL BE CORE DRILLED IN THE FIELD AS PER SHOP DRAWINGS OR ACTUAL FIELD REQUIREMENTS.
4. THE CONCRETE TOP SLAB SHALL BE MINIMUM 4,000 PSI CONCRETE PRECAST WITH REINFORCING IN ACCORDANCE WITH THE STRUCTURAL DETAILS. THE PRECAST TOP SLAB SHALL INCORPORATE THE PUMP ACCESS HATCH PROVIDED BY THE PUMP MANUFACTURER AND HOLES AS SHOWN IN THE DRAWINGS FOR PIPE PENETRATIONS. THE ALUMINUM PUMP ACCESS HATCH SHALL BE ORIENTED SO THE HATCH OPENS TOWARDS THE DISCHARGE PIPING. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE PRECAST WETWELL TOP.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ELECTRICAL POWER TO THE PUMPING STATION. THREE PHASE POWER IS REQUIRED. THIS WORK IS TO BE COORDINATED WITH FLORIDA POWER AND LIGHT.
6. CLEAN AND PREPARE THE SURFACE OF THE WETWELL IN ACCORDANCE WITH SPECIFICATION SECTION 09 96 [illegible] AND THE APPROVED PROTECTIVE COATING SYSTEM MANUFACTURER'S RECOMMENDATIONS. SJCUD WILL MAKE THE DETERMINATION WHETHER STRUCTURAL RESTORATION IS REQUIRED PRIOR TO THE PROTECTIVE COATING APPLICATION. AFTER WETWELLS HAVE BEEN CLEANED AND PREPARED NOTIFY SJCUD FOR A STRUCTURAL RESTORATION DETERMINATION. LINE THE INTERIOR OF THE WETWELL WITH APPROVED PROTECTIVE COATING SYSTEM IN ACCORDANCE WITH SECTION [illegible] AND MANUFACTURER'S RECOMMENDATIONS. WHERE JOINT FILLET HAS DETERIORATED, APPLY SUFFICIENT BASE COAT MATERIAL TO BRING THE WETWELL BACK TO THE DESIGNED DIMENSIONS. INSTALL WETWELL STRUCTURAL RESTORATION MATERIALS AND PROTECTIVE COATING SYSTEM PRIOR TO EQUIPMENT, PIPING, OR PUMP SUCTION PIPING INSTALLATION. THE COATING SYSTEM SHALL BE WARRANTED FOR A MINIMUM OF 10 YEARS FOR MATERIAL AND WORKMANSHIP.
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 AUDIBLE ALARM SHALL BE SUPPLIED AND INSTALLED BY THE "SYSTEM" SUPPLIER.
10. AT LEAST ONE PUMP SHALL BE EQUIPPED WITH A MIX-FLUSH VALVE, SEE SPECIFICATION SECTION 43 21 39.13.
11. PLUG VALVE OPERATOR SHALL BE MOUNTED PARALLEL TO GROUND AND FACE OUTWARD.
12. PLUG VALVE SEAT SHALL BE INSTALLED ADJACENT TO CHECK VALVE REGARDLESS OF FLOW ARROW ON VALVE.
13. RPZ BACKFLOW PREVENTER PIPING ABOVE GRADE SHALL BE THREADED BRASS WITH BRASS OR STAINLESS STEEL FITTINGS AND VALVES.
14. SITE GRADING SHALL PROVIDE FOR DRAINAGE OF WATER TO THE DRIVEWAY SIDE OF SITE.
15. SIZES SHOWN IN "STATION INFORMATION" ABOVE ARE MINIMUMS AND MAY NEED TO BE LARGER BASED ON SPECIFIC SITE DESIGN.
16. ALL ABOVE GRADE VALVES SHALL BE PAINTED FOREST GREEN (OIL BASED).
17. FOR PUMPS 47 HP AND LARGER, USE 6" STAINLESS STEEL KAMLOCK FITTINGS. FOR PUMPS LESS THAN 47 HP, USE 4" STAINLESS STEEL KAMLOCK FITTINGS.
18. ONE STAINLESS STEEL SUPPORT SHALL BE INSTALLED UNDER EACH PLUG VALVE, PROVIDE 1/4" NEOPRENE PAD BETWEEN PLUG VALVE AND SUPPORT.
19. ALL PIPE AND FITTINGS ABOVE GRADE AND WITHIN WETWELL SHALL BE FLANGED. ALL PIPE AND FITTINGS BELOW GRADE SHALL BE RESTRAINED MECHANICAL JOINT.
20. IN ADDITION TO THE SUBMERSIBLE PUMPS, THE PUMP SUPPLIER SHALL PROVIDE AN ACCESS HATCH, GUIDE RAILS W/ ACCESSORIES, PUMP BASES, CONTROL PANEL, LEVEL PROBE, FLOATS, TERMINAL BOXES, FUSED DISCONNECT SWITCH, AND ALL ANCILLARY EQUIPMENT PER SJCUD STANDARDS.
21. PUMP FLOAT ELEVATIONS AND OPERATING ELEVATIONS SHALL BE COORDINATED WITH SJCUD DURING CONSTRUCTION.
22. ALL STAINLESS STEEL PIPE AND FITTINGS MUST BE SCHEDULE 40. ALL HARDWARE AND ANCHOR BOLTS SHALL BE 316 STAINLESS STEEL.
23. ROTATE THE PRESSURE TRANSMITTER DISPLAY TO MATCH THE HORIZONTAL INSTALLATION. ROTATE THE PRESSURE TRANSMITTER MOUNTING TEE SUCH THAT THE PRESSURE TRANSMITTER DISPLAY FACES NORTH.

NO.	BY	DATE	SYMBOL	REVISIONS

DESIGNED BY: CDH — DRAWN BY: DDH — DATE — CHECKED BY: JWY — DATE: 5/XX/18

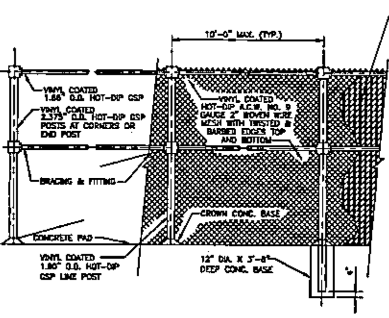
DESIGN ENGINEER: CHRISTINE S. ELLINGHOUSE — FLORIDA REGISTRATION NO. [illegible]

JACOBS JACOBS PROJECT NO. [illegible] — 200 W. FORSYTH STREET, SUITE 1520, JACKSONVILLE, FL 32202, PHONE: 904.636.5432, COA #2822

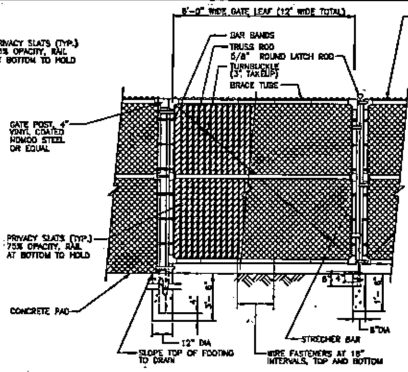
St. Johns County Utility Department — 1205 STATE ROAD 16, ST. AUGUSTINE, FL 32084 — PHONE: (904) 209-2620 FAX: (904) 209-2627

CYPRESS LAKES (PS 125)
PLAN, SECTION AND DETAILS

NO. SHEETS 24 — SHEET NO. 11 — DRAWING NO. C-1.09

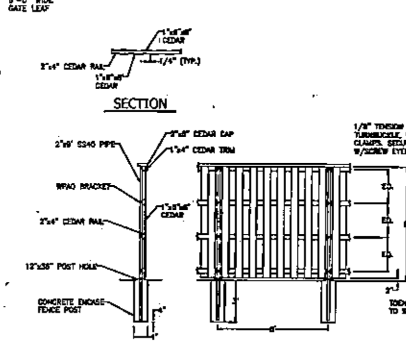


① TYPICAL FENCE DETAIL

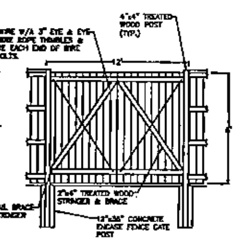


② CHAIN LINK DETAIL

NOTES:
1. ALL FENCING AND POSTS SHALL BE GREEN VINYL COATED.
2. THE LOCK HASP SHALL BE CAPABLE OF ACCEPTING A STANDARD COUNTY PADLOCK.

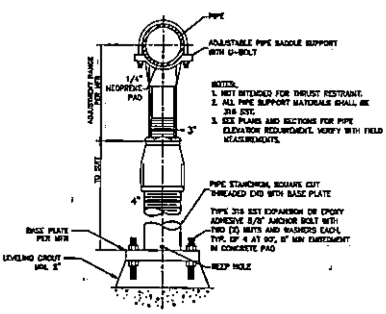


⑥ 6' SHADOW BOX PRIVACY FENCE DETAIL

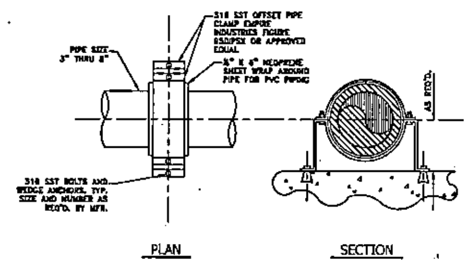


⑦ 6' PRIVACY FENCE GATE DETAIL

NOTES:
1. SHADOW BOX PRIVACY FENCE AND GATE SHALL BE STAINED BASED ON PROPERTY OWNER'S PREFERENCE.

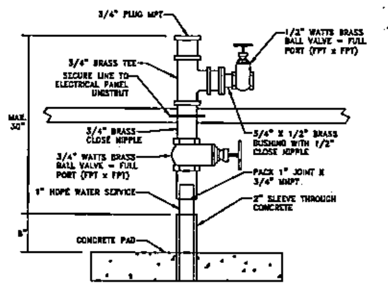


③ PIPE SUPPORT DETAIL



NOTES:
1. FOR ANCHORING TO STEEL USE 316 SST MACHINE BOLTS, WASHERS AND NUTS.
2. PROVIDE 316 SST INTERMEDIATE PIPE SUPPORT BRACKETS AND CLAMPS EVERY FIVE FEET OR AS REQUIRED BY MANUFACTURER. WHICHEVER IS MORE STRINGENT.
3. INSTALL 316 SST PIPE CLAMPS IN ACCORDANCE WITH PROTECTIVE WET WELL COATING MANUFACTURER RECOMMENDATIONS.

④ PIPE CRADLE SUPPORT



⑤ STATIC WATER LINE END CONNECTION DETAIL
(SEE ELECTRICAL DETAILS FOR LOCATION)

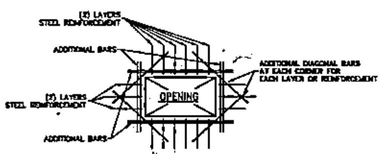
NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS — JACOBS PROJECT NO. EDX22104, JACKSONVILLE, FL

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084

MISCELLANEOUS DETAILS

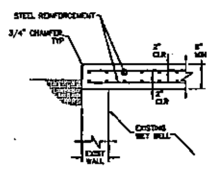
NO. SHEETS 24
SHEET NO. 12
DRAWING NO. C-2.01



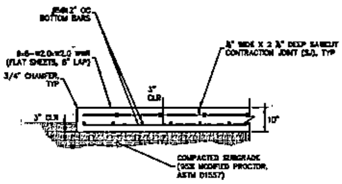
NOTE:

1. HOLES FOR OPENINGS AND PIPE PENETRATIONS IN TOP SLABS SHALL BE PREFORMED.
2. PROVIDE 2" MINIMUM EDGE DISTANCE, TYPICAL.
3. THE TOP SLAB SHALL BE DESIGNED BY A SPECIALTY ENGINEER FOR 300 PSF LIVE LOAD. COORDINATE ACCESS HATCH AND OPENINGS WITH OTHER DISCIPLINES.

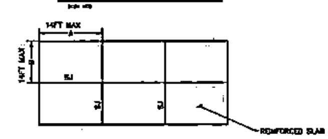
TYPICAL TOP SLAB OPENING REINFORCING DETAIL



TYPICAL TOP SLAB SECTION



TYPICAL DRIVEWAY AND AREA SLAB SECTION



NOTE:

1. LOCATE SAWCUT CONTRACTION JOINTS (SJ) EQUALLY SPACED AS REQUIRED TO LIMIT THE AREA OF "A" x "B" TO BE EQUAL TO OR LESS THAN 200 SF. AT LOCATIONS WHERE SLABS ARE CAST AGAINST EXISTING SLABS OR STRUCTURES PROVIDE 1/2" PREFORMED JOINT FILLER BETWEEN SLABS.
2. PROVIDE SILICONE JOINT SEALANT AT ALL JOINTS IN ACCORDANCE WITH ASTM D5893, AND TOOL ALL JOINTS.

JOINT PATTERN FOR DRIVEWAY AND AREA SLABS

NOTES FOR WETWELL TOP SLAB, CONCRETE DRIVEWAY AND AREA SLABS:

1. CONCRETE WORK SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-14), AND THE LATEST EDITION OF ACI 301 SPECIFICATIONS FOR STRUCTURAL CONCRETE.
2. THE DESIGN LIVE LOAD FOR THE TOP SLAB IS 300 POUNDS PER SQUARE FOOT.
3. TOP SLAB SHALL BE DESIGNED BY A SPECIALTY ENGINEER. THE CONTRACTOR SHALL SUBMIT PLANS AND CALCULATIONS SIGNED AND SEALED BY A FLORIDA PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL.
4. WETWELL TOP SLAB CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH (F'c) OF NOT LESS THAN 4000 PSI AT 28 DAYS. CONCRETE SLUMP SHALL BE 4 +/- 1 INCH. WATER/CEMENT RATIO SHALL NOT EXCEED 0.45.
5. DRIVEWAY AND AREA SLAB CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI AT 28 DAYS. CONCRETE SLUMP SHALL BE 4 +/- 1 INCH. WATER/CEMENT RATIO SHALL NOT EXCEED 0.50.
6. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, FOR TYPE II CEMENT. SUBMIT CONCRETE MIX DESIGNS FOR EACH FORMULATION OF CONCRETE WITH ADEQUATE SUPPORTING DATA TO DEMONSTRATE COMPLIANCE WITH ACI 301. INDICATE ON EACH SUBMITTAL WHERE THE MIX IS TO BE USED.
7. DEFORMED REINFORCING BARS SHALL COMPLY WITH SPECIFICATION ASTM A615, GRADE 60. WELDED WIRE REINFORCEMENT SHALL COMPLY WITH SPECIFICATION ASTM A1064, WITH A MINIMUM YIELD STRENGTH OF 65 KSI.
8. THE EXISTING WETWELL TOP SLAB SHALL BE REMOVED AND THE WALL SHALL BE CUT AS REQUIRED TO PROVIDE A LEVEL SURFACE FOR THE NEW TOP SLAB. SLAB TOP ELEVATION SHALL MATCH EXISTING TOP SLAB ELEVATION. THE CUT SURFACE OF THE WALLS SHALL BE SEALED WITH AN EPOXY GROUT.
9. THE TOP SLAB DIAMETER SHALL BE MATCH THE OUTSIDE DIAMETER OF THE WETWELL.
10. THE TOP SLAB SHALL INCORPORATE THE PUMP ACCESS HATCH PROVIDED BY THE PUMP MANUFACTURER AND HOLES AS SHOWN IN THE DRAWINGS FOR PIPE PENETRATIONS. THE ACCESS HATCH SHALL BE ORIENTED SO THE HATCH OPENS TOWARDS THE DISCHARGE PIPING.
11. THE ACCESS HATCH SHALL HAVE A MINIMUM LOAD CAPACITY OF 300 POUNDS PER SQUARE FOOT. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE ACCESS HATCH FOR REVIEW.
12. PROVIDE TROWEL FINISH TO TOP OF SLAB AND FOLLOW THE RECOMMENDATIONS OF THE CONCRETE SUPPLIER FOR CURING PROCEDURE.

NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS — JACOBS PROJECT NO. [illegible] 200 W. FORSYTH STREET, SUITE 1520 JACKSONVILLE, FL 32202 PHONE [illegible] COA [illegible]

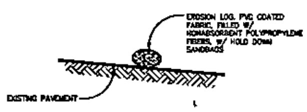
St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084
PHONE: (904) 209-2620 FAX: (904) 209-2627

STRUCTURAL DETAILS

NO. SHEETS 24 | SHEET NO. 13 | DRAWING NO. C-2.02

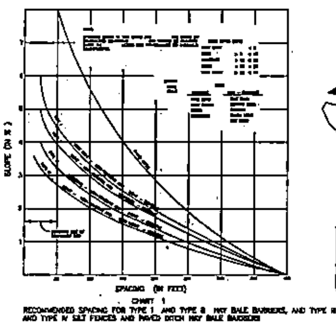
EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SILT FROM SITE IF NOT REUSABLE ON-SITE AND ASSURING PLAN ALIGNMENT AND GRADE IN ALL DITCHES AND SWALES AT COMPLETION OF CONSTRUCTION.
2. THE SITE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER COMPLETION OF CONSTRUCTION AND ONLY WHEN AREAS HAVE BEEN STABILIZED.
3. ADDITIONAL PROTECTION – ON-SITE PROTECTION IN ADDITION TO THE ABOVE MUST BE PROVIDED THAT WILL NOT PERMIT SILT TO LEAVE THE PROJECT CONFINES DUE TO UNSEEN CONDITIONS OR ACCIDENTS.
4. CONTRACTOR SHALL INSURE THAT ALL DRAINAGE STRUCTURES, PIPES, ETC. ARE CLEANED OUT AND WORKING PROPERLY AT TIME OF ACCEPTANCE.
5. WIRE MESH SHALL BE LAID OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS SHALL BE USED. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, THE STRIPS SHALL BE OVERLAPPED.
6. FDOT NO. 1 COARSE AGGREGATE SHALL BE PLACED OVER THE WIRE MESH AS INDICATED IN C-603. THE DEPTH OF STONE SHALL BE AT LEAST 12 INCHES OVER THE ENTIRE INLET OPENING. THE STONE SHALL EXTEND BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES.
7. IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT SO THAT IT NO LONGER ADEQUATELY PERFORMS ITS FUNCTION, THE STONES MUST BE PULLED AWAY FROM THE INLET, CLEANED AND REPLACED.
8. NECESSARY REPAIRS TO BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.
9. SILT FENCE SHALL BE TYPE III AT A MINIMUM. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
10. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
11. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
12. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
13. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
14. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/3 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
15. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
16. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL – A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION (F.D.E.R.) CHAPTER 6.
17. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION. SEE DETAIL SHEET FOR TYPICAL CONSTRUCTION.
18. ALL DISTURBED AREAS SHALL BE GRASSED, FERTILIZED, MULCHED AND MAINTAINED UNTIL A PERMANENT VEGETATIVE COVER IS ESTABLISHED.
19. SOD SHALL BE PLACED IN AREAS WHICH MAY REQUIRE IMMEDIATE EROSION PROTECTION TO ENSURE WATER QUALITY STANDARDS ARE MAINTAINED.
20. ANY DISCHARGE FROM DEWATERING ACTIVITY SHALL BE FILTERED AND CONVEYED TO THE OUTFALL IN A MANNER WHICH PREVENTS EROSION AND TRANSPORTATION OF SUSPENDED SOLIDS TO THE RECEIVING OUTFALL.
21. DEWATERING PUMPS SHALL NOT EXCEED THE CAPACITY OF THAT WHICH REQUIRES A CONSUMPTIVE USE PERMIT FROM THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
22. ALL DISTURBED AREAS TO BE STABILIZED THROUGH COMPACTION, SILT SCREENS, HAY BALES, AND GRASSING. ALL FILL SLOPES 3:1 OR STEEPER TO RECEIVE STAKED SOLID SOD.
23. ALL DEWATERING, EROSION, AND SEDIMENT CONTROL TO REMAIN IN PLACE AFTER COMPLETION OF CONSTRUCTION AND REMOVED ONLY WHEN AREAS HAVE STABILIZED.
24. THIS PLAN INDICATES THE MINIMUM EROSION AND SEDIMENT MEASURES REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL APPLICABLE RULES, REGULATIONS AND WATER QUALITY GUIDELINES AND MAY NEED TO INSTALL ADDITIONAL CONTROLS.
25. THE CONTRACTOR SHALL BE REQUIRED TO RESPOND TO ALL WATER MANAGEMENT DISTRICT INQUIRIES, RELATIVE TO COMPLIANCE OF SURVEYING FOR EROSION AND SEDIMENTATION CONTROL. THE COST OF THIS COMPLIANCE SHALL BE PART OF THE CONTRACT.



EROSION LOG

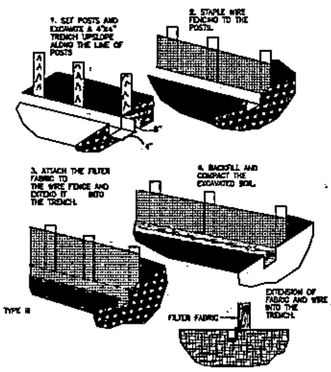
N.T.S.



RECOMMENDED SPACING FOR TYPE I AND TYPE II HAY BALE BARRIERS, AND TYPE III AND TYPE IV SILT FENCES AND PAVED DITCH HAY BALE BARRIERS

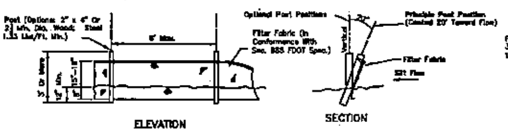
SPACING RECOMMENDATION FOR SILT FENCES & HAY BALES

N.T.S.

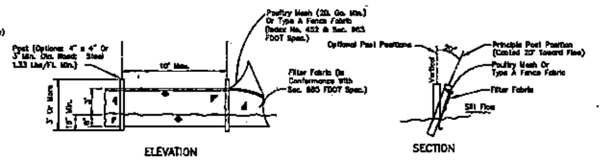


CONSTRUCTION DETAILS FOR SILT FENCES

N.T.S.

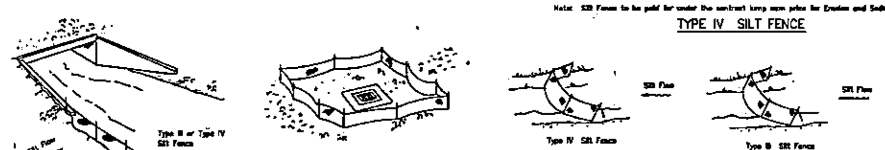


TYPE III SILT FENCE



Note: Silt Fence to be paid for under the contract lump sum price for Erosion and Sediment Control.

TYPE IV SILT FENCE



Note: Spacing for Type III & TYPE IV Fence to be in accordance with Chart 1, Sheet 1 of 3, FDOT Index No. 102 and ditch installations at drainage structures Sheet 2 of 3, FDOT Index No. 102.

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

SILT FENCE APPLICATIONS

SILT FENCE TYPE III & IV

N.T.S.

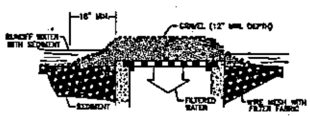
NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS — JACOBS PROJECT NO. [illegible], 200 W. FORSYTH STREET, SUITE 1[illegible], JACKSONVILLE, FL 32202

St. Johns County Utility Department — 1205 STATE ROAD 16, ST. AUGUSTINE, FL 32084

SEDIMENTATION AND EROSION CONTROL NOTES AND DETAILS

NO. SHEETS 24 — SHEET NO. 14 — DRAWING NO. C-2.03



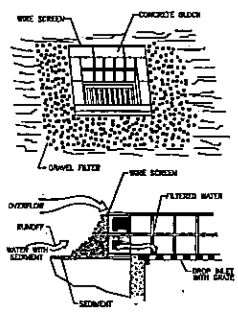
GRAVEL AND WIRE MESH DROP INLET SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL INLET SEDIMENT TRAP

N.T.S.

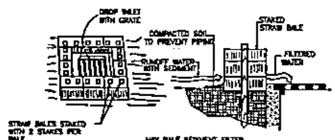


SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

BLOCK & GRAVEL DROP INLET SEDIMENT FILTER

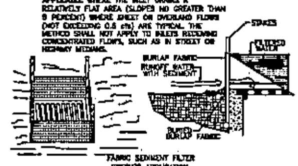
N.T.S.



HAY BALE SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.



FABRIC SEDIMENT FILTER

SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPES NO GREATER THAN 5 PERCENT) WHERE SHEET OR OVERLAND FLOWS (NOT EXCEEDING 0.5 cfs) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

DROP INLET SEDIMENT TRAP

N.T.S.

NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS

St. Johns County Utility Department

SEDIMENTATION AND EROSION CONTROL DETAILS

DRAWING NO. C-2.04

ST. JOHNS COUNTY UTILITY DEPARTMENT (SJCUD) GENERAL NOTES

GENERAL:

1. TWO (2) COPIES OF THE SHOP DRAWINGS (STAMPED APPROVED BY THE ENGINEER) SHALL BE SUBMITTED TO SJCUD FOR REVIEW PRIOR TO SCHEDULING THE MANDATORY PRE-CONSTRUCTION CONFERENCE. THE INITIAL SHOP DRAWING REVIEW BY SJCUD WILL BE COMPLETED WITHIN FIFTEEN (15) WORKING DAYS. SUBSEQUENT SHOP DRAWING REVIEWS WILL BE COMPLETED WITHIN TEN (10) WORKING DAYS.

2. A PRE-CONSTRUCTION CONFERENCE IS REQUIRED WITH THE DEVELOPER, THE ENGINEER OF RECORD, THE UTILITY CONTRACTOR AND THE SJCUD PRIOR TO THE START OF ANY CONSTRUCTION. EVERY PERSON PERFORMING 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.

4. THE CONTRACTOR IS RESPONSIBLE FOR INSPECTING THE SITE PRIOR TO CONSTRUCTION.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL LOCATIONS & ELEVATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

6. 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 UTILITY LINES 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 SJCUD.

7. THE WATER, SEWER, AND/OR REUSE SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS & APPROVED CONSTRUCTION DRAWINGS AND SPECIFICATIONS. IF THERE IS ANY DEVIATION FROM THE APPROVED CONSTRUCTION DRAWINGS OR THE APPROVED CONSTRUCTION PLANS, THE CONTRACTOR SHALL OBTAIN THE APPROVAL AND CONCUR FROM THE SJCUD. THE CONTRACTOR SHALL REVISE THE DEVIATION AND RETURN IT TO THE APPROVED CONSTRUCTION DRAWING CONFIGURATION AS AS-BUILTED TO THE SJCUD. ANY DEVIATIONS FROM THE APPROVED DESIGNER'S SEAL SHALL VOID THE SJCUD ESSENTIAL SERVICE.

8. 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 SJCUD IMMEDIATELY.

9. EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED PER AVAILABLE RECORD WITHOUT EXCAVATION.

10. VERTICAL LOCATIONS OF ALL UTILITIES (INCLUDING EXISTING STORM SEWERS) SHOWN ON PLAN AND PROFILE SHEETS HAVE BEEN REFERENCED TO A KNOWN DATUM SHOWN ON THE UTILITY PLANS. CONTRACTOR SHALL EXERCISE CAUTION DURING EXCAVATION NEAR EXISTING UTILITIES SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF LOCATION DIFFERS FROM THAT SHOWN ON THE PLANS BEFORE CONTINUING WITH CONSTRUCTION.

11. SHOULD CONDITIONS VARY FROM THOSE SHOWN ON THESE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SJCUD PRIOR TO CONTINUING CONSTRUCTION.

12. THE CONTRACTOR SHALL PROTECT SURVEY MARKERS, MONUMENTS, ETC. DURING CONSTRUCTION. THE CONTRACTOR SHALL REFERENCE/REPLACE, AT NO ADDITIONAL EXPENSE TO THE OWNER, ANY DAMAGE DONE BY CONSTRUCTION ACTIVITIES.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY HIS OPERATIONS. ANY DAMAGE SHALL BE REPLACED/REPAIRED AT THE CONTRACTOR'S ADDITIONAL EXPENSE TO THE OWNER.

14. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION AND BUILDING PLACEMENT WITH ALL OTHER UTILITIES CONSTRUCTION.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ANY UNSUITABLE MATERIAL FROM HIS OPERATIONS. FURNISHING AND COMPACTING SUITABLE BACKFILL MATERIAL SHALL BE INCLUDED IN THE CONTRACT PRICE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

16. WHERE WATER MAINS, SEWER MAINS, AND/OR REUSE MAINS SHALL BE INSTALLED IN NEWLY PLATTED OR INSTALLED WATER PROPERTY CONFLICTED TO WITH OF EXISTING PROPERTY, BACKFILL SHALL BE COMPACTED BY A MINIMUM OF 95% (+2%) (+) LIFTS. DENSITY TESTS SHALL BE TAKEN AFTER COMPACTION OF EVERY LIFT.

17. THE CONTRACTOR(S) SHALL NOTIFY ALL APPLICABLE UTILITIES COMPANIES, THE ENGINEER OF RECORD, AND THE PROPERTY OWNER 72 HOURS PRIOR TO EXCAVATION. NO EXCAVATION SHALL BE EXECUTED BY THE UTILITY COMPANIES AND THE PERMITS OBTAINED FOR THE WORK.

18. THE ENGINEER OF RECORD AND SJCUD SHALL BE GIVEN SEVENTY TWO HOURS (72-HOUR) NOTICE OF ALL REQUIRED MEETINGS AND/OR TESTING SCHEDULES RELATED TO THE PROJECT.

19. ALL WORK, MATERIALS, AND EQUIPMENT SHALL BE IN COMPLETE ACCORDANCE WITH ALL INCLUSIVE ST. JOHNS COUNTY UTILITIES STANDARDS AND REQUIREMENTS AS WELL AS STATE AND LOCAL REGULATIONS.

20. ALL UNDERGROUND UTILITY EQUIPMENT, MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST PROVISIONS OF THE MANUAL OF WATER, WASTEWATER, AND REUSE DESIGN STANDARDS & SPECIFICATIONS, ALL APPLICABLE FEDERAL STATE AND LOCAL REGULATIONS, AND THE APPROVED SITE PLANS.

21. ALL UTILITY CROSSINGS SHALL COMPLY WITH FDEP REGULATIONS (CH. 62-555.314, F.A.C.)

22. ANY LANDCLEARING TREES SHALL BE PLACED AT A MINIMUM OF 7.5 FEET AWAY FROM THE EDGE OF PAVEMENT TO THE EDGE OF THE TREE LINE.

23. ALL BACK AND EMBEDMENT SIZED STONES (AS DESCRIBED IN APPLICABLE AWWA 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 WIDTH OF AT LEAST SIX (6) INCHES BELOW THE BOTTOM OF THE PIPE, COMPACTED AND UNIFORM BEDDING SHALL BE PROVIDED FOR NEW AND RELOCATED PIPES. THE BACKFILL MATERIAL SHALL BE SHAPED IN LAYERS AROUND THE NEW AND RELOCATED PIPES AND TO A SUFFICIENT HEIGHT ABOVE EACH PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE.

24. FOR WATER, WASTEWATER, AND REUSE MAINS SMALLER THAN 12 INCHES, THE MINIMUM AND MAXIMUM COVER SHALL BE 30 INCHES AND 54 INCHES, RESPECTIVELY, IN PAVED AREAS AND 36 INCHES AND 42 INCHES, RESPECTIVELY, IN PAVED AREAS, OR AS REQUIRED WITHIN FDOT OR RAILROAD RIGHTS-OF-WAY. FOR MAINS GREATER THAN 12 INCHES, THE MINIMUM AND MAXIMUM COVER SHALL BE 42 INCHES AND 54 INCHES, RESPECTIVELY. EXCEPTIONS SHALL BE MADE FOR CONFLICTS.

25. WHERE FORCE MAINS, WATER MAINS, OR REUSE MAINS ARE LAID WITHOUT FITTINGS, THE MAXIMUM DEFLECTION SHALL BE 80% OF THAT RECOMMENDED BY THE MANUFACTURER.

26. 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 CABLE IN THE APPROVED PLAN SET.

27. ALL UNDERGROUND VALVES SHALL BE INSTALLED WITH AN ADJUSTABLE CAST IRON VALVE BOX WITH 24" TO 7" FINAL GRADE IN ACCORDANCE WITH SJCUD DETAILS AND SPECIFICATIONS. ALL VALVES SHALL HAVE PVC LOCATORS (143.7 OR APPROVED EQUAL).

28. CONTRACTOR IS RESPONSIBLE FOR PROPER NOTIFICATION OF INSPECTING AUTHORITIES BEFORE AND DURING CONSTRUCTION.

29. CONTRACTOR SHALL PROVIDE A MINIMUM OF SEVEN (7) CALENDAR DAYS NOTICE TO SJCUD BEFORE THE FINAL INSPECTION.

NOTICE OF PROCEDURE:

1. ALL CONSTRUCTION, BUILDING PERMITS AND METERS PROCESSED THROUGH SJCUD CUSTOMER SERVICE SHALL BE ACCOMPANIED BY A SET OF APPROVED CIVIL DESIGN PLANS.

2. ALL CONNECTIONS TO THE WATER, SEWER, AND/OR REUSE SYSTEM, FLUSHING, AND PRESSURE TESTS TO BE PERFORMED BY THE UTILITY CONTRACTOR OR SUBCONTRACTOR WHO SHALL HAVE AN SJCUD LICENSE AT LEAST ONE (1) WORKING DAY IN ADVANCE WITH THE SJCUD. A SJCUD INSPECTOR MUST BE PRESENT PRIOR TO THE CONNECTION BEING MADE OR TESTING.

3. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO SECURE APPLICABLE PERMITS PRIOR TO CONSTRUCTION.

4. THE PROPERTY OWNER SHALL PURCHASE THE WATER METER THROUGH THE SJCUD ON PROJECTS THAT REQUIRE A WATER METER LARGER THAN ONE (1) INCH. THE OWNER'S CONTRACTOR SHALL INSTALL ALL METERS THREE (3) INCHES AND LARGER.

5. WATER, SEWER, AND/OR REUSE IMPACT FEES AND CONNECTION FEES SHALL BE PAID AT THE TIME OF BUILDING PERMIT APPLICATION.

6. ALL ON-SITE PRIVATE WATER, SEWER, AND/OR REUSE CONSTRUCTION BETWEEN THE UTILITY AND THE BUILDING MAY BE INSPECTED BY THE SJCUD TO ENSURE STANDARDS ARE MET.

7. ALL REQUIREMENTS BY THE SJCUD (I.E. FINAL INSPECTION, CORRECTION OF PUNCH LIST ITEMS, AS BUILTS, ETC.) PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPATION, ETC) MUST BE COMPLETED PRIOR TO RELEASE OF CERTIFICATE OF OCCUPANCY.

POTABLE WATER SYSTEMS NOTES:

1. ALL WATER MAINS 4" THROUGH 12" DIAMETER SHALL BE PVC C-900, DR-18, COLOR "BLUE" WITH PUSH-ON GASKETED JOINTS OR C-905 HDPE DR 11 COLOR "BLUE" OR DIP CLASS 350.

2. ALL WATER MAINS 16" THROUGH 20" DIAMETER SHALL BE PVC C-905, DR-25, COLOR "BLUE" WITH PUSH-ON GASKETED JOINTS OR C-905 HDPE DR 11 COLOR "BLUE" OR DIP CLASS 250.

3. ALL CURB STOPS ARE TO BE FORD BALL-TYPE OR EQUAL WITH LOCKING CAPABILITY, FIP BRANCH.

4. ALL WATER LINES 2" DIAMETER OR LESS SHALL BE HDPE DR OR A COLOR "BLUE".

5. ALL CURB STOPS ARE TO BE FORD BALL-TYPE OR EQUAL WITH LOCKING CAPABILITY, FIP BRANCH.

6. THE SEPARATION REQUIREMENT BETWEEN POTABLE WATER MAINS AND OTHER UTILITIES SHALL BE PER CH. 62-555, F.A.C.

7. A FULL LENGTH JOINT 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 CROSSING REGARDLESS OF THE VERTICAL SEPARATION.

8. 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, SUCTION IRON PIPE, FITTINGS AND APPROVED SOLVENT RESISTANT GASKETING MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE WILL EXTEND AT LEAST 100 FEET BEYOND ANY DISCOVERED CONTAMINATION.

9. 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 SJCUD AND FDEP.

10. JUMPER CONNECTIONS WITH BACKFLOW PREVENTION DEVICE SHALL BE USED TO FILL OR FLUSH WATER MAINS

11. ALL NEW AND RELOCATED WATER MAIN PIPE, FITTINGS, VALVES, AND FIRE HYDRANTS SHALL BE IN CONFORMANCE WITH APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND SJCUD STANDARDS.

12. ALL NEW AND RELOCATED WATER MAIN PIPE AND FITTINGS WILL COMPLY WITH THE LATEST FDEP AND AWWA STANDARDS FOR LEAD CONTENT.

13. ALL NEW AND RELOCATED WATER MAINS SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600, LATEST EDITION.

14. ALL NEW AND RELOCATED WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 AND RULE 62-555.340, F.A.C.

15. ALL NEW AND RELOCATED WATER SERVICES SHALL BE IN CONFORMANCE WITH THE SJCUD STANDARD CODE AND SJCUD STANDARDS.

16. THE BACTERIOLOGICAL SAMPLE POINTS SHALL BE INDICATED ON THE AS BUILT DRAWINGS. THE POINTS SHALL BE LABELED AND NUMBERED AND SHALL CORRESPOND TO THOSE ON THE BACTERIOLOGICAL SAMPLE CHAIN OF CUSTODY FORMS.

WASTEWATER SYSTEM NOTES:

1. INTERIOR LINERS ARE REQUIRED ON JUNCTION MANHOLES WITH THREE OR MORE INCOMING LINES AND SHALL BE ASPHALTIC, SPECTRASEAL, SUPERSEAL, OR EQUAL AS APPROVED BY SJCUD.

2. SANITARY SEWER LINE TO DEPTHS OF 10' SHALL BE SDR-35 PVC PIPE CONFORMING TO ASTM D-3034 COLORED GREEN. SANITARY SEWER LINE OF DEPTHS 10' TO 15' SHALL BE SDR-26 PVC. ALL SANITARY SEWER LINES SHALL BE GREEN AND SLIGHTLY MARKED ON THE PIPE.

3. SANITARY SEWER FORCE MAIN 4" AND LARGER SHALL BE C900 DR25 PVC PIPE CONFORMING TO ASTM D-1784, D-1785, AND D-2241. DUCTILE IRON PIPE SHALL ONLY BE USED WHEN APPROVAL BY THE SJCUD. SANITARY FORCE MAIN SHALL BE COLOR CODED GREEN AND CLEARLY MARKED.

4. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER OF RECORD AND SJCUD ALL MUDD LOSS, WRITTEN REPORTS, AND DEFLECTION TEST RESULTS FOR REVIEW AND APPROVAL.

5. THE CONTRACTOR SHALL CONTACT SJCUD PRE-TREATMENT DEPARTMENT AT (904) 471-6468 EXT. 225 FOR INSPECTION AFTER INSTALLATION OF GREASE TRAPS, INTERCEPTORS, AND/OR OIL-WATER SEPARATORS.

AS-BUILTS:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PRODUCE, SUBMIT AND OBTAIN APPROVAL OF ENGINEERING AS-BUILT DRAWINGS FROM JURISDICTIONAL AGENCIES AS MAY BE REQUIRED.

2. "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 DETERMINE 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.

3. A MINIMUM OF FIVE WORKING DAYS PRIOR TO THE FINAL INSPECTION, TWO (2) SETS OF PRELIMINARY BLACKLINE "AS-BUILT" AND COPY ON DISK IN AUTOCAD FORMAT SHOWING THE REQUIRED INFORMATION, SHALL BE SUBMITTED TO THE ENGINEER OF RECORD.

4. 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 PLACE THE CONSTRUCTION INTO SERVICE WILL CLEARLY REFLECT THE VERTICAL CLEARANCES BETWEEN WATER, SEWER (INCLUDING STORM) AND REUSE LINES AT ALL CROSSING AND PARALLEL RUNS WHERE THE HORIZONTAL SEPARATION IS LESS THAN 10 FEET. IN ADDITION, THE CENTERING OF LENGTH LENGTHS OF PIPE (USUALLY 20 FEET) AT POINTS OF CROSSINGS WILL BE DOCUMENTED ON THE DRAWINGS AND ALL ATTENDING CONSTRUCTION MEASURES CLEARLY DEPICTED. IN CASES WHERE A MINIMUM OF 18 INCHES OF VERTICAL CLEARANCE BETWEEN THE WATER AND SEWER (INCLUDING STORM) LINES IS NOT POSSIBLE.

5. AFTER SJCUD HAS APPROVED PRELIMINARY "AS BUILT", THREE (3) SETS OF BLACKLINE AS-BUILTS (SIGNED AND SEALED), ONE SET OF MYLARS AS BUILT (SIGNED), AND COPY ON DISK IN AUTOCAD FORMAT SHOWING THE REQUIRED INFORMATION, SHALL BE SUBMITTED TO SJCUD THROUGH ST. JOHNS COUNTY DEVELOPMENT SERVICES.

STANDARD WATER/ SEWER/ RECLAIMED WATER SEPARATION STATEMENT:

THE CONTRACTOR SHALL INSTALL ALL MAINS IN ACCORDANCE WITH THE REQUIREMENTS OF RULE 62-555.314, F.A.C. BELOW. THE CONTRACTOR SHALL NOTIFY SJCUD IN ANY INSTANCE WHERE THE BELOW REQUIREMENTS CANNOT BE MET PRIOR TO INSTALLATION OF PIPE.

"62-555.314 LOCATION OF PUBLIC WATER SYSTEM MAINS.

FOR THE PURPOSES OF THIS SECTION, THE PHRASE "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER, FOR DISTRIBUTION AND SERVICE LINES THAT ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE THE POTENTIAL TO CONVEY RAW OR UNTREATED WATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND LOCATIONS OF 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 OR WASTEWATER FORCE MAIN CONVEYING RECLAIMED WATER REGULATED UNDER PART III 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 VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(c) 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 OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C. THE DISTANCE BETWEEN SEWER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REGULATED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID 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 SYSTEM AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

(2) 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, STORM SEWER SHALL BE LAID TO THE OUTSIDE OF THE WATER MAIN IS LAID AT LEAST SIX INCHES, AND PREFERABLY 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 12 INCHES ABOVE OR BELOW THE OUTSIDE OF 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, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW 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 THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST THREE FEET FROM ANY JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III 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 25, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED SO THAT THEY PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SUITABLE 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 ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE). THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E. THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES), BUT ONLY LOTS OF WATER OR PERSONS PROPOSING 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 THESE PERMIT APPLICATIONS THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.

2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.

3. ASSURANCE OF CONFORMANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-SUBPARAGRAPH a. THROUGH h. BELOW.

A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE WATERTIGHT JOINT ON EITHER SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLING BETWEEN THE MAIN AND THE MANHOLE.

B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATERTIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH OF AT LEAST EQUAL TO THAT OF SCHEDULE 80 PVC).

C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEARING OF THE MANHOLE.

D. DRAINAGE SHALL BE INSTALLED AT ALL STORM SEWER INLETS UPSTREAM OF EACH CONFLICT MANHOLE TO PREVENT LARGE QUANTITIES FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN PIPE WITHOUT CRACKS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. WHERE OR RELOCATED PIPE WITHOUT CRACKS UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED GRAVITY-, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.) AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED PRESSURE-, OR PRESSURE-TYPE, SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED PART OF AN ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

(5) EXCEPTIONS. WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THESE REQUIREMENTS, BUT ONLY FOR LOTS OF WATER OR PERSONS PROPOSING TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH EXCEPTION AND PROVIDING ASSURANCE OF CONFORMANCE WITH ALTERNATIVE CRITERIA FOR LEVELS OF RELIABILITY AND PUBLIC HEALTH PROTECTION ACCEPTABLE ALTERNATIVE CONSTRUCTION FEATURES INCLUDE:

(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-RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62-555.330(3), 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; OR

3. USE OF WATERTIGHT CASING PIPE OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

(b) WHERE WATER MAINS CROSS OTHER PIPELINES THAT ARE LESS THAN THREE FEET HORIZONTALLY 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 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 SCHEDULE 80 PVC PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND

2. USE OF PIPE OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF SCHEDULE 80 PVC PIPE) OR CONCRETE ENCASEMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER."

HYDROSTATIC TESTING NOTES:

1. AFTER ALL PRESSURE PIPES ARE INSTALLED, THE JOINTS COMPLETED, AND THE TRENCH BACKFILLED, TIME, 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 SJCUD SHALL BE NOTIFIED AT LEAST 72 HOURS BEFORE A TEST IS TO BE PERFORMED. TEST SHALL BE AS SET FORTH IN AWWA STANDARD C600. 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 ONLY ALLOWANCE SET FORTH IN SECTION 4 OF AWWA STANDARD C600 LATEST EDITION. HYDROSTATIC AND LEAKAGE TEST AND BLOW-DOWN CLEARING OF DRAIN MUST DECLARE BEFORE SAMPLING FOR BACTERIOLOGICAL TEST. THE MAXIMUM ALLOWABLE PRESSURE LOSS IN 8 HR.

NO.	BY	DATE	DIVISION	REVISIONS
1				
2				
3				
4				
5				

DESIGNED
DRAWN BY
CHK'D
APPROVED BY
DATE

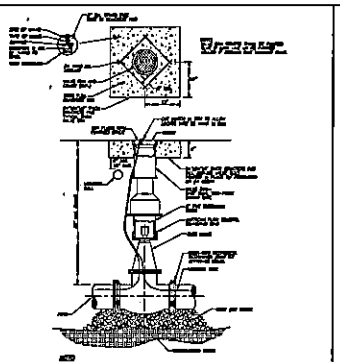
NOTE: THE DETAILS/NOTES AS SHOWN ON THESE DRAWINGS ARE THE MINIMUM REQUIREMENTS OF ST. JOHNS COUNTY UTILITY DEPARTMENT. WE TAKE NO EXCEPTION TO THEIR DESIGN.

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32086
PHONE: (904) 209-2600 FAX: (904) 209-2623

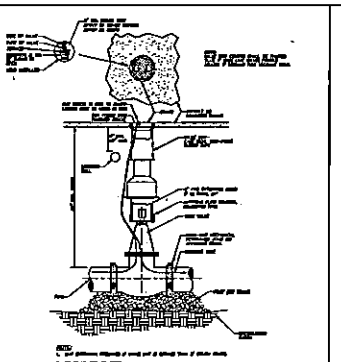
OCEAN OAKS (PS 53), FOOD LION (PS 79), CYPRESS LAKES (PS 125) LIFT STATION UPGRADES

GENERAL NOTES

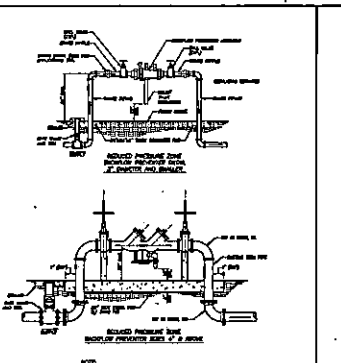
NO. SHEETS IN SHEETPKG: 1
DRAWING NO.: 01-01



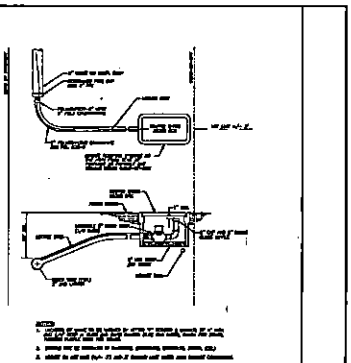
GATE VALVE & BOX FOR UNPAVED LOCATIONS 4"-16" — PLATE W-3



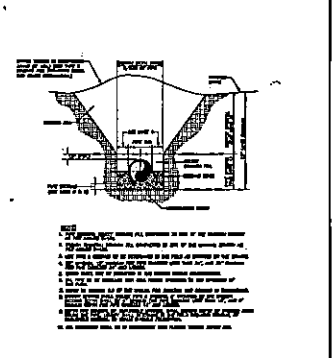
GATE VALVE & BOX FOR PAVED LOCATIONS 4"-16" — PLATE W-4



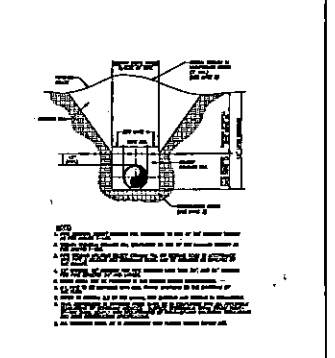
TYPICAL REDUCED PRESSURE ZONE ASSEMBLY — PLATE W-5



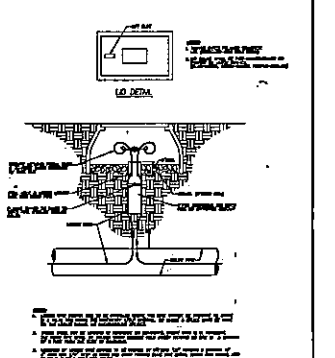
2" FLUSHING HYDRANT BELOW GRADE TYPE — PLATE W-6



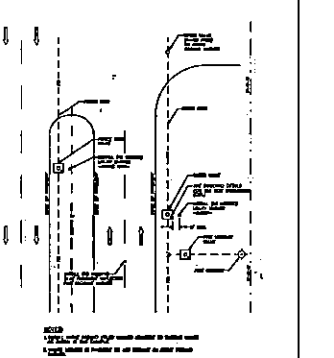
TYPE A BEDDING & TRENCHING — PLATE W-13



TYPE B BEDDING & TRENCHING — PLATE W-14



LOCATE WIRE STATION DETAIL — PLATE W-16



TYPICAL ABOVE GROUND UTILITY MARKERS INSTALLATION — PLATE W-19

NO.	BY	DATE	REVISIONS
1			
2			
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4			
5			

NOTE: THE DETAILS/NOTES AS SHOWN ON THIS DRAWING ARE THE "BOOK" OF ST. JOHNS COUNTY UTILITY DEPARTMENT. WE TAKE NO EXCEPTION TO THEIR DESIGN.

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084

OCEAN OAKS (PB 53), FOOD LION (PB 79), CYPRESS LAKES (PB 125) LIFT STATION UPGRADES

GENERAL WATER DETAILS 1

USE DETAILS IN ACCORDANCE WITH SPECIFIC PROJECT PLAN REQUIREMENTS

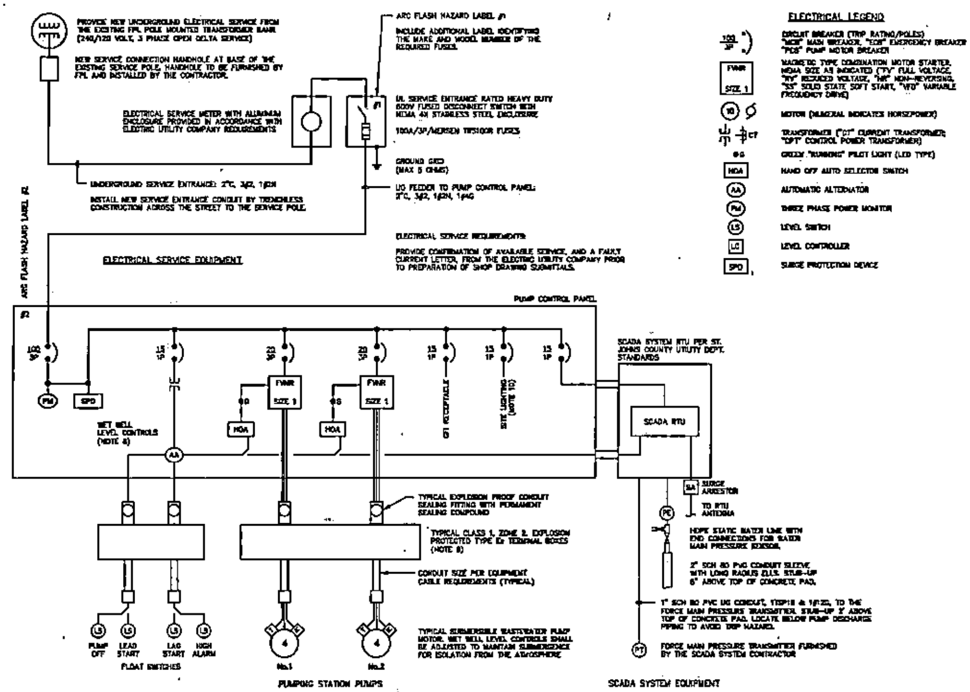
NO. SHEETS IN SHEET NO. OF DRAWING NO.

NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
5. 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 REPLACED OR CORRECTED TO THE ENGINEER'S SATISFACTION WITHOUT FURTHER EXPENSE TO THE OWNER.
6. THE PROJECTS 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.
7. 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 80 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".
8. THE PUMP CONTROL PANEL WET WELL LEVEL CONTROL SYSTEM SHALL INCLUDE LEAD PUMP SELECTOR SWITCH AND AUTOMATIC ALTERNATOR FOR AUTOMATIC LEAD/LAG PUMP CONTROL AND ALTERNATION; AND 24V CONTROL POWER TRANSFORMER AND HIGH/LAG/LEAD/OFF LEVEL FLOAT SWITCHES FOR PUMP CONTROL AND HIGH LEVEL ALARM.
9. 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.
10. PROVIDE SITE LIGHT POLE WITH SERVICE FROM THE PUMP CONTROL PANEL (3/4"C, 3#12). PROVIDE WP DUPLEX GFI RECEPTACLE WITH CAST ALUMINUM BOX AND COVER, AND WP LIGHT SWITCH 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 AEL MODEL (AH2-LU5-MVOLT-R5-BA-SH WITH 18" LONG ALUMINUM EPOXY BRACKET ARM. LUMINAIRE MOUNTING HEIGHT SHALL BE 12'. LOCATE LIGHT POLE ON RIGHT-HAND SIDE OF THE PUMP CONTROL PANEL.
11. IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE NEW PUMP CONTROL PANEL, EXPLOSION PROTECTED TYPE EX TERMINAL BOXES, WET WELL LEVEL CONTROLS, AND UL SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH SHALL BE FURNISHED BY THE SJCUD APPROVED LIFT STATION ELECTRICAL EQUIPMENT SUPPLIER.
12. IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE SCADA SYSTEM RTU, ANTENNA MAST, AND ANTENNA, SHALL BE PROVIDED BY A SJCUD APPROVED SCADA SYSTEM INTEGRATOR. FOR STATIONS EQUIPPED WITH FORCE MAIN PRESSURE SENSORS AND/OR WATER MAIN PRESSURE SENSORS, THE PRESSURE SENSORS SHALL BE PROVIDED BY THE SCADA SYSTEM INTEGRATOR.

ELECTRICAL SYSTEMS ANALYSIS:

1. 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 SJCUD STANDARDS
2. 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.
3. THE SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH FUSE SELECTION SHALL BE IN ACCORDANCE WITH THE SJCUD STANDARDIZED FUSES: FERRAZ SHAWMUT TRS100R AND TRS200R. HOWEVER, SELECTION OF AN INTERMEDIATE TRS-R FUSE SHALL BE UTILIZED WHEN POSSIBLE TO REDUCE THE DOWNSTREAM HAZARD RISK CATEGORY.
4. THE CONTRACTOR SHALL PROVIDE THE SERVICE ENTRANCE FUSE SIZE DETERMINED BY THE FINAL APPROVED ELECTRICAL SYSTEMS ANALYSIS.



ALL ALL EQUIPMENT LOCATED WITHIN THE WET WELL AND EXPOSED TO POTENTIAL HAZARDOUS CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS. SHALL BE RATED FOR CLASS I, DIVISION 1, GROUP D LOCATIONS. ALL ELECTRICAL EQUIPMENT AND INSTALLATION SHALL BE SUITABLE FOR CORROSIVE CONDITIONS.

OCEAN OAKS LIFT STATION 53 – SINGLE LINE DIAGRAM

FPL ALLOWANCE:

1. 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 LOAD CALCULATIONS

LIFT STATION PUMP NO.1	4 HP	10 AMPS
LIFT STATION PUMP NO.2	4 HP	10 AMPS
TOTAL MOTOR LOAD		20 AMPS
LIGHTING AND CONTROLS	3 KVA	25 AMPS
TOTAL CONNECTED LOAD		45 AMPS
TOTAL NON-COINCIDENTAL LOAD		0 AMPS
PEAK DEMAND AMPS		45 AMPS
0.25 X LARGEST MOTOR		3 AMPS
MIN SERVICE AMPACITY 3 PHASE		48 AMPS
MIN MAIN BREAKER SIZE		57 AMPS

ELECTRICAL SERVICE:
100 AMP, 240/120 VOLT, 3 PHASE

NO.	BY	DATE	SYMBOL	REVISIONS

JACOBS

St. Johns County
Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084

OCEAN OAKS (PS 53)
ELECTRICAL SINGLE LINE DIAGRAM

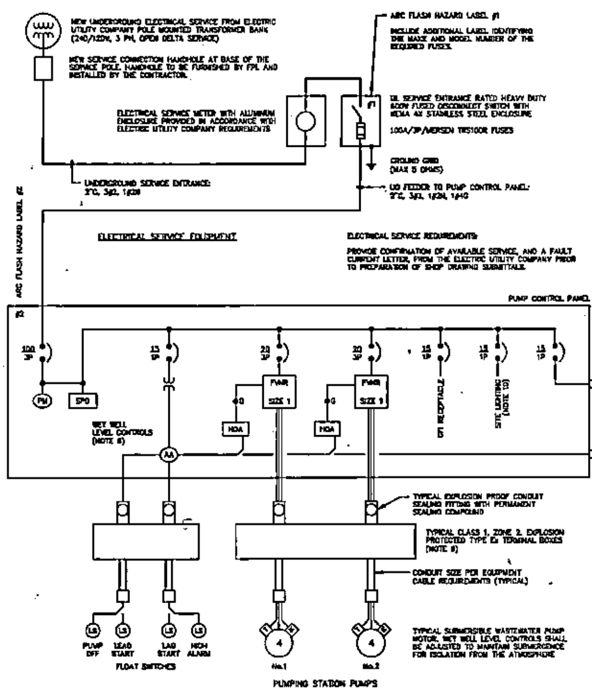
DRAWING NO. E-1

NOTES:

1. 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.
2. 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.
3. 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.
4. 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.
5. 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 REPLACED OR CORRECTED TO THE ENGINEER'S SATISFACTION WITHOUT FURTHER EXPENSE TO THE OWNER.
6. THE PROJECTS 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.
7. UNLESS OTHERWISE INDICATED, ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA 12/3R ALUMINUM OR 316 STAINLESS STEEL; CONDUCTORS SHALL BE STRANDED AWG TYPE XHHW-2 COPPER; UNDERGROUND CONDUIT SHALL BE SCH 40 PVC. EXPOSED CONDUIT SHALL BE SCH 80 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".
8. THE PUMP CONTROL PANEL WET WELL LEVEL CONTROL SYSTEM SHALL INCLUDE LEAD PUMP SELECTOR SWITCH AND AUTOMATIC ALTERNATOR FOR AUTOMATIC LEAD/LAG PUMP CONTROL AND ALTERNATION; AND 24V CONTROL POWER TRANSFORMER AND HIGH/LAG/LEAD/OFF LEVEL FLOAT SWITCHES FOR PUMP CONTROL AND HIGH LEVEL ALARM.
9. 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.
10. PROVIDE SITE LIGHT POLE WITH SERVICE FROM THE PUMP CONTROL PANEL (3/4"C, 3#12). PROVIDE WP DUPLEX GFI RECEPTACLE WITH CAST ALUMINUM BOX AND COVER, AND WP LIGHT SWITCH 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 AEL MODEL LHN3-LU5-MVOLT-R5-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.
11. IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE NEW PUMP CONTROL PANEL, EXPLOSION PROTECTED TYPE EX TERMINAL BOXES, WET WELL LEVEL CONTROLS, AND UL SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH SHALL BE FURNISHED BY THE SJCUD APPROVED LIFT STATION ELECTRICAL EQUIPMENT SUPPLIER.
12. IN ACCORDANCE WITH THE LATEST ST. JOHNS COUNTY UTILITIES DEPARTMENT STANDARDS, THE SCADA SYSTEM RTU, ANTENNA MAST, AND ANTENNA, SHALL BE PROVIDED BY A SJCUD APPROVED SCADA SYSTEM INTEGRATOR. FOR STATIONS EQUIPPED WITH FORCE MAIN PRESSURE SENSORS AND/OR WATER MAIN PRESSURE SENSORS, THE PRESSURE SENSORS SHALL BE PROVIDED BY THE SCADA SYSTEM INTEGRATOR.

ELECTRICAL SYSTEMS ANALYSIS:

1. 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 SJCUD STANDARDS.
2. 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.
3. THE SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH FUSE SELECTION SHALL BE IN ACCORDANCE WITH THE SJCUD STANDARDIZED FUSES: FERRAZ SHAWMUT TRS100R AND TRS200R. HOWEVER, SELECTION OF AN INTERMEDIATE TRS-R FUSE SHALL BE UTILIZED WHEN POSSIBLE TO REDUCE THE DOWNSTREAM HAZARD RISK CATEGORY.
4. THE CONTRACTOR SHALL PROVIDE THE SERVICE ENTRANCE FUSE SIZE DETERMINED BY THE FINAL APPROVED ELECTRICAL SYSTEMS ANALYSIS.



ALL ALL EQUIPMENT LOCATED WITHIN THE WET WELL AND EXPOSED TO POTENTIAL HAZARDOUS CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS, SHALL BE RATED FOR CLASS I, DIVISION 1, GROUP D LOCATIONS. ALL ELECTRICAL EQUIPMENT AND INSTALLATION SHALL BE SUITABLE FOR CORROSIVE CONDITIONS.

FOOD LION LIFT STATION 79 — SINGLE LINE DIAGRAM

FPL ALLOWANCE:

1. THE CONTRACTOR SHALL INCLUDE A BID ALLOWANCE IN THE AMOUNT OF $8,000 AS A CONTRIBUTION IN AID OF CONSTRUCTION PAYMENT TO FPL TO PROVIDE THE NEW ELECTRICAL SERVICE.

ELECTRICAL LEGEND

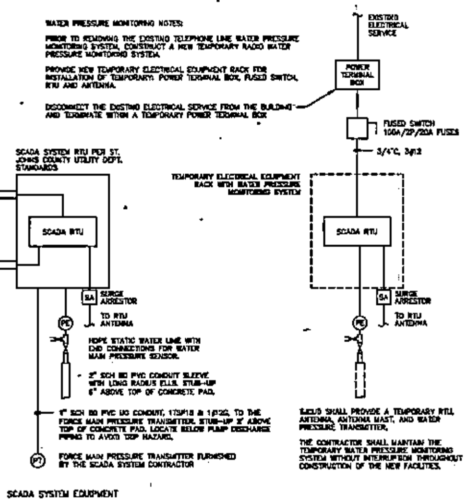
- CIRCUIT BREAKER (TRIP RATING/POLES) "MCB" MAIN BREAKER, "ECB" EMERGENCY BREAKER, "PCB" PUMP MOTOR BREAKER
- MAGNETIC TYPE COMBINATION MOTOR STARTER, NEMA SIZE AS INDICATED ("FV" FULL VOLTAGE, "RV" REDUCED VOLTAGE, "NR" NON-REVERSING, "SS" SOLID STATE SOFT START, "VFD" VARIABLE FREQUENCY DRIVE)
- MOTOR (NUMERAL INDICATES HORSEPOWER)
- TRANSFORMER ("CT" CURRENT TRANSFORMER, "CPT" CONTROL POWER TRANSFORMER)
- GREEN "RUNNING" PILOT LIGHT (LED TYPE)
- HOA — HAND OFF AUTO SELECTOR SWITCH
- AA — AUTOMATIC ALTERNATOR
- PM — THREE PHASE POWER MONITOR
- LS — LEVEL SWITCH
- LC — LEVEL CONTROLLER
- SPD — SURGE PROTECTION DEVICE

WATER PRESSURE MONITORING NOTES:

PRIOR TO REMOVING THE EXISTING TELEPHONE LINE WATER PRESSURE MONITORING SYSTEM, CONSTRUCT A NEW TEMPORARY RADIO WATER PRESSURE MONITORING SYSTEM.

PROVIDE NEW TEMPORARY ELECTRICAL EQUIPMENT RACK FOR INSTALLATION OF TEMPORARY: POWER TERMINAL BOX, FUSED SWITCH, RTU AND ANTENNA.

DISCONNECT THE EXISTING ELECTRICAL SERVICE FROM THE BUILDING AND TERMINATE WITHIN A TEMPORARY POWER TERMINAL BOX



SJCUD SHALL PROVIDE A TEMPORARY RTU, ANTENNA, ANTENNA MAST, AND WATER PRESSURE TRANSMITTER.

THE CONTRACTOR SHALL MAINTAIN THE TEMPORARY WATER PRESSURE MONITORING SYSTEM WITHOUT INTERRUPTION THROUGHOUT CONSTRUCTION OF THE NEW FACILITIES.

SCADA SYSTEM EQUIPMENT

FUTURE ELECTRICAL LOAD CALCULATIONS

LIFT STATION PUMP NO.1	11 HP	26 AMPS
LIFT STATION PUMP NO.2	11 HP	26 AMPS
TOTAL MOTOR LOAD		52 AMPS
LIGHTING AND CONTROLS	3 KVA	25 AMPS
TOTAL CONNECTED LOAD		77 AMPS
TOTAL NON-COINCIDENTAL LOAD		0 AMPS
PEAK DEMAND AMPS		77 AMPS
0.25 X LARGEST MOTOR		7 AMPS
MIN SERVICE AMPACITY 3 PHASE		84 AMPS
MIN MAIN BREAKER SIZE		96 AMPS

ELECTRICAL SERVICE:
100 AMP, 240/120 VOLT, 3 PHASE

INITIAL ELECTRICAL LOAD CALCULATIONS

LIFT STATION PUMP NO.1	4 HP	10 AMPS
LIFT STATION PUMP NO.2	4 HP	10 AMPS
TOTAL MOTOR LOAD		20 AMPS
LIGHTING AND CONTROLS	3 KVA	25 AMPS
TOTAL CONNECTED LOAD		45 AMPS
TOTAL NON-COINCIDENTAL LOAD		0 AMPS
PEAK DEMAND AMPS		45 AMPS
0.25 X LARGEST MOTOR		3 AMPS
MIN SERVICE AMPACITY 3 PHASE		48 AMPS
MIN MAIN BREAKER SIZE		57 AMPS

ELECTRICAL SERVICE:
100 AMP, 240/120 VOLT, 3 PHASE

NO	BY	DATE	SYMBOL	REVISIONS

JACOBS

St. Johns County Utility Department
1205 STATE ROAD 16
ST. AUGUSTINE, FL 32084

FOOD LION (PS 79)
ELECTRICAL SINGLE LINE DIAGRAM

NO. SHEETS
SHEET NO.
DRAWING NO.
E-2

NOTES:

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3. 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.
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7. UNLESS OTHERWISE INDICATED, ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE NEMA 12/3R ALUMINUM OR 316 STAINLESS STEEL; CONDUCTORS SHALL BE STRANDED AWG TYPE XHHW-2 COPPER; UNDERGROUND CONDUIT SHALL BE SCH 40 PVC; EXPOSED CONDUIT SHALL BE SCH 80 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".
8. THE PUMP CONTROL PANEL WET WELL LEVEL CONTROL SYSTEM SHALL INCLUDE A MULTIPLEX 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.
9. 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.
10. PROVIDE SITE LIGHT POLE WITH SERVICE FROM THE PUMP CONTROL PANEL (3/4"C, 3#12). PROVIDE WP DUPLEX GFI RECEPTACLE WITH CAST ALUMINUM BOX AND COVER, AND WP LIGHT SWITCH 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 AEL MODEL LMH2-LU5-MVOLT-R5-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.
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ELECTRICAL SYSTEMS ANALYSIS:

1. THE CONTRACTOR SHALL INCLUDE A BID ALLOWANCE IN THE AMOUNT OF $3,000.00 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 SJCUD STANDARDS.
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3. THE SERVICE ENTRANCE MAIN FUSED DISCONNECT SWITCH FUSE SELECTION SHALL BE IN ACCORDANCE WITH THE SJCUD STANDARDIZED FUSES: FERRAZ SHAWMUT TRS100R AND TRS200R. HOWEVER, SELECTION OF AN INTERMEDIATE TRS-R FUSE SHALL BE UTILIZED WHEN POSSIBLE TO REDUCE THE DOWNSTREAM HAZARD RISK CATEGORY.
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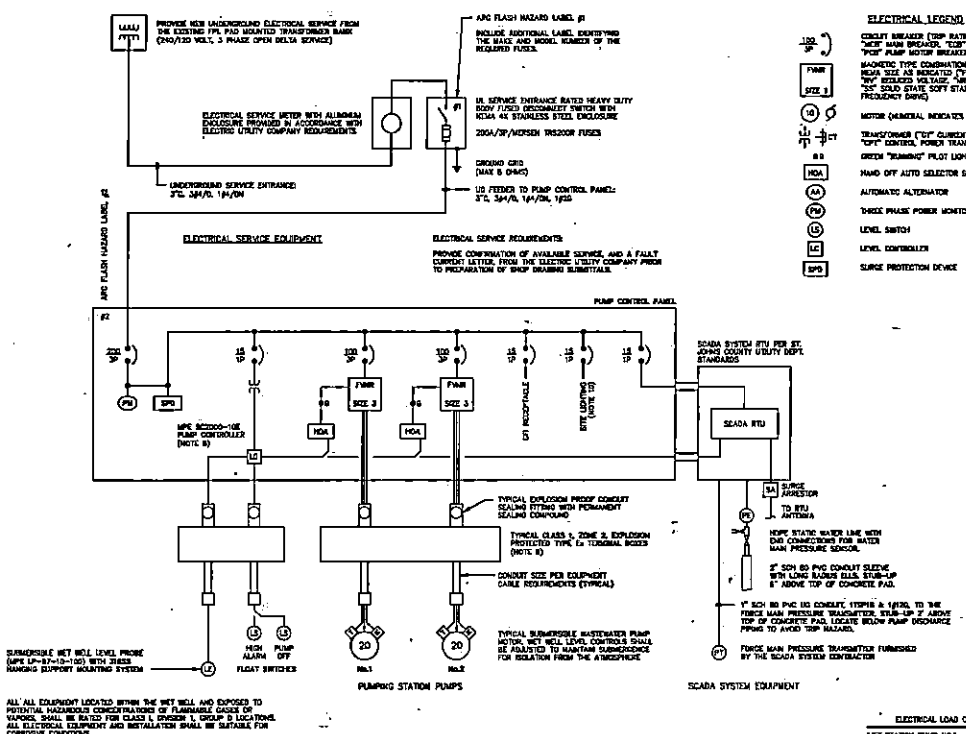

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CYPRESS LAKES LIFT STATION 125 – SINGLE LINE DIAGRAM

ELECTRICAL LEGEND

- 100/3P – CIRCUIT BREAKER (TRIP RATING/POLES) "MCB" MAIN BREAKER, "ECB" EMERGENCY BREAKER "PCB" PUMP MOTOR BREAKER
- FVNR SIZE 3 – MAGNETIC TYPE COMBINATION MOTOR STARTER, NEMA SIZE AS INDICATED ("FV" FULL VOLTAGE, "RV" REDUCED VOLTAGE, "NR" NON-REVERSING, "SS" SOLID STATE SOFT START, "VFD" VARIABLE FREQUENCY DRIVE)
- (10) – MOTOR (NUMERAL INDICATES HORSEPOWER)
- CT – TRANSFORMER ("CT" CURRENT TRANSFORMER; "CPT" CONTROL POWER TRANSFORMER)
- GREEN "RUNNING" PILOT LIGHT (LED TYPE)
- HOA – HAND OFF AUTO SELECTOR SWITCH
- AA – AUTOMATIC ALTERNATOR
- PM – THREE PHASE POWER MONITOR
- LS – LEVEL SWITCH
- LC – LEVEL CONTROLLER
- SPD – SURGE PROTECTION DEVICE

ELECTRICAL LOAD CALCULATIONS

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	3 KVA	25 AMPS
TOTAL CONNECTED LOAD		129 AMPS
TOTAL NON-COINCIDENTAL LOAD		0 AMPS
PEAK DEMAND AMPS		129 AMPS
0.25 X LARGEST MOTOR		13 AMPS
MIN SERVICE AMPACITY 3 PHASE		142 AMPS
MIN MAIN BREAKER SIZE		151 AMPS

ELECTRICAL SERVICE:
200 AMP, 240/120 VOLT, 3 PHASE

NO	BY	DATE	SYMBOL	REVISIONS

JACOBS

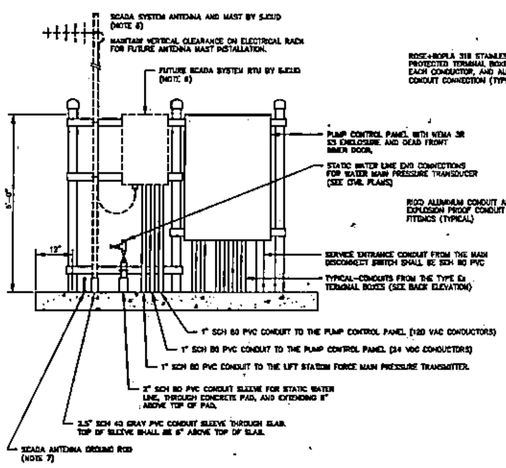
St. Johns County Utility Department

CYPRESS LAKES (PS 125)
ELECTRICAL SINGLE LINE DIAGRAM

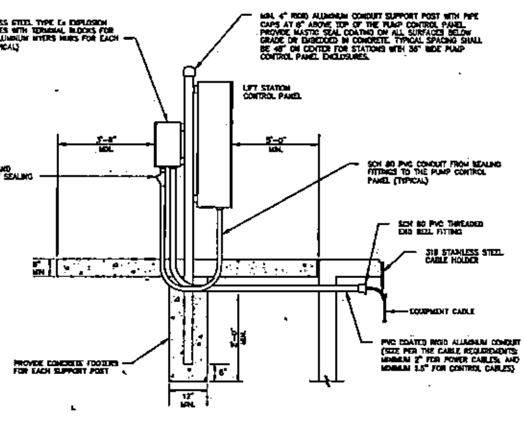
NO. SHEETS
SHEET NO. 20
DRAWING NO.

NOTES:

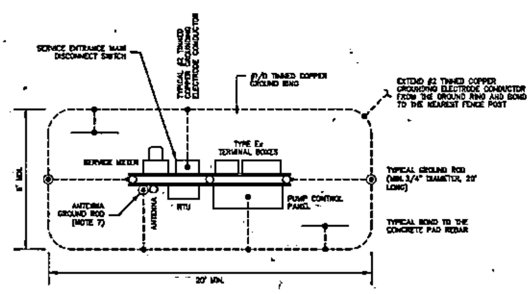
1. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL PRE-CONSTRUCTION COORDINATION SITE MEETING WITH SJCUD AND THE ELECTRICAL DESIGN ENGINEER TO COORDINATE SITE SPECIFIC REQUIREMENTS OF THE ELECTRICAL EQUIPMENT INSTALLATION.
2. THE CONTRACTOR SHALL SCHEDULE AN ELECTRICAL ROUGH-IN SITE INSPECTION WITH SJCUD 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, ENCIRCLING 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. 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.



FRONT ELEVATION

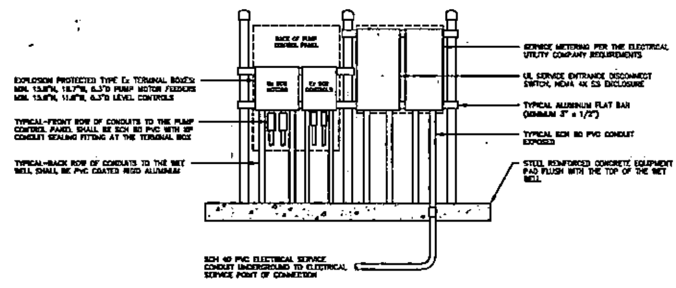


SIDE VIEW



ELECTRICAL EQUIPMENT GROUNDING SYSTEM DETAIL

NOT TO SCALE



BACK ELEVATION

TYPICAL LIFT STATION ELECTRICAL EQUIPMENT INSTALLATION DETAIL

NOT TO SCALE

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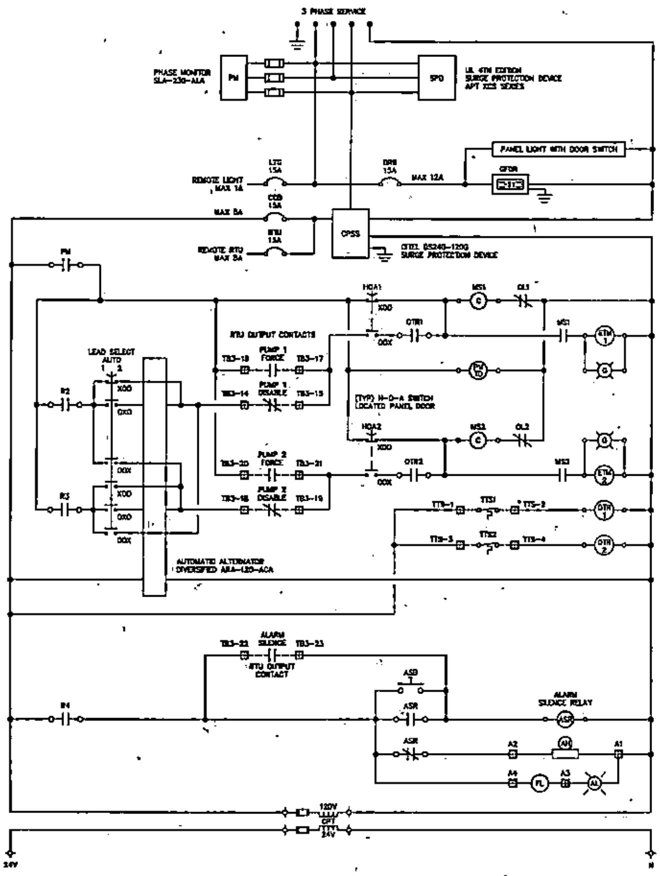
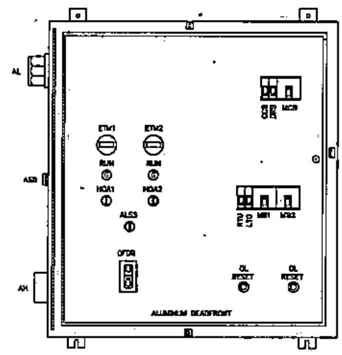
SJCUD STANDARD LIFT STATION ELECTRICAL DETAILS





OUTER DOOR REMOVED TO SHOW DEADFRONT LAYOUT
NEMA TYPE 3R S.S. ENCL. WITH CONTINUOUS HINGE
ALL HARDWARE STAINLESS STEEL, WITH 3-PT LATCH

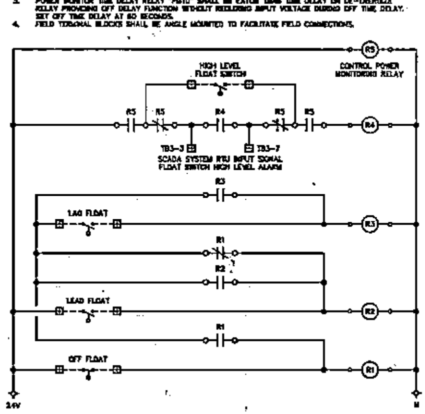
PANEL TO BE U.L., AND SERVICE ENTRANCE RATED.

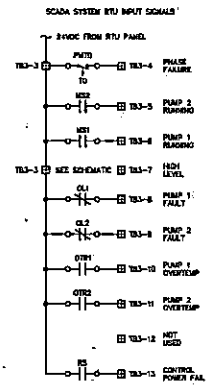
CONTROL PANEL LEGEND

- AH – ALARM HORN
- AL – ALARM LIGHT
- ASB – ALARM SILENCE BUTTON
- ASR – ALARM SILENCE RELAY
- ALSS – ALTERNATOR LEAD SELECTOR SWITCH
- CPSS – CONTROL POWER SURGE SUPPRESSOR
- CCB – CONTROL CIRCUIT BREAKER
- DPDT – DOUBLE POLE DOUBLE THROW
- DRB – DUPLEX RECEPTACLE BREAKER
- ETM – ELAPSED TIME METER
- F – FUSE
- FB – FUSE BLOCK
- FL – FLASHER
- G – GREEN LED "RUNNING" PILOT LIGHT
- GFDR – GROUND FAULT DUPLEX RECEPTACLE
- LCB – LIGHTING CIRCUIT BREAKER
- MB – MOTOR BREAKER
- MCB – MAIN CIRCUIT BREAKER
- MS – MOTOR STARTER
- OL – OVERLOAD
- OT – OVERTEMP
- PB – POWER BLOCK
- PM – PHASE MONITOR
- R – RELAY
- RCB – RTU CIRCUIT BREAKER
- RL – RUNNING LIGHT
- SPD – SURGE PROTECTION DEVICE
- TB – TERMINAL BLOCK
- TTS – THERMAL TERMINAL STRIP

NOTES:

1. ALL CONTROL PANEL WIRING, RTU WIRING, AND ALL WIRING FROM THE CONTROL PANEL TO THE RTU, SHALL BE TINNED CONDUCTORS.
2. ALL CONTROL RELAYS SHALL BE TPDT.
3. POWER MONITOR TIME DELAY RELAY "PMTD" SHALL BE EATON TRR6 TIME DELAY ON DE-ENERGIZE RELAY PROVIDING OFF DELAY FUNCTION WITHOUT REQUIRING INPUT VOLTAGE DURING OFF TIME DELAY. SET OFF TIME DELAY AT 60 SECONDS.
4. FIELD TERMINAL BLOCKS SHALL BE ANGLE MOUNTED TO FACILITATE FIELD CONNECTIONS.





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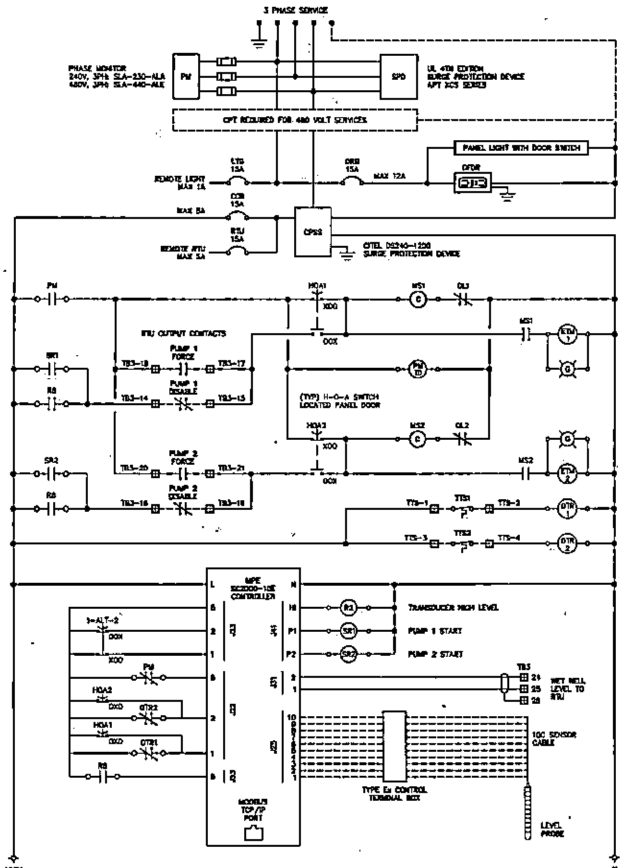
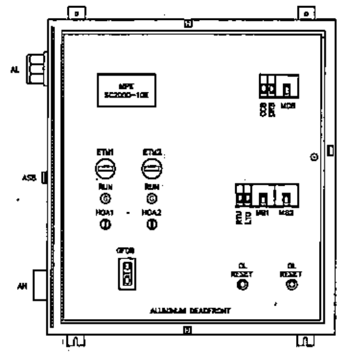
SJCUD STANDARD LIFT STATION 100A PUMP CONTROL PANEL DETAILS



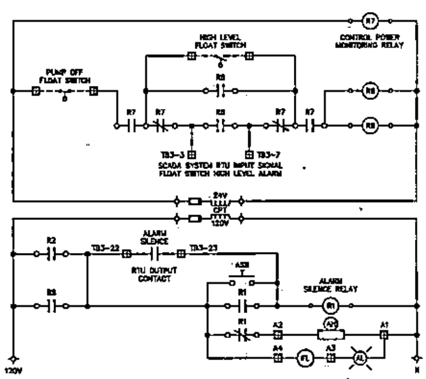


OUTER DOOR REMOVED TO SHOW DEADFRONT LAYOUT
NEMA TYPE 3R S.S. ENCL. WITH CONTINUOUS HINGE
ALL HARDWARE STAINLESS STEEL, WITH 3-PT LATCH

PANEL TO BE U.L. AND SERVICE ENTRANCE RATED.

NOTES:

1. ALL CONTROL PANEL WIRING, RTU WIRING, AND ALL WIRING FROM THE CONTROL PANEL TO THE RTU, SHALL BE TINNED CONDUCTORS.
2. ALL CONTROL RELAYS SHALL BE TPDT.
3. POWER MONITOR TIME DELAY RELAY "PMTD" SHALL BE EATON TRS TIME DELAY ON DE-ENERGIZE RELAY PROVIDING OFF DELAY FUNCTION WITHOUT REQUIRING INPUT VOLTAGE DURING OFF TIME DELAY. SET OFF TIME DELAY AT 60 SECONDS.
4. FIELD TERMINAL BLOCKS SHALL BE ANGLE MOUNTED TO FACILITATE FIELD CONNECTIONS.



CONTROL PANEL LEGEND

- AH – ALARM HORN
- AL – ALARM LIGHT
- ASB – ALARM SILENCE BUTTON
- ASR – ALARM SILENCE RELAY
- ALSS – ALTERNATOR LEAD SELECTOR SWITCH
- CPSS – CONTROL POWER SURGE SUPPRESSOR
- CCB – CONTROL CIRCUIT BREAKER
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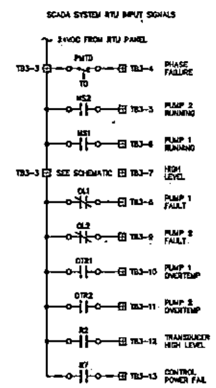
- R – RELAY
- RCB – RTU CIRCUIT BREAKER
- RL – RUNNING LIGHT
- SPD – SURGE PROTECTION DEVICE
- TB – TERMINAL BLOCK
- TTS – THERMAL TERMINAL STRIP



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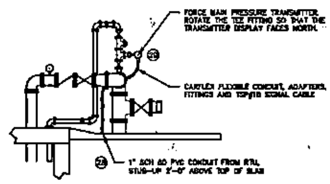
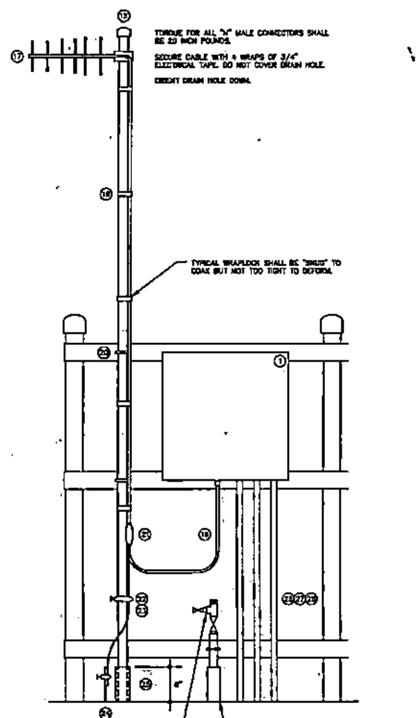
SJCUD STANDARD LIFT STATION
200A PUMP CONTROL PANEL DETAILS

SCADA SYSTEM NOTES:

1. THE CONTRACTOR SHALL EMPLOY THE SERVICES OF A SJCUD PRE-APPROVED SCADA SYSTEM INTEGRATOR TO PERFORM ALL SCADA SYSTEM ADDITIONS AND MODIFICATIONS INCLUDING: NEW RTU, ANTENNA, AND ANTENNA MAST.
2. THE SCADA SYSTEM SUPPLIER SHALL MODIFY AND UPGRADE THE EXISTING SJCUD 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 SJCUD SCADA SYSTEM SUPERVISOR.
4. THE SCADA SYSTEM RTU SHALL BE A SJCUD 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 SJCUD 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 SJCUD 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 "LIGHTNING PROTECTION" 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 1TSP#18 CABLE FOR EACH ANALOG INPUT SIGNAL.
15. PROVIDE DIN RAIL ON BACK PLANE 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 ASHCROFT TYPE 330 FLUSH DIAPHRAGM SEAL, AND ALUMINUM M20x1.5 METRIC TO 1/2" NPT CONDUIT CONNECTION ADAPTER.

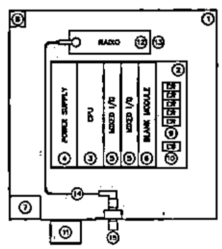


FORCE MAIN PRESSURE TRANSMITTER DETAIL
NOT TO SCALE



SCADA SYSTEM ANTENNA DETAIL
NOT TO SCALE

ITEM	DESCRIPTION	
1	RTU ENCLOSURE, SCHAEFER'S ELECTRICAL ENCLOSURE MODEL SPN4AL-20206-735, DO NOT SUBSTITUTE,	
	NEMA 12/3R ALUMINUM ENCLOSURE, PADLOCK PROVISIONS, ALUMINUM TOP, SIDES, AND DOOR SUN SHIELDS	
2	MOTOROLA ACE3600 METAL CHASSIS WITH 3 I/O SLOT FRAME	V214/V103
3	MOTOROLA ACE3600 RTU WITH UPGRADE TO CPU3680 AND SECURITY ENABLE OPTION	F7509/V448/VA00360AA
	MOTOROLA CPU PLUG-IN ETHERNET 10/100 M PORT	V212
4	MOTOROLA ACE3600 AC POWER SUPPLY WITH BATTERY CHARGER	V251
5	MOTOROLA ACE3600 MIXED I/O MODULE 16DI, 4DO EE, 4AI, ±20 mA WITH FLOATING POWER SUPPLY	V245/V250
6	MOTOROLA ACE3600 BLANK I/O MODULE	V20
7	MOTOROLA BATTERY POWER CABLE	FKN8378
	BATTERY BACKUP 12V, 7AH, SEALED RECHARGEABLE SLA BATTERY, TOYO-USP 6FM57	
8	INTRUSION SWITCH WITH PULL TO DEFEAT FEATURE HONEYWELL MICRO SWITCH 10M401	
9	DIN RAIL MOUNTED DIGITAL OUTPUT CONTROL RELAYS OMRON G2R-1-SN-DC12-S, 12VDC, SPDT, PTT	
10	DIN RAIL MOUNTED CIRCUIT BREAKER SUPPLEMENTARY PROTECTOR EATON FAZ-C10/1-SP	
11	DITEK DTK-120HW SURGE PROTECTION DEVICE 120VAC	
12	4RF DIGITAL RADIO MODEL APSQ-N220-SSC-HD-22-ENAA	
	4RF DIGITAL RADIO DIN RAIL MOUNTING BRACKET APSQ-MBRK-DIN (NOTE 15)	
	RADIO POWER CABLE 12VDC WITH PLUG COMPATIBLE WITH MOTOROLA POWER SUPPLY	
13	RADIO COMMUNICATION CABLE TYPE 568B ETHERNET CABLE, 1M	
14	LMR-195 FLEXIBLE COAX, RIGHT ANGLE N MALE/RIGHT ANGLE TNC MALE CONNECTORS, 36" LONG	
15	TIMES MICROWAVE LP-HGX-NFF COAX SURGE ARRESTER	
16	TIMES MICROWAVE LMR-400-DB COAX, TYPE N MALE CONNECTORS EZ-400-NMH-D	
17	ASTRON MODEL 220-8H ANTENNA (Contact: Marline Burgstahler MBurgstahler@teamfic.com)	
18	ANTENNA MAST 2" x 20' LONG SCHEDULE 40 ALUMINUM PIPE, WHITE PVC CAP	
19	1/2" SS WRAPLOCK BANDS, 3' ON CENTER. TIE WRAPS ARE NOT ACCEPTABLE.	
20	3/8" SS U-BOLTS. ANTI-SEIZE MUST BE USED ON ALL THREADS.	
21	TESSCO GK-538 COAX GROUND KIT	
22	GROUNDING CLAMP RATED FOR DIRECT BURIAL	
23	NO.2 AWG SOLID TINNED COPPER CONDUCTOR	
24	COPPER CLAD STEEL GROUND ROD, 3/4" DIAMETER, 20' LONG	
25	2.5" SCHEDULE 40 GRAY PVC CONDUIT SLEEVE THROUGH SLAB	
26	1" SCH 80 PVC "POWER" CONDUIT TO PUMP CONTROL PANEL, 120 VAC CONDUCTORS	
27	1" SCH 80 PVC "CONTROL" CONDUIT TO PUMP CONTROL PANEL, 24 VDC CONDUCTORS	
28	1" SCH 80 PVC CONDUIT TO THE LIFT STATION FORCE MAIN PRESSURE TRANSMITTER	
29	FORCE MAIN PRESSURE TRANSMITTER: WIKA UPT-20 PART NUMBER 52571718 (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	SPARE
02	HIGH LEVEL	02	SPARE
03	PHASE FAILURE	03	SPARE
04	PUMP 1 RUNNING	04	SPARE
05	PUMP 2 RUNNING	05	SPARE
06	PUMP 1 FAIL	06	SPARE
07	PUMP 2 FAIL	07	SPARE
08	CONTROL POWER	08	SPARE
09	PUMP 1 OVERTEMP	09	SPARE
10	PUMP 2 OVERTEMP	10	SPARE
11	TRANSDUCER HIGH LEVEL	11	SPARE
12	SPARE	12	SPARE
13	SPARE	13	SPARE
14	SPARE	14	SPARE
15	SPARE	15	SPARE
16	SPARE	16	SPARE
DO	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

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St. Johns County Utility Department
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ST. AUGUSTINE, FL 32084

SJCUD STANDARD LIFT STATION
SCADA SYSTEM DETAILS

TECHNICAL SPECIFICATIONS

OCEAN OAKS (PS 53), FOOD LION (PS 79), AND CYPRESS LAKES (PS 125) LIFT STATION UPGRADES

ST. JOHNS COUNTY UTILITY DEPARTMENT
ST. AUGUSTINE, FLORIDA

Issued for Bid
March 2018

Prepared By:
Jacobs Engineering Group Inc.
200 W. Forsyth Street, Suite 1520
Jacksonville, FL 32202
(904) 636-5432
COA # 2822

SJCUD
TECHNICAL SPECIFICATIONS
FOR

OCEAN OAKS (PS53), FOOD LION (PS 79), AND CYPRESS LAKES (PS 125) LIFT STATION UPGRADES

General/Civil/Process
Division 01
Division 02
Division 09
Division 31
Division 40
Division 43

Christine S. Ellenberger, P.E.
Florida Registered P.E. No. 58418

Jacobs Engineering Group Inc.
200 W. Forsyth Street., Suite 1520
Jacksonville, Florida 32202
T 904.636.5432 F 904.636.5433
FL COA No. 2822

TECHNICAL SPECIFICATIONS

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Part 1 General

1.01 Description

A. The work to be performed under this Contract shall consist of furnishing all labor, materials, tools, equipment and incidentals and performing all work required to rehabilitate and place into operation the following pump stations as shown on the Drawings and specified herein:

1. Ocean Oaks Pump Station (PS 53) – 10 Beach St., St. Augustine, FL 32080
2. Food Lion Pump Station (PS 79) – 160 Lewis Point Rd., St. Augustine, FL 32086
3. Cypress Lakes Pump Station (PS 125) – 4399 Cypress Links Blvd., Elkton, FL 32033

B. All materials or products which come into contact with drinking water or raw water shall be third-party certified as meeting the Specifications of the American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61: Drinking Water System Components – Health Effects. All materials and products which come into contact with drinking water or raw water shall comply with the Reduction of Lead in Drinking Water Act and ANSI/NSF Standard 372: Drinking Water System Components – Lead Content as applicable.

C. The Contractor shall follow the latest version of SJCUD's Manual of Water, Wastewater, and Reuse Design Standards and Specifications during the construction of the improvements.

D. The following general scope of work will be defined as the base bid for each pump station under this contract and shall include, but is not necessarily limited to, the following:

1. Mobilization/demobilization, general requirements, and insurance
2. All testing required during construction
3. All permits necessary to complete the work
4. Sedimentation and erosion control measures
5. Restoration of the site
6. Specific improvements at each pump station shall include, but is not necessarily limited to, the items listed in the following paragraphs.

E. The following scope of work for the Ocean Oaks Pump Station (PS 53) will be defined as the base bid for this contract and shall include, but is not necessarily limited to, the following:

1. Bypass pumping operations to complete the rehabilitation of the station
2. Demolition of existing building, concrete slab, pumps, suction and discharge piping, top slab, electrical and instrumentation, fence, and appurtenances
3. The existing wet well will be relined and reused
4. New wet well top slab and access hatch
5. New submersible pumps
6. New force main piping including fittings, valves, and connections to existing force mains
7. New electrical and instrumentation equipment
8. New shadow box wood fence

F. The following scope of work for the Food Lion Pump Station (PS 79) will be defined as the base bid for this contract and shall include, but is not necessarily limited to, the following:

1. Bypass pumping operations to complete the rehabilitation of the station
2. Demolition of existing building, concrete slab, pumps, suction and discharge piping, top slab, electrical and instrumentation, and appurtenances
3. The existing wet well will be relined and reused
4. New wet well top slab and access hatch
5. New submersible pumps
6. New force main piping including fittings, valves, and connections to existing force mains
7. New electrical and instrumentation equipment for wastewater pump station
8. Construct temporary water pressure monitoring facilities including electrical equipment rack, RTU, Antenna Mast, Antenna, water pressure transmitter, static water line connection, and electrical service. SJCUD shall furnish the temporary RTU, Antenna Mast, Antenna and pressure transmitter for installation by the Contractor.
9. New vinyl-coated chain link fence

G. The following scope of work for the Cypress Lakes Pump Station (PS 125) will be defined as the base bid for this contract and shall include, but is not necessarily limited to, the following:

1. Bypass pumping operations to complete the rehabilitation of the station

2. Demolition of existing building, concrete slab, pumps, suction and discharge piping, top slab, electrical and instrumentation, and appurtenances

3. The existing wet well will be relined and reused

4. New wet well top slab and access hatch

5. New submersible pumps

6. New force main piping including fittings, valves, and connections to existing force mains

7. New electrical and instrumentation equipment

8. New vinyl-coated chain link fence

1.02 Permits and Regulations

A. The Contractor's responsibility includes compliance with federal, state and local regulations which in any way affect the work or implementation of the Project.

B. The Company shall comply with all conditions of permits issued for the Work, either directly or indirectly, issued by federal, state, or local governmental agencies, which are hereby incorporated as part of these Contract Documents.

1.03 Existing Facility Operations

A. The Contractor shall coordinate the work with the Owner so that the construction will not restrain or hinder the operation of the existing facilities. If, at any time, any portion of the facilities are out of service, the Contractor must obtain approval from the Owner as to the date, time and length of time that portion of the facilities are out of service.

B. Connections to the existing facilities or alteration of existing facilities will be made at times when the facility involved is not in use or at times, established by the Owner, when the use of the facility can be conveniently interrupted for the period of time needed to make the connection or alteration.

C. After having coordinated the work with the Owner, the Contractor shall prepare a submittal in accordance with Section 01 33 23 of these Specifications to include the time, time limits and methods of each connection or alteration and have the approval of the Owner and Engineer before any work is undertaken on the connections or alterations.

1.04 Sequencing

A. General:

1. The Contractor shall be solely responsible for all construction sequencing.

2. The completion of specific preliminary sequencing tasks indicated will be required prior to any significant site demolition.

B. Submit a proposed sequence in accordance with Section 01 33 23 of these Specifications with appropriate times of starting and completion of tasks to the Owner and Engineer for review.

C. The Contractor may propose alternatives to the sequencing constraints to that shown in this Section in an attempt to reduce the disruption of the operation of the existing facility or streamline the tasks of this Contract. The Owner and Engineer are not obligated to accept any of these alternatives.

1.05 Sequencing Constraints

A. The following construction sequencing constraints are to emphasize critical tasks of the work in this Contract. It is not a complete list of all work to be completed.

B. The Contractor shall give a minimum of 5 working days advance written notice to the Owner of each component proposed for shutdown, tie-in, or disruption, all of which shall be subject to Owner's approval and limitations. Shutdowns, tie-ins, or disruptions specifically mentioned in the Section must conform to this requirement and any others requested by the Owner. The request shall include, but not be limited to, points of connection, fittings to be used, method of flushing, and estimated construction time for connection.

C. In general, no Work which affects or could affect the station operations shall be performed without a specific plan written by the Contractor approved in advance by the Owner.

D. The existing facilities must be kept in continuous operation throughout the construction period. Temporary bypass pumping shall be in accordance with Section 01 51 43 of these Specifications and the latest version of SJCUD's Manual of Water, Wastewater, and Reuse Design Standards and Specifications.

E. All connections and ties to the existing system and transfer of services shall be performed by the Contractor under the Owner's direction. The Contractor shall not operate any valves in the existing system.

F. The Owner reserves the right to postpone connections to existing utilities due to operational and/or weather related concerns.

G. All connections to existing facilities shall be made in accordance with Section 3.5 of the latest version of SJCUD's Manual of Water, Wastewater, and Reuse Design Standards and Specifications.

H. Connection to the existing system may depend on the closure of certain valves. The existing valves may be not be operable or may not seal properly. The Contractor shall coordinate with the Owner in advance of connections to determine condition of existing valves.

I. Sewer gases, including but not limited to hydrogen sulfide, are present in the wastewater at the pump stations, gravity sewer mains, manholes, and force mains. The Contractor is responsible to ensure all safety and personal protection equipment is provided to all employees and subcontractors at all times as necessary.

J. Pump station sites are constrained. Contractor shall provide additional storage or work areas as required to minimize conflict with existing operations and to facilitate Owner usage.

K. The Contractor shall be responsible for all sewage removal, including hauling and disposal in accordance with all regulatory requirements.

L. At the Food Lion Pump Station (PS 79), water main pressure monitoring shall be continuous throughout construction. Any momentary outages on the water main pressure monitoring shall be coordinated and approved by SJCUD. A minimum notice of 5 working days is required for any momentary outages. Construct temporary water pressure monitoring facilities including electrical equipment rack, RTU, Antenna Mast, Antenna, water pressure transmitter, static water line connection, and electrical service. SJCUD shall furnish the temporary RTU, Antenna Mast, Antenna and pressure transmitter for installation by the Contractor.

1.06 Schedule

A. Perform work in a sequence to ensure completion of the Work in the Contract Time. Completion dates of the various stages shall be in accordance with the approved construction schedule submitted by the Contractor.

B. The Contractor shall submit a written schedule to the Owner for approval prior to commencing work. Completion dates of the various stages shall be in accordance with the approved construction schedule submitted by the contractor.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

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Part 1 General

1.01 Scope

A. The Contractor shall furnish all equipment and labor materials required to provide the Owner with continuous color audio-visual digital recording and photographs for the entire project limits to save as a record of pre-construction conditions.

B. Photo and video files shall become the property of the Owner and none of the videos or photographs shall be published without express permission of the Owner.

1.02 Pre and Post Construction Videos and Photographs

A. Prior to the beginning of any work, the Contractor shall take videos and photographs of the work area to record existing conditions.

B. Following completion of the work, another set of videos and photographs shall be made showing the same areas and features as in the pre-construction videos and photographs.

C. All conditions which might later be subject to disagreement shall be shown in sufficient detail to provide a basis for decisions.

1.03 Progress Videos and Photographs

A. The photographs shall include the date and time marking of the recording.

B. The video and photography view selections will be as agreed to with the Owner.

1.04 File Format, Media and Submittals

A. Photographs shall be in "jpg" format.

B. Videos shall be in a format viewable by Microsoft Windows Media Player or Apple QuickTime Player. Audio narration is desirable.

C. Files shall be named such that what is being viewed is self evident. Videos shall be submitted with a log of the items recorded and referenced to stations and property numbers.

D. Files shall be submitted on a compact disk (CD) or a digital video disk (DVD). If submitted on DVD, disk shall be recorded in "Minus R" format.

E. The pre-construction videos and photographs shall be submitted to the Owner within 30 calendar days after the date of receipt by the Contractor of Notice to Proceed. Post-construction videos and photographs shall be provided prior to final acceptance of the Project.

F. Construction photographs shall be submitted monthly with each payment request.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Scope

A. The work under this Section includes submittal to the Engineer of shop drawings, product data and samples required by the various Sections of these Specifications.

B. Submittal Contents: The submittal contents required are specified in each Section.

C. Definitions: Submittals are categorized as follows:

1. Shop Drawings

   a. Shop drawings shall include technical data, drawings, diagrams, procedure and methodology, performance curves, schedules, templates, patterns, test reports, calculations, instructions, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.

   b. Provide newly-prepared information, on bond sheets, with graphic information at accurate scale (except as otherwise indicated) or appropriate number of prints hereof, with name or preparer (firm name) indicated. The Contract Drawings shall not be traced or reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and note dimensions that are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards and special coordination requirements. Do not allow shop drawings to be used in connection with the Work without appropriate final "Action" markings by the Engineer.

   c. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, Specification Section as shown on the Contract Drawings.

2. Product Data

   a. Product data includes standard printed information on materials, products and systems, not specially prepared for this Project, other than the designation of selections from among available choices printed therein.

   b. Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to the Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked and special coordination requirements.

3. Samples

   a. Samples include both fabricated and un-fabricated physical examples of materials, products and units of work, both as complete units and as smaller

portions of units of work, either for limited visual inspection or, where indicated, for more detailed testing and analysis.

b. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples, not less than three units, where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where the Engineer's selection is required. Prepare samples to match the Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the Engineer. Engineer will note "test" samples, except as otherwise indicated, for other requirements, which are the exclusive responsibility of the Contractor.

4. Miscellaneous submittals related directly to the work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the work but not processed as shop drawings, product data or samples.

1.02 Specific Category Requirements

A. General: Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal. Submittals shall contain:

1. The date of submittal and the dates of any previous submittals.

2. The Project title.

3. Numerical submittal numbers, starting with 1.0, 2.0, etc. Revisions to be numbered 1.1, 1.2, etc.

4. The Names of:

   a. Contractor

   b. Supplier

   c. Manufacturer

5. Identification of the product, with the Specification Section number, permanent equipment tag numbers and applicable Drawing No.

6. Field dimensions, clearly identified as such.

7. Relation to adjacent or critical features of the work or materials.

8. Applicable standards, such as ASTM or Federal Specification numbers.

9. Notification to the Engineer in writing, at time of submissions, of any deviations on the submittals from requirements of the Contract Documents.

10. Identification of revisions on resubmittals.

11. An 8 x 3-inch blank space for Contractor and Engineer stamps.

12. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria and coordination of the information within the submittal with requirements of the work and of Contract Documents.

13. Submittal sheets or Drawings showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

1.03 Routing of Submittals

A. Submittals and routine correspondence shall be routed as follows:

1. Supplier to Contractor (through representative if applicable)

2. Contractor to Engineer

3. Engineer to Contractor and Owner

4. Contractor to Supplier

1.04 Submittal Log

A. The Contractor shall maintain a log of all Submittals. The log shall be kept accurate and up to date. The log shall include the following items at a minimum: submittal number, specification section, description, date submitted to Engineer, date returned to Contractor, submittal status, date resubmitted (if applicable), date resubmittal returned to Contractor (if applicable)

Part 2 Products

2.01 Shop Drawings

A. Unless otherwise specifically directed by the Engineer, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the work.

2.02 Manufacturer's Literature

A. Where content of submitted literature from manufacturers includes data not pertinent to this submittal, clearly indicate which portion of the contents is being submitted for the Engineer's review.

B. Submit the number of copies which are required to be returned (not to exceed three) plus two (2) copies which will be retained by the Engineer.

2.03 Samples

A. Samples shall illustrate materials, equipment or workmanship and established standards by which completed work is judged.

B. Unless otherwise specifically directed by the Engineer, all samples shall be of the precise article proposed to be furnished.

C. Submit all samples in the quantity which is required to be returned plus one sample which will be retained by the Engineer.

2.04 Colors

A. Unless the precise color and pattern is specifically described in the Contract Documents, wherever a choice of color or pattern is available in a specified product, submit accurate color charts and pattern charts to the Engineer for review and selection.

B. Unless all available colors and patterns have identical costs and identical wearing capabilities, and are identically suited to the installation, completely describe the relative costs and capabilities of each.

Part 3 Execution

3.01 Contractor's Coordination of Submittals

A. Prior to submittal for the Engineer's review, the Contractor shall use all means necessary to fully coordinate all material, including the following procedures:

1. Determine and verify all field dimensions and conditions, catalog numbers and similar data.

2. Coordinate as required with all trades and all public agencies involved.

3. Submit a written statement of review and compliance with the requirements of all applicable technical Specifications as well as the requirements of this Section.

4. Clearly indicate in a letter or memorandum on the manufacturer's or fabricator's letterhead, all deviations from the Contract Documents.

B. Each and every copy of the shop drawings and data shall bear the Contractor's stamp showing that they have been so checked. Shop drawings submitted to the Engineer without the Contractor's stamp will be returned to the Contractor for conformance with this requirement.

C. The Owner may backcharge the Contractor for costs associated with having to review a particular shop drawing, product data or sample more than two times to receive a "No Exceptions Taken" mark.

D. Grouping of Submittals

1. Unless otherwise specifically permitted by the Engineer, make all submittals in groups containing all associated items.

2. No review will be given to partial submittals of shop drawings for items which interconnect and/or are interdependent. It is the Contractor's responsibility to assemble the shop drawings for all such interconnecting and/or interdependent items, check them and then make one submittal to the Engineer along with Contractor's comments as to compliance, non-compliance or features requiring special attention.

E. Schedule of Submittals

1. Within 30 days of Contract award and prior to any shop drawing submittal, the Contractor shall submit a schedule showing the estimated date of submittal and the desired approval date for each shop drawing anticipated. A reasonable period shall be scheduled for review and comments. Time lost due to unacceptable submittals shall be the Contractor's responsibility and some time allowance for resubmittal shall be provided. The schedule shall provide for submittal of items which relate to one another to be submitted concurrently.

F. Submit the following number of copies:

1. Shop Drawings: Three (3) copies.

2. Samples: Three (3) copies, unless otherwise noted.

3. Product Data: Three (3) copies, unless otherwise noted.

4. Operation and Maintenance Data: As required in Section 01 78 23.

G. Electronic Submittals: Submittals may be made in electronic format.

1. Each submittal shall be an electronic file in Adobe Acrobat Portable Document Format (PDF). Use the latest version available at time of execution of the Agreement.

2. Electronic files that contain more than 10 pages in PDF format shall contain internal bookmarking from an index page to major sections of the document.

3. PDF files shall be set to open in "Bookmarks and Page" view.

4. Add general information to each PDF file, including title, subject, author and keywords.

5. PDF files shall be set up to print legibly at 8.5-inch by 11-inch, 11-inch by 17-inch, or 22-inch by 34-inch. No other paper sizes will be accepted.

6. Submit new electronic files for each resubmittal.

7. Include a copy of the Contractor's written statement of review and compliance with the requirements of all applicable Technical Specifications as well as the requirements of this Section, including Contractor's stamp with each electronic file.

8. Hard copies must also be submitted in quantities noted in this Section. The Engineer's review time will commence upon receipt of the hard copies.

9. Detailed procedures for handling electronic submittals will be discussed at the preconstruction conference.

H. Direct submittals to Engineer at the following, unless specified otherwise: available at preconstruction conference.

3.02 Timing of Submittals

A. Time of review shall commence on Engineer's receipt of submittal. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery.

B. In scheduling, allow sufficient time for the Engineer's review following the receipt of the submittal.

3.03 Reviewed Shop Drawings

A. Engineer Review

1. Allow a minimum of 21 calendar days for the Engineer's initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The Engineer will advise the Contractor promptly when it is determined that a submittal being processed must be delayed for coordination. Advise the Engineer on each submittal as to whether processing time is critical to progress of the work, and therefore the work would be expedited if processing time could be foreshortened.

2. Resubmittals will be subject to the same review time.

3. No adjustment of Contract Times or Price will be allowed as a result of delays in progress of work caused by rejection and subsequent resubmittals.

4. Acceptable submittals will be marked "No Exceptions Taken". A minimum of two (2) copies will be retained by the Engineer for Engineer's and the Owner's use and the remaining copies will be returned to the Contractor.

5. Submittals marked "Exceptions Noted" do not require resubmittal. The Contractor may incorporate product(s) or implement work covered by submittal, in accordance with Engineer's notations. A minimum of two (2) copies will be retained by the Engineer for Engineer's and the Owner's use and the remaining copies will be returned to the Contractor.

6. Submittals requiring minor corrections before the product is acceptable will be marked "Make Corrections Noted". The Contractor may order, fabricate and ship the items included in the submittals, provided the indicated corrections are made. Drawings must be resubmitted for review and marked "No Exceptions Taken" prior to installation or use of products.

7. Submittals marked "Amend and Resubmit" must be revised to reflect required changes and the initial review procedure repeated.

8. The "Rejected - See Remarks" notation is used to indicate products which are not acceptable. Upon return of a submittal so marked, the Contractor shall repeat the initial review procedure utilizing acceptable products.

9. Only three (3) copies of items marked "Amend and Resubmit" and "Rejected - See Remarks" will be reviewed and marked. One copy will be retained by the Engineer, one copy will be retained by the Owner, and the other copy with all remaining unmarked copies will be returned to the Contractor for resubmittal.

B. No work or products shall be installed without a drawing or submittal bearing the "No Exceptions Taken" or "Exceptions Noted" notation. The Contractor shall maintain at the job site a complete set of shop drawings bearing the Engineer's stamp.

C. Use of the "No Exceptions Taken" or "Exceptions Noted" notation on shop drawings or other submittals is general and shall not relieve the Contractor of the responsibility of furnishing products of the proper dimension, size, quality, quantity, materials and all performance characteristics, to efficiently perform the requirements and intent of the Contract Documents. The Engineer's review shall not relieve the Contractor of responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site. The Contractor is also responsible for information that pertains solely to the fabrication processes or to the technique of construction and for the coordination of the work of all trades.

3.04 Resubmission Requirements

A. Shop Drawings

1. Revise initial Drawings as required and resubmit as specified for initial submittal, with the resubmittal number shown.

2. Clearly indicate on Drawings all changes which have been made.

B. Project Data and Samples: Resubmit new data and samples as specified for initial submittal, with the resubmittal number shown.

END OF SECTION

Part 1 General

1.01 Description

A. Scope: This Section affixes responsibilities for the various aspects of Quality Control and Quality Assurance on this Project. Specific requirements; details of tests and inspections; and modifications to the provisions of this Section appear in the detailed technical sections. All testing and quality requirements included in the St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications also apply. Except as modified by the detailed technical sections or the Drawings, the provisions of this Section apply. The types of Quality Control and Quality Assurance actions covered by this Section include:

1. Construction Observation.
2. Painting and Coating thickness and holiday testing and inspection.
3. Factory tests and certifications.
4. Equipment checkout and acceptance testing.
5. Pipeline testing.
6. Pre-final and final inspections.

B. Related Sections

1. Section 01 75 16 - Starting of Systems
2. Section 01 78 23 - Operation and Maintenance Data
3. Section 09 91 00 – Painting
4. Section 09 96 00 – Protective Coatings
5. Section 43 21 39.13 - Submersible Pumps
6. Division 40, Applicable Sections on Piping and Valves

1.02 Quality Assurance

A. Qualifications: All agencies and individuals conducting inspections and tests shall be trained and experienced, to the satisfaction of the Owner. Where certifications or qualifications are generally accepted as required for certain tests or inspections, the firm and/or individual shall possess such certifications or qualifications.

B. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

1. Standards of the Hydraulic Institute.

2. National Electrical Code.

3. Standards of National Electrical Manufacturers Association.

4. Institute of Electrical and Electronic Engineers.

5. American National Standards Institute.

6. Standards of American Water Works Association.

7. American Society for Testing and Materials (ASTM)

C. General: The Contractor is fully responsible for the quality of its Work, and for meeting all requirements of the Contract Documents. The conduct or lack of observations, inspections, and tests, whether by the Contractor, the Owner, or the Engineer, shall in no way relieve the Contractor of any of these responsibilities.

1.03 Submittals

A. Qualifications

1. Except as prescribed below, where inspections and tests are to be provided by the Contractor or its sub-contractors or suppliers (at any level), the qualifications of the firm and/or individual shall be submitted to the Owner for approval prior to conducting the tests.

2. Pre-approval is not required if the firm conducting the test is a qualified Independent Testing Agency or if the individual conducting or certifying the result is a Professional Engineer, licensed to practice in the State of Florida, whose seal and signature appear on the report. In these cases, the qualifications need be submitted for approval of the Owner only if requested.

B. Notification

1. Where inspections and tests are to be provided by the Contractor or its sub-contractors or suppliers (at any level), the testing may be witnessed by the Owner. Contractor shall notify the Owner, in writing, at least fourteen (14) calendar days in advance of the testing. The written notifications shall specify the exact time and date, and location, the equipment covered, the tests that will be conducted, and shall define the test procedures to be utilized. Testing procedure and schedule shall be performed during normal working hours and shall be subject to review by the Owner.

2. Where inspections and tests are to be conducted by the Owner, Contractor shall notify the Owner, in writing, at least seven (7) calendar days in advance of the first inspection or test of each type, and at least 24 hours in advance of each subsequent test or inspection of that type.

C. Reports

1. Reports of all inspections and tests required by the Contract Documents will be submitted to the Owner for approval, within one (1) week of the conduct of the test.

2. Where these reports are required by the Contract Documents to be "Certified", the report shall be signed with an appropriate certification and sealed by either a Professional Engineer or an officer of the corporation conducting the inspection or test.

3. Where inspections or tests are to be conducted or paid for by the Owner or its sub-consultants, a copy of the report will be submitted to the Contractor within one week of the conduct of the inspection or test.

1.04 Construction Observation

A. All Work will be subject to Construction Observation, which may be performed by the Resident Project Representative or other representative of the Owner. Observations may include visual observations and/or measurements and tests.

B. The Observer shall conduct his/her observations with as little disruption to the Contractor's work as practical, and shall report, orally, any discrepancies observed to the Contractor's on-site foreman or superintendent.

C. The Contractor shall suspend work, if required, and provide safe and appropriate access to the Observer. The Contractor shall immediately correct any work observed to be out of compliance with the Contract Documents and suspend further work until it is approved. If the Contractor believes that the Work is in compliance with the Contract Documents, he shall immediately notify the Engineer and request direction.

1.05 Painting and Coating Thickness and Holiday Testing and Inspection

A. Painting and coating Work will be subject to Construction Observation, inspection, and test of surface preparation, conformance to application requirements, coating thickness, and coverage.

B. Observations, surface preparation inspection, and wet-film thickness measurement will be conducted as specified for "Construction Observation."

C. Dry-film thickness and holiday testing will be conducted by the Contractor and witnessed by the Owner.

D. The Contractor shall immediately correct any work observed to be out of compliance with the Contract Documents and suspend further work until it is approved. If the Contractor believes that the Work is in compliance with the Contract Documents, he shall immediately notify the Owner and request direction.

1.06 Factory Tests

A. Equipment will be subject to factory tests as prescribed in the individual technical sections.

B. Factory Tests will be conducted and paid for by the Contractor, and may be witnessed by a representative of the Owner.

C. Unless otherwise specified in the technical section, the costs of the conduct and reporting of tests will be borne by the Contractor and travel and salary costs associated with witnessing factory tests shall be borne by the Owner.

D. The results of all required factory tests shall be certified and reported to the Engineer, for approval, prior to shipping the tested equipment in accordance with Section 01 33 23.

E. If requested by the Contractor and approved by the Engineer, the requirement for factory tests for minor equipment may be met by certified tests of previously-manufactured equipment of the same make, model, and capacity. Such request, along with the certified test results, shall be submitted with the original equipment submittal. If Engineer requires individual test of the equipment for this Project, the Contractor shall ensure that such is done, at no additional cost to the Owner.

1.07 Equipment Checkout and Acceptance Testing

A. The Contractor shall provide equipment checkout and acceptance tests for:

1. All systems and motorized equipment specified in Divisions 40 and 43

2. All motorized valves and check valves

3. All control instruments, panels and systems.

B. The checkout and tests shall be conducted by qualified representatives of the manufacturers, and may be witnessed by a representative of the Owner. Additional requirements for furnishing services of manufacturers' representatives are specified in the appropriate Sections.

C. Unless otherwise specified in the technical section, the costs of the conduct and reporting of tests will be borne by the Contractor. Such costs include all labor, travel, chemicals, materials, instruments, fuel, incidentals, and expendables required, unless otherwise provided.

D. Preliminary Tests: Prior to, or in conjunction with activities prescribed by Section 01 75 16 – Starting of Systems.

1. Contractor shall make preliminary field tests of all equipment as soon as conditions permit.

2. Purpose of tests is to determine if equipment is: properly installed, in compliance with operating cycles, and operational and free from overheating, overloading, vibration or other operating problems.

3. Contractor shall make all changes, adjustments and replacements required to place equipment in service and test it.

4. The Owner shall be given sufficient notice prior to witness tests. A minimum 48 hour notice shall be given.

E. Final Tests: After preliminary tests.

1. To the maximum extent possible, Contractor shall perform final field tests of equipment and systems prior to initial start-up and operation of the Project. Where this is not practicable, Contractor shall request, in writing, approval of the Owner, to perform final

testing simultaneously with start-up. Contractor shall define procedures necessary to comply with the requirements of Section 01 75 16 – Starting of Systems.

2. Purpose of the tests is to demonstrate that equipment is: properly installed, completely ready for operation by the Owner, and in compliance with design conditions, material specifications and all other requirements of the Contract Documents.

3. Until final field tests are completed and approved, Contractor shall make all necessary changes, adjustments and replacements.

4. Systems or unit process or any piece of equipment shall not be started-up without the approved Operation and Maintenance Manuals being turned over to the Owner.

5. Contractor shall keep notes and data on tests and submit copy to the Engineer. The Owner's operating personnel shall witness all tests.

F. Within 14 calendar days after installation, and before payment for installation is approved, Contractor shall submit to the Engineer a letter from the manufacturer, on the manufacturer's letterhead, stating all equipment and components are installed in accordance with the manufacturer's requirements and installation instructions as described in these Specifications.

1.08 Pipeline Testing

A. All testing shall be in accordance with the requirements of St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.1.12 – Material Inspection and Testing and Section 3.9 – Pressure and Leakage Testing of Pressurized Pipe.

B. Cleaning and Disposal

1. Contractor shall provide suitable means for disposal of test and flushing water so that no damage results to facilities or waterways. Means of disposal of test and flushing water shall be subject to the approval of Owner, local governing authorities and regulatory agencies.

2. Cleaning: Thoroughly clean all piping and flush prior to placing in service in a manner approved by Owner.

1.09 Pre-Final and Final Inspections

A. When the Contractor believes that the Work is substantially complete, as defined by the General Conditions and Supplemental Conditions of the Contract, he shall notify the Owner, in writing, in accordance with these Conditions. Pre-Final and Final Inspections shall be conducted by the Contractor, and the Owner, in accordance with the General Conditions and Supplemental Conditions of the Contract.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Description

A. Whenever reference is made to conforming to the standards of any technical society, organization, body, code or standard, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the time of advertisement for Bids. This shall include the furnishing of materials, testing of materials, fabrication and installation practices. In those cases where the Contractor's quality standards establish more stringent quality requirements, the more stringent requirement shall prevail. Such standards are made a part hereof to the extent which is indicated or intended.

B. The inclusion of an organization under one category does not preclude that organization's standards from applying to another category.

C. In addition, all work shall comply with the applicable requirements of local codes, utilities and other authorities having jurisdiction.

D. All material and equipment, for which a UL Standard, an AGA or NSF approval or an ASME requirement is established, shall be so approved and labeled or stamped. The label or stamp shall be conspicuous and not covered, painted, or otherwise obscured from visual inspection.

E. The standards which apply to this Project are not necessarily restricted to those organizations which are listed in Article 1.02.

1.02 Standard Organizations

A. Piping and Valves

ACPA	American Concrete Pipe Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
AWWA	American Water Works Association
CISPI	Cast Iron Soil Pipe Institute
DIPRA	Ductile Iron Pipe Research Association
FCI	Fluid Controls Institute
MSS	Manufacturers Standardization Society
NCPI	National Clay Pipe Institute
NSF	National Sanitation Foundation
PPI	Plastic Pipe Institute
Uni-Bell	PVC Pipe Association

B. Materials

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials

C. Painting and Surface Preparation

NACE	National Association of Corrosion Engineers
SSPC	Steel Structures Painting Council

D. Electrical and Instrumentation

AEIC	Association of Edison Illuminating Companies
AIEE	American Institute of Electrical Engineers
EIA	Electronic Industries Association
ICEA	Insulated Cable Engineers Association
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
IPC	Institute of Printed Circuits
IPCEA	Insulated Power Cable Engineers Association
ISA	The Instrumentation, Systems, and Automation Society
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
REA	Rural Electrification Administration
TIA	Telecommunications Industries Association
UL	Underwriter's Laboratories
VRCI	Variable Resistive Components Institute

E. Aluminum

AA	Aluminum Association
AAMA	American Architectural Manufacturers Association

F. Steel and Concrete

ACI	American Concrete Institute
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
CRSI	Concrete Reinforcing Steel Institute
NRMA	National Ready-Mix Association
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute

G. Welding

ASME	American Society of Mechanical Engineers
AWS	American Welding Society

H. Government and Technical Organizations

AIA	American Institute of Architects
APHA	American Public Health Association
APWA	American Public Works Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASQC	American Society of Quality Control
ASSE	American Society of Sanitary Engineers
CFR	Code of Federal Regulations
CSI	Construction Specifications Institute
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FCC	Federal Communications Commission

FmHA	Farmers Home Administration
FS	Federal Specifications
IAI	International Association of Identification
ISEA	Industrial Safety Equipment Association
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
NBFU	National Board of Fire Underwriters
(NFPA)	National Fluid Power Association
NBS	National Bureau of Standards
NISO	National Information Standards Organization
OSHA	Occupational Safety and Health Administration
SI	Salt Institute
SPI	The Society of the Plastics Industry, Inc.
USDC	United States Department of Commerce
WEF	Water Environment Federation

I. General Building Construction

AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AITC	American Institute of Timber Construction
APA	American Parquet Association, Inc.
APA	American Plywood Association
BHMA	Builders Hardware Manufacturers Association
BIFMA	Business and Institutional Furniture Manufacturers Association
DHI	Door and Hardware Institute
FM	Factory Mutual Fire Insurance Company
HPMA	Hardwood Plywood Manufacturers Association
HTI	Hand Tools Institute
IME	Institute of Makers of Explosives
ISANTA	International Staple, Nail and Tool Association
ISDSI	Insulated Steel Door Systems Institute
IWS	Insect Screening Weavers Association
MBMA	Metal Building Manufacturers Association
NAAMM	National Association of Architectural Metal Manufacturers
NAGDM	National Association of Garage Door Manufacturers
NCCLS	National Committee for Clinical Laboratory Standards
NFPA	National Fire Protection Association
NFSA	National Fertilizer Solutions Association
NKCA	National Kitchen Cabinet Association
NWMA	National Woodwork Manufacturers Association
NWWDA	National Wood Window and Door Association
RMA	Rubber Manufacturers Association
SBC	SBCC Standard Building Code
SDI	Steel Door Institute
SIA	Scaffold Industry Association
SMA	Screen Manufacturers Association
SPRI	Single-Ply Roofing Institute
TCA	Tile Council of America
UBC	Uniform Building Code

J. Roadways

AREA	American Railway Engineering Association
DOT	Department of Transportation

K. Plumbing

AGA	American Gas Association
NSF	National Sanitation Foundation
PDI	Plumbing Drainage Institute
SPC	SBCC Standard Plumbing Code

L. Equipment

AFBMA	Anti-Friction Bearing Manufacturers Association, Inc.
AGMA	American Gear Manufacturers Association
ALI	Automotive Lift Institute
CEMA	Conveyor Equipment Manufacturers Association
CMAA	Crane Manufacturers Association of America
DEMA	Diesel Engine Manufacturers Association
MMA	Monorail Manufacturers Association
OPEI	Outdoor Power Equipment Institute, Inc.
PTI	Power Tool Institute, Inc.
RIA	Robotic Industries Association
SAMA	Scientific Apparatus Makers Association

1.03 Symbols

A. Symbols and material legends shall be as scheduled on the Drawings.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Scope

A. The work under this Section defines the minimum scope of services to be provided by the Contractor during start-up, operating test period, and operator training using factory representatives of the manufacturers of the equipment provided.

B. Furnish all labor, materials, tools, equipment, and services for the cleaning up or preparation of all equipment which is required in conjunction with the instruction work to be performed for the Owner's personnel.

C. Perform additional instruction of the Owner's personnel for any and all items of work that are incomplete at the time initial instruction sessions are scheduled.

D. Although such work may not be explicitly specifically indicated elsewhere, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation, and to provide instructions upon the functions of that installation.

E. Provide instruction for all equipment and systems for which operating and maintenance data is required.

F. Instruction sessions may be combined to some extent between several pieces of similar equipment within the same training session, but only if that combination is defined in the Contractor's instruction program submittal and approved by the Owner.

G. One instruction session for each major type of equipment will be required. The Contractor shall anticipate that up to ten of the Owner's employees will participate in any particular instruction session, and shall be prepared to provide the required number of handouts, manuals, and tools for each session.

1.02 Qualification

A. Qualification of the manufacturer's representatives for installation, start-up, and operator training purposes shall be appropriate for the equipment being installed. Manufacturer's representatives shall be subject to the approval of the Owner. Where equipment has significant process complexity, furnish the services of engineering personnel knowledgeable in the process involved and the function of the equipment.

B. References in various equipment sections of the terms "factory representative" or "field representative" shall mean an employee of the equipment manufacturer who is completely knowledgeable of the manufacturing, installation, operation and maintenance of the equipment. A sales representative does not qualify, unless it is documented that they have been specifically trained by the Manufacturer. Any field or factory representative not an active employee of the manufacturer must provide documentation from the manufacturer stating that the individual, by name, has been formally trained in the installation, operation and maintenance of the equipment and is authorized to make the required certification to perform the required services.

1.03 Submittals

A. At least 21 calendar days prior to the scheduled instruction session, submit course outlines and training material for each of the approved instruction session. Instruction session outlines and their contents shall be subject to the approval of the Owner.

B. Submit a separate instruction request/report (form attached) for each system or type of equipment, subject to the Owner's approval of availability of personnel.

1. Submit request/report with preliminary information indicated, to the Owner at least two weeks prior to first instruction period.

2. After each instruction session, submit three copies of the completed report to the Owner.

1.04 Coordination

A. Do not begin instructions until component assembly or system has been tested as specified in Section 01 75 16 and is in satisfactory operating condition.

B. Prior to instruction sessions, assemble instructional aids, tools, test equipment, and any necessary copies of Operations and Maintenance Manuals.

C. All instruction sessions shall be planned and scheduled such that the Owner's participants will utilize copies of the Project Operations and Maintenance Manuals which will have been previously provided. These copies are in addition to the quantities which have to be provided to the Owner under Section 01 78 23. The use of draft copies of these manuals will be acceptable.

D. The Contractor shall schedule and coordinate the visits of factory representatives during installation, start-up and operator training in accordance with the requirements of Section 01 75 16 of these Specifications.

E. The Contractor shall notify the Owner 72 hours prior to any impending visit by factory representatives so that the Owner can be present.

1.05 Installation Inspection, Start-Up, and Testing Services

A. The Contractor shall furnish the services of a factory representative to provide the Installation Inspection, Pre-Start-Up Maintenance, and Operational Testing in accordance with Section 01 75 16 and the equipment sections of these Specifications.

1.06 Operator Training Services

A. Provide all instruction as required to ensure understanding of all operating and maintenance procedures by the Owner designated personnel.

B. Instruct Owner's personnel in operation and maintenance of equipment and systems. Provide all necessary instruction to satisfaction of the Owner.

C. Explain use of Operating and Maintenance Manuals.

D. Tour areas involved and identify:

1. Maintenance and access points.

2. Control locations and control equipment.

E. Explain operating sequences:

1. Identify location and show operation of switches, valves, etc., used to start, stop, and adjust systems.
2. Explain use of flow diagrams, operating sequences, diagrams, etc.
3. Demonstrate operation through complete cycle(s) and full range of operation in all modes, including testing and adjusting relevant to operation.

F. Explain use of control equipment, including temperature settings, switch modes, available adjustments, reading of gauges, and functions that must be serviced only by authorized factory representative.

G. Explain trouble shooting procedures:

1. Demonstrate commonly occurring problems.
2. Note procedures which must be performed by factory personnel.

H. Explain maintenance procedures and requirements:

1. Point out items requiring periodic maintenance.
2. Demonstrate typical preventive maintenance procedures and recommend typical maintenance intervals.
3. Demonstrate other commonly occurring maintenance procedures not part of preventive maintenance program.
4. Identify maintenance materials to be used.

I. Furnish all tools and/or test equipment required for proper instruction of the Owner's personnel. Tools and/or test equipment shall be distributed in "sets" with each two participants having a "set" to work with and retain upon completion of the instruction. Each participant shall sign for their tools at the start of the instruction session, and copies of the assignment documents shall be provided to the Owner by the Contractor.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

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E. Erosion Control: Provide erosion control.

F. Pollution: Prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. Do not permit sanitary wastes to enter any drain or watercourse other than sanitary sewers. Do not permit sediment, debris, or other substances to enter sanitary sewers. Take reasonable measures to prevent such materials from entering any drain or watercourse.

1.08 Traffic Regulation

A. Parking: Parking facilities for the Contractor's and Contractor's subcontractors' personnel shall be the Contractor's responsibility. The storage and work facilities provided by the Owner will not be used for parking by the Contractor's or subcontractor's personnel.

B. Access: Conduct Work to interfere as little as possible with public travel, whether vehicular or pedestrian. Provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel. Whenever it is necessary to cross, obstruct, or close roads, driveways, and walks, whether public or private, give reasonable notice to owners of private drives before interfering with them. Such maintenance of traffic will not be required when the Contractor has obtained permission from the owner or tenant of private property, or from the authority having jurisdiction over the public property involved, to obstruct traffic at the designated point.

Part 2 Products

2.01 General

A. Materials: Contractor shall provide new materials. If acceptable in writing by the Owner, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

1. Lumber and Plywood: Provide UL-labeled, fire-treated lumber and plywood for temporary offices and sheds. Provide exterior, Grade B-B high-density concrete form overlay plywood for signs. Provide 5/8-inch- (16-mm-) thick exterior plywood for other uses.

2. Tarpaulins: Waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.

3. Water: Potable water approved by local health authorities.

4. Open-Mesh Fencing: 0.120-inch- (3-mm-) thick, galvanized 2-inch (50-mm) chain link fabric fencing 6 feet (2 m) high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches (38 mm) I.D. for line posts and 2-1/2 inches (64 mm) I.D. for corner posts.

the service. The Contractor shall provide the remainder with matching, compatible materials and equipment at no additional cost to the Owner. The Contractor shall comply with utility company recommendations:

1. Arrange with utility company and existing users a time when service can be interrupted to make connections for temporary services.

2. Provide adequate capacity at each stage of construction. Prior to the establishment of temporary utility service, Contractor shall provide trucked-in services at no additional costs to the Owner.

3. Contractor shall obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.

4. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner. The Owner will not accept cost or use charges as a basis of claims for Change Orders.

C. Security and Protection Facilities Installation: Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until acceptance of Substantial Completion by the Owner.

1. Temporary Fire Protection: Until permanent facilities supply fire-protection needs, install and maintain temporary fire-protection facilities of types needed to protect against controllable fire losses. Comply with NFPA 10 and NFPA 241.

   a. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell. Maintain unobstructed access to fire extinguishers.

   b. Store combustible materials in containers in fire-safe locations.

   c. Prohibit smoking in hazardous fire-exposure areas.

   d. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

2. Security Enclosure and Lockup: Install temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, and theft. Provide a secure lockup where materials and equipment are of value and must be stored.

3. Environmental Protection: Operate temporary facilities and conduct construction in ways that comply with environmental regulations and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making equipment to hours that will minimize complaints.

D. Operation: Enforce discipline in use of temporary facilities. Limit availability of intended uses to minimize waste and abuse.

E. Maintenance: Maintain facilities in operating condition until removal. Protect from damage by freezing temperatures and similar elements. Maintain temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid damage.

F. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect during excavation.

G. Termination and Removal: Contractor shall remove each temporary facility when the need has ended, when replaced by a permanent facility, or no later than the request for Substantial Completion. Complete or restore permanent construction delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired:

1. Materials and temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.

2. At time of request for Substantial Completion, clean and renovate permanent facilities used during the construction period.

   a. Replace air filters and clean inside of ductwork and housings.

   b. Replace worn parts and parts subject to unusual operating conditions.

   c. Replace burned out lamps.

END OF SECTION

Part 1 General

1.01 Scope

A. This Section covers furnishing, maintaining, and operating a temporary bypass pumping system during construction. The Contractor shall furnish all materials, labor, equipment, power, maintenance, etc., to implement a temporary pumping and control system for the purpose of diverting the existing flow around the work area.

B. Design and installation of these systems shall be the Contractor's responsibility subject to Owner approval as specified.

1.02 General

A. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility. The Contractor shall employ the services of a Specialty Firm (Firm) who can demonstrate to the Owner that it specializes in the design and operation of temporary bypass pumping systems. The Firm shall provide at least five references of projects of a similar size and complexity as this Project performed by his company within the past three years. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction. The approved Specialty Firms are as follows:

1. Godwin/Flygt
2. Sunbelt Rentals, Inc.
3. Thompson Pump and Manufacturing, Inc.
4. United Rentals, Inc.

1.03 Submittals

A. The Contractor shall prepare with the Firm a specific, detailed description of the proposed pumping system(s) required for each location and submit it along with the Firm's references within one month following Notice to Proceed.

B. The Contractor shall submit detailed plans and descriptions outlining all provisions and precautions to be taken by the Contractor regarding the handling of existing wastewater flows in accordance with the submittal section. This plan must be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, pump and drive control selection and design, materials and all other incidental items necessary and/or required to ensure proper protection of the facilities. The plan shall include but not be limited to details of the following:

1. Staging areas for pumps.
2. Sewer or Structure plugging method and types of plugs.

3. Number, size, material, location and method of installation of suction piping.
4. Number, size, material, method of installation and location of installation of discharge piping.
5. Bypass pump sizes, capacity, and number of each size to be on site and power requirements.
6. Motor control package design, including wiring diagrams, voltage and amperage requirements, control logic description.
7. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted).
8. Standby power provisions.
9. Thrust and restraint block sizes and locations if applicable.
10. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill.
11. Any temporary pipe supports and anchoring required.
12. Design plans and access provisions to bypass pumping and generator fueling locations indicated on the Drawings.
13. Calculations for selection of bypass pumping pipe size.
14. Schedule for installation and maintenance of bypass pumping lines.
15. Continuous monitoring, operating and emergency response plan.

Part 2 Products

2.01 Design and Performance Requirements

A. Bypass pumping systems shall have sufficient capacity to pump flow equal to the manifold condition as identified in the pump information table on the Drawings for each pump station. The Contractor shall provide all pumps of adequate size to handle the flow events and temporary piping to ensure that the total flow can be safely diverted around the work area.

B. It is essential to the operation of the existing sewerage system that there is no interruption in the flow of sewage throughout the duration of the project. To this end, the Contractor shall provide, maintain, and operate all temporary facilities such as dams, plugs, pumping equipment (both primary and back-up units as required), conduits, all necessary power, and all other labor and equipment necessary to intercept the sewage flow before it reaches the point where it would interfere with work, carry it past the work area, and return it to the existing sewer downstream of the work area. Contractor shall have adequate standby equipment of equal capacity

available onsite and ready for immediate operation and use in the event of an emergency or breakdown. Bypass pumping system may be required to be operated 24 hours a day. Contractor shall provide all necessary monitoring devices to notify the Contractor of any pump failure.

C. The design, installation and operation of the temporary pumping system shall be the Contractor's responsibility. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction.

E. The Contractor shall maintain sewer flow around the 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 and flooding.

F. The Contractor shall protect water resources, wetlands, and other natural resources.

G. The Contractor shall provide standby power to all electric pumping units in the event of power loss.

2.02 Equipment

A. All pumps used shall be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The pumps shall be diesel powered. Pumps shall be capable of handling raw, unscreened, sanitary sewage containing solids and fibrous materials. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of the wastewater flows. No equipment, including pumps, shall exceed 85 dBA at a distance of 5 feet from any part of the unit. Sound attenuated enclosures shall be provided as required to meet this noise limitation. For purposes of setting a standard, the pumps should be equal to Godwin Dri-Prime® as manufactured by Godwin Pumps of America, Inc.

B. The Contractor shall provide the necessary stop/start and variable speed controls for each pump. The motor controls shall use a PLC based level control system with a submersible level transducer to initiate start and stop signals to the motor controls. The system shall include an autodialer to alert and alarm of potential failures and prior to any high water alarms.

C. Discharge piping systems shall be constructed of restrained joint type piping. Joints shall allow no leakage. Standard aluminum irrigation piping or glued PVC is not acceptable.

D. Discharge and suction piping sizing shall be determined according to flow calculations system operating calculations.

Part 3 Execution

3.01 Field Quality Control and Maintenance

A. The Contractor shall perform leakage and pressure tests of the bypass piping using clean water prior to actual operation.

B. The Contractor shall inspect the bypass pumping system every two hours to ensure that the system is working correctly.

C. The Contractor shall insure that the temporary pumping system is properly maintained and that a responsible operator shall be on hand at all times when pumps are operating.

D. The Contractor shall submit a plan for the replacement of malfunctioning equipment.

E. Spare parts for pumps and piping shall be kept on site as required.

F. Adequate hoisting equipment for each pump and accessories shall be maintained on the site.

3.02 Installation and Operation

A. The Contractor shall install the bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the pipeline locations from the Owner. Routing of bypass pipelines shall not impede traffic or pedestrian flow.

B. Contractor shall remove manhole sections or make connections to the existing sewer and construct temporary bypass pumping structures as may be required to provide suction conduit.

C. Plugging or blocking of sewage flows shall incorporate primary and secondary plugging devices. When plugging or blocking is no longer needed for performance and acceptance of Work, it is to be removed in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging, or causing other major disturbances downstream.

D. When working inside a manhole or force main, the Contractor shall exercise caution and comply with OSHA requirements for working in the presence of sewer gases, combustible oxygen-deficient atmospheres, and confined spaces.

E. The installation of bypass pipelines is prohibited in all waterways and wetland areas. The pipeline must be located off streets, sidewalks, and cart paths. When the bypass pipeline crosses local streets and private driveways, where roadway ramps cannot be used, the Contractor must place the bypass line in trenches and cover with temporary pavement.

F. The Contractor shall protect the temporary pumping station and piping from damage during construction. The contactor shall also have an approved method to limit public access to temporary bypass facilities.

G. Contractor shall provide all fuel and power for the temporary pumping facility. Contractor shall make arrangements for a power meter and pay all associated fees.

H. Upon completion of the bypass pumping operations, and after the receipt of written permission from the Owner, the Contractor shall remove all piping, restore all property to pre-construction condition, and restore all surfaces. The Contractor is responsible for obtaining any approvals for placement of temporary pipelines from local agencies.

END OF SECTION

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Part 1 General

1.01 Scope

A. The work specified in this Section consists of providing and maintaining temporary and permanent erosion and sedimentation controls as shown on the Drawings and specified herein. This Section also specifies the subsequent removal of temporary erosion and sedimentation controls.

B. Temporary and permanent erosion and sedimentation controls shall comply with the State of Florida Erosion and Sediment Control Designer and Reviewer Manual, latest edition, Florida Department of Transportation Design Standards, latest edition, and applicable codes, ordinances, rules, regulations and laws of local and municipal authorities having jurisdiction.

1.02 Submittals

A. Submit product data in accordance with the requirements of Section 01 33 23 of these Specifications.

B. Prior to any construction activity, the Contractor shall submit, for the Owner's approval, a schedule for the accomplishment of temporary and permanent erosion and sedimentation control work. No work shall be started until the erosion and sedimentation control schedule has been approved by the Owner.

1.03 Quality Assurance

A. The temporary and permanent erosion and sedimentation control measures shown on the Drawings are minimum requirements. Any additional erosion and sedimentation control measures required by the Contractor's means, methods, techniques and sequence of operation will be installed by the Contractor at no additional cost to the Owner.

B. Perform all work under this Section in accordance with all pertinent rules and regulations including, but not necessarily limited to, those stated in these Specifications. Where provisions of pertinent rules and regulations conflict with these Specifications, the more stringent provisions shall govern.

C. Provide all materials and promptly take all actions necessary to achieve effective erosion and sedimentation control in accordance with local ordinances, other permits, local enforcing agency guidelines and these Specifications.

D. Basic Principles

1. Coordinate the land disturbance activities to fit the topography, soil types and conditions.

2. Minimize the disturbed area and the duration of exposure to erosive elements.

3. Provide temporary or permanent stabilization to disturbed areas immediately after rough grading is complete.

4. Safely convey run-off from the site to a stable outlet to prevent flooding and damage to downstream facilities resulting from increased runoff from the site.

5. Retain sediment on-site that was generated on-site.

6. Minimize encroachment upon water courses.

E. Implementation

1. The Contractor is solely responsible for the control of erosion within the Project site and the prevention of sedimentation from leaving the Project site or entering waterways.

2. The Contractor shall install temporary and permanent erosion and sedimentation controls which will ensure that runoff from the disturbed area of the Project site shall pass through a filter system before exiting the Project site.

3. The Contractor shall provide temporary and permanent erosion and sedimentation control measures to prevent silt and sediment from entering the waterways. The Contractor shall maintain an undisturbed vegetative buffer a minimum of 25 feet from the top of the bank.

4. The Contractor shall limit land disturbance activity to those areas shown on the Drawings.

5. The Contractor shall maintain erosion and sedimentation control measures within disturbed areas on the entire site at no additional cost to the Owner until the acceptance of the Project. Maintenance shall include mulching, re-seeding, clean-out of sediment barriers, replacement of washed-out or undermined erosion control materials, replacement of deteriorated hay bales and dislodged filter stone, to the satisfaction of the Owner.

6. All fines imposed for improper erosion and sedimentation control shall be paid by the Contractor.

Part 2 Products (Not Used)

Part 3 Execution

3.01 General

A. Temporary and permanent erosion and sedimentation control measures shall prevent erosion and prevent sediment from exiting the site. If, in the opinion of the Owner or Engineer, the Contractor's temporary erosion and sedimentation control measures are inadequate, the Contractor shall provide additional maintenance for existing measures

or additional devices to control erosion and sedimentation on the site at no additional cost to the Owner.

B. All erosion and sedimentation control devices and structures shall be inspected by the Contractor at least once a week and immediately prior to and after each rainfall occurrence. Any device or structure found to be damaged will be repaired or replaced by the Contractor by the end of the day.

C. All erosion and sedimentation control measures and devices shall be constructed and maintained as indicated on the Drawings or specified herein until adequate permanent disturbed area stabilization has been provided and accepted by the Owner. Once adequate permanent stabilization has been provided and accepted by the Owner, all temporary erosion and sedimentation control structures and devices shall be removed.

3.02 Sediment Control

A. Construction Exit

1. Construction exit(s) shall be located at any point traffic will be leaving a disturbed area to a public right-of-way, street, alley, and sidewalk or parking area.

2. Placement of Construction Exit Material: The ground surface upon which the construction exit material is to be placed shall be prepared to a smooth condition free from obstructions, depressions or debris. The stone shall be placed with its top elevation conforming to the surrounding roadway elevations.

3. Construction Exit Maintenance: The Contractor shall regularly maintain the exit with the top dressing of stone to prevent tracking or flow of soil onto public rights-of-way and paved surfaces as directed by the Owner.

4. Construction Exit Removal: Construction exit(s) shall be removed and properly disposed of when the disturbed area has been properly stabilized, the tracking or flow of soil onto public rights-of-way or paved surfaces has ceased and as directed by the Owner.

B. Sediment Barriers

1. Sediment barriers shall include, but are not necessarily limited to, silt fences, hay bales, inlet sediment traps, and any device which prevents sediment from exiting the disturbed area.

2. Sediment barriers shall be installed as shown on the Drawings and as specified herein.

3. Sediment barriers shall be maintained to ensure the depth of empounded sediment is no more than one-half of the original height of the barrier. Torn, damaged, destroyed or washed-out barriers shall be repaired, reinforced or replaced with new material and installed as shown on the Drawings.

4. Sediment Barrier Removal

a. Sediment barrier shall be removed once the disturbed area has been stabilized with a permanent vegetative cover and the sediment barrier is no longer required as directed by the Owner.

b. Accumulated sediment shall be removed from the barrier and spread over the site. All unsuitable material and excess sediment shall be removed from the site.

c. All non-biodegradable parts of the barrier shall be disposed of properly. The hay bales may be spread evenly across disturbed areas as a mulching material.

d. The disturbed area created by barrier removal shall be permanently stabilized.

3.03 Erosion Control

A. Plastic filter fabric shall be placed as shown on the Drawings.

B. Temporary Stabilization: Temporary stabilization shall be provided as shown on the Drawings and conforming to these Specifications to control erosion on the site. Temporary stabilization shall be provided to any area which will not receive permanent stabilization within the next 14 calendar days.

C. Permanent Stabilization: Permanent stabilization shall be provided as shown on the Drawings and conforming to these Specifications to control erosion on the site. Permanent stabilization shall be provided to all areas of land disturbance within seven calendar days of the completion of land disturbance.

1. Grass or sod removed or damaged in residential areas shall be replanted with the same variety within seven calendar days of the completion of work in any area.

2. Where permanent stabilization cannot be immediately established because of an inappropriate season, the Contractor shall provide temporary stabilization. The Contractor shall return to the site at the appropriate season to provide permanent stabilization in areas that received only temporary stabilization.

3.04 Clean-Up

A. Dispose of all excess erosion and sedimentation control materials in a manner satisfactory to the Owner.

B. Final clean-up shall be performed in accordance with the requirements of Section 01 74 00 of these Specifications.

END OF SECTION

Part 1 General

1.01 Scope

A. The Contractor shall provide transportation of all equipment, materials and products furnished under these Contract Documents to the Work site. In addition, the Contractor shall provide preparation for shipment, loading, unloading, handling and preparation for installation and all other work and incidental items necessary or convenient to the Contractor for the satisfactory prosecution and completion of the Work.

B. All equipment, materials and products damaged during transportation or handling shall be repaired or replaced by the Contractor at no additional cost to the Owner prior to being incorporated into the Work.

1.02 Transportation

A. All equipment shall be suitably boxed, crated or otherwise protected during transportation.

B. Where equipment will be installed using existing cranes or hoisting equipment, the Contractor shall ensure that the weights of the assembled sections do not exceed the capacity of the cranes or hoisting equipment.

C. Small items and appurtenances such as gauges, valves, switches, instruments and probes which could be damaged during shipment shall be removed from the equipment prior to shipment, packaged and shipped separately. All openings shall be plugged or sealed to prevent the entrance of water or dirt.

1.03 Handling

A. All equipment, materials and products shall be carefully handled to prevent damage or excessive deflections during unloading or transportation.

B. Lifting and handling drawings and instructions furnished by the manufacturer or supplier shall be strictly followed. Eyebolts or lifting lugs furnished on the equipment shall be used in handling the equipment. Shafts and operating mechanisms shall not be used as lifting points. Spreader bars or lifting beams shall be used when the distance between lifting points exceeds that permitted by standard industry practice.

C. Under no circumstances shall equipment or products such as pipe, structural steel, castings, reinforcement, lumber, piles, poles, etc., be thrown or rolled off of trucks onto the ground.

D. Slings and chains shall be padded as required to prevent damage to protective coatings and finishes.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Scope

A. The work under this Section includes, but is not necessarily limited to, the furnishing of all labor, tools and materials necessary to properly store and protect all materials, equipment, products and the like, as necessary for the proper and complete performance of the Work.

1.02 Storage and Protection

A. Storage

1. Maintain ample way for foot traffic at all times, except as otherwise approved by the Engineer.

2. All property damaged by reason of storing of material shall be properly replaced at no additional cost to the Owner.

3. Packaged materials shall be delivered in original unopened containers and so stored until ready for use.

4. All materials shall meet the requirements of these Specifications at the time that they are used in the work.

5. Store products in accordance with manufacturer's instructions.

B. Protection

1. Use all means necessary to protect the materials, equipment and products of every section before, during and after installation and to protect the installed work and materials of all other trades.

2. All materials shall be delivered, stored and handled to prevent the inclusion of foreign materials and damage by water, breakage, vandalism or other causes.

3. Substantially constructed weathertight storage sheds, with raised floors, shall be provided and maintained as may be required to adequately protect those materials and products stored on the site which may require protection from damage by the elements.

C. Replacements: In the event of damage, immediately make all repairs and replacements necessary for the approval of the Owner and at no additional cost to the Owner.

D. All equipment shall be boxed, crated or otherwise completely enclosed and protected during shipment, handling and storage. All equipment shall be protected from exposure to the elements and shall be kept thoroughly dry at all times. Compressors, blowers, pumps, motors, valves, control panels, instrumentation, electrical equipment

and other equipment having antifriction or sleeve bearings shall be stored in weathertight warehouses which are maintained at a temperature of at least 60 °F. Other equipment may be stored outside under cover. All equipment shall be stored above ground level and adequately supported on wood blocking or other approved support material. Printed storage instructions of the manufacturers shall be strictly adhered to.

E. Painted, anodized or otherwise coated surfaces shall be protected against impact, abrasion, discoloration and other damage. All coated surfaces which are damaged prior to acceptance of equipment shall be cleaned and coated to the satisfaction of the Engineer with the same or equivalent coating used in the original application.

F. Electrical equipment, motors, controls, and insulation shall be protected against moisture or water damage. All space heaters provided in the equipment shall be kept connected and operating at all times until equipment is placed in service. Electrical equipment stored without space heaters shall be provided with desiccants to protect against moisture damage. Desiccant shall be silica gel in porous bags at not less than 1 ounce per cubic foot of volume. Desiccant shall be replaced periodically.

G. Electrical equipment and instrumentation shall be stored in a location that is free from excessive or injurious amounts of vibration.

H. Rotating equipment such as pumps, motors, fans and compressors shall be rotated periodically. In the absence of specific exercising instructions by the equipment manufacturers, each item of rotating equipment shall be rotated a minimum of 10 revolutions at intervals not to exceed 20 days. When shafts are too difficult to rotate by hand, nonmetallic grips shall be used to turn the shafts.

I. Interiors of gear and bearing cases housing oil-lubricated gears and bearings shall be filled with a rust inhibiting oil prior to storage or, if extended storage is anticipated, coated periodically with a rust inhibiting oil mist at intervals of time acceptable to the Engineer. Interiors of large pumps and compressors shall be protected using vapor phase inhibitor paper or porous bags of rust inhibiting, vapor emitting crystals. Exposed shafts shall be coated with rust preventative compound, then wrapped with oil-impregnated paper and polyethylene film and sealed with waterproof tape prior to shipment.

J. Individually packaged, unpainted steel parts shall be protected by a wrapping of vapor phase inhibiting or oil-impregnated paper and polyethylene film prior to shipment.

K. Parts and equipment not requiring periodic inspection or maintenance shall be stored unopened in their original packaging until used.

L. Parts, instruments, controls and small items of equipment shall be stored above ground or floor level on suitable shelves or racks in a heated, watertight warehouse.

M. Flanged openings on equipment shall be covered with suitable solid wooden or metal blanks securely bolted to the flange using a minimum of four bolts and a suitable rubber gasket. Ends of threaded pipe and fittings shall be sealed watertight with metal or plastic caps. Threaded openings shall be sealed watertight with metal or plastic

plugs. Other openings shall be sealed with two layers of 6 mil polyethylene securely taped in place with waterproof tape.

N. A maintenance log on each item of mechanical and electrical equipment requiring periodic attention in storage shall be maintained by the Contractor. Oil and grease changes, exercising, desiccant replacement, nitrogen purge checks, heater checks, insulation checks and other periodic maintenance shall be entered in the log. The maintenance log shall be made available to the Engineer on request.

O. A resistance test shall be performed on all motor windings and heater elements following storage and prior to installation as a check for insulation deterioration or moisture damage during storage.

P. Immediately prior to installation, equipment shall be cleaned of any protective coatings used during storage and any rust, dirt, grit or other foreign material shall be removed.

Q. After installation and prior to start-up, all grease-lubricated joints, shaft couplings and bearings shall be flushed out and regreased. All oil reservoirs and sumps shall be completely drained and flushed and refilled with the proper lubricant. Screens and filters shall be checked for contamination and replaced if necessary. The equipment shall then be tagged, signed and dated, indicating that the equipment has been properly lubricated for start-up.

R. After storage, rubber parts such as valve seats, diaphragms, expansion joints, gaskets, hoses and shaft couplings shall be checked for hardening or cracking. Deteriorated parts shall be replaced prior to start-up by the Contractor at Contractor's own expense.

S. Equipment and products stored outdoors shall be supported above the ground on suitable wooden blocks or braces arranged to prevent excessive deflection or bending between supports. Items such as pipe, structural steel and sheet construction products shall be stored with one end elevated to facilitate drainage.

T. Unless otherwise permitted in writing by the Owner, building products and materials such as cement, grout, plaster, gypsumboard, particleboard, resilient flooring, acoustical tile, paneling, finish lumber, insulation, wiring, etc., shall be stored indoors in a dry location. Building products such as rough lumber, plywood, concrete block and structural tile may be stored outdoors under a properly secured waterproof covering.

U. Tarps and other coverings shall be supported above the stored equipment or materials on wooden strips to provide ventilation under the cover and minimize condensation. Tarps and covers shall be arranged to prevent ponding of water.

1.03 Extended Storage

A. In the event that certain items of major equipment such as air compressors, pumps and mechanical aerators have to be stored for an extended period of time, the Contractor shall provide satisfactory long-term storage facilities which are acceptable to the Owner. The Contractor shall provide all special packaging, protective coverings, protective coatings, power, nitrogen purge, desiccants, lubricants and exercising

necessary or recommended by the manufacturer to properly maintain and protect the equipment during the period of extended storage.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Scope

A. This Section covers the general cleaning which the Contractor shall be required to perform both during construction and before final acceptance of the Project unless otherwise shown on the Drawings or specified elsewhere in these Specifications.

1.02 Quality Assurance

A. Daily, and more often if necessary, conduct inspections verifying that requirements of cleanliness are being met.

B. In addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

1.03 Cleaning Materials and Equipment

A. Provide all required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

B. Use only the cleaning materials, methods and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Owner.

1.04 Progress Cleaning

A. General

1. Do not allow the accumulation of scrap, debris, waste material and other items not required for construction of this Work.

2. At least each week, and more often if necessary, completely remove all scrap, debris and waste material from the job site.

3. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.

4. Schedule cleaning operation so that dust and other contaminants resulting from cleaning operations will not fall on wet, recently painted surfaces.

5. Properly store volatile wastes in covered metal containers and remove from the site daily.

6. Do not bury or burn on the site or dispose of into storm drains, sanitary sewers, streams, or waterways, any waste material. Remove all wastes from

the site and dispose of in a manner complying with applicable ordinances and laws.

B. Site

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.

2. Restack materials stored on site weekly.

3. At all times maintain the site in a neat and orderly condition which meets the approval of the Owner.

1.05 Final Cleaning

A. Definitions: Unless otherwise specifically specified, "clean" for the purpose of this Article shall be interpreted as the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.

B. General: Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in 1.04 above.

C. Site: Unless otherwise specifically directed by the Owner, hose down all paved areas on the site and all public sidewalks directly adjacent to the site; rake clean other surfaces of the grounds. Completely remove all resultant debris.

D. Structures:

1. Remove all traces of soil, waste material, splashed material, and other foreign matter to provide a uniform degree of exterior cleanliness. Visually inspect all exterior surfaces and remove all traces of soil, waste material, and other foreign matter. Remove all paint droppings, spots, stains and dirt from finished surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure.

2. Visually inspect all interior surfaces and remove all traces of soil, waste material, smudges and other foreign matter. Remove all paint droppings, spots, stains and dirt from finished surfaces. Clean interior of all panel cabinets, pull boxes, and other equipment enclosures.

3. Repair, patch, and touch up marred surfaces to specified finish, to match adjacent surfaces.

4. Perform touch-up painting.

E. Post-Construction Cleanup: All evidence of temporary construction facilities, haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other evidence of construction, shall be removed as directed by the Owner.

F. Restoration of Landscape Damage: Any landscape feature damaged by the Contractor shall be restored as nearly as possible to its original condition at the Contractor's expense. Restoration shall be performed to the satisfaction of the Owner.

G. Timing: Schedule final cleaning as approved by the Owner to enable the Owner to accept the Project.

1.06 Disposal of Waste

A. The term waste shall include excess and surplus materials, and shall include liquid and solid wastes.

B. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

C. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

D. Remove and transport waste in a manner that will prevent spillage on adjacent surfaces and areas.

E. Burning: Do not burn waste materials on site.

F. Waste removed from the Project site shall be disposed of in sites permitted for the acceptance of type of waste being disposed. The acceptable types of permitted disposal facilities are as follows:

1. Inert Waste Landfills

2. Municipal Solid Waste Landfills

3. Municipal Solid Waste Landfills permitted to receive only construction and demolition wastes.

G. Exceptions to Paragraph F are as follows:

1. Hazardous waste shall be disposed of in accordance with local, state, and federal regulations.

2. Excess earth material and excess excavated rock material may be placed on sites for which the Contractor provides to the Owner a signed affidavit from the property owner that the placement of such material is acceptable to the property

owner. The Contractor and property owner shall be responsible for all permitting of such disposal.

H. No waste shall be placed at a transfer station facility.

I. The Contractor shall maintain records related to all waste removed from the Project site so as to allow the Owner to readily determine the following:

1. Date waste removed from Project site.

2. Name of hauler (company and driver) transporting such waste.

3. General description of waste transported.

4. "Truck tickets" indicating the waste disposal site and amount of waste disposed therein.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Scope

A. The work under this Section includes, but is not necessarily limited to, the provision of all labor and material required to perform installation inspection and start-up of all equipment and mechanical systems installed under this Contract.

B. The work defined under this Section includes providing the services of a trained factory representative in accordance with the requirements of Section 01 43 33 of these Specifications.

C. Certification of start-up and full testing shall be performed by the manufacturer using the services of a factory representative trained in this type service.

D. Unless otherwise specified, the Contractor shall furnish all labor, materials, water, air, oil, power, fuel, chemicals, test equipment and other items required to conduct the field tests, including any retests.

E. The cost of all field testing shall be included in the Contract Price and no separate payment will be made.

1.02 Coordination

A. The Contractor shall not proceed with any functional test or operating test until the operation and maintenance manuals for the equipment have been submitted and been designated "No Exceptions Taken" or "Exceptions Noted". The Contractor shall coordinate all activities required for starting of systems including the visits by the factory representatives, particularly where an equipment item's operation is dependent on the operation of other equipment. Prior to the factory representative's site visit, the Contractor shall ensure that all necessary related equipment, structures, piping and electrical work is complete. Any required revisits to the site by the factory representative shall be provided by the Contractor.

1.03 Pre Start-Up Maintenance

A. After installation and prior to start-up, the equipment shall be tagged, signed and dated, indicating that the equipment has been properly prepared for start-up.

1.04 Installation Inspection

A. Prior to energizing any piece of equipment or performing an operational test, a factory representative of the equipment manufacturer shall inspect the installation of the equipment. The factory representative shall determine if the equipment has been installed in accordance with the manufacturer's recommendations, pre-start-up maintenance has been performed, and is ready for start-up and the initiation of the operational test.

B. Should the installation inspection indicate that the equipment has been improperly installed or prepared for start-up, the Contractor shall provide such modifications or adjustments as required for the equipment to operate properly.

C. The factory representative shall certify that the equipment has been installed in accordance with the Drawings, Specifications, and the manufacturer's

recommendations and that the equipment is ready for start-up and functional testing to be performed.

1.05 Start-up and Operational Test

A. Following the installation inspection by the factory representative, each piece of equipment shall undergo an operational test under normal service conditions in the presence of the Owner and factory representative. The test shall consist of operation of the equipment on a normal duty cycle for a sufficient period of time to determine satisfactory operation. To the maximum extent practical, exercise the full capabilities of all equipment including, instrumented control schemes, alternate modes of operation and emergency operation. A minimum of one complete 8-hour operational period shall be performed to satisfy the operational testing requirements. Equipment should be checked for any abnormal noise or vibration as part of the operational test, and any observed abnormal conditions corrected prior to certification.

B. Should the results of the operational test indicate that the equipment has failed to perform in accordance with the Specifications, the Contractor shall, at no additional cost to the Owner, make all modifications or adjustments required for satisfactory operation, including replacement of any or all components, if necessary. Should the equipment fail to meet the performance testing requirements, a factory representative shall evaluate the equipment and determine the cause of the process failure. The Contractor shall make all modifications and adjustments recommended by the manufacturer. Following the modifications or adjustments, the Contractor shall repeat the operational test. This procedure shall be repeated until the results of the test indicate that the equipment has satisfied the requirements of the applicable Specification section.

C. After the operational test is completed, each manufacturer shall certify to the Owner, in writing, that the equipment is fully operational and capable of meeting operating requirements.

D. Certification of start-up and full testing shall be performed by the manufacturer using the services of an authorized representative trained in this type service.

E. Unless otherwise specified, the Contractor shall furnish all labor, materials, water, air, oil, power, fuel, chemicals, test equipment and other items required to conduct the field tests, including any retests.

F. The cost of all field testing shall be included in the Contract Price and no separate payment will be made.

1.06 Certification

A. Upon completion of start up, the Contractor shall provide written Installation and Start-Up Report from all equipment manufacturers' factory representatives. Report shall address the equipment installation's compliance with manufacturer's requirements and note any problems noted that may affect the warranty, operation or longevity of the equipment. Written certification shall indicate that tests were made in accordance with the manufacturer's recommendations, that the test and start-up operation has been satisfactory completed and that the equipment is fully operational under design requirements. Written certification shall be filed with the Owner on the manufacturers stationary.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

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Manufacturer's Installation and Start-up Report

GENERAL INFORMATION:

Owner: _____ Contractor: _____
Facility: _____ System: _____
Location: _____ Specification Number: _____
Tag: _____

MANUFACTURER:

Manufacturer Name: _____
Address: _____
City/State/Zip: _____
Phone Number: _____ Fax Number: _____
E-Mail: _____
Manufacturer's Representative: _____

1. Required safety equipment available?	Y☐	N☐	N/A☐
2. Are equipment tags correct and attached to equipment?	Y☐	N☐	N/A☐
3. Are rotating equipment safety guards in place and secure?	Y☐	N☐	N/A☐
4. Shaft and couplings aligned?	Y☐	N☐	N/A☐
5. Have belt drives been aligned?	Y☐	N☐	N/A☐
6. Bearings lubricated?	Y☐	N☐	N/A☐
7. Oil reservoirs filled with proper lubricant?	Y☐	N☐	N/A☐
8. Rotation verified?	Y☐	N☐	N/A☐
9. Is equipment level?	Y☐	N☐	N/A☐
10. Equipment anchored properly?	Y☐	N☐	N/A☐
11. Equipment grouted properly?	Y☐	N☐	N/A☐
12. Required utilities available?	Y☐	N☐	N/A☐
13. Nozzles free from loads?	Y☐	N☐	N/A☐
14. Are required pressure and temperature gauges and sensors installed?	Y☐	N☐	N/A☐
15. Have any shipping coatings/sealants been removed?	Y☐	N☐	N/A☐
16. Does any paint/coating damage need to be repaired?	Y☐	N☐	N/A☐
17. Have moving parts been checked for proper running clearance?	Y☐	N☐	N/A☐
18. Is there any observed leakage of lubricants or fluids from equipment?	Y☐	N☐	N/A☐
19. Are all electrical power connections made and properly torqued?	Y☐	N☐	N/A☐
20. Are electrical overloads properly set?	Y☐	N☐	N/A☐
21. Are current transformers properly wired for polarity?	Y☐	N☐	N/A☐
22. Are control enclosures per the specified NEMA classification and material?	Y☐	N☐	N/A☐
23. Are instrumentation connections terminated?	Y☐	N☐	N/A☐
24. Are signal cable shield leads grounded in accordance with Manufacturer's recommendations?	Y☐	N☐	N/A☐
25. Are required spare parts on-site, inventoried and properly stored?	Y☐	N☐	N/A☐
26. Are Operations and Maintenance Manuals on-site and complete?	Y☐	N☐	N/A☐
27. Are all installation requirements of the O&M Manuals performed?	Y☐	N☐	N/A☐

Starting of Systems

28. Does equipment have a record of maintenance and exercise as recommended by the manufacturer during storage? Y☐ N☐ N/A☐
29. Are there any observed installation issues that impact the equipment warranty? Y☐ N☐ N/A☐

Additional items noted during installation inspection by Manufacturer's Start-up Representative:

_____

_____

_____

_____

_____

I certify as an authorized Factory Representative, that the equipment is installed in accordance with the Manufacturer's recommendations, and is ready for start-up and initial operation.

Factory Representative: _____ Date: _____
Representing: _____ (If employed by other than the Manufacturer)
Mailing Address: _____

_____

Phone Number: _____
E-mail Address: _____

START-UP REPORT:

1. Does equipment operate and perform in accordance with the specification?	Y☐	N☐	N/A☐
2. Have all specified modes of operation been tested and verified?	Y☐	N☐	N/A☐
3. Do all system indicators, readouts, controls and operator interfaces operate?	Y☐	N☐	N/A☐
4. Have variable speed units been tested throughout the available speed range?	Y☐	N☐	N/A☐
5. Have multi-speed motors been tested on all available speeds?	Y☐	N☐	N/A☐
6. Did equipment exhibit any abnormal vibration during operation?	Y☐	N☐	N/A☐
7. Did equipment exhibit any abnormal noise during operation?	Y☐	N☐	N/A☐
8. Are bearings operating at normal temperature?	Y☐	N☐	N/A☐
9. Do bearings display any roughness in operation?	Y☐	N☐	N/A☐
10. Prior to start-up, or during initial operation, was any leakage of lubricant observed?	Y☐	N☐	N/A☐
11. Was any leakage of process fluids observed during start-up?	Y☐	N☐	N/A☐
12. Has operation of equipment protective systems been verified?	Y☐	N☐	N/A☐
13. Is the equipment ready to place into operation?	Y☐	N☐	N/A☐

Additional items noted during start-up by Manufacturer's Start-up Representative:

_____

_____

_____

_____

_____

_____

_____

_____

I certify as an authorized Factory Representative, that the equipment has been properly started up in accordance with the Manufacturer's recommendations, and is ready for initial operation.

Factory Representative:_____ Date: _____

END OF SECTION

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Part 1 General

1.01 General

A. Closeout requirements for specific construction activities are included in the appropriate Specification Sections, Divisions 2 through 43.

1.02 Substantial Completion

A. Substantial Completion: To satisfy the definition of Substantial Completion, each pump station shall operate with all controls and equipment properly functioning for a 5 day 24-hour per day period without any significant issues or deficiencies.

B. Before requesting inspection for certification of Substantial Completion, complete the following:

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the work claimed as substantially complete.

2. Include supporting documentation for completion and an accounting of changes to the Contract Sum documented by the ledger and/or change order forms.

C. Advise the Owner of pending insurance changeover requirements.

D. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

E. Submit record documents, as-built drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.

F. Deliver tools, spare parts, extra stock, and similar items.

G. Changeover locks and transmit keys to the Owner.

H. Complete startup testing of systems and instruction of operation and maintenance personnel. Remove temporary facilities, mockups, construction tools, and similar elements.

I. Complete final cleanup requirements, including touchup painting.

J. Touch up, repair and restore marred, exposed finishes.

1.03 Inspection Procedures

A. On receipt of a request for inspection of Substantial Completion, the Owner will proceed or advise the Contractor in writing of unfulfilled requirements. The Owner will prepare the Certificate of Substantial Completion following inspection or advise

the Contractor of construction that must be completed or corrected before the certificate will be issued.

B. Results of the completed inspection will form the basis of requirements for final acceptance.

1.04 Final Acceptance

A. Final Completion: The last stage of construction shall be final construction and shall include the final remaining items subject to Owner's approval as well as all items listed in section 01 77 19, Contract Closeout.

B. Before requesting inspection for certification of Final Acceptance and final payment, the Contractor shall complete the following:

1. Final payment request with releases and supporting documentation. Include insurance certificates where required.
2. Submit a statement, accounting for changes to the Contract Sum.
3. Submit a copy of the final inspection punch list issued at the time of the Substantial Completion inspection stating that each item has been completed or otherwise resolved for acceptance.
4. Submit final meter readings for utilities, a record of stored fuel, and similar data as of the date of Substantial Completion.
5. Submit consent of surety to final payment.
6. Submit a final settlement statement.
7. Submit evidence of continuing insurance coverage complying with insurance requirements.

1.05 Record Document Submittals

A. Contractor shall not use record documents for construction. Contractor shall protect record documents from loss in a secure location. Contractor shall furnish record documents to the Project Owner at time for request of Substantial Completion. Contractor shall provide access to record documents throughout the duration of the project for the Project Owner's reference.

1.06 Record Drawings

A. Contractor shall maintain a set of prints of Contract Drawings, Shop Drawings and Submittals on site. It is the responsibility of the Contractor to mark the set of Construction Documents to show the actual installation of all site elements where the installation varies substantially from the work as originally shown. Mark the drawings in a manner that depicts conditions fully and accurately, including all sub-surface elements.

B. Mark all drawings with a red pencil. Use other colors where necessary to distinguish between variations in separate categories of work.

C. Organize record drawing sheets into manageable sets. Bind with durable-paper cover sheets; print titles, dates, and other identification on the cover of each set.

D. Upon completion of the work, submit one reproducible copy of the Record Drawings, Shop Drawings and Submittals to the Owner. (Refer to the SJCUD Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.1.11 for as-built drawing requirements.)

1.07 Record Specifications

A. Contractor shall maintain one copy of the Project Manual Specifications, including addenda, on site. It is the responsibility of the Contractor to mark variations in work performed in comparison with the text of the Specifications and modifications. Give attention to substitutions, selection of options and information on subsurface site element construction. Note related record drawing, shop drawing and submittal information, as well as product data.

B. Upon completion of the Work, submit record Project Manual Specifications to the Owner for the Owner's records.

C. Submit complete copies of all testing data records to the Owner.

1.08 Operation and Maintenance Instructions

A. Arrange for each Installer of equipment that requires maintenance to provide instruction in proper operation and maintenance. Include a detailed review of the following items:

1. Maintenance manuals, including maintenance schedule requirements.
2. Spare parts, tools, and materials, including identification of manufacturer and location of warehouse distribution center.
3. Lubricants and fuels.
4. Identification systems, including all related diagrams.
5. Control sequences.
6. Hazards, including emergency procedure requirements.
7. Warranties and bonds.
8. Maintenance agreements and continuing commitments by the installer and manufacturer.

B. As part of instruction for operating equipment, demonstrate the following:

1. Startup and shutdown sequencing requirements.

2. Emergency operations and safety procedures.

3. Noise and vibration adjustments.

1.09 Final Cleaning

A. Contractor shall employ experienced cleaners for final cleaning. Clean each surface or unit to the condition that is acceptable to the Owner and meets the requirements included in Divisions 2 through Division 43 of the Project Manual Specifications. Complete the following operations before requesting inspection for certification of Substantial Completion:

1. Remove labels from all site elements that are not permanent labels.

2. Clean transparent materials, including mirrors and glass. Remove glazing compounds. Replace chipped or broken glass.

3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Leave concrete floors broom clean. Vacuum carpeted surfaces.

4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures and lamps.

5. Clean the site of rubbish, litter, and foreign substances. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface. Remove all paint markings from permanent paving and structures.

1.10 Pest Control

A. Engage a licensed exterminator to make a final inspection and rid the project site of rodents, insects, and other pests.

1.11 Removal of Protection

A. Remove temporary site security, protection and facilities.

1.12 Compliance

A. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials and dispose of lawfully.

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Scope

A. The Contractor shall provide five copies of a complete and comprehensive reference manual (Operating and Maintenance Manual) containing operating and maintenance data to enable operators and plant engineers to correctly operate, service and maintain all equipment and accessories covered by the Specifications and Drawings. The data contained in the manual shall explain and illustrate clearly and simply all principles and theory of operation, operating instructions, maintenance procedures, calibration procedures and safety precautions and procedures for the equipment involved.

B. No separate payment will be made for the Operating and Maintenance Manual and the cost of said manual shall be included in the Contract Price.

1.02 Submittal Schedule

A. The Contractor shall submit, for the Owner's approval, two preliminary copies of the manual with all specified material before the work covered by these Contract Documents is 80 percent complete. The Owner will notify the Contractor, in writing, of any deficiencies in the manual and will return one copy of the manual for completion and/or correction.

B. Before testing and start-up, the Contractor shall submit four (4) copies of the final revised manual, complete in detail as specified below.

1.03 Submittal Format

A. Each copy of the manual shall be assembled in one or more loose leaf binders, each with title page, typed table of contents, typed list of tables, typed list of figures, and heavy section dividers with reinforced holes and numbered plastic index tabs. Binders shall be 3-ring, hardback type, with transparent vinyl pocket front cover suitable for inserting identifying cover and with a transparent vinyl pocket on the spine for label. All data shall be punched for binding. Composition and printing shall be arranged so that punching does not obliterate any data. The cover and binding edge of each manual shall have the Project title, Specification Section number and title, and manual title printed thereon, all as approved by the Engineer.

B. All copies of shop drawings, figures and diagrams shall be reduced to either 8-1/2 x 11-inches or to 11-inches in the vertical dimension and as near as practical to 17-inches in the horizontal dimensions. Such sheets shall be folded to 8-1/2 x 11-inches. The manual and other data shall be printed on first quality paper, 8-1/2 x 11-inch size with standard 3-hole punching. Binders shall be labeled Vol. 1, Vol. 2, etc., where more than one is required. The table of contents for the entire set, identified by volume number, shall appear in each binder. Text, figures and Drawings shall be clearly legible and suitable for dry process reproductions.

C. Each submittal shall have a cover sheet that includes the following information:

1. The date of submittal and the dates of any previous submittals.
2. The Project title.

3. Numerical submittal numbers, starting with 1.90, 2.90, etc. Revisions to be numbered 1.91, 1.92, etc.
4. The names of:
   a. Contractor
   b. Supplier
   c. Manufacturer
5. Identification of the product, with the Specification Section number, permanent equipment tag numbers and applicable Drawing No.

D. Electronic O&M Manuals:

1. An electronic copy of the O&M manual shall be provided with each hard copy submitted. Electronic file shall be in searchable Adobe Acrobat Portable Document Format (PDF). The PDF file(s) shall be fully indexed using the Table of Contents, searchable with thumbnails generated. File(s) shall be identified by utilization of a convention XXXXXX.YY.pdf where X is the six digit number corresponding to the Specification Section, and YY is an identification number. All documents shall be scanned at 300dpi or greater utilizing optical character recognition (OCR) software. All text in the document must be text selectable with the exception of pages which are in their entirety Drawings or diagrams. Word searches of the PDF document must function successfully. PDF files that fail to comply with the indexing and searchable features described above will not be acceptable. All Drawing data shall be provided in digital format compatible with AutoCAD Version 14.
2. Materials not available in original digital format (available only in paper format) shall be scanned as noted above into a PDF format and cleaned to remove smudges, fingerprints, artifacts, and other extraneous marks. All notes, version stamps, etc. shall be preserved. Color maps shall be scanned in not less than the number of colors of the document or 16 colors, whichever is greater. Color photographs shall be saved in not less than 256 colors. Black and white or monochrome scans (non-text) shall not be less than 16 gray scale levels. Color maps, color photographs, and black and white and gray scale photograph files shall be saved as GIF or JPG files. Documents shall be scanned in the existing color format of the document, i.e. color documents shall be scanned in color, and black and white or monochrome in gray scale.
3. After the documents are in correct digital format, they shall be furnished on a CD ROM. All media transmittals shall be accompanied by a detailed paper printout of the files on the media. This printout shall consist of a file name, file size, date of creation, submittal number, and a brief but accurate description of the file.

E. The Owner will not recommend final acceptance of the work until the Operating and Maintenance Manual is complete and satisfactory to Owner.

1.04 Contents of Operating and Maintenance Manual

A. Each manual shall include a title page which includes all information specified in Article 1.03, Paragraph C of this Section. In addition, the title page shall include manufacturer's address, phone number, facsimile number, and contact; manufacturer's equipment name, model number, and serial number; supplier's address, phone number, facsimile number, and contact.

B. Each manual shall include a table of contents identifying the location of each item listed below, for each component supplied. For items not applicable to a component, the table of contents shall list N/A for the page number.

C. For all equipment, the Contractor shall furnish a complete, detailed listing of all equipment, components and accessories showing component name, manufacturer, model number and quantity information shall be furnished for each component as outlined below:

1. Equipment function, normal operating characteristics, performance data and limiting conditions.
2. Detailed disassembly, overhaul and reassembly, installation, alignment, adjustment and checking instructions.
3. Detailed operating instructions for start-up, calibration, routine and normal operation, regulation and control, safety, shutdown and emergency conditions. Detailed list of settings for relays, pressure switches, temperature switches, level switches, thermostats, alarms, relief valves, rupture discs, etc.
4. Detailed preventative maintenance procedures and schedules, including detailed lubrication instructions and schedules, identification of required lubricants and operating fluids (description, specification and trade name of at least two manufacturers), and diagrams illustrating lubrication points.
5. Detailed guide to equipment "troubleshooting".
6. Detailed parts lists identified by title, materials of construction, manufacturer's part number, list of recommended spare parts identified as specified above, predicted life of parts subject to wear, and an exploded or concise cut-away view of each equipment assembly.
7. Electrical and instrumentation schematics, including motor control centers, control panels, instrument panels and analyzer panels.
8. List of all special tools supplied and description of their use. Special tools include any tool not normally available in an industrial hardware or mill supply house.
9. List of names and addresses of nearest service centers for parts, overhaul and service.
10. Procedures for storing, handling and disposing of any chemicals or products used with the equipment or system.
11. For equipment and systems, provide:
    a. Control and wiring diagrams by the controls manufacturer.
    b. Sequence of operations by the controls manufacturer.
12. The supplier's operation and maintenance information will address the particular equipment furnished, with specific details on operation and maintenance practices. General data is not acceptable. Information contained in the manual which is not acceptable to the Project shall be marked out and noted as "N/A".

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

Part 1 General

1.01 Scope

A. The work under this Section includes, but is not necessarily limited to, the compiling, maintaining, recording and submitting of Project record documents as herein specified.

B. Record documents include, but are not limited to:

1. Drawings;
2. Specifications;
3. Change orders and other modifications to the Contract;
4. Engineer field orders or written instructions, including Requests for Information (RFI) and Clarification Memorandums;
5. Reviewed shop drawings, product data and samples;
6. Test records.

C. The Contractor shall provide As-Built Drawings signed and sealed by a Florida Registered Land Surveyor or Florida Professional Engineer in accordance with the SJUCD Manual of Water, Wastewater, and Reuse Design Standards and Specifications section 3.1.11 and this Section.

D. The Contractor shall maintain on the Project site throughout the Contract Time an up to date set of As-Built Drawings.

1.02 Maintenance of Documents and Samples

A. Storage

1. Store documents and samples in the Contractor's field office, apart from documents used for construction.
2. Provide files and racks for storage of documents.
3. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with format of these Specifications.

C. Maintenance

1. Maintain documents in a clean, dry, legible condition and in good order.
2. Do not use record documents for construction purposes.
3. Maintain at the site for the Owner one copy of all record documents.

D. Make documents and samples available at all times for inspection by Engineer or Owner.

E. Failure to maintain the Record Documents in a satisfactory manner may be cause for withholding of a certificate for payment.

1.03 Quality Assurance

A. Unless noted otherwise, As-Built Drawings shall provide dimensions, distances and coordinates to the nearest 0.1 foot.

B. Unless noted otherwise, As-Built Drawings shall provide elevations to the nearest 0.01 foot for all pertinent items constructed by the Contractor.

C. The Contractor shall employ a currently registered surveyor to prepare the As-Built Drawings from a post-construction, field run survey. The As-Built Drawings shall provide elevations to the nearest 0.01 foot for all manhole inverts, manhole frames and other pertinent items constructed by the Contractor. The As-Built Drawings shall provide dimensions, distances, and coordinates to the nearest 0.01 foot and horizontal angles to the nearest 10 seconds.

1.04 Recording

A. Recording:

1. Record information concurrently with construction progress.

2. Do not conceal any work until required information is recorded.

1.05 As-Built Drawings

A. As-Built Drawings shall be reproducible, shall have a title block indicating that the drawings are As-Built Drawings, the name of the company preparing the As-Built Drawings, and the date the As-Built Drawings were prepared.

B. Legibly mark drawings to record actual construction, including:

1. All Construction

a. Changes of dimension and detail.

b. Changes made by Requests for Information (RFI), field order, clarification memorandums or by change order.

c. Details not on original Drawings.

2. Site Improvements, including underground utilities outlined in SJUCD Manual of Water, Wastewater, and Reuse Design Standards and Specifications section 3.1.11. Additionally, the following should be shown:

a. Horizontal and vertical locations of all exposed and underground utilities and appurtenances, both new facilities constructed and those utilities encountered.

b. Location of and dimensions of roadways and parking areas, providing dimensions to back of curb when present.

c. The locations shall be referenced to at least two easily identifiable, permanent landmarks (e.g., power poles, valve markers, etc.) or benchmarks.

3. Structures

a. Depths of various elements of foundation in relation to finish first floor datum or top of wall.

b. Location of internal and buried utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

1.06 Specifications

A. Legibly mark each section to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.

2. Changes made by Requests for Information (RFI), field order, clarification memorandums, or by change order.

1.07 Submittal

A. At contract closeout, deliver Record Documents to the Engineer for the Owner.

B. Accompany submittal with transmittal letter, in duplicate, containing:

1. Date

2. Project title and number

3. Contractor's name and address

4. Title and number of each record document

5. Signature of Contractor or Contractor's authorized representative

Part 2 Products (Not Used)

Part 3 Execution (Not Used)

END OF SECTION

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Part 1 General

1.01 Scope

A. The work in this section consists of furnishing all material and equipment and performing all labor necessary for demolishing and disposing of designated facilities indicated on the Drawings.

B. The wet well is considered a confined space hazard. The Contractor shall confirm to the Owner in writing, prior to the start of the Project that the Contractor has training programs, trained personnel, and is otherwise in compliance with CFR 1910.146.

1.02 General

A. Demolition work shall create minimum interference with the Owner's operations and minimum inconvenience to the Owner, pedestrians, traffic, and adjacent facilities. The Contractor will be held to have visited the site and to have carefully and thoroughly inspected the existing facilities and to have taken into account in the preparation of their bid, all conditions affecting the work required by the Drawings and Specification. Failure to do so will in no way relieve the Contractor of the responsibility for furnishing all labor and equipment required to perform the demolition work.

B. The Contractor shall provide barricades, signs, lights, etc, to warn of possible dangers on the site until the demolition work is completed.

C. Damages: The Contractor shall assume full responsibility for any and all damages to the existing structures and facilities resulting from their work. The Contractor shall promptly repair any damage caused to adjacent facilities by demolition operation when directed by the Owner and at no additional cost to the Owner. Repairs shall be made to a condition at least equal to that which existing prior to construction. The Contractor shall take any necessary photographs of existing construction to verify existing conditions and shall file with the Owner a report of any existing damaged construction before the work is started.

D. Protection: The Contractor shall protect from damage all existing construction, structures, and utilities that are to remain in service. Conduct demolition and removal work to prevent damage or injury to existing structures and adjacent features which might result from falling debris or other causes. It is the Contractor's responsibility to avoid any sewage spills during the demolition of the pump stations.

E. The Contractor shall take every precaution to avoid contamination of all water sources adjacent to the scope of this project. The Contractor shall exercise care to prevent spills onto the ground surface and shall immediately contain and clean up any spills at no extra cost to the Owner. Under no circumstance is grout, concrete wash down, or other debris generated by the Contractor's work to be discharged into water bodies.

1.02 Submittals

A. The Contractor shall submit a written request, to include a detailed demolition procedure and demolition schedule to the Owner for approval at least 30 days before demolition is started, in accordance with Section 01 33 23. The demolition procedure shall include a detailed description of the methods and equipment to be used for each operation and a detailed sequence of work. The demolition procedures shall provide for safe conduct of work, protection of the property, which is to remain undisturbed and coordination with other work or operation which may be in progress.

Part 2 Products (Not Used)

Part 3 Execution

3.01 General

A. All facilities and materials to be demolished and salvaged shall be removed from the site unless otherwise noted on the Drawings. Methods used in demolition and disposal of materials shall be in accordance with all codes, ordinances, and requirements of all governing authorities; shall be acceptable to the Owner; and shall in all cases assure the safety of persons and property.

B. Existing surfaces to receive new materials or finishes shall be prepared accordingly. Surfaces exposed by demolition shall be finished to match adjacent surfaces if no additional work is scheduled or indicated.

C. Pollution controls shall be implemented to contain and control debris, dust and dirt from entering any waterway or land surface. Comply with governing regulations pertaining to environmental protection.

3.02 Existing Piping and Electrical Utilities

A. Shut off or disconnect utilities affecting demolition work. Schedule shutdowns with the Owner; notify the Owner 14 working days in advance of any shutdown that is required to perform the work. The Owner will open/close valves on piping required for the shutdowns unless other arrangements are made during the coordination meeting.

3.03 Removal of Electrical Materials and Equipment

A. Unless otherwise noted, remove all abandoned and unused electrical conduit, wiring, materials, and equipment from areas indicated for demolition. This includes, but is not limited to, all unnecessary buried power and control circuits. Disconnect circuits at their source. Remove exposed and buried conduits and materials no longer used, including conduit supports, anchors; studs, and straps. Remove or cut off concealed or embedded conduit, boxes, or other materials and equipment to a point at least 3/4 inch below the final finished surface.

B. Repair affected surfaces to conform to the type, quality, and finish of the surrounding surface.

3.04 Demolition

A. Existing buildings, structures, boxes, pipes, pavements, curbs, and other items are to be removed and disposed of shall be as indicated on the Drawings. Remove and dispose of all portions of these items which interfere with project construction.

B. Remove from the site all facilities, in their entirety, to be demolished including below ground footings, foundations, and other associated appurtenances, as shown on the Drawings or as specified herein. Backfill and compact all site areas disturbed by demolition work with earth backfill material in accordance with Section 31 23 33.

C. Any structure, or part thereof, remaining below grade shall be mechanically fractured so that subsurface water will freely pass through the slab or floor of the structure, and so that no void will remain after backfilling the work site to grade as shown on the Drawings.

D. The Contractor shall be responsible for removing all existing service connections to the buildings or site and permanently plugging the pipes where required in accordance with requirements of the utility companies concerned.

E. Perform the work in a manner that will not damage adjacent structures or facilities. If, in the opinion of the Owner, the method of demolition used may endanger or damage parts of the structure or affect the satisfactory operation of the facilities, Contractor must promptly change the method when so notified by the Owner's Representative. No blasting will be permitted.

F. The Contractor will be responsible for any damage caused to other structures, and shall be held liable for any and all repairs, replacement of parts or renovations required to restore any structure, portion of structure, equipment or items, not intended for demolition. The Contractor shall restore any damaged facilities to their condition prior to demolition provided the damage was result of the demolition. If the Contractor does not repair any such damage immediately, or if the repairs are not suitable to the Owner, the Owner reserves the right to have such repairs made by another party and deduct the cost of required repairs from money due Contractor.

G. Dust-tight, weathertight partitions shall be erected to protect existing facilities from dust and weather while wrecking is in progress and until such time as closures have been made. Partitions may be constructed of wood and shall have a covering of tarred roofing felt on the weather side.

H. All equipment, material, and piping, except as specified to be salvaged for the Owner, or removed by others, within the limits of the demolition, excavations, and backfills, will become the property of the Contractor and shall be removed from the project site.

I. Material salvaged from demolition work shall not be reused as part of the work, except as specifically shown on the Drawings.

3.05 Disposal

A. All materials, which are not delivered to the Owner as specified above, shall become the property of the Contractor, and shall be demolished, moved or otherwise disposed of at the option of the Contractor by a method approved by the Owner.

B. All demolished structures, equipment and materials shall be removed from the work site by the Contractor.

C. All demolished structures, equipment and materials which are either left in place or removed to the disposal site shall be in a non-hazardous condition.

D. Manhole frames and covers to be removed are the property of the Owner and shall be delivered to a place designated by the Owner.

3.06 Schedule

A. Certain items cannot be removed, abandoned, or demolished until certain other work has been accomplished. Contractor shall sequence work such that demolition will not have any impact on the pump station operations.

END OF SECTION

Part 1 General

1.01 Scope

A. This section includes, but is not necessarily limited to, standards for cleaning and painting structures and equipment described in the Drawings and Specifications. Furnish all materials, equipment and labor necessary to complete the work.

B. The protective coating system for the wet wells shall be as specified in the Section 09 96 00 of these Specifications.

C. To the maximum extent possible, all coatings shall be the products of a single manufacturer.

1.02 Submittals

A. All submittals shall be made in accordance with the requirements of Section 01 33 23 of these Specifications.

B. The Contractor shall submit to Owner, for review, the following information concerning the materials the Contractor proposes to use in work covered by this section:

1. A list of all components (paints or other materials) to be used in each painting system required herein.

2. A complete descriptive specification, including manufacturer's data sheet, of each component.

3. Prior to completing the purchase and delivery of the coating material selected by the Contractor, the Contractor shall obtain a letter from the material supplier stating that the selected material is suitable and compatible for application and use as directed under these Specifications, and that if properly applied will provide metal protection and a pleasing appearance for five years or longer.

4. A color chart for each product to be applied.

1.03 Painting Requirements

A. Finish paint all exposed surfaces except prefinished items, anodized or lacquered aluminum, stainless steel and copper surfaces. Exposures and surfaces are defined in 3.06 of this section. Items to be left unfinished or to receive other types of finishes, such as tile, are specifically shown on the Drawings or specified.

1. Unpainted Products: Full field cleaning and priming will be performed in accordance with specification requirements for unpainted products. Maintain adequate equipment on the site to assure proper cleaning.

2. Shop Primed Products:

   a. Manufactured products may be shop cleaned and primed. Shop cleaning must equal or exceed cleaning specified in the Painting Schedule. Clean as specified and reprime all abrasions, weld splatter, excessive weathering and other defects in the shop prime coating.

   b. Manufacturers furnishing shop primed products shall certify that cleaning was performed in accordance with specification requirements and that the specified primer was used.

   c. Fully field clean and prime any shop primed products which the Owner determines that were not cleaned in accordance with the Specifications prior to priming, that the wrong primer was applied, that the primer was applied improperly, or has excessively weathered, or that the product is otherwise unacceptable.

3. Finish Painted Products: Certain products such as electrical control panels and similar items may, with the approval of the Owner, be furnished finish painted. Properly protect these products throughout the Project to maintain a bright and new appearance. If the finish surfaces are defaced, weathered or not of the selected color, repaint as necessary.

4. Existing Surfaces

   a. Properly protect existing finish painted items and surfaces from damage throughout the Project.

   b. Repair any damage to existing coatings repaired in accordance with the requirements of this section, at no expense to the Owner.

5. Hardware: Remove all electrical plates, surface hardware, fittings and fastenings prior to painting operations. These items are to be carefully stored, cleaned and replaced upon completion of work in each area. Do not use solvent to clean hardware that may remove permanent lacquer finish.

1.04 Quality Assurance

A. Only those systems and components which are judged acceptable by the Owner shall be utilized in the work covered by this item. No materials shall be delivered to the job site until the Owner has evaluated their acceptability.

B. The following information shall be included on the label of all containers of materials supplied under this item:

   1. Manufacturer's name.

   2. Type of paint or other generic identification.

   3. Manufacturer's stock number.

4. Color (if any).

5. Instructions for mixing, thinning, or reducing (as applicable).

6. Manufacturer's application recommendations.

7. Safety and storage information.

C. All coating material used on this Project shall be purchased specifically for this Project and furnished in new, unopened containers.

D. The Contractor shall obtain the Owner's review of the first finished room, space, area, item or portion of work of each surface type and color specified. The first room, space, area, item or portion of work which is acceptable to the Owner shall serve as the Project standard for all surfaces of similar type and color. Where spray application is utilized, the area to be reviewed shall not be smaller than 100 square feet.

1.05 Testing Equipment

A. The Contractor shall furnish and make available to the Owner the following items of testing equipment for use in determining if the requirements of this section are being satisfied. The specified items of equipment shall be available for the Owner's use at all times when field painting or surface preparation is in progress:

1. Wet film gauge.

2. Surface thermometer.

3. "Surface Profile Comparator" as published by SSPC (with magnifier and three discs).

4. "Visual Standard for Abrasive Blast Cleaned Steel", as published by SSPC (SSPC-VIS 1-89).

5. "Visual Standard for Power- and Hand-Tool Cleaned Steel", as published by SSPC (SSPC-VIS 3).

6. Holiday (pin hole) detector (low voltage).

7. Sling-psychrometer or other on-site device used to calculate relative humidity and ambient air temperature.

8. Magnetic dry film gauge, meeting the requirements of SSPC-PA2, Type I or Type II, including calibration.

9. "Guide and Reference Photographs for Steel Surfaces Prepared by Waterjetting" as published by SSPC (SSPC-VIS 4).

1.06 Product Handling

A. Delivery:

1. Deliver materials in original, sealed containers of the manufacturer with labels legible and intact.

2. Each container shall be clearly marked or labeled to show paint identification, date of manufacture, batch number, analysis or contents, and special instructions. At all times a copy of every component's MSDS shall be available.

B. Storage

1. Store only acceptable Project materials on the Project site.

2. Store material in a suitable location and in such a manner as to comply with all safety requirements including any applicable federal, state and local rules and requirements. Storage shall also be in accordance with the instructions of the paint manufacturer and the requirements of the insurance underwriters.

3. Restrict storage area to paint materials and related equipment.

4. Place any material, which may constitute a fire hazard, in closed metal containers and remove daily from the Project site.

C. Material Safety Data Sheets: A copy of every component's MSDS shall be available at all times on the Project site.

1.07 Material Schedules

A. Material Schedules at the end of this section list prime coats, intermediate coats, finish coats and cover coats that comprise a complete and compatible system of surface protection for the particular substrate. Maintain the unity of these systems, making sure all coats applied to any surface are from the same system and same manufacturer. Verify with the manufacturer the compatibility of the materials used.

Part 2 Products

2.01 Abrasive Material

A. The abrasive used in the abrasive cleaning shall be a material acceptable to the regulatory agencies of the State of Florida for use in the described work. The material shall be of a shape and size to produce a uniform surface profile that meets the coating manufacturer's recommendations for the specific primer and coating system to be applied.

B. The abrasive may be a combination of materials, including additives such as dust inhibitors and Blastox®.

C. If Blastox® is used, it shall be blended with the blasting abrasive by a blending facility authorized by the TDJ Group, Inc.

2.02 Coating Materials

A. Acceptable Manufacturers: The only acceptable manufacturers and products shall be those listed in the Material Schedules at the end of this section.

B. All applicable data currently published by the paint manufacturer relating to surface preparation, coverages, film thickness, application technique, drying and overcoating times is included by reference as a part of this section. It is the responsibility of the Contractor to obtain and fully understand the appropriate data sheets for the coatings specified.

C. Products:

1. Paints shall be factory mixed and delivered to the site in unbroken original packages bearing the manufacturer's name and brand designation and shall be applied in strict accordance with the manufacturer's printed specifications. Two-component coatings shall be mixed in accordance with manufacturer's instructions. All two-component coatings, once mixed, shall be applied within the pot-life recommended by the manufacturer.

2. Unless otherwise specified, paints shall be of the best grade. All thinners, driers, varnish, etc., shall be of the best grade and shall be furnished by the coating manufacturer for use with the specified paints.

D. Colors: The Owner will select the colors to be used on the various portions of the work. Provide color cards for the coatings proposed. Where more than one coat of paint is required, job tint off-shade the paint for each undercoat to show complete coverage.

2.03 Mixing and Tinting

A. When possible, all paints and other materials shall be mixed and tinted by the paint manufacturer prior to delivery to the job site.

B. When job site mixing and/or tinting is required, the manufacturer's recommendations shall be strictly adhered to. The Contractor shall be solely responsible for the proper conduct of all on-site mixing and/or tinting.

2.04 Pipe and Equipment Identification

A. Pipe and equipment identification used on valves and piping systems shall be as directed by the Owner.

Part 3 Execution

3.01 General

A. Protect other surfaces from paint and damage. Furnish sufficient shields and protective equipment to prevent spray or droppings from fouling surfaces not being painted. Repair damage as a result of inadequate or unsuitable protection.

B. The Contractor's on-site representative shall keep a record of work performed each day and shall submit it to the Owner weekly.

C. No coat of paint shall be applied until the surface has been inspected and accepted by the Owner. The Contractor shall give at least 24 hours notice to the Owner when cleaning is to be performed to prevent inspection delays. The Contractor shall provide the necessary access for inspection by the Owner.

D. Shop applied prime coatings which are damaged during transportation, construction or installation shall be thoroughly cleaned and touched-up in the field as directed by the Owner. The Contractor shall use repair procedures which insure the complete protection of all adjacent primer. The specified repair method and equipment may include wire brushing, hand or power tool cleaning, or dry air blast cleaning. In order to prevent injury to surrounding painted areas, blast cleaning may require use of lower air pressure, small nozzle and abrasive particle sizes, short blast nozzle, distance from surface, shielding and masking. If damage is too extensive or uneconomical to touch-up, then the item shall be re-cleaned and coated or painted as directed by the Owner.

3.02 Environmental Conditions

A. Environmental conditions which affect coating application include, but are not necessarily limited to, ambient air temperature, surface temperature, humidity, dew point and environmental cleanliness. Comply with the manufacturer's recommendations regarding environmental conditions under which coatings may be applied.

B. Surface preparation and cleaning of the exterior surfaces must be performed during periods of still air or only a slight breeze so that fallout of the dust produced does not drift onto adjacent property. The Owner reserves the right to temporarily stop the Contractor from exterior blasting (or painting) when by observation it is apparent that the wind direction or velocity prevents compliance with this requirement. Any clean-up of fall-out on adjacent property shall be the responsibility of the Contractor.

C. All blast residues shall be properly disposed of off-site by the Contractor.

D. No paint shall be applied upon damp or frosty surfaces, or in wet or foggy weather. No paint shall be applied in temperatures below 40 degrees F, when freezing (32 degrees F) is predicted within 24 hours of application, or under temperature or humidity conditions not recommended by the manufacturer. However, in no case

shall coatings be applied when the surface temperature is within 5 degrees F of dew point, and in no cases shall coating be applied over a damp surface.

E. Provide all fixtures and appurtenances required to perform the work, including fixtures to support the work off the ground and proper storage facilities.

3.03 Safety

A. General:

1. The Contractor is responsible for the safety of all workers and subcontractors and suppliers performing work on this Project.

2. The Contractor shall protect the Owner, their agents, and the General Public from harm attributable to the Contractor's performance, or non-performance, of the work on this Project. The protection shall include, but not be limited to, providing the necessary safety equipment and instructions for its use by the Owner, and their agents.

3. The Contractor shall protect the existing structures and environment from damage attributable to the Contractor's performance, or non-performance, of the work on this Project.

4. The Contractor shall comply with the applicable standards of 29 CFR Part 1910 and 29 CFR Part 1926.

5. The listing of the following potential hazards shall in no way relieve the Contractor's responsibility for safety on this Project.

3.04 Surface Preparation

A. General: All surfaces shall be thoroughly clean, dry, and free from oil, grease or dust. All concrete shall have cured a minimum of 28 days before painting. All fabricated metal products shall have all weld flux and weld spatter removed and sharp peaks in welds ground smooth. The Owner will inspect the surface preparation prior to the application of coatings. If the preparation is found to be satisfactory, a written order will be given to proceed with coatings.

B. Ferrous Metals: Standards for the surface preparation of ferrous metals required in the Material Schedules are the standards of the SSPC – The Society for Protective Coatings (SSPC, SP-1 through SP-10). Inspection of these surfaces will be evaluated by field comparison with visual comparator panels. These panels shall be securely wrapped in clear plastic and sealed to protect them from deterioration and marring.

C. Concrete Surfaces: For all concrete surfaces, the following surface preparation shall be employed:

1. CC-1 - Wash: Wash and scrub all surfaces with a solution of 1-1/2 ounces of soap chips and 1-1/2 ounces of trisodium phosphate in each gallon of water

used. Flush away all soap and dirt with clean water. After this washing the surface will be re-checked and any rough areas not suitable for painting shall be sandblasted smooth.

2. CC-2 - Acid Etch: Surface preparation for painting shall not commence until 7 days after the concrete has been pronounced cured. Wash and scrub all surfaces with a solution of 1-1/2 ounces of soap chips and 1-1/2 ounces of trisodium phosphate in each gallon of water used. Flush away all soap and dirt with clean water and then etch the surface with a 15 percent or stronger solution of muriatic acid until an openfaced granular texture, similar to fine sandpaper, is obtained. Any areas that remain smooth are to be re-etched until the desired texture is achieved. Flush and scrub away with clear water all acid and loosened particles.

3. CC-3 - Blast Cleaning: Remove all form oil and dirt by washing the surface with a solution of 1-1/2 ounces of soap chips and 1-1/2 ounces of trisodium phosphate in each gallon of water used. Blast clean all laitance and other foreign material from the surface of the concrete until an openfaced granular texture similar to fine sandpaper is achieved. These results should be accomplished with blast cleaning similar to "brush blasting" steel surfaces.

3.05 Application

A. Surface Preparation: After specified surface preparation, all surfaces shall be brushed free of dust or foreign matter. Surfaces shall be completely dry before any paint is applied. All voids, open or hollow places in masonry shall be repaired with an epoxy patching compound.

B. Application: Paint shall be evenly spread in the proper thickness, so that there shall be no drops, runs or sagging of the coating. Where runs and drops do occur, they shall be removed and the surface re-coated to the satisfaction of the Owner. Sufficient time, as directed by the manufacturer, shall be allowed for the paint to dry before the application of succeeding coats.

C. Protection of Work Area: Use drop cloths or other suitable means to protect other surfaces of the structure or equipment in place. Upon completion of the work, remove all paint spots from surfaces as directed by the Owner.

D. Inspection: The Owner will inspect each coat prior to the application of subsequent coats. If the work is found to be satisfactory, a written order will be given to proceed.

E. Defective Work: Remove and replace, at the direction of the Owner, any painting work found to be defective or applied under adverse conditions.

3.06 Painting Schedule

A. General: The Painting Schedule summarizes the painting systems to be applied to the various surfaces. Items which appear in the Painting Schedule are defined in following Paragraphs.

B. Any surfaces not specifically named in the Schedule and not specifically accepted shall be prepared, primed, and painted in the manner and with materials consistent with these Specifications. The Owner shall select which of the manufacturer's products, whether the type is indicated herein or not, shall be used for such unnamed surfaces. No extra payment shall be made for this painting.

C. Exposure terms refer to the environmental conditions to which different surfaces may be exposed. A surface may exist in more than one exposure, e.g. an exterior wall can be categorized not only as "above grade", but also as "below grade", where the exposure is delimited by the grade line.

1. Interior: All surfaces within the confines of a building or other enclosure not constantly exposed to weather, including concealed surfaces subject to trapped moisture, heat or other deteriorating conditions and all surfaces exposed to view.

2. Exterior

a. Above Grade: All surfaces above finished grade and exposed to weather.

b. Below Grade: All surfaces below the finished grade line. Building surfaces with this exposure shall only be painted when they are structurally common with an interior surface, e.g. exterior walls of a dry pit, not the exterior wall of a below grade tank.

3. Submerged: All surfaces below a water surface or exposed to spray. Surfaces exposed to spray include all areas within 6-inches of maximum water surface in quiescent tanks and within 18-inches of maximum water surface in mixed or agitated tanks. Building surfaces with this exposure shall only be painted when surfaces above water level have an interior exposure.

D. Surfaces:

1. Floors: Interior surfaces subject to foot or roller traffic.

2. Building Surfaces: All structural and architectural surfaces except floors. Building surfaces include, but are not limited to, doors and frames, windows and frames, floor doors and walls.

3. Piping: All plumbing and process piping and accessories including valves, fittings, pipe supports, electrical conduit and similar related items.

4. Equipment: All mechanical, electrical, and architectural equipment, items, and accessories installed in the work and not defined above. Equipment includes, but is not limited to: pumps, motors, cabinets, ducts, tanks and process equipment.

3.07 Material Schedules

A. Material Schedules list pretreatment coats, wash coats, seal coats, prime coats, intermediate coats, finish coats and cover coats that comprise a complete and compatible system of surface protection for the particular substrate. Maintain the unity of these systems, making sure all coats applied to any surface are from the same system and same manufacturer. Verify with the manufacturer the compatibility of the materials used.

3.08 Maintenance Materials

A. Furnish the Owner at least one gallon of each type and color of paint used for finish coats and one gallon of each type of thinner required. Containers shall be tightly sealed and clearly labeled.

3.09 Coating Repair

A. Where coatings have been damaged, the surfaces shall be cleaned and repainted. Surface preparation shall conform to SSPC-SP 11, and feathered into undamaged areas. Painting shall be performed as specified for the damaged surface.

Painting Schedule

Exposures	Surfaces	System Schedules			
		Concrete & Concrete Block Substrate	Non-Ferrous Metals Substrate	Ferrous Metals Substrate	Plastic
Interior	Floors	-	-	-	-
	Building Surfaces**	134	-	144	-
	Equipment*	-	157	144	-
	Piping*	-	157	144	-
Exterior Above Grade	Building Surfaces**	234	257	247	-
	Equipment*	-	257	247	-
	Piping*	-	257	247	277
Exterior Below Grade	Piping*	-	257	247	-
Submerged Wastewater	Piping*	-	-	544	-
	Equipment*	-	-	544	-

* See coating, lining, and/or painting paragraphs in individual piping or equipment Specification Sections.

** See finish schedule for where each type shall be used.

Schedule Numbering Guide

First Number - Exposure		Second Number - Substrate		Third Number - Coating Type		Final Letter	
1	Interior and Weather Protected	1	Non-Ferrous Metals	1	Alkyd	S	Sewage
2	Exterior Weather Exposure	2	Wood	2	Asphaltic	W	Potable Water
3	Submerged in Potable Water but Protected from Sunlight	3	Concrete, Concrete Block, Masonry	4	Epoxy	F	Floors
4	Submerged in Potable Water and Exposed to Sunlight	4	Ferrous Metals	5	Vinyl	C	Severe Chemical Exposure
5	Submerged in Wastewater	5	Galvanized Ferrous Metals	6	Coal Tar		
		6	Drywall	7	Polyurethane		
		7	PVC Pipe	8	Acrylic		
				9	Zinc		
				0	Latex		

Material Schedules

System: 134
Type: Epoxy
Use: Interior Concrete and Masonry

Surface Preparation: CC-1

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	PPG	Sherwin Williams
1st	As required to create a pinhole free surface	Sanitile 600/600 TG	Series 130 Envirofill	Polyfill Block Filler	Amerlock 400 BF	Kem Cati-Coat HS Epoxy Filler
2nd	4.0-6.0	Sanitile 655	Series 69 Hi-Build Epoxoline	PermaClean II Epoxy	Amerlock 2/400	Macropoxy 646 FC Epoxy
3rd	4.0-6.0	Sanitile 655	Series 69 Hi-Build Epoxoline	PermaClean II Epoxy	Amerlock 2/400	Macropoxy 646 FC Epoxy
System	8.0					

System: 144
Type: Epoxy
Use: Interior Ferrous Metal

Surface Preparation: SP-10

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	PPG	Sherwin Williams
1st	3.0 – 5.0	Carboguard 893 SG	Series N69 Hi-Epoxoline Primer	PermaClean II Primer	Amerlock 2/400	Macropoxy 646 FC Epoxy, Dura-Plate 235
2nd	4.0 – 6.0	Carboguard 890	Series N69-Color Hi-Build Epoxoline	PermaClean II Epoxy	Amerlock 2/400	Macropoxy 646 FC Epoxy, Dura-Plate 235
3rd	4.0 – 6.0	Carboguard 890	Series N69-Color Hi-Build Epoxoline	PermaClean II Epoxy	Amerlock 2/400	Macropoxy 646 FC Epoxy, Dura-Plate 235
System	12.0					

System: 157
Type: Polyurethane
Use: Galvanized Metals

Surface Preparation: SP-1 With Manufacturer's Recommended Pre-Treatment

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	PPG	Sherwin Williams
1st	5.0	Carboguard 893 SG	Series 66 Hi-Build Epoxoline	Pretreat using Vinyl Wash Primer PermaClean II Epoxy	Amerlock 2/400	Macropoxy 646 FC Epoxy
2nd	2.0	Carbothane 134 HG	Series 1074 Endura-Shield	Indurethane 6600 Plus	Amercoat 450H	Sherthane 2K Urethane, Hi-Solids Polyurethane
System	7.0					

System: 234
Type: Epoxy
Use: Exterior Concrete and Masonry

Surface Preparation: CC-3
Note: Concrete shall be at least 28 days old before any of these coatings are applied.

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	PPG	Sherwin Williams
1st	8.0 – 10.0	Sanitile 600/600 TG	Series 156 Enviro-Crete	AC-403	Perma Crete 4-22	Loxon XP
2nd	5.0 – 7.0	Carboguard 890	Series 156 Enviro-Crete	AC-403	Perma Crete 4-22	Loxon XP
3rd	As Needed	-			---	
System	13.0					

System: 247
Type: Polyurethane
Use: Exterior Ferrous Metal
Surface Preparation: SP-10

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	PPG	Sherwin Williams
1st	3.0	Carboguard 893 SG	Series N69 Epoxoline	PermaClean II Primer	Amerlock 2/400	Macropoxy 646 FC Epoxy
2nd	4.0 - 6.0	Carboguard 893 SG	Series N69 Color Epoxoline	PermaClean II Epoxy	Amerlock 2/400	Macropoxy 646 FC Epoxy
3rd	2.0 - 3.0	Carbothane 134 HG	Series 1074 Endura-Shield	Indurethane 6600 Plus	Amercoat 450H	Sherthane 2K Urethane, Hi-Solids Polyurethane, Acrolon 218 HS
System	11.0					

System: 257
Type: Polyurethane
Use: Exterior Non-Ferrous Metals
Surface Preparation: SP-1

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	PPG	Sherwin Williams
1st	4.0 - 6.0	Carboguard 893 SG	Series 66-Color Hi-Build Epoxoline	PermaClean II Epoxy	Amerlock 2/400	Macropoxy 646 FC Epoxy
2nd	2.0 - 3.0	Carbothane 134 HG	Series 1074-Color Endura-Shield	Indurethane 6600 Plus	Amercoat 450H	Sherthane 2K Urethane, Hi-Solids Polyurethane
System	8.0					

System: 277
Type: Polyurethane
Use: Exterior Plastic
Surface Preparation: Scarify

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	Ameron	Sherwin Williams
1st	2.0 – 3.0	Carboguard 890	Series N69-Color Hi-Build Epoxoline II	Armorguard Epoxy	Amerlock Series	Macropoxy 646 FC Epoxy
2nd	2.0 - 3.0	Carbothane 134 HG	Series 1074-Color Endura-Shield IV	Indurethane 5500 Enamel	Amercoat 450 Series	Sherthane 2K Urethane
System	4.0 – 6.0					

System: 544
Type: Epoxy
Use: Submerged Ferrous Metal
Surface Preparation: SP-10

Coat	Minimum Dry Film Thickness (Mils)	Carboline	Tnemec	Induron	PPG	Sherwin Williams
1st	4.0 - 6.0	Carboguard 890	Series N69-Color Hi-Build Epoxoline	Perma-Clean II Epoxy	Amerlock 2	Macropoxy 646 Epoxy, Dura-Plate 235
2nd	4.0 - 6.0	Carboguard 890	Series 69-Color Hi-Build Epoxoline	Perma-Clean II Epoxy	Amerlock 2	Macropoxy 646 Epoxy, Dura-Plate 235
3rd	4.0 - 6.0	Carboguard 890	Series 69-Color Hi-Build Epoxoline	Perma-Clean II Epoxy	Amerlock 2	Macropoxy 646 Epoxy, Dura-Plate 235
System	12.0					

Pipe Identification and Color Coding

Paint color and pipe identification text to be directed by owner.

Color Coding General Notes

1. All banding to be 2-inches wide and four feet on center.
2. Sample, drain, vent, metering, blowoff, decant, and hot lines shall be painted the same color combination as the piping system from which the line originates unless specified otherwise above. The additional pertinent text shall be applied to the pipe.
3. Building service lines such as plumbing lines, HVAC lines, and electrical conduit, shall not be color coded but shall be painted the same color as the background construction.
4. All lettering shall be done in capital letters of approved size and type.
5. Legend symbols shall be applied on piping on every run and spaced not greater than 8 feet apart.
6. Text shall be applied on piping in the middle of pipe runs.
7. Pumps, chemical tanks and other items of equipment to be painted shall be painted a color corresponding to their service, in accordance with the above schedule.

END OF SECTION

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Part 1 General

1.01 Scope

A. This specification covers labor, materials and equipment required for structurally restoring and protecting the interior of concrete and masonry sanitary sewer structures to protect the concrete and/or masonry sewer structures from hydrogen sulfide and acid generated by microbiological sources present in the municipal wastewater environment.

B. The structural restoration materials shall be a fused calcium aluminate or cementitious fiberglass based product. For all sanitary structures, the structural restoration limits shall include the roof, fillets, walls, and inverts in the structure.

C. The protective coating shall be polymer based polymer or a high-build solvent free epoxy product. For all sanitary structures, the coating limits shall include the roof, fillets, walls, and inverts in the pipe or structure. The coating system shall overlap hatch frames and underside of hatch surfaces up to the top of the frame.

D. The Contractor shall provide all labor, materials, equipment and incidentals as specified and required to repair the locations of cracks, aggregate pockets and voids, and exposed reinforcing and associated elements intended to have sufficient concrete cover.

E. Following cleaning operations and prior to commencing any repair work, the Contractor shall mark areas for repair and review the marked areas with the Engineer/Owner for agreement regarding the repair.

F. This specification also covers labor, materials and equipment required for corrosion protection of ductile iron pipes and fittings in all sanitary sewer structures.

G. Stainless steel, aluminum, and plastics shall not be coated.

1.02 References

A. ASTM C109 – Compressive Strength of Hydraulic Cement Mortars

B. ASTM C579 – Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings, and Polymer Concretes

C. ASTM C580 –Flexural Strength and Modulus of Elasticity of Chemical Resistant Mortars, Grouts, Monolithic Surfaces and Polymer Concretes

D. ASTM D543 – Resistance of Plastics to Chemical Reagents

E. ASTM D596 - Standard Test Method for Drying Shrinkage of Mortar Containing Hydraulic Cement

F. ASTM D638 – Tensile Properties of Plastics

G. ASTM D695 – Compressive Properties of Rigid Plastics

H. ASTM D790 – Flexural Properties of Unreinforced/Reinforced Plastics

I. ASTM D4414 – Standard Practice for Measurement of Wet Film Thickness by Notched Gauges

J. ASTM D4541 – Standard Test Method for Pull-Off Strength of Coatings using Portable Adhesion Testers

K. ASTM D4787 – Standard Practice for Continuity Verification of Liquid or Sheet Linings Applied to Concrete Substrates

L. ASTM – The published standards of the American Society of Testing and Materials, West Conshohocken, PA

M. NACE – The published standards of the National Association of Corrosion Engineers (NACE, International), Houston, TX

N. SSPC – The published standards of the Society of Protective Coatings, Pittsburgh, PA

1.03 Submittals

A. All submittals shall be made in accordance with the requirements of Section 01 33 23 of these Specifications.

B. Product Data

1. Technical data sheet on each product used, including ASTM test results indicating that the product conforms to and is suitable for its intended use per these specifications.

2. Material Safety Data Sheets (MSDS) for each product used.

3. Project-specific guidelines and recommendations.

4. Warranty Certificate in accordance with Part 1.08 of this Specification.

5. Provide reference documentation that the proposed coating system has a proven performance record when used in the intended application, including a list of five (5) successful installations that have been in service for a minimum of ten (10) years. The reference listing shall include the name, date, location of the installation, and a contact name and telephone number.

C. Applicator Qualifications

1. Manufacturer's certification that the applicator has been trained and approved in the handling, mixing and application of each product used.

2. Certification that the equipment to be used in applying the products has been manufactured or approved by the concrete rehabilitation manufacturer, protective coatings manufacturer and certified for use in the specific application.

3. Written documentation of three (3) recent references of Applicator (involving structures with a surface area of 1,000 square feet or greater) indicating successful application of

a polymer based polyurethane or a high-build solvent free epoxy product coating system.

4. Applicator must provide written documentation of having installed a minimum of 20,000 square feet of a product similar to those required in this specification within the last two (2) years.

5. Any project-specific guidelines or recommendations for the project.

6. Design details (Shop Drawings) for any ancillary equipment or systems to be used in site and/or surface preparation and testing.

1.04 Quality Assurance

A. Applicator shall initiate and enforce quality control procedures consistent with applicable NACE, SSPC and ASTM standards and the protective coating manufacturer.

B. Coating manufacturer's authorized representative shall be on site prior to the application of the coating system to verify that the substrate has been properly prepared, and during the application of the coating system to certify that the system has been properly applied. The authorized representative will provide the Owner an accurate and objective written report stating observations on the preparation, application and final inspection verifying adherence to coating manufacturer's recommendations, industry standards and this Specification.

1.05 Product Delivery, Storage and Handling

A. All materials are to be kept dry, protected from the weather and stored under cover. All materials exposed to rain, sleet, or snow shall be discarded.

B. Protective coating materials shall be stored in accordance with the manufacturer's guidelines. Do not store near flame, heat or strong oxidants.

C. Repair/patching materials and protective coating materials are to be handled according to their safety data sheets (MSDS).

1.06 Site Conditions

A. Applicator shall conform to all local, state and federal regulations including those set forth by OSHA, RCRA and EPA as well as other applicable authorities.

B. Method statements and procedures are to be provided by the Applicator when confined space entry is required.

C. Proceed with surface preparation and coating application only when air and surface temperatures are above the manufacturer's recommended minimum surface temperature and below the manufacturer's recommended maximum. Coating shall not be applied to dusty, wet, or damp surfaces.

D. No surface preparation or coating application work shall be done under suspect weather conditions.

E. Contractor shall provide fans, heating devices, dehumidification or other means recommended by coating manufacturer to attain substrate conditions as recommended by the manufacturer's representative.

1.07 Access to the Work Site

A. Applicator shall provide safe access to the work site for inspection of the Work.

B. The Applicator shall provide proper facilities for such access and observation of the Work and also for inspection or testing by others. If any Work or access is covered contrary to this specification or any request by the Engineer/Owner representative, it must if requested by the Engineer/Owner representative, be rendered accessible for observation and replaced at the Applicator's expense.

1.08 Warranty

A. The Coatings Manufacturer shall warranty the entire project to include any and all aspects of the surface preparation, base material installation and protective coating applications for a period of ten (10) years from the date of acceptance by the Owner. The warranty shall make no distinction between installation practices and material performance and shall not be prorated with respect to elapsed time for the entire warranty period. Manufacturer shall, within a reasonable period of time after receipt of written notice thereof by the Owner [period not to exceed sixty (60) calendar days], repair defects in materials or workmanship during said ten (10) year period, and any damage to other work caused by such defects or repairing of same at his own expense and without cost to the Owner.

Part 2 Products

2.01 General

A. All materials must be new with date of manufacturer clearly marked for inspection by the Owner.

B. Only full kits of approved coating shall be mixed. No partial kits will be saved or mixed at a later time.

2.02 Repair Materials

A. Cementitious patching, repair and structural restoration materials used shall be only those specified and pre-approved. Project-specific submittals shall be provided including application, cure time and surface preparation procedures which permit optimum bond strength with the protective coating.

B. Repair products shall be compatible with the concrete substrates under the conditions of services.

C. Repair materials shall be used to fill voids, pitting and surface irregularities, structurally reinforce and/or rebuild substrate surfaces and restore the structure to its original dimensions, etc. as deemed necessary by the Owner. Quick blending, rapid setting, high early-strength, fiber-reinforced, non-shrink repair mortar that can be trowelled or spray

applied must be compatible with the specified protective coating, and shall be applied according to the manufacturer's recommendations.

D. Where structural restoration is required in the manhole or wet well prior to the application of a protective top coating due to hydrogen sulfide attack, cracks, holes or other structural defects allowing infiltration, the structural restoration materials shall be applied to achieve a smooth surface to receive the protective top coating.

E. Infiltration Control:

1. Only fast setting materials shall be applied to active leaks under hydrostatic pressure for the exterior of the concrete in wastewater structures. Materials shall consist of rapid setting cements and various accelerating agents. Materials shall not contain chlorides, gypsum or metallic particles.

F. Repair, Patching and Structural Restoration:

1. All materials furnished shall be designed to fill voids and to repair or reconstruct where no hydrostatic pressure exists. Materials shall consist of rapid setting agents, NSG agents and various accelerating agents. Materials shall not contain chlorides, gypsum or metallic particles.

2. All structural restoration materials shall be specifically designed for rehabilitation of wastewater structures and related sanitary structures. Materials shall contain poly-fiber reinforcement, fused calcium aluminates and chemical admixtures.

G. Structural Restoration Material Properties

Product Type	**Fused Calcium Aluminate or Cementitious Fiberglass**
Cure Time	<48 hours
Curing Gasses	Non-Toxic
Compressive Strength	5,000 psi (minimum)
Tensile Strength	500 psi (minimum)
Flexural Strength	600 psi (minimum)
Shrinkage	0% at 90% Relative Humidity

H. The following products are acceptable and approved as "Structural Restoration" materials for use under this specification:

1. MS-2C or High performance Mix as manufactured by Strong Seal Systems

2. Alumaliner as manufactured by Quadex

3. Permacast MS-10,000 with Conshield by as manufactured by APM, Inc.

4. Sewpercoat PG as manufactured by LaFarge Calcium Aluminates

5. Mainstay ML-CA as manufactured by Madewell Products Corp.

6. SewerSeal No. F-170 as manufactured by Sauereisen

7. MSM as manufactured by AW Cook

8. Reliner MSP® by Standard Cement Materials, Inc.

I. Protective Coating Properties

Product Type	**Polyurethane, Solid Epoxy**
Color	Light
Compressive Strength	4,000 psi (minimum)
Tensile Strength	1,500 psi (minimum)
Hardness Type D	60
Bond Strength-Concrete	> than 750 psi
Dry Film Thickness	250 mils (1/4-inch)
Product Type	**Ceramic Polymer**
Color	Light
Application Thickness	1-inch

Test Method	**Parameter**	**24 Hours**	**7 Days**	**28 Days**
ASTM C 109	Compressive Strength, psi	>5,500	>6,000	>7,000
ASTM C 348	Flexural Strength, psi	>900	>1,100	>1,300
ASTM C 157	Shrinkage after 28d immersion, %	<0.04	<0.05	<0.07
ASTM C 496	Splitting Tensile Strength, psi	>550	>600	>700
ASTM C 882	Bond Strength by Slant Shear, psi		>2,500	>2,500
ASTM C 666	Freeze-Thaw - 300 cyc. Rel. Dyn. Modulus	102		
ASTM C 642	Volume of Permeable Voids (40 days), %	15		
ASTM C 642	Apparent Density (40 days)	2.74		
ASTM C 469	Modulus of Elasticity (28 days), ksi	>5,000		

J. The following products are acceptable and approved as "Protective Top Coating" materials for use under this specification:

1. Raven 405 as manufactured by Raven Lining Systems

2. Spectra Shield as manufactured by CCI Spectrum

2.03 Structural Restoration & Protective Coating Material Application Equipment

A. Structural restoration mortars and protective coatings shall be applied with manufacturer approved equipment.

Part 3 Execution

3.01 Acceptable Applicators

A. Repair or restoration mortars must be applied by manufacturer trained and approved applicators. The mortars shall be applied according to the manufacturer's recommendations.

B. The Protective Coating must be applied by manufacturer certified and trained applicators. The Protect Coatings shall be applied according to the manufacturer's recommendations.

3.02 Examination

A. Appropriate actions shall be taken to comply with all applicable local, state and federal regulatory agencies with regard to health, safety and environmental concerns.

B. All Bidders are required to verify that they have inspected the work site(s) and are familiar with the conditions and the entire scope of work.

C. Applicator shall provide minimum 24-hour notice to the Owner for the following conditions:

1. After final surface preparation is complete but before structural rehabilitation.

2. After patching/restoration operations have cured and.

3. After each coating is applied.

D. Protective coating application shall not commence until the concrete substrate has cured in accordance with these specifications and manufacturer recommendations.

E. Temperature of the surface to be coated shall be maintained between 60° F and 100° F during application. Prior to and during application, care shall be taken to avoid exposure to direct sunlight or other intense heat source to the structure being cured. Where varying surface temperatures do exist, care shall be taken to apply the coating when the temperature is falling versus rising, (i.e. late afternoon into evening vs. early morning into afternoon.

3.03 Surface Preparation

A. Applicator shall inspect all surfaces to receive a protective coating prior to surface preparation. Wet well liner shall be installed prior to piping installation.

B. All contaminants including: oils, grease, incompatible coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed.

C. All concrete that is not sound, or has been damaged by chemical exposure shall be removed to a sound concrete surface or replaced.

D. Old concrete must be structurally sound to the satisfaction of the Owner and coating manufacturer.

E. Surface preparation method(s) should be used based upon the condition of the substrate, service environment and the requirements of the manufacturers of the protective coating to be applied.

F. Surfaces to receive a protective coating shall be cleaned and abraded to produce a sound surface with adequate profile and porosity to provide a strong bond between the protective coating and the substrate. At a minimum, this shall be achieved with low-pressure water cleaning having a 0 degree rotating nozzle at a minimum 3,500 psi and 4 gpm. Other methods, such as high pressure water jetting (refer to NACE Standard No. 6/ SSPC-SP 13), abrasive blasting, shot blasting, grinding, scarifying and/or acid etching may be used. In addition, detergent cleaning and hot water blasting may be necessary to remove oils, grease and other hydrocarbon residue from the concrete. The method(s) used shall be performed in a manner that produces a sound, uniform, clean, neutralized surface that is not excessively damaged.

3.04 Application of Restoration Materials

A. Areas where structural steel has been exposed or removed shall be repaired to the satisfaction of the Owner and the coating manufacturer.

B. Restoration materials used shall meet the specifications herein described in Part 2.02 of this specification. Materials shall be applied using proper equipment onto specified surfaces. Restoration materials shall match the original undamaged surface profile.

C. Infiltration shall be stopped using materials which are compatible with the specified repair mortar, waterproof quick-setting mortar type that is suitable for the protective top coating material to be applied. Applicator shall completely identify the types of grout, mortar and sealant for repair of the leak defects and provide case histories of successful use in similar environments.

D. Areas of infiltration requiring crack injection shall be covered in this specification. Injection holes shall be drilled through the structure at 120 degree angles from each other at the same plane of elevation. Rows shall be separated no more than three (3) vertical feet, and shall be staggered with the holes above and below. Additional injection holes near observed defects and pipe seals shall be provided. A minimum of six (6) injection holes per defect shall be provided.

E. The approved repair materials shall provide a smooth surface with an average profile equivalent to coarse sandpaper to optimally receive the protective coating. No bug holes or honeycomb surfaces should remain after the final trowel procedure associated with the repair material application.

F. Repair materials shall be permitted to cure according to manufacturer's recommendations. Curing compounds should not be used unless approved by manufacturer for compatibility with the specified protective coating.

G. After required cleaning and repair is performed, all surfaces shall be inspected for remaining laitance prior to protective coating application. Any evidence of remaining contamination or laitance shall be removed by additional abrasive blast, shot-blast or

other methods approved by the Engineer or Owner. If repair materials are used, refer to these specifications for surface preparation. Areas to be coated must also be prepared in accordance with these specifications after receiving repair mortar and prior to protective coating application.

3.05 Application of Protective Coatings

A. Application procedures shall conform to the recommendations of the protective coating manufacturer, including handling, mixing, environmental controls during application, safety and spray equipment.

B. The equipment shall be specifically designed to accurately ratio and apply the protective coating materials and shall be well maintained and in proper working order for the duration of the Work.

C. The protective coating must be applied by a "Certified Applicator" of the protective coating manufacturer.

D. Specified surfaces shall be coated by moisture tolerant, solvent-free, protective coating exhibiting properties described in these specifications.

E. Equipment approved by the protective coating manufacturer shall be used to apply each coat of the protective coating.

F. If necessary, subsequent top-coating or additional coats of the protective coating shall occur as soon as the base coat (if applicable) becomes tack-free, ideally within twelve (12) hours but not later than the recoat window for the specified products. Additional surface preparation procedures shall be required if the recoat window is exceeded.

3.06 Inspection and Testing

A. During application, a wet-film thickness gauge meeting ASTM D-4414 Standard Practice for Measurement of Wet-Film Thickness by Notched Gauges shall be used to insure a uniform thickness during application.

B. For Ceramic Polymer Products:

1. Samples shall be taken of the installed liner each day that the lining is installed in the following manner:

Quantity of Manholes or Wet Wells Lined in One Day	Quantity of Samples Required
1-5	1
6-10	2
11-15	3
16 or more	4

2. Samples shall be taken at equally spaced intervals throughout the workday. The frequency of tests may be increased by the Engineer or Owner and performed by the Contractor at no additional cost to the Owner when the required tests indicate that the installed lining does not meet the Specification.

3. Strength and Bonding Testing Procedures: Samples shall be cube samples. A minimum of six cubes shall be taken for each sample testing. The samples shall be tested in accordance with the applicable ASTM standards, including ASTM C109, to verify that the installed liner meets the compressive strength requirements specified herein and the lining manufacturer's published product data. Tests shall include 7-day and 28-day strength tests (3 cubes for each time period per sample). Shrinkage and bond strength tests shall be performed on each batch or lot of material shipped to the Contractor. Testing shall be performed by an independent laboratory with all associated costs paid by the Contractor. The test results shall be submitted to the Owner immediately when available and no later than 30 days after lining installation.

4. The Contractor shall submit test reports of the testing which include: the project name, structure tested, and testing data resulting in a PASS or FAIL grade. Test reports must be submitted citing the reason for failure noted on the report.

5. Any structure failing the test shall be repaired and retested immediately by the Contractor at no additional cost to the Owner.

C. For Polyurethanes or Solid Epoxy – Holiday (Spark Arrestor) Testing:

1. After the protective coating has set hard to the touch it shall be inspected with high voltage holiday equipment meeting ASTM D-4787. The spark test shall be initially set to 100 volts per one (1) mil (25 microns) of film thickness applied. All detected holidays shall be marked and repaired by abrading the coated surface with grit disk paper or other hand tooling method. After abrading and cleaning, additional protective coating material shall be hand-applied to the repair area. All touch-up/repair areas that do not meet the specified thickness requirements shall be reworked following the protective coating manufacturer's recommendations.

2. A NACE Certified Coating Inspector shall be present and on-site to monitor the holiday testing procedures and subsequent repairs.

3. A visual inspection shall be made by the NACE Certified Inspector and the protective coating manufacturer's representative. Any deficiencies shall be marked and repaired according to manufacturer's recommendations to the satisfaction of the Owner.

D. Adhesion Testing:

1. An adhesion test shall be performed on each structure.

2. Adhesion testing shall be conducted after the lining or coating system has cured per manufacturer instruction and in accordance with ASTM D4541. A minimum of one 20 - mm dolly shall be affixed to the lined surface of the structure at the upper section or cone area, mid section and at the bottom, unless otherwise specified or directed by the Engineer, Owner or coating manufacturer. Each testing location shall be identified by the Engineer, Owner or coating manufacturer.

3. Selection of the adhesive used to attach the dollies to the liner shall be the Contractor's responsibility. Adhesive shall be rapid setting with tensile strength in excess of the liner material, suitable for the environmental conditions anticipated in a sanitary sewer manhole, and permitted to cure in accordance with manufacturer recommendations. The lining material and dollies shall be adequately prepared to receive the adhesive.

4. Prior to pull test, the Contractor shall utilize a scoring device to cut through the coating until the substrate is reached. Extreme care shall be required while scoring to prevent micro cracking in the coating, since cracks may cause failures at diminished strengths.

5. Failure due to improper dolly adhesive or scoring shall require retesting. The pull tests in each area shall meet or exceed 200 psi and shall include sub-base adhered to the back of the dolly or no visual signs of coating material in the test hole.

6. Pull tests with results between a minimum 150 psi and 200 psi shall be acceptable if more than 50% of the subsurface is adhered to the back of the dolly. A test result can be discarded, as determined by the Owner, if there is a valid non-statistical reason for discarding the test results as directed by Sections 8.4 and 8.5 of ASTM D4541.

7. If any test fails, a minimum of three additional locations in the section of the failure shall be tested, as directed by the Owner. If any of the retests fail, the structure shall be deemed to have failed. All loosely adhered or unadhered liner in the failed area, as determined by the Owner, shall be removed and replaced at the Contractor's expense.

8. The mil thickness will be measured and confirmed with the scored and pulled test samples. If the measured thickness of any adhesion test samples is under the specified value, a minimum of three additional locations in the same structure shall be tested, as directed by the Owner. All areas found to be less than the specified thickness shall be corrected through additional application of lining material.

9. The liner shall be repaired at all pull test locations immediately following testing at no additional cost to the Owner.

10. The Owner shall be present for all adhesion testing.

3.07 Cleaning and Completion

A. At the completion of this portion of the work, remove all debris, remove all coatings and stains from work for which coating is not intended, touchup all marred surfaces, and leave all structures in a clean condition, ready for use.

B. Refinish all damaged or imperfect coatings to the satisfaction of the Engineer or Owner prior to final acceptance of the work.

C. Finish work is to present an even, pleasing and uniform appearance. Surfaces exhibiting coatings with outgas bubbles, shadows, streaks, overlap marks, sags, drips, roughness or non-uniform sheen will be considered as improperly applied and will not be considered acceptable.

END OF SECTION

1.02 Quality Assurance

A. The Contractor shall control soil compaction during construction to provide the percentage of maximum density specified. The Contractor shall provide the Owner copies of all soil testing reports, prepared by the Geotechnical Engineer, demonstrating compliance with these Specifications. The Contractor shall make all necessary excavations and shall supply any samples of materials necessary for conducting compaction and density tests.

B. Compaction and compaction testing shall be in accordance with St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.3.9.

1.03 Safety

A. Perform all trench excavation and backfilling activities in accordance with the Occupational Safety and Health Act of 1970 (PL 91-596), as amended and the Florida Trench Safety Act. The Contractor shall pay particular attention to the Safety and Health Regulations Part 1926, Subpart P "Excavation, Trenching & Shoring" as described in OSHA publication 2226.

Part 2 Products

2.01 Trench Foundation Materials

A. Crushed stone shall be utilized for trench foundation (trench stabilization). Crushed stone or Coarse Aggregate is defined by the Florida Department of Transportation (FDOT) Specifications Section 901 as: Coarse aggregate shall consist of naturally occurring materials such as gravel, or resulting from the crushing of parent rock, to include natural rock, slags, expanded clays and shales (lightweight aggregates) and other approved inert materials with similar characteristics, having hard, strong, and durable particles. Crushed or recycled concrete shall not be used for trench foundation materials.

B. All on-site material shall be soil exclusive of organic matter, frozen lumps, or other deleterious substances. On-site fill material shall contain no rocks or lumps over 2-inches maximum in dimension. All imported fill materials shall meet the requirements of on-site fill materials.

2.02 Bedding and Haunching Materials

A. Unless specified otherwise, bedding and haunching materials shall be crushed stone as specified in this Section.

B. Earth materials utilized for bedding and haunching shall be suitable materials selected from materials excavated from the trench. Suitable materials shall be clean and free of rock larger than 2-inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes and other unsuitable materials. Should the material excavated from the trench be saturated, the saturated material may be used

as earth material, provided it is allowed to dry properly and it is capable of meeting the specified compaction requirements. When necessary, earth bedding and haunching materials shall be moistened to facilitate compaction by tamping. If materials excavated from the trench are not suitable for use as bedding or haunching material, provide select material conforming to the requirements of this section at no additional cost to the Owner.

2.03 Initial Backfill

A. Initial backfill material shall be crushed stone or earth materials as specified for bedding and haunching materials.

B. Earth materials utilized for initial backfill shall be suitable materials selected from materials excavated from the trench. Suitable materials shall be clean and free of rock larger than 2-inches at its largest dimension, organics, cinders, stumps, limbs, frozen earth or mud, man-made wastes and other unsuitable materials. Should the material excavated from the trench be saturated, the saturated material may be used as earth material, provided it is allowed to dry properly and it is capable of meeting the specified compaction requirements. When necessary, initial backfill materials shall be moistened to facilitate compaction by tamping. If materials excavated from the trench are not suitable for use as initial backfill material, provide select material conforming to the requirements of this section.

2.04 Final Backfill

A. Final backfill material shall be general excavated earth materials, shall not contain rock larger than 2-inches at its greatest diameter, cinders, stumps, limbs, man-made wastes and other unsuitable materials. If materials excavated from the trench are not suitable for use as final backfill material, provide select material conforming to the requirements of this section.

Part 3 Execution

3.01 Trench Excavation

A. Topsoil and grass shall be removed in accordance with the following requirements:

1. Remove all topsoil to a depth at which subsoil is encountered from all areas under buildings, pavements, and from all areas which are to be cut to lower grades or filled.

2. With the Owner's approval, topsoil to be used for finish grading may be stored on the site. Other topsoil may be used for fill in non-critical areas. Properly dispose of all excess topsoil off-site at no additional cost to the Owner.

B. Trenches shall be excavated to the lines and grades shown on the Drawings with the centerlines of the trenches on the centerlines of the pipes and to the dimensions which provide the proper support and protection of the pipe and other structures and accessories.

C. Trench Width for Pipelines

1. The sides of all trenches shall be vertical to a minimum of one foot above the top of the pipe. Unless otherwise indicated on the Drawings, the maximum trench width shall be equal to the sum of the outside diameter of the pipe plus two feet. The minimum trench width shall be that which allows the proper consolidation of the haunching and initial backfill material.

2. Excavate the top portion of the trench to any width within the construction easement or right-of-way which will not cause unnecessary damage to adjoining structures, roadways, pavement, utilities, trees or private property. Where necessary to accomplish this, provide sheeting and shoring.

3. Where rock is encountered in trenches, excavate to remove boulders and stones to provide a minimum of 12-inches clearance between the rock and any part of the pipe barrel or manhole.

4. Wherever the prescribed maximum trench width is exceeded, the Contractor shall use the next higher Class or Type of bedding and haunching as shown on the Drawings for the full trench width as actually cut. The excessive trench width may be due to unstable trench walls, inadequate or improperly placed bracing and sheeting which caused sloughing, accidental over-excavation, intentional over-excavation necessitated by the size of the Contractor's tamping and compaction equipment, intentional over-excavation due to the size of the Contractor's excavation equipment, or other reasons beyond the control of the Engineer or Owner.

D. Depth

1. The trenches shall be excavated to the required depth or elevation which allow for the placement of the pipe and bedding to the dimensions shown on the Drawings.

2. Pressure Mains

   a. Increase the depth of cover where specifically shown on the Drawings and where necessary to avoid interference with underground utilities and obstructions.

3. Where rock is encountered in trenches for pipelines, excavate to the minimum depth which will provide clearance below the pipe barrel of 12-inches for pipe, valves and manholes. Remove boulders and stones to provide a minimum of 12-inches clearance between the rock and any part of the pipe, manhole or accessory.

E. Excavated Materials

1. Excavated materials shall be placed adjacent to the work to be used for backfilling as required. Top soil shall be carefully separated and lastly placed in its original location.

2. Excavated material shall be placed sufficiently back from the edge of the excavation to prevent caving of the trench wall, to permit safe access along the trench and not cause any drainage problems. Excavated material shall be placed so as not to damage existing landscape features or manmade improvements.

3. Excess unsuitable materials shall be removed from the jobsite and properly disposed by the Contractor.

3.02 Sheeting, Bracing and Shoring

A. Sheeting, shoring and bracing shall be in accordance with the following requirements:

1. Furnish, put in place, and maintain all sheeting, bracing and shoring as may be required to properly support the sides of all excavations and to prevent all movement of earth which could in any way injure the work, adjacent property or workers.

2. Exercise care in the removal of sheeting, shoring, bracing, and timbering to prevent collapse or caving of the excavation faces being supported and damage to the work and adjacent property.

3. Do not leave any sheeting or bracing in the trench or excavation after completion of the work, unless approved by the Owner.

B. Trench Shield: A trench shield or box may be used to support the trench walls. The use of a trench shield does not necessarily preclude the additional use of bracing and sheeting. When trench shields are used, care must be taken to avoid disturbing the alignment and grade of the pipe or disrupting the haunching of the pipe as the shield is moved. When the bottom of the trench shield extends below the top of the pipe, the trench shield will be raised in 6-inch increments with specified backfilling occurring simultaneously. At no time shall the trench shield be "dragged" with the bottom of the shield extending below the top of the pipe or utility.

C. Remove bracing and sheeting in units when backfill reaches the point necessary to protect the pipe and adjacent property. Leave sheeting in place when in the opinion of the Owner it cannot be safely removed or is within three feet of an existing structure, utility, or pipeline. Cut off any sheeting left in place at least two feet below the surface.

D. Sheet piling within three feet of an existing structure or pipeline shall remain in place, unless otherwise directed by the Owner.

3.03 Dewatering

A. General: The Contractor shall excavate, construct and place all pipelines, concrete work, fill, and bedding rock, in-the-dry. In addition, the Contractor shall not make the final 24 inches of excavation until the water level is a minimum of one foot below proposed bottom of excavation. For purposes of these specifications, "in-the-dry" is defined to be within 2% of the optimum moisture content of the soil. The Owner reserves the right to ask the Contractor to demonstrate that the water level is a

minimum of one foot below proposed bottom of excavation before allowing the construction to proceed.

B. In all cases, accumulated water in the trench shall be removed before placing bedding or haunching, laying pipe, placing concrete or backfilling.

C. Dewater by use of a well point system when pumping from sumps does not lower the water level two feet below the trench bottom. Where soil conditions dictate, the Contractor shall construct well points cased in sand wicks. The casing, 6 to 10-inches in diameter, shall be jetted into the ground, followed by the installation of the well point, filling casing with sand and withdrawing the casing.

D. Discharge water shall be clear, with no visible soil particles. Discharge from dewatering shall be disposed of in such a manner that it will not interfere with the normal drainage of the area in which the work is being performed. Create a public nuisance, or form ponding. The operations shall not cause injury to any portion of the work completed, or in progress, or to the surface of streets, or in progress, or to the surface of streets, or to private property. The dewatering operation shall comply with the requirement of appropriate regulatory agencies. Additionally, where private property will be involved, advance permission shall be obtained by the Contractor.

3.04 Trench Foundation and Stabilization

A. The bottom of the trench shall provide a foundation to support the pipe and its specified bedding. The trench bottom shall be graded to support the pipe and bedding uniformly throughout its length and width.

B. If, after dewatering as specified above, the trench bottom is spongy, or if the trench bottom does not provide firm, stable footing and the material at the bottom of the trench will still not adequately support the pipe, the trench will be determined to be unsuitable and the Owner shall then authorize payment for trench stabilization.

C. Should the undisturbed material encountered at the trench bottom constitute, in the opinion of the Owner, an unstable foundation for the pipe, the Contractor shall be required to remove such unstable material and fill the trench to the proper subgrade with crushed stone as directed by the Owner.

E. Where trench stabilization is provided, the trench stabilization material shall be compacted to at least 95 percent of the maximum dry density, unless shown or specified otherwise.

3.05 Bedding and Haunching

A. Prior to placement of bedding material, the trench bottom shall be free of any water, loose rocks, boulders or large dirt clods.

B. Bedding material shall be placed to provide uniform support along the bottom of the pipe and to place and maintain the pipe at the proper elevation. The initial layer of bedding placed to receive the pipe shall be brought to the grade and dimensions indicated on the Drawings. All bedding shall extend the full width of the trench bottom.

The pipe shall be placed and brought to grade by tamping the bedding material or by removal of the excess amount of the bedding material under the pipe. Adjustment to grade line shall be made by scraping away or filling with bedding material. Wedging or blocking up of pipe shall not be permitted. Applying pressure to the top of the pipe, such as with a backhoe bucket, to lower the pipe to the proper elevation or grade shall not be permitted. Each pipe section shall have a uniform bearing on the bedding for the length of the pipe, except at joints.

C. At each joint, excavate bell holes of ample depth and width to permit the joint to be assembled properly and to relieve the pipe bell of any load.

D. After the pipe section is properly placed, add the haunching material to the specified depth. The haunching material shall be shovel sliced, tamped, vigorously chinked or otherwise consolidated to provide uniform support for the pipe barrel and to fill completely the voids under the pipe, including the bell hole. Prior to placement of the haunching material, the bedding shall be clean and free of any water, loose rocks, boulders or dirt clods.

E. Excessive Width and Depth

1. If the trench is excavated to excessive depth, provide crushed stone to place the pipe at the proper elevation or grade.

F. Compaction: Bedding and haunching materials under pipe, manholes and accessories shall be compacted to a minimum of 95 percent of the maximum dry density, unless shown or specified otherwise.

3.06 Initial Backfill

A. Initial backfill shall be placed to anchor the pipe, protect the pipe from damage by subsequent backfill and ensure the uniform distribution of the loads over the top of the pipe.

B. Place initial backfill material carefully around the pipe in uniform layers to a depth of at least 12-inches above the pipe barrel or duct bank. Layer depths shall be a maximum of 6-inches for pipe 18-inches in diameter and smaller and a maximum of 12-inches for pipe larger than 18-inches in diameter.

C. Backfill on both sides of the pipe simultaneously to prevent side pressures.

D. Compact each layer thoroughly with suitable hand tools or tamping equipment.

E. Initial backfill shall be compacted to a minimum 95 percent of the maximum dry density, as determined by the laboratory Modified Proctor Test ASTM D1557, unless shown or specified otherwise.

F. If materials excavated from the trench are not suitable for use as backfill materials, provide select backfill material conforming to the requirements of this section.

3.07 Concrete Encasement for Pipelines

A. Where concrete encasement is shown on the Drawings for pipelines not under structures, excavate the trench to provide a minimum of 6-inches clearance from the bell of the pipe. Lay the pipe to line and grade on concrete blocks. In lieu of bedding, haunching and initial backfill, place concrete to the full width of the trench and to a height of not less than 6-inches above the pipe bell. Do not backfill the trench for a period of at least 24 hours after concrete is placed.

3.08 Final Backfill (Not Under Roads)

A. After initial backfill material has been placed and compacted, backfill with final backfill material. Place backfill material in uniform layers, compacting each layer thoroughly as follows:

1. In 6-inch layers, if using light power tamping equipment, such as a "jumping jack".

2. In 12-inch layers, if using heavy tamping equipment, such as hammer with tamping feet.

B. Final backfill shall be compacted to a minimum 95 percent of the maximum dry density, as determined by the laboratory Modified Proctor Test ASTM D1557, unless specified otherwise.

C. Backfill carefully to provide a finished grade at the elevations shown on the Drawings.

D. The top 6-inches shall be topsoil in areas to be seeded or sodded.

E. If materials excavated from the trench are not suitable for use as backfill materials, provide select backfill material conforming to the requirements of this section.

F. Settlement: If trench settles, re-fill and grade the surface to conform to the adjacent surfaces.

G. Remove and dispose of excess or unsuitable materials off site at no additional cost to the Owner.

3.09 Backfill Under Roads

A. Compact backfill underlying pavement, driveways, and sidewalks in accordance with St. Johns County Public Works Details No. 200 and 201.

B. Backfill under dirt and gravel roads to a minimum 95 percent of the maximum dry density, as determined by the laboratory Modified Proctor Test ASTM D1557. The top 12-inches shall be compacted to a minimum of 98 percent of the maximum dry density, as determined by the laboratory Modified Proctor Test ASTM D1557.

END OF SECTION

Part 1 General

1.01 Description

A. Scope: This section includes all stainless steel pipe and fittings. The extent of the piping is shown on the Drawings.

1.02 Quality Assurance

A. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

1. ANSI/ASME B2.1 - Pipe Threads (Except Dryseal)
2. ANSI/ASME B16.11 - Forged Steel Fittings, Socket-Welding and Threaded.
3. ANSI/ASME B36.19 - Stainless Steel Pipe.
4. ASTM A182 - Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
5. ASTM A193 - Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications
6. ASTM A194 - Carbon Steel, Alloy Steel, and Stainless Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both
7. ASTM A240 - Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
8. ASTM A276 - Stainless Steel Bars and Shapes
9. ASTM A403 - Wrought Austenitic Stainless Steel Piping Fittings
10. AWWA C228 - Stainless-Steel Pipe Flange Joints for Water Service-Sizes 2 In. Through 72 In.
11. AWS D1.16 - Structural Welding Code – Stainless Steel

B. Qualifications

1. Manufacturer shall have a minimum of five years of experience in the production of stainless steel pipe and fittings, and shall show evidence of satisfactory service in at least five installations.
2. Stainless steel pipe and fittings shall be the product of one manufacturer.

1.03 Submittals

A. Shop Drawings: Submit for approval the following:

1. Detailed drawings and data for stainless steel pipe and fittings.

2. Physical and chemical properties of all stainless steel.

3. Laying schedules and detailed plan and profile drawings for all stainless steel piping showing full details of piping, valves, hangers, supports, restraints, couplings, accessories and specials.

4. Reports of production weld tests.

1.04 Delivery, Storage, and Handling

A. Deliver, store and handle all pipe, fittings and appurtenances as specified in Division 1 of these Specifications and in accordance with the manufacturer's recommendations. Pipe, fittings, and accessories shall be delivered, stored, and handled in a manner that will ensure installation in a sound, undamaged condition. Equipment, tools, and methods used in handling and installing pipe, fittings, and accessories shall have well padded contact surfaces and shall not damage the pipe, fittings and accessories. Pipe, fittings, and accessories in which the lining or coating has been damaged shall be replaced. With the concurrence of the Owner, small and readily accessible damaged areas may be repaired in accordance with the manufacturer's recommendations.

Part 2 Products

2.01 Materials

A. Fabricated Stainless Steel Pipe

1. Pipe:

a. Type: Electrically welded or seamless at Contractor's option. Spiral welded pipe is not acceptable.

b. Material: ASTM A240, Type 316L stainless steel. All weld filler material shall be Type 316L.

c. Diameter: Pipe diameters shown shall mean the nominal outside diameter of the pipe, except for pipes specified with schedule numbers for wall thickness which shall conform to ANSI/ASME B36.19.

d. Wall Design Criteria

i. Provide a piping system designed to meet the fabrication, installation and service conditions shown and specified.

ii. Based on the internal design pressure indicated for test pressure shown in the latest version of SJCUD's Manual of Water, Wastewater, and Reuse Design Standards and Specifications.

iii. Support weight of pipe, fittings, and valves using the support system shown on the Drawings or specified.

iv. Minimum Wall Thickness: All stainless steel piping for pump stations shall be Schedule 40.

e. Fabrication:

i. Longitudinal Seams: Maximum of two per section.

ii. Girth Seams: Not less than six feet apart except at fittings and specials.

iii. Pipe Ends: Perpendicular to longitudinal axis.

iv. Roundness: ±1/16-inch.

v. Straightness: ±1/8-inch in 10 feet.

vi. Edges: All joint-edges shall be true so as not to leave a shoulder on the inside of the pipe.

f. Welding:

i. Longitudinal Welds: Tungsten Inert Gas or Metal Inert Gas.

ii. Circumferential Welds: Heliarc or metallic air process.

iii. Grinding: All interior welds shall be ground smooth to provide an internal bead of 1/16-inch or less.

g. Factory Finish:

i. All pipe and fittings shall be pickled after manufacture by immersion in acid bath until all weld discoloration and iron pickup is removed.

ii. Passivate all piping welds after fabrication.

iii. Thoroughly wash all pipe and fittings with clear water after pickling.

2. Joints:

a. General:

i. Provide flanged joints at valves and equipment.

ii. Provide flanged joints for field assembly of exposed and submerged piping.

iii. All joints shall be shop welded, unless otherwise shown or specified.

iv. Stainless steel pipe fabricated into spool pieces shall have shop-welded circumferential butt welded joints or flanges.

b. Flanged Joints: Flanges shall conform to AWWA C228, Class SD (stainless steel ring flanges). Flange material shall be stainless steel type 316L.

c. Gaskets: Comply with manufacturer's recommendations for service conditions as shown and specified. Flange gaskets shall be 1/8-inch thick, EPDM, full face type. Gaskets shall be suitable for the service intended in accordance with the manufacturer's ratings and instructions.

d. Bolts and Nuts: Bolts shall be heavy hex stainless steel conforming to ASTM A193, Grade B8M, Class 1 or 2 (Type 316 stainless steel). Nuts shall be heavy hex stainless steel conforming to ASTM A194, Grade 8M (Type 316 stainless steel). Washers shall be Type 316 stainless steel.

3. Fittings:

a. Type: Welded or flanged as shown on the Drawings, all stainless steel.

b. Construction:

i. Stainless steel fittings, 2-1/2-inch and smaller, shall be ASTM A403, of the same material and pressure rating as the pipe, threaded long radius with dimensions conforming to ANSI B16.11.

ii. Unless otherwise specified, stainless steel fittings 3-inch and larger shall be of the same material and in the same thicknesses as the pipe. Long radius elbows up to 24-inches in diameter shall be smooth flow. All short radius, special radius and reducing bends and long radius bends greater than 24-inches in diameter shall be of mitered construction. Reducers shall be tapered, cone type. Tees, crosses, laterals and wyes shall be shop-fabricated pipe.

c. Wall Thickness: As required for the service conditions specified, but in no case less than the pipe wall thickness.

d. Base Fitting: Provide stainless steel.

4. Field Assembly of Piping:

a. Field welding of pipe is not permitted.

b. Connect exposed and submerged piping with flanges.

5. Threaded Connections: Threaded pipe, gage or instrument connections shall be made using stainless steel, 150-pound, threaded half-couplings conforming to ASTM A182 or ASTM A276, shop welded to the pipe at the locations specified or shown on the Drawings.

B. Specials

1. Taps

a. Provide taps where shown or required for small pipe and instrument connections.

b. Connections shall be welded, forged threaded stainless steel boss.

c. Product and Manufacturer: Provide one of the following:

i. Thredolet by Grinnell Company.

ii. Or equal.

2. Pipe Adapters: Where necessary to join pipe of different type, Contractor shall provide necessary adapters. Ends shall conform to Specifications for the appropriate type joint.

2.02 Identification

A. All pipeline materials shall be stamped, marked or identified with the following:

1. Name of manufacturer.

2. Date of manufacture.

3. Operating design pressure at operating design temperature.

4. Type of service.

5. Manufacturer's part number.

Part 3 Execution

3.01 Inspection

A. All pipe and fittings shall be carefully examined by the Contractor for defects just before installing and no pipe or fitting shall be installed if it is defective. If any defective pipe or fitting is discovered after having been installed, it shall be removed and replaced in a satisfactory manner with a sound pipe or fitting by the Contractor at Contractor's own expense.

3.02 Installation

A. General

1. Install piping as shown, specified and as recommended by the manufacturer.

2. If there is a conflict between manufacturer's recommendations and the Contract Documents, request instructions from Owner before proceeding.

3. Where unforeseen conditions will not permit the installation of piping as shown or specified, no piping shall be installed without approval of the Owner. Do not modify structures or facilities without approval of the Owner.

4. Protect and keep clean water pipe interiors, fittings and valves.

5. Provide temporary caps or plugs over all pipe openings at the end of each day's work, and when otherwise required or directed by Owner.

6. Cutting: Cut pipe from measurements taken at site, not from Drawings. Cutting shall be made with a saw or cutter specially designed for cutting piping, so as to leave a smooth end at right angles to the axis of the piping. Cut end shall be tapered and sharp edges filed off smooth. Flame cutting shall not be permitted.

7. All exposed piping shall be firmly anchored and supported by pipe supports or anchors as shown or required. Pipe supports shall be furnished as shown on the Drawings. All pipe shall be carefully placed to the proper lines and grades as shown on the Drawings.

8. All elbows, tees, brackets, crosses, and reducers in pressure piping systems shall be adequately restrained against thrust.

B. Transitions from One Type of Pipe to Another: Provide all necessary adapters, specials and connection pieces required when connecting different types and sizes of pipe or connecting pipe made by different manufacturers.

C. Joints

1. General

a. Make joints in accordance with the pipe manufacturer's recommendations and the requirements below.

b. Cut piping accurately and squarely and install without forcing or springing.

c. Ream out all pipes and tubing to full inside diameter after cutting. Remove all sharp edges on end cuts.

d. Remove all cuttings and foreign matter from the inside of pipe and tubing before installation. Thoroughly clean all pipe, fittings, valves, specials, and accessories before installing.

2. Flanged Joints:

a. All flanges shall be true and perpendicular to the axis of the pipe. Flanges shall be cleaned of all burrs, deformations, or other imperfections before joining. Flanged joints shall be installed so as to ensure uniform gasket compression. All bolting shall be pulled up to the specified torque by crossover sequence. Where screwed flanges are used, the finished pipe edge shall not extend beyond the face of the flange, and the flange neck shall completely cover the threaded portion of the pipe.

b. Connections to equipment or valves shall be made in such a way that no torque is placed on the equipment or valve flanges. Connecting flanges must be in proper position and alignment and no external force may be used to bring them together properly.

c. Bolts shall be tightened in a sequence that will ensure equal distribution of bolt loads.

d. The length of bolts shall be uniform, and they shall not project beyond the nut more than 1/4-inch or fall short of the nut when fully taken up. The ends of bolts shall be machine cut so as to be neatly rounded.

e. Bolt threads and gasket faces for flanged joints shall be lubricated prior to assembly.

f. Alternately tighten bolts 180 degrees apart to compress the gasket evenly. Gaskets shall be properly centered.

g. Flanged filler shall be used only where shown on the Drawings or approved by the Owner to make up minor differences in pipe length, less than 3-inches. Joint bolts shall be increased by the thickness of the flange filler.

h. Joints of Dissimilar Metals: When a flanged joint consists of a ductile iron flange mated to a stainless steel flange, the stainless steel flanges shall be flat faced and furnished with full-faced gaskets, insulating bushings.

3. Threaded Joints:

a. Pipe threads shall be concentric with the outside of the pipe and shall conform to ANSI B2.1. When threading stainless steel pipe, dies shall have 20 to 30 degree hook. Finished joints shall have no more than three threads exposed. Before assembly, pipe ends and threads shall be inspected and any defective pieces replaced. All joints shall be properly aligned before connection to prevent thread damage. Pipe dope shall be used on the male threads of all threaded connections. Teflon thread tape shall be applied two threads back from the end of the pipe of fitting to prevent shredding. Excess pipe dope shall be trimmed or cleaned off to provide adherence for paints or coatings.

4. Welded Joints:

a. Stainless Steel Pipe: Pipe welding shall be performed with the provisions of the latest revision of American Welding Society AWS D1.6 Structural Welding Code – Stainless Steel. All welds, unless otherwise shown or noted in the Drawings, shall be complete penetration joint (CJP) welds. All welds shall be inspected with 100% of welds passing ultrasound (UT) or radiological inspection by AWS Certified Weld Inspector at no additional cost to the Owner. Weld inspector qualifications and all weld inspection reports shall be submitted to the Owner. Only stainless steel brushes shall be used to clean the welds, pipe and welding surfaces. Before any welding is performed, the Contractor shall submit to the Owner a copy of the Contractor's welding procedure specification and welder's qualification record clearly showing that the welder has been tested and approved for welding per the Contractor's submitted procedure.

b. Field welded pipe joints are prohibited.

D. Unions and Flanges

1. Install dielectric unions or dielectric flange kits with sleeves and washers wherever dissimilar metals are connected, except for bronze or brass valves in ferrous piping.

2. Provide a union downstream of each valve with screwed connections.

3. Provide screwed or flanged unions at each piece of equipment, where shown, and where necessary to install or dismantle piping.

E. Eccentric Reducers: Use eccentric reducers where shown and where air or water pockets would otherwise occur in mains because of a reduction in pipe size.

END OF SECTION

Part 1 General

1.01 Scope

A. Provide all labor, materials, equipment and incidentals necessary to construct all ductile iron pipe and appurtenances and test as shown on the Drawings and as specified herein.

1.02 References

A. ANSI/ASME B1.1 - Unified Inch Screw Threads (UN and UNR Thread Form)

B. AWWA C110/ANSI 21.10 - Ductile-Iron and Gray-Iron Fittings

C. AWWA C111/ANSI 21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

D. AWWA C153/ANSI 21.53 - Ductile-Iron Compact Fittings

E. AWWA 600 - Installation of Ductile Iron Mains and their Appurtenances

1.03 Submittals

A. Complete shop drawings and product data on all piping, fittings, linings, coatings, and gaskets shall be submitted to the Owner in accordance with the requirements of Section 01 33 23 of these Specifications.

1.04 Delivery, Storage, and Handling

A. Deliver, store and handle all pipe, fittings and appurtenances as specified in Division 1 of these Specifications and in accordance with the manufacturer's recommendations. Pipe, fittings, and accessories shall be delivered, stored, and handled in a manner that will ensure installation in a sound, undamaged condition. Equipment, tools, and methods used in handling and installing pipe, fittings, and accessories shall have well padded contact surfaces and shall not damage the pipe, fittings and accessories. Pipe, fittings, and accessories in which the lining or coating has been damaged shall be replaced. With the concurrence of the Owner, small and readily accessible damaged areas may be repaired in accordance with the manufacturer's recommendations.

Part 2 Products

2.01 Ductile Iron Pipe (DIP) Fittings and Accessories

A. Ductile iron fittings shall be utilized as shown on the Drawings.

B. Long body fittings shall normally be installed. Compact fittings shall be used when conditions so warrant and directed by the Owner.

C. Fittings shall be ductile iron and shall conform to AWWA C110/ANSI A21.10 or AWWA C153/ANSIA21.53 with a minimum rated working pressure of 250 psi.

D. Solid sleeves shall permit the connection of plain end ductile iron pipe. Solid sleeves shall meet the requirements of ANSI/AWWA C110 for long pattern and have a minimum pressure rating of 250 psi. Solid sleeves shall have mechanical or restrained joints as specified in this section and as shown on the Drawings. Solid sleeves shall be used only in locations shown on the Drawings.

2.02 Joints

A. General

1. Unless shown or specified otherwise, joints for buried service shall be standard mechanical joints for fittings.

2. Provide the necessary bolts for connections. All bolts and nuts shall be threaded in accordance with ANSI B1.1, Coarse Thread Series, Class 2A external and 2B internal fit. All bolts and nuts shall be made in the U.S.A.

3. In all cases, gaskets shall be made of material that will not be damaged by the fluid being transported nor by the environment in which the pipe is installed. Gaskets for sewage force main shall be compatible with raw municipal wastewater.

B. Mechanical Joints (Buried Service)

1. Joints shall conform to AWWA C111/ANSI A21.11.

2. For buried mechanical joints, bolts and nuts shall be Tee Head bolts and nuts of high strength low-alloy steel in accordance with ASTM A 242 to the dimension shown in AWWA C111/ANSI A21.11.

3. Gaskets shall be in accordance with AWWA C111/ANSI A21.11 and shall be constructed of plain rubber (SBR) unless otherwise shown on the Drawings.

4. Mechanical joint glands shall be ductile iron.

2.03 Coatings

A. The exterior of fittings for buried service shall be factory coated with an asphaltic coating conforming to AWWA C110/ANSI 21.10 for fittings.

2.04 Linings

A. Ceramic Epoxy Lining (force main fittings)

1. Lining Material: Force Main fitting lining material shall be Protecto 401 Ceramic Epoxy, an amine cured novalac epoxy containing at least 20 percent by volume of ceramic quartz pigment. The material shall meet the following minimum requirements:

   a. A permeability rating of 0.00 when tested according to Method A of ASTM E-96-66, Procedure A with a test duration of 30 days.

   b. The following test shall be run on coupons from factory lined ductile iron pipe:

      i. ASTM B-117 Salt Spray (scribed panel) – Results to equal 0.0 undercutting after two years.

      ii. ASTM G-95 Cathodic Disbondment 1.5 volts @ 77° F. Results to equal no more than 0.5 mm undercutting after 30 days.

      iii. Immersion Testing rated using ASTM D-714-87.

         1) 20% Sulfuric Acid – No effect after two years.
         2) 140° F 25% Sodium Hydroxide – No effect after two years.
         3) 160° F Distilled Water – No effect after two years.
         4) 120° F Tap Water (scribed panel) – 0.0 undercutting after two years with no effect.

   c. An abrasion resistance of no more than 3 mils (.075 mm) loss after one million cycles using European Standard EN 598: 1994 Section 7.8 Abrasion Resistance.

2. Surface Preparation: Surface preparation shall consist of the ductile iron surface to a near-gray blast finish. This degree of cleanliness is comparable to a SSPC-SP10 for steel with the exception that ductile iron attains a gray color when blast cleaned. The blast cleaning operation shall remove 95% of all surface contaminants, including tightly adhered annealing scale. The anchor tooth pattern, resulting from the blasting operation, shall have a minimum height of 3.0 mils.

3. Applicators: The lining shall be applied using a centrifugal lance applicator by applicators certified by the lining manufacturer. The workers shall be experienced and competent in the surface preparation, application and inspection of the lining to be applied.

4. Lining: After the surface preparation and within 8 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of Protecto 401. Minimum thickness shall be 30 mils. No lining shall take place when the substrate or ambient temperature is below 40 degrees Fahrenheit. The surface shall be dry and dust free.

5. Bell Sockets and Spigot Ends: The gasket area and spigot end up to 6 inches back from the end of the spigot end shall be coated with 6 mils nominal, 10 mils maximum, using Protecto Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating

of the gasket seat and spigot ends shall be performed after the application of the lining.

6. Number of Coats: The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. To prevent delamination between coats, no material shall be used for lining which is not indefinitely recoatable with itself without roughening of the surface.

7. Touch-Up and Repair: Protecto Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.

8. Lining Holiday Test: At the manufacturer's facility, the lining shall be tested over 100% of the pipe barrel surface with a high-voltage spark tester as recommended by ASTM Designation G-62 Method B. If holidays are found in the lining by the above test at the manufacturing plant, the holiday shall be repaired per the lining manufacturer's recommendation. The holiday detector shall be a commercially available detector available from holiday detection equipment manufacturers such as SPY, TINKER AND RASOR, and ZORELCO.

9. All linings shall be checked for thickness using a magnetic film thickness gauge. Thickness testing shall be performed in accordance with SSPC-PA-2.

10. Each fitting shall be marked with the date of application of the lining system and with the numerical sequence of application of that date.

11. Certification: The fitting manufacturer shall supply a certificate attesting to the fact that the applicator met the requirements of this Specification, and that the material used was as specified.

12. Handling: Protecto 401 lined fittings shall be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning, or laying.

2.05 Retainer Glands

A. Retainer glands for ductile iron pipe shall be Megalug Series 1100, as manufactured by EBAA Iron, Uni-Flange Series 1400, as manufactured by Ford Meter Box Company, or Star Pipe Products StarGrip Series 3000.

2.06 Utility Locate Tape and Wire

A. General

1. Utility marking tape shall be 3-inch wide and 4 mil (minimum) thick per ASTM D2103 with a 2750 psi tensile strength per ASTM D882. Tape shall have adhesive backing and industrial standard repeatable message. Tape shall be buried directly over all pipes no deeper than 18 inches below ground.

2. External colon of locate wire shall be green for wastewater force main. Locate wire shall be installed on all buried ductile iron piping and services 2 inches and larger. No wire shall be installed on above ground installations or water services smaller than 2 inches.

3. Locate wire shall be 10 gauge, single strand, UF rated (direct burial), copper wire with 30 mil (minimum) insulation.

Part 3 Execution

3.01 Joint Assembly

A. General: Ductile iron fittings shall be assembled in accordance with AWWA/ANSI C600.

B. Mechanical Joints

1. The surfaces with which the rubber gasket comes in contact shall be brushed thoroughly with a wire brush just prior to assembly to remove all loose rust or foreign material which may be present and to provide clean surfaces which shall be brushed with a liberal amount of soapy water or other approved lubricant just prior to slipping the gasket over the spigot end and into the bell. Lubricant shall be brushed over the gasket prior to installation to remove loose dirt and lubricate the gasket as it is forced into its retaining space.

2. Joint bolts shall be tightened by the use of wrenches and to a tension recommended by the pipe manufacturer. When tightening bolts, the gland shall be brought up toward the pipe bell. If effective sealing is not attained at the maximum torque indicated above, the joint shall be disassembled and reassembled after thorough cleaning. Overstressing of bolts to compensate for poor installation shall not be permitted.

3. After installation, bolts and nuts in buried piping shall be given two heavy coats of a bituminous paint.

3.02 Installation

A. All buried ductile iron pipe and fittings shall be backfilled in accordance with Section 31 23 33 of these Specifications.

B. Proper and suitable tools and appliances for safe and convenient handling and laying of pipe and fittings shall be used. Care shall be taken to prevent the pipe coating from being damaged, particularly cement linings on the inside of the pipes and fittings. Any damage shall be remedied as directed by the Owner.

C. All pipe and fittings shall be carefully examined by the Contractor for defects just before installing and no pipe or fitting shall be installed if it is defective. If any defective pipe or fitting is discovered after having been installed, it shall be removed

and replaced in a satisfactory manner with a sound pipe or fitting by the Contractor at Contractor's own expense.

D. All pipes and fittings shall be thoroughly cleaned before they are installed and shall be kept clean until they are used in the completed work. Open ends of pipe shall be kept plugged with a bulkhead during construction.

E. All elbows, tees, wyes, and reducers in pressure piping systems shall be adequately restrained against thrust.

3.03 Locate Wire Installation and Testing

A. Locate wire installation and testing shall be in accordance with St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.9.5.

B. Locate Wire Installation for Open Cut Mains: Contractor shall furnish and install locate wiring on all reclaimed water mains and force mains 2-inch size and greater. Locate wire shall be brought to grade within a valve box or Locating Station box at 475 foot intervals or less. Locate wire shall be installed in box and along pipeline. Locate wire shall be installed in either the 5:00 or 8:00 position relative to the pipe, but shall not be attached to the pipe. Connection or splices underground which are not inside a locate box or valve box shall not be allowed.

C. Locate Wire Testing Equipment. Testing technology shall include variable frequency controls, digital depth read-out, and tone continuity approved by SJCUD.

1. Tester: Testing shall be performed by a person or company that has been certified by the manufacturer of the approved testing equipment as proficient in the use of the equipment and has six months experience in the use of the equipment including documented proof of past performance.

2. Locate Wire Testing Requirements: Locate wiring shall be tested by the Contractor using a certified tester and approved testing equipment. The Certified Tester shall be pre-approved by SJCUD. The SJCUD field representative may elect to be present during the testing period. The Contractor shall provide the Certified Tester a copy of the project drawings. The technician shall trace the entire length of the installed wire and mark the location at 100-foot intervals along the route. The depth of pipe shall be tested at 200-foot intervals. The Certified Tester shall report where the pipe has less than the allowable minimum cover or more than the maximum allowable cover. All laterals shall be marked and recorded. A final Locate Wire Report shall be submitted to SJCUD for review and approval. The report shall include a signed statement from the certified tester which certifies that all installed wire was successfully sounded and traced with no open breaks. The report shall also include a copy of the project drawings which indicate all field notes, breaks found/repaired, depths and other applicable field by the Certified Tester. A certified copy of the report and marked-up drawing shall be furnished prior to final acceptance of the project.

3.04 Inspection, Flushing, and Testing

A. Inspection: Clean, inspect, and examine each piece of pipe and each fitting and special for defects before it is installed.

1. Do not use any cracked, broken, or defective pieces in the work.

2. If any defective piece should be discovered after having been installed, remove and replace this piece with a sound piece in a satisfactory manner at no increase in Contract Amount.

B. At the conclusion of the work, the Contractor shall thoroughly clean all new pipe lines by flushing with water or other means to remove all dirt, sand, stones or other foreign material which may have entered the line during the construction period. Flushing shall be allowed for pipes less than or equal to 12-inch diameter. Flushing shall be accomplished in strict accordance with AWWA C651 and Section 3.9 of the St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications. Flushing shall be terminated at the direction of the SJCUD. The Contractor shall dispose of the flushing water without causing a nuisance or property damage. The Contractor shall arrange with the Owner the source of flushing water. In lieu of flushing, new water mains may be hydraulically or pneumatically cleaned with a polypropylene swabbing device.

C. All pressure pipelines shall be pressure and leakage tested in accordance with the Section 3.9 of the St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications.

3.05 Connection to Existing System

A. All connections to existing mains shall be made after complete testing, flushing, and clearance of the proposed system and shall be made under the direction of the Owner. Valves separating the mains being installed from existing mains shall be operated by or under the direction of the Owner. Proper and suitable tools and appliances for safe and convenient handling and laying of pipe and fittings shall be used. Care shall be taken to prevent the pipe coating and linings from being damaged. Any damage shall be remedied as directed by the Owner.

3.06 Cleaning

A. General: Thoroughly clean all pipe before it is laid and keep it clean until it is accepted in the completed work.

B. Removal of Materials: Exercise special care to avoid leaving bits of wood, dirt, and other foreign particles in the pipe. If any particles are discovered before the final acceptance of the work, remove and clean the pipe.

END OF SECTION

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Part 1 General

1.01 Scope

A. Provide all labor, materials, equipment and incidentals necessary to construct all polyvinyl chloride pipe and appurtenances as shown on the Drawings and as specified herein.

1.02 References

A. AWWA C110/ANSI 21.10 - Ductile-Iron and Gray-Iron Fittings

B. AWWA C111/ANSI 21.11 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

C. AWWA C115/ANSI 21.15 - Flanged Ductile-Iron Pipe With Ductile-Iron or Gray-Iron Threaded Flanges

D. AWWA C151/ANSI 21.51 - Ductile-Iron Pipe, Centrifugally Cast

E. AWWA C153/ANSI 21.53 - Ductile-Iron Compact Fittings

F. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In.

G. ASTM D882 - Tensile Properties of Thin Plastic Sheeting

H. ASTM D1784 - Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds

I. ASTM D2103 - Polyethylene Film and Sheeting

J. ASTM D3139 - Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals

K. ASTM F477 - Elastomeric Seals (Gaskets) for Joining Plastic Pipe

1.03 Submittals

A. Complete shop drawings on all piping and fittings shall be submitted to the Owner in accordance with the requirements of Section 01 33 23 of these Specifications.

B. The Contractor shall submit written evidence to the Owner that the products furnished under this section will conform to the material and mechanical requirements specified herein. Certified copies of independent laboratory test results or mill test results from the pipe supplier may be considered evidence of compliance provided such tests are performed in accordance with the appropriate testing standards by experienced, competent personnel. In case of doubt as to the accuracy or adequacy of mill tests, the Owner may require that the Contractor

furnish test reports from an independent testing laboratory on samples of pipe materials.

1.04 Delivery, Storage, and Handling

A. Deliver, store and handle all pipe, fittings and appurtenances as specified in Division 1 of these Specifications and in accordance with the manufacturer's recommendations. Pipe, fittings, and accessories shall be delivered, stored, and handled in a manner that will ensure installation in a sound, undamaged condition. Equipment, tools, and methods used in handling and installing pipe, fittings, and accessories shall have well padded contact surfaces and shall not damage the pipe, fittings and accessories. Pipe, fittings, and accessories in which the lining or coating has been damaged shall be replaced. With the concurrence of the Owner, small and readily accessible damaged areas may be repaired in accordance with the manufacturer's recommendations.

Part 2 Products

2.01 Acceptable Manufacturers

A. PVC pipe shall be as manufactured by Diamond Plastics, JM Eagle, or approved equal.

2.02 Polyvinyl Chloride (PVC) Pressure Pipe

A. Polyvinyl Chloride Pipe (AWWA C900)

1. PVC pipe shall be utilized where shown on the Drawings and as specified by the St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.13.

2. All buried PVC pipe shall have belled ends for push-on type jointing and shall conform to ANSI/AWWA C900, ductile iron pipe equivalent outside diameters. The force main pipe shall have a Dimension Ratio (DR) of 25 and shall be capable of withstanding a working pressure of 100 psi. Pipe shall be furnished in nominal lengths of 20 feet, except specials. Force main pipe shall be green for color coding of materials.

3. All fittings shall be of cast or ductile iron meeting the requirements of AWWA C110/ANSI A21.10 or AWWA C153/ANSI A21.53 with a minimum rated working pressure of 250 psi. Long body fittings shall normally be installed. Compact fittings shall be used when conditions so warrant. All wastewater force main fittings shall be ceramic epoxy lined as specified in Section 40 27 23 of these Specifications. The exterior of fittings for buried service shall be factory coated with an asphaltic coating conforming to AWWA C151/ANSI 21.51 for ductile iron pipe, AWWA C115/ANSI 21.15 for flanged pipe and AWWA C110/ANSI 21.10 for fittings.

4. Fittings shall be UL/FM approved and shall conform to NSF Standard 61 as applicable. Fittings furnished by the approved manufacturer shall be cast and machined at one foundry location to assure quality control. Fittings shall have cast on them the pressure rating, nominal diameter of openings, manufacturer's name, foundry location, plant code, and degrees or fraction of the circle.

5. Acceptance will be on the basis of the Owner's inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards, including the National Sanitation Foundation.

2.03 Accessories

A. Service Saddles: Service saddles shall be fusion bonded epoxy coated ductile iron, solid band Type 316 stainless steel bands sized exactly to the pipe outside diameter. All hardware shall be Type 316 stainless steel. Service saddles shall be as manufactured by Ford or approved equal.

2.04 Restrained Joints

A. Restrained Joints: Where indicated on the Drawings, to prevent pipe joints and fittings from separating under pressure, pipe joints and fittings shall be restrained as follows:

1. PVC pipe bell and spigot joints 4-inch through 12-inch diameter shall be restrained with the EBAA Iron MEGALUG® Series 1500 Bell Restraint Harness or approved equal. PVC pipe bell and spigot joints 14-inch through 24-inch diameter shall be restrained with the EBAA Iron MEGALUG® Series 2800 Bell Restraint Harness or approved equal. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A536, Grade 65-45-12. Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A242.

2. Ductile iron mechanical joint fittings used with PVC pipe shall be restrained with the EBAA Iron MEGALUG® Series 2000 PV Mechanical Joint Restraint or approved equal. The restraining device and Tee head bolts shall be manufactured of high strength ductile iron meeting ASTM A536, Grade 65-45-12. Clamping bolts and nuts shall be manufactured of corrosion resistant high strength, low alloy CORTEN steel meeting the requirements of ASTM A242.

2.05 Utility Locate Tape and Wire

A. General

1. Utility marking tape shall be 3-inch wide and 4 mil (minimum) thick per ASTM D2103 with a 2750 psi tensile strength per ASTM D882. Tape shall have adhesive backing and industrial standard repeatable message.

2. External color of locate wire shall be green for wastewater force main. Locate wire shall be installed on all buried PVC, ductile iron, and HDPE piping and services 2 inches and larger. No wire shall be installed on above ground

installations or water services smaller than 2 inches. Tape shall be buried directly over all pipes no deeper than 18 inches below ground.

3. On open cut pipe, locate wire shall be 10 gauge, single strand, UF rated (direct burial), copper wire with 30 mil (minimum) insulation.

2.06 Pipe Marking

A. Each length of pipe shall bear the name or trademark of the manufacturer, the location of the manufacturing plant, design pressure, service and the class or strength classification of the pipe. The markings shall be plainly visible on the pipe barrel.

B. All pipes shall have a homing mark on the spigot provided by the manufacturer. On field cut pipe, the Contractor shall provide homing mark on the spigot in accordance with manufacturer's recommendations.

2.07 Color Code Requirements

A. Force main pipe shall be green for color coding the materials.

Part 3 Execution

3.01 Cutting

A. When new or existing pipe is required to be cut, the pipe shall be cut in such a manner as to leave a smooth end normal to the axis of the pipe.

B. All cutting of polyvinyl chloride pipe shall be performed with a cutting saw. All burrs shall be removed from the inside and outside edges of all cut pipe. All damaged linings and coatings shall be repaired.

3.02 Joint Assembly

A. The inside of the bell and the outside of the pipe from the plain end to the guide stripe shall be wiped clean immediately before assembling the pipe joint. Then the rubber gasket shall be inserted into a groove or shaped recess in the bell. Both the bell and spigot ends to be joined shall be wiped again to ensure they are thoroughly clean. A liberal coating of special lubricant furnished by the pipe manufacturer shall be applied to the outside of the pipe. The plain end shall be centered in the bell and the spigot pushed home.

3.03 Preparation

A. Dry Trench Bottoms: Lay pipe only in dry trenches having a stable bottom.

1. Where groundwater is encountered, make every effort to obtain a dry trench bottom.

2. If a dry trench bottom has not been obtained due to improper or insufficient use of all known methods of trench dewatering, then excavate below grade and place sufficient select fill material, crushed stone, or Class D concrete over the trench bottom.

3. If all efforts fail to obtain a stable dry trench bottom and it is determined that the trench bottom is unsuitable for pipe foundation, obtain an order, in writing, for the kind of stabilization to be constructed.

4. Perform trench excavation and backfill in accordance with Section 31 23 33 and St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications.

3.04 Installation

A. Install all buried PVC pipe and fittings in accordance with the manufacturer's recommendations, approved shop drawings, as specified in Division 01, Section 31 23 33, and St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications.

B. Pipe Laying - General:

1. Generally, lay all pipe with bells pointing ahead.

2. Carefully place each pipe and check for alignment and grade.

3. Make adjustments to bring pipe to line and grade by scraping away or filling in select fill material under the body of the pipe.

4. Wedging or blocking up the pipe barrel is not permitted.

5. Bring the faces of the spigot ends and the bells of pipes into fair contact and firmly and completely shove the pipe home.

6. As the work progresses, clean the interior of pipelines of all dirt and superfluous materials of every description.

7. Keep all lines absolutely clean during construction.

8. Lay pipelines accurately to line and grade.

C. Pipe Laying - Trenches:

1. Lay all pipelines in trench excavations on select fill bedding, Class D concrete cradle or other foundations as shown, specified or ordered in writing.

2. Properly secure the pipe against movement and make the pipe joints in the excavation as required.

3. Carefully grade and compact pipe bedding.

4. Bell Holes:

   a. Cut out bell holes for each joint as required to permit the joint to be properly made and allow the barrel of the pipe to have full bearing throughout its length.

   b. Thoroughly tamp bell holes full of select fill material following the making of each joint.

3.05 Locate Wire Installation and Testing

A. Locate wire installation and testing shall be in accordance with St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.9.5.

B. Locate Wire Installation for Open Cut Mains: Contractor shall furnish and install locate wiring on all water mains, force mains, and on water service mains 2-inch size and greater. Locate wire shall be brought to grade within a valve box or Locating Station box at 475 foot intervals or less. Locate wire shall be installed in box and along pipeline. Locate wire shall be installed in either the 5:00 or 8:00 position relative to the pipe, but shall not be attached to the pipe. Connection or splices underground which are not inside the locate box or valve box shall not be allowed.

D. Locate Wire Testing Equipment. Testing technology shall include variable frequency controls, digital depth read-out, and tone continuity approved by SJCUD.

   1. Tester: Testing shall be performed by a person or company that has been certified by the manufacturer of the approved testing equipment as proficient in the use of the equipment and has six months experience in the use of the equipment including documented proof of past performance.

   2. Locate Wire Testing Requirements: Locate wiring shall be tested by the Contractor using a certified tester and approved testing equipment. The Certified Tester shall be pre-approved by SJCUD. The SJCUD field representative may elect to be present during the testing period. The Contractor shall provide the Certified Tester a copy of the project drawings. The technician shall trace the entire length of the installed wire and mark the location at 100-foot intervals along the route. The depth of pipe shall be tested at 200-foot intervals. The Certified Tester shall report where the pipe has less than the allowable minimum cover or more than the maximum allowable cover. All laterals shall be marked and recorded. A final Locate Wire Report shall be submitted to SJCUD for review and approval. The report shall include a signed statement from the certified tester which certifies that all installed wire was successfully sounded and traced with no open breaks. The report shall also include a copy of the project drawings which indicate all field notes, breaks found/repaired, depths and other applicable field by the Certified Tester. A certified copy of the report and marked-up drawing shall be furnished prior to final acceptance of the project.

3.06 Inspection, Flushing, and Testing

A. Inspection: Clean, inspect, and examine each piece of pipe and each fitting and special for defects before it is installed.

1. Cut away any lumps or projections on the face of the spigot end or the shoulder.

2. Do not use any cracked, broken, or defective pieces in the work.

3. If any defective piece should be discovered after having been installed, remove and replace this piece with a sound piece in a satisfactory manner at no increase in Contract Amount.

B. At the conclusion of the work, the Contractor shall thoroughly clean all new pipe lines by flushing with water or other means to remove all dirt, sand, stones or other foreign material which may have entered the line during the construction period. Flushing shall be allowed for pipes less than or equal to 12-inch diameter. Flushing shall be accomplished in strict accordance with AWWA C651 and Section 3.9 of the St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications. Flushing shall be terminated at the direction of the SJCUD. The Contractor shall dispose of the flushing water without causing a nuisance or property damage. The Contractor shall arrange with the Owner the source of flushing water. In lieu of flushing, new water mains may be hydraulically or pneumatically cleaned with a polypropylene swabbing device.

C. All pressure pipelines shall be pressure and leakage tested in accordance with the Section 3.9 of the St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications.

3.07 Connection to Existing System

A. All connections to existing mains shall be made after complete testing, flushing, disinfection, bacteriological testing, and clearance of the proposed system and shall be made under the direction of the Owner. Valves separating the mains being installed from existing mains shall be operated by or under the direction of the Owner. Proper and suitable tools and appliances for safe and convenient handling and laying of pipe and fittings shall be used. Care shall be taken to prevent the pipe coating and linings from being damaged. Any damage shall be remedied as directed by the Owner.

3.08 Cleaning

A. General: Thoroughly clean all pipe before it is laid and keep it clean until it is accepted in the completed work.

B. Removal of Materials: Exercise special care to avoid leaving bits of wood, dirt, and other foreign particles in the pipe. If any particles are discovered before the final acceptance of the work, remove and clean the pipe.

END OF SECTION

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Part 1 General

1.01 Scope

A. Furnish all labor, materials, equipment and incidentals required to complete and make ready for operation, all valves and appurtenances as shown on the Drawings and as specified herein.

B. This section does not include valves for combustible or flammable liquids or gases.

1.02 Quality Assurance

A. Furnish valve of the same type from the same manufacturer. Provide parts that are interchangeable for all valves of the same type and size.

B. The valve manufacturer shall have a minimum of five years of experience in the production of substantially similar equipment, and shall show evidence of satisfactory service in at least five installations.

C. The valve manufacturer shall provide written certification to the Engineer that all equipment furnished complies with all applicable requirements of these Specifications.

D. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

1. AGMA Standards – American Gear Manufacturers Association

2. NEMA - National Electrical Manufacturer's Association

3. St. Johns County Utility Department, Manual of Water, Wastewater, and Reuse Design Standards and Specifications

1.03 Submittals

A. Complete shop drawings of all valves and appurtenances shall be submitted to the Engineer for approval in accordance with Section 01 33 23 of these Specifications and the SJCUD Manual of Water, Wastewater, and Reuse Design Standards and Specifications Part III, Section 3.1.9. Clearly indicate make, model, location, type, size and pressure rating.

B. Submit to the Owner, within 30 days after execution of the Contract, a list of materials to be furnished, the names of the suppliers, and the date of delivery of materials to the site.

C. Product Data: Submit, for approval, manufacturer's literature for all items specified under "Products", including: Paint certifications, specifications, and engineering data including capacities, dimensions, materials, size and weight.

D. Shop Drawings: Submit the following:

1. Complete detailed drawings of all valves

2. Working drawings, including arrangement and erection drawings of the control equipment; schematic control diagrams, electrical connection diagrams, and complete description of the control system; and operating characteristics.

E. Operation and maintenance data for all valves shall be furnished in accordance with Section 01 78 23 of these Specifications.

F. Certificates: Where tests are specified, submit test certificates.

1.04 Product Delivery, Storage and Handling

A. Delivery

1. Deliver materials to the site to ensure uninterrupted progress of the Work.

B. Handle all valves and appurtenances very carefully. Valves which are cracked, dented or otherwise damaged or dropped will not be acceptable.

C. Storage

1. Store materials to permit easy access for inspection and identification.

2. Keep steel members off the ground, using pallets, platforms or other supports.

3. Protect steel members and packaged materials from corrosion and deterioration.

4. Store all mechanical equipment in covered storage off the ground and prevent condensation.

D. Valves and all associated accessories shall be stored and protected in accordance with the requirements of Section 01 66 00 of these Specifications.

1.05 Tools and Spare Parts

A. Furnish a complete set of special tools required for normal operation and maintenance. All tools and spare parts shall be properly packed, protected and labeled.

Part 2 Products

2.01 Materials

A. Provide valves of the same type of same manufacturer throughout where possible.

B. General:

1. Valves shall have manufacturer's name and working pressure rating clearly marked on the outside of the valve body.

2. Valve Connections: Bolts shall be heavy hex stainless steel conforming to ASTM A 193, Grade B8M, Class 1 or 2 (Type 316 stainless steel). Nuts shall be heavy hex stainless steel conforming to ASTM A 194, Grade 8M (Type 316 stainless steel). Washers shall be Type 316 stainless steel.

3. Bolts and nuts shall have hexagon heads and nuts.

4. Provide full faced 1/8-inch thick gasket, cloth inserted, EPDM resilient material.

5. Identification:

   a. Identify each valve with a stainless steel nameplate stamped with the approved designation.

   b. Nameplate shall be permanently fastened to valve body at the factory.

2.02 Shop Painting

A. All exterior ferrous metal surfaces of exposed or submerged valves and appurtenances shall receive a coating of rust-inhibitive primer compatible with the finish paint specified in Section 09 91 00 of these Specifications. The exterior of all buried valves shall have a factory applied, two coat coal tar epoxy coating system. The coal tar epoxy shall be Tnemec Tneme-Tar 46-413, Indurall Ruffstuff 2100 Coal Tar Epoxy or KopCoat Bitumastic No. 300-M. Each coating shall have a dry film thickness of 8-10 mils.

B. All interior ferrous metal surfaces of valves, except for finished or bearing surfaces, and appurtenances shall be provided with two coats, interior epoxy coating conforming to the requirements of AWWA C550 and NSF 61. The coating shall be equal to Tnemec Series 20 Pota Pox, Valspar Series 78 Hi-Build Epoxy, or KopCoat Hi-Gard Epoxy. The coating system shall have a minimum dry film thickness of 4 - 6 mils.

2.03 Gate Valves (GV)

A. Gate Valves 4 Inches and larger: Gate valves 4-inches and larger shall be resilient wedge type conforming to the requirements of AWWA C509 or C515 rated for 250 psi minimum working pressure.

1. Valves shall be provided with two O-ring stem seals with one O-ring located above and one O-ring below the stem collar. The area between the O-rings shall be filled with lubricant to provide lubrication to the thrust collar bearing surfaces each time the valve is operated. At least one anti friction washer shall be utilized to further minimize operating torque. All seals between valve parts, such as body and bonnet, bonnet and bonnet cover, shall be flat gaskets or O-rings.

2. The valve gate shall be made of ASTM A126 Class B cast iron or ASTM A536 ductile iron, having a vulcanized, synthetic rubber coating, or a seat ring attached to the disc with retaining screws. Sliding of the rubber on the seating surfaces to compress the rubber will not be allowed. The design shall be such that compression set of the rubber shall not affect the ability of the valve to seal when pressure is applied to either side of the gate. The sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.

3. All internal ferrous surfaces shall be coated with fusion bonded epoxy to a minimum thickness of 10 mils. The epoxy shall be non toxic, impart no taste to the water and shall conform to AWWA C550, latest revision.

4. Gate valves shall be tested in accordance with AWWA C509 or C515. The reports covering proof of design testing in accordance with AWWA C509 or C515 shall be submitted.

5. Gate valves 4 through 12 inches shall be manufactured by American Flow Control, Mueller, M & H Valve, or approved equal.

B. Valve ends shall be mechanical joint type except where flanged or restrained joint ends are shown. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.

C. Operators

1. Manually operated valves, including geared valves, shall be non rising stem type having O-ring seals.

2. Valves for buried service shall have a nut type operator and shall be equipped with a valve box and extension stem as specified in this section.

3. Valves for non buried service shall be equipped with a handwheel operator.

4. Actuators for manually operated valves shall be provided in accordance with the St. Johns County Utility Department's Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.13.4.D.

5. All valves shall open counter-clockwise (left).

2.04 Plug Valves (PV)

A. Valves shall be 90 degree turn, non lubricated, eccentric type with resilient faced plugs. Design of the valve shall provide that contact between the seat and the plug shall only occur in the final degrees of plug movement. Valves shall be suitable for throttling service and service where valve operation is infrequent.

B. Valves shall provide drip tight shut off up to the full pressure rating with pressure in either direction. Pressure ratings shall be established by hydrostatic tests conducted in accordance with ANSI B16.1. Valves shall be rated at a minimum of 150 psi.

C. Valves shall have a port area equal to at least 80 percent of the full pipe area.

D. Bodies shall be cast iron, conforming to ASTM A 126, Class B (carbon steel for 2 inch valves) or ductile iron, conforming to ASTM A536.

E. Valve ends shall be flanged ends as shown on the Drawings. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.

F. Valve seats shall be a raised, welded-in overlay of not less than 95 percent pure nickel, machined to mate with the resilient faced plug. Overlay shall be minimum of 1/8-inch thick.

G. The plug shall be of semi-steel, conforming to ASTM A 126, Class B or ASTM A536. The plug facing shall be a synthetic rubber compound of approximately 70 durometer hardness bonded to the plug. Facing material shall be abrasion resistant and suitable for service in sewage and sludge applications.

H. Valves shall be furnished with replaceable, sleeve-type bearings in the upper and lower journals. Bearings shall comply with applicable requirements of AWWA C507. Bearing materials shall have a proven record of service of not less than five years.

I. The valve body shall be fitted with a bolted bonnet incorporating a stuffing box and pull-down packing gland. Design of exposed valves shall allow visible inspection of the shaft seal, adjustment of the packing, and replacement of the packing, all without disturbing the bonnet or valve operator. The shaft seal shall comply with the requirements of AWWA C504.

J. Actuators

1. Valves for exposed service, 3 through 6-inches in diameter, shall be lever operated. Hand levers shall be steel with a non-metallic grip. Valves for exposed service, 8-inches in diameter and larger, shall be equipped with a manual gear with handwheel.

2. All valves shall open counter-clockwise (left).

K. Plug valves shall be manufactured by DeZurik, Pratt, Val-Matic, GA Industries, or approved equal.

2.05 Check Valves (CV)

A. Swing Disc Type, Spring and Lever Type

1. Check valves shall be hinged disc type conforming to the requirements of AWWA C508, latest edition. Valves shall be cast iron body, conforming to ASTM A126, Class B, or ductile iron body, conforming to ASTM A536. Disc shall be bronze, bronze fitted disc, or rubber faced ductile iron disc. A renewable stainless steel seat ring shall be mechanically retained in the valve body. Valve hinge pin shall be stainless steel. A minimum of two O-rings shall be used to seal the hinge pin. Bonnet bolts shall be stainless steel and shall be sealed by the bonnet gasket.

Valves shall be designed for the operating head indicated and shall not slam shut on pump shutdown. Swing check valves shall absolutely prevent the return of water back through the valve when the inlet pressure decreases below the downstream pressure. When open, the valve shall have a straight way passage with a minimum flow area equal to the full pipe area. Valve shall be rated for 150 psi working pressure and hydrostatically tested at a minimum of 300 psi. Valves shall be equipped with a 1/2 inch stop cock at the high point of the valve for bleeding air from the line.

2. Exterior and Interior Valve Coating: Prior to shipment from the factory, the exterior and interior ferrous surfaces of the valve, except for finished, non-ferrous, or bearing surfaces, shall be coated with a fusion bonded or thermosetting epoxy coating in accordance with AWWA C550, latest revision. Coating shall be holiday-free, with a minimum thickness of 10 mils. Surfaces shall be clean, dry, and free from rush and grease before coating.

3. Valve ends shall be flanged meeting the requirements of ANSI 16.1, Class 125.

4. Valves shall be spring and lever type.

5. Valves shall be manufactured by GA Industries, Mueller, M & H Valve, or approved equal.

2.06 Stainless Steel Ball Valves (3-Inches and Smaller) (BLV-SS)

A. Stainless Steel Ball Valves:

1. Type: Full port, 2-piece stainless steel body construction.

2. Pressure Rating: 150 psi.

3. Ball and Stem: Type 316 stainless steel, anti-blowout stem design.

4. Packing: High density TFE.

5. Handle: Nylon with metal travel stops.

6. Support Rings: Stainless steel.

7. End Connections: NPT.

8. Ball valves shall be as manufactured by Apollo Series 86, or approved equal.

2.07 Valve Operator Accessories

A. The valve manufacturer shall supply, mount and test all operators on valves at the factory. The valves and their individual operators shall be shipped as a unit.

B. Unless otherwise noted on the Drawings, valves shall be manually actuated; non-buried valves shall have an operating wheel, handle, or lever mounted on the operator; those with operating nuts shall have a non-rising stem with AWWA 2-inch nut. At least two tee handles shall be provided for all operating nuts. Unless otherwise noted, operation for all valves shall be CCW open.

C. All operators shall be capable of moving the valve from the full open to full close position, in reverse, and holding the valve at any position part way between full open or closed.

D. Each operating device shall have cast on it the "OPEN" and an arrow indicating the direction of operation.

E. Extension Stems: Extension stem shall be stainless steel and shall be furnished by the manufacturer of the associated valve to bring the operating nut to within 6-inches of finished grade. Extension stems shall be sized by the valve manufacturer to withstand the maximum valve operator output.

F. Valve Boxes: Valve boxes shall be provided in accordance with the St. Johns County Utility Department's Manual of Water, Wastewater, and Reuse Design Standards and Specifications Section 3.13.4.

Part 3 Execution

3.01 Installation

A. All valves and appurtenances shall be installed in the locations shown on the Drawings, true to alignment and properly supported. Any damage to the above items shall be repaired to the satisfaction of the Owner before they are installed. Install all valves and appurtenances in accordance with manufacturer's instructions and approved shop drawings.

3.02 Field Quality Control

A. Adjust all parts and components as required to provide correct operation.

B. Following installation, operating tests will be performed to demonstrate to the Engineer that all equipment and accessories will function in a satisfactory manner. The Contractor shall make, at Contractor's own expense, all necessary changes, modifications and/or adjustments required to ensure satisfactory operation.

3.03 Field Painting

A. All exposed, non-buried or submerged valves and appurtenances specified herein shall be painted as part of the work in Section 09 91 00 of these Specifications.

3.04 Cleaning

A. Prior to acceptance of the work of this section, thoroughly clean all installed materials, equipment and related areas in accordance with Section 01 74 00 of these Specifications.

END OF SECTION

Part 1 General

1.01 Scope

A. Work described in this Section includes furnishing all labor, materials, equipment, tools and incidentals required for a complete and operable installation of all submersible pumps, motors, controls, access hatches and appurtenances. All equipment shall be installed, adjusted, tested and placed in operation in accordance with these Specifications and the manufacturer's recommendations.

B. Two (2) submersible pumps will be installed in accordance with the Drawings at each of SJCUD's Ocean Oaks Pump Station (PS 53), Food Lion Pump Station (PS 79), and Cypress Lakes Pump Station (PS 125).

C. Work also includes providing aluminum access hatches and appurtenances.

D. Related Work specified in other Sections includes, but is not limited to, the following:

1. Section 09 91 00 - Painting

1.02 Quality Assurance

A. The pump manufacturer shall have similar units in operation for a minimum of five years in the United States.

B. The manufacturer shall provide a written certification to the Engineer that all equipment furnished complies with all applicable requirements of these Specifications.

C. Reference Standards:

1. American Society for Testing Materials (ASTM)
2. American National Standard Institute (ANSI)
3. American Bearing Manufacturers Association (ABMA)
4. National Electrical Manufacturers Association (NEMA)
5. National Electrical Code (NEC)
6. Factory Mutual (FM)
7. Hydraulic Institute (HI)
8. Underwriters Laboratories (UL)
9. St. Johns County Utility Department Manual of Water, Wastewater, and Reuse Design Standards and Specifications

1.03 Design Requirements

A. Pumps shall be totally submersible, electric motor driven, non-clog, sewage pumps.

B. The pump manufacturer shall review design and layout drawings to ensure that installation arrangements are suitable for their equipment. Any potential conflicts or recommended modification shall be noted on the shop drawings or by a pre-submittal request for information if appropriate. Any modifications required to satisfy manufacturer's recommendations shall be at the Contractor's expense.

C. Operating requirements for pumps shall be as shown in the pump information table for each pump station as shown on the Drawings.

D. The operating range of the pump shall include minimum head, rated and shut-off conditions. The pumps shall be non-overloading throughout this operating range.

E. Pump design shall incorporate an automatic discharge connection, allowing each unit to be removed for inspection or service by simply lifting the pump. Re-connection shall require only lowering of the pump into position.

1.04 Submittals

A. Submit shop drawings in accordance with the requirements of Section 01 33 23 of these Specifications.

B. Product Data and Information:

1. Suggested spare parts list.

2. Factory Test Reports.

3. Manufacturer's Certification of Compliance for factory finish system with Section 09 91 00.

4. Shipping, storage and protection, handling instructions, and installation instructions.

5. Manufacturer's Certificate of Proper Installation.

6. Operation and Maintenance manuals for the pumping equipment.

C. Shop Drawings:

1. Make, model, weight, horsepower of each equipment assembly.

2. Pump performance curves, showing head, horsepower demand, and overall efficiency, as a function of capacity from shutoff to maximum capacity for various speeds. Indicate separately head, capacity, horsepower demand, overall efficiency, and minimum submergence required at Rated and Secondary Conditions.

3. General arrangement drawing of pumping unit, base elbow and guide rail system. Include equipment weight and anchor methods and materials.

4. Catalog information for pump and motor, including plan and cross-section drawings, descriptive literature, specifications, and identification of materials of construction.

5. Parts list with materials of construction identified.

6. Power and control wiring diagrams, including terminals and numbers.

7. Complete motor nameplate data, as defined by NEMA, from motor manufacturer.

8. Factory finish system: Coat in accordance with Specification Section 09 91 00.

9. Bearing life calculations.

10. Motor manufacturer's name, motor horsepower, RPM and frame size, weight and descriptive bulletin of the motor to be furnished. Include motor manufacturer's certified dimension sheet that lists motor features and include typical motor data sheet.

D. Operation and maintenance manuals shall be furnished in accordance with the requirements of Section 01 78 23 of these Specifications.

1.05 Factory Testing

A. The pump manufacturer shall conduct full scale, full range factory performance tests with respect to capacity, head and horsepower on each of the pump units to be provided on this Project. Certified test reports shall be submitted for approval, prior to shipment of the pumps. Tests shall be conducted in accordance with applicable Hydraulic Institute standards for Acceptance Level "A".

B. Submit a table with a listing of a minimum of 10 test points throughout the pump range including shut off, rated capacity and run out. Show capacity, total head, BHP, efficiency, and speed.

1.06 Storage and Protection

A. Pumps and accessories shall be stored and protected in accordance with Section 01 66 00 of these Specifications and the manufacturer's recommendations.

B. Pumps shall be completely drained prior to shipment. Suction and discharge ports shall be provided with plastic plugs. Each pump shall be secured to a wooden skid to facilitate handling and storage.

1.07 Warranty

A. The submersible pumps, motors, and appurtenances shall be fully warranted by the Contractor and Manufacturer for a period of one (1) year from the date of the Owner

acceptance as defined under the General Conditions, and Division 1, to be free from defects in workmanship, design or material. All interior equipment, apparatus and parts furnished shall be warranted except those items that are normally consumed in service, such as light bulbs, oil, grease, packing, O-rings, etc. If the equipment should fail during the warranty period due to a defective part(s), it shall be replaced in the machine and the unit(s) restored to service at no additional cost to the OWNER. After year one (1), a pro-rated warranty shall be provided for an additional four (4) years.

B. Manufacturer shall provide a written copy of the warranty terms with the operating manual for the pump station.

1.08 Spare Parts

A. Furnish a complete set of special tools required to completely dismantle and reassemble each kind and size of pumping unit. All tools and spare parts shall be properly packed, protected and labeled.

Part 2 Products

2.01 Acceptable Manufacturers

A. Pumps shall be as manufactured by Flygt.

2.02 Materials and Construction

A. Pump Construction:

1. The pump casing shall be of grey cast iron, ATM A48, Class 35B, with a slide rail guide shoe attached to the discharge flange as an integral assembly. The casing shall be easily removed from the motor for full inspection of the impeller.

2. All major castings, including the motor housing, bearing housing, volute and impeller shall be of as a minimum ASTM A48 Class 35B cast iron.

3. All major parts, such as the stator casing, oil casing, volute, sliding bracket and discharge connection shall be of gray iron. All exposed bolts and nuts shall be 316 stainless steel. All mating surfaces of major parts shall be machined and fitted with rubber, O-ring seals where watertight sealing is required. All parts shall be interchangeable and watertight sealing shall not require additional machining of replacement parts, sealing compounds, or the application of specific torques to connectors.

B. Discharge Base and Elbow:

1. No portion of the pump unit shall bear directly on the floor of the wet well. There shall be no more than one 90 degree bend allowed between the volute discharge flange and station piping.

2. A sliding guide bracket shall be an integral part of the pump unit. The volute casing shall have a machined discharge flange which automatically connects directly to, or through an intermediate coupling to a discharge base. The discharge base shall be bolted to the floor of the sump and shall have a flanged connection to the discharge piping. There shall be no need for adjustment, fasteners, clamps, or other devices to connect the pump to the discharge base.

3. The pump manufacturer shall furnish a discharge base and elbow for the pump supplied. The base shall be sufficiently rigid to firmly support the guide rails, discharge piping and pump under all operating conditions. The base shall be suitable for bolting to the floor, (bolting to a standard 1-inch thick metal plate, see details on Drawings), of the wet well. The face of the discharge elbow inlet flange (ANSI 125) shall make contact with the face of the pump discharge nozzle flange.

4. The pump and motor assembly shall be a "quick disconnect" type connected to and supported by the discharge base and guide rails. This shall allow the removal of the pump from the wet well and replacement without the need of unbolting, lowering the liquid level or requiring operating personnel to enter the wet well.

5. Pump shall be provided with a sealing flange and guide rail sliding bracket. The bracket shall be designed to obtain a leak proof seal between flange faces as final alignment of the pump occurs in the connected position. The bracket shall maintain proper contact and suitably sealed connection between flange faces under all operating conditions. Sealing of the pumping unit to the discharge connection shall be accomplished by a machined metal-to-metal watertight contact. Sealing of the discharge interface with a diaphragm or profile gasket will not be acceptable.

C. Impeller Configuration: Impellers shall be an enclosed type or semi-open type as specified below:

1. Enclosed Type Impeller: The impeller shall be constructed with a long throughlet without acute turns, be of non-clogging design and capable of handling solids, fibrous material, heavy sludge or other matter found in normal sewage applications. The impeller shall be dynamically balanced and have no more than three vanes. Dynamic balancing operations shall not deform or weaken it. The impeller shall be a slip fit or taper fit to the shaft and key driven. Non-corroding fasteners shall be used. The impeller shall have a Brinell Hardness Rating of 200 minimum. The pump shall be provided with impeller and casing wear rings of 400 series stainless steel having a Brinell Hardness Rating of a minimum 300. Impeller ring Brinell Hardness shall be 50 points lower than the casing ring (nominal).

2. Semi-Open Type Impeller

   a. Impeller shall be manufactured of ASTM A48 Cl 35B or ASTM A532 Alloy IIIA, be a non-clog, semi-open design, dynamically and statically balanced. The impeller leading edges shall be mechanically self-cleaning against a machined spiral groove in the mating suction wear plate. Leading edges shall be hardened to a minimum Rockwell C hardness of 45. The impeller to wear plate operating tolerance shall be adjustable to compensate for wear over the life of

the components. The impeller configuration shall be capable of handling sludges up to 6%, and fibrous materials typical of raw wastewater.

b. The impeller shall operate against a replaceable wear plate in the pump suction casting. The wear plate shall be machined with a sharp-edge groove(s) designed to shred solids passing between the impeller vane edge and the plate. The wear plate shall be manufactured of either ASTM A48 Class 35B or ASTM A532 Alloy IIIA, hardened to a minimum Rockwell C value of 45. The wear plate contour shall match the impeller vane shape to provide a running seal during operation.

c. Semi-open impeller and wear plate configurations shall be as manufactured by Flygt (N-Series).

D. Wearing Rings: Wearing rings shall be abrasion resistant and shall be installed at the inlet side of the pump to provide protection against wear to the impeller.

E. Abrasion Resistance: All parts exposed to abrasive wear, case and impeller shall have a minimum Brinell hardness of 200.

F. Shaft Seals:

1. Each pump shall be provided with a mechanical, rotating shaft seal system running in an oil reservoir having separate, constantly hydro-dynamically lubricated, lapped seal faces. The lower seal unit between the pump and oil chamber shall contain one stationary and one positively driven, rotating tungsten-carbide or silicon-carbide ring. The upper seal unit between the oil sump and motor housing shall contain one stationary tungsten-carbide ring and one positively driven rotating tungsten-carbine ring.

2. Each interface shall be held in contact by its own independent spring system, supplemented by external liquid pressures. The seals shall require neither maintenance nor adjustment, but shall be easily inspected and replaceable. No seal damage shall result from operating the pumping unit out of its liquid environment. The seal system shall not rely upon the pumped media for lubrication. The oil reservoir shall have a drain and inspection plug, with positive seal, which shall be easily accessible from outside the pump.

3. A leakage sensing system shall be provided to detect the intrusion of moisture in either the seal chamber or stator housing.

G. The pump and motor shaft shall be one-piece made of ASTM 479 stainless steel.

2.03 Guide Rails

A. Pump shall be equipped with one or more guide rails (no cable wire assembly). Guide rails shall be a minimum of 2-inch diameter and sized to fit the discharge base and the sliding bracket and shall extend upwards from the discharge base to the access hatch cover at the top of the wet well. Intermediate rail braces shall be supplied and solidly

secured to the wet well wall. Braces secured to the discharge piping shall not be accepted. Guide rails and brackets shall be Type 316 stainless steel, Schedule 40.

B. The pumping station shall be furnished with the necessary, stainless steel upper guide holder and level sensor cable holder.

C. Stainless steel cable holders including the cable hooks shall be fabricated from Type 316 stainless steel plate. Sharp corners and edges shall be ground smooth to prevent abrasion and cutting of electrical cable insulation. The cable holder shall be of sufficient length and strength to provide support for each separate cable, except that the pump power and lift cables may use the same hook position, provided the cables do not foul one another and the lift cable is easily accessed from the hatch opening.

D. Lower guide holders shall be integral with the discharge connection. Intermediate guide brackets shall be furnished and installed so that the maximum length of unsupported guide bars will be no longer than 20 feet and shall be fabricated of Type 316 stainless steel.

2.04 Lifting Cable

A. The lifting cable shall consist of an stainless steel braided wire cable (3/8-inch minimum) attached to the pump lifting bail. An eyelet shall be provided at the upper end of this cable for attaching to the wet well access frame. Unless approved otherwise by Owner, the lifting cable shall be shackled to a heavy-duty Type 316 stainless steel lifting bail attached to the pump/motor housing for removal and reinstallation. Three feet of excess cable above the top of the wet well shall be provided to expedite removal. A cable/motor electric cable holder shall be provided and appropriately sized to accommodate the lifting cable and motor electrical cables provided without deformation. Lifting cable/electric cable holder shall include extra heavy duty 3/8-inch rod hooks for attaching control floats, lifting chains, and other wet well accessories (four hooks minimum) and be located on the side of the wet well hatch opening opposite to the discharge piping. The cable, shackles, lifting bail, and cable holder shall be Type 316 stainless steel.

2.05 Motor

A. Pump Motor: Motor shall comply with the latest edition of the SJCUD Manual of Water, Wastewater, and Reuse Design Standards & Specifications Sections 2.18.5.B and 2.19.6. Wet well level controls shall be adjusted to maintain submergence of the submersible wastewater pump motor for isolation from the atmosphere.

B. Bearings: The shaft shall be supported above and below the rotor by anti-friction bearings designed to provide long life and minimize shaft deflection. At least one bearing shall be double row type. Bearings shall have a minimum ABMA B-10 life of 50,000 hours

2.06 Controls

A. The pump local control panel shall comply with the Drawings and latest edition of the SJCUD Manual of Water, Wastewater, and Reuse Design Standards & Specifications.

2.07 Accessories

A. Aluminum Access Hatches:

1. Provide Manufacturer's standard fabricated access hatch that meet the function of each pump station. Pump manufacturer shall size the hatch to allow for unobstructed vertical removal of all equipment. Provide a minimum 4-inch clearance from hatch opening and all portions of the pump and rail (measured from all sides).

2. Where standard access hatches are not available, provide custom fabricated access hatches as follows:

   a. Door shall be a single or double leaf type as shown on the Drawings built to withstand 300 pounds per square foot.

   b. The frame shall be 1/4-inch extruded aluminum with built-in neoprene cushion and with strap anchors bolted to the exterior. Door leaf shall be 1/4-inch aluminum diamond plate reinforced with aluminum stiffeners as required. Type 316 stainless steel heavy duty hinges shall be bolted to the underside and pivot on torsion bars that counterbalance the door for easy operation. The door shall open to 90 degrees and lock automatically in that position. A vinyl grip handle shall be provided to release the cover for closing. Doors shall be equipped with a snap lock and removable handle. Door shall also be equipped with hasp and padlock in addition to built-in locking mechanisms. Padlocks for all doors shall be keyed alike. Bituminous coating shall be applied to the exterior of the frame by the manufacturer. All parts shall be aluminum or Type 316 stainless steel.

   c. Acceptable Aluminum Access Hatch manufacturers are as follows:

      1) The Bilco Company (Type JD for double leaf doors and Type J for single leaf doors);
      2) US Fabrication (Type TPD for double leaf doors and Type TPS for single leaf doors);
      3) Halliday Products Inc. (W2R for double leaf doors and W1R for single leaf doors).
      4) Or approved equal.

3. Fabricate each access hatch cover unit in the shop, complete with anchors, gaskets, hardware, and accessory items as required.

4. Provide Schedule 80 PVC drain piping from the access hatch cover channel frame routed to structure below or as indicated on the Drawings.

2.08 Mix-Flush Valve – Cypress Lakes (PS 125)

A. At least one pump in the Cypress Lakes (PS 125) wetwell shall be equipped with an automatically operating valve that will provide a mixing action within the sump at the start-up of the pumping cycle. The valve shall be Flygt Mix-Flush Model 4901.

B. This mix-flush valve shall be mounted directly on the pump volute and shall direct a portion of the pumpage into the sump to flush and re-suspend solids and grease by the turbulent action of its-discharge. The turbulent action caused by the flow shall also provide some sump aeration benefits.

C. The valve shall be mounted on the pump volute so that it can be removed from the sump along with the pump during normal and routine maintenance checks and shall be positioned on the volute to provide for non-clogging operation. The valve shall be equipped with an adjustable, wear-resistant discharge nozzle which shall be used to direct flow from the valve to optimize mixing action within the sump. The valve shall be installed in accordance with the manufacturer's recommendations. The Contractor shall coordinate with the manufacturer on the location of the mix-flush valve. The size of the access hatch shall be enlarged as required to accommodate the mix-flush valve plus a minimum of 4-inch clearance on all sides of the valve.

D. The valve shall not require any external power source or control to operate, neither electric nor pneumatic. The use of the external power source is not acceptable. The valve shall be suitable for use in Class I, Division 1 hazardous locations.

E. The valve shall open at the beginning of each pumping cycle and shall automatically close during pump operation after a pre-selected time of operation. The valve shall operate automatically by differential pressure across the valve and shall be actuated through a self-contained hydraulic system which uses an environmentally safe fluid. A method of adjusting the valve operating time shall be provided.

2.09 Shop Painting

A. All materials specified under this Section shall be shop primed as part of the work under this Section. Surface preparation and paint shall be as specified in Section 09 91 00 of these Specifications.

Part 3 Execution

3.01 Installation

A. Equipment Installation: All equipment shall be installed in accordance with approved shop drawings, the manufacturer's recommendations and these Specifications.

B. Anchorage: Type 316 stainless steel anchor bolts, nuts and washers, as well as any templates necessary for setting the anchorage, shall be furnished by the equipment manufacturer. Placement of the anchor bolts shall be done by the Contractor from certified dimension shop drawings supplied by the equipment manufacturer.

C. Leveling and Grouting:

1. Level and align pump and motor in accordance with the respective manufacturer's published data.

2. Grout pump and discharge base with non-shrink grout in accordance with the ACI and the equipment manufacturer's and grout manufacturer's published specifications.

D. Access Hatches: Access hatches shall be integrally cast into the top of the wet well. The pump manufacturer shall verify the size and location with the Contractor prior to installation of each access hatch. Access hatches shall be cast into concrete in accordance with the manufacturer's recommendations.

3.02 Field Quality Control

A. Adjust all parts and components as required to provide correct operation.

B. Following installation, perform start-up and operational test in accordance with Section 01 75 16 of these Specifications to demonstrate to the Engineer that all equipment and accessories will function in a satisfactory manner. The Contractor shall make, at Contractor's own expense, all necessary changes, modifications and/or adjustments required to ensure satisfactory operation.

3.03 Manufacturer's Services

A. Provide manufacturer's services in accordance with Section 01 43 33 of Specifications.

B. Furnish the services of a qualified representative of the pump manufacturer for one, eight hour day per pump station to provide inspection of the completed installation, make any necessary adjustments, participate in the start-up of the equipment, participate in the field testing of the equipment, and place the equipment in trouble-free operation. The qualified representative of the pump manufacturer shall have full knowledge and experience in the installation and start-up of the equipment being installed.

C. Following completion of the installation and field testing, a qualified representative of the pump manufacturer shall provide a maximum of 4 hours training for employees of the Owner in the, proper operation, troubleshooting and maintenance of the equipment. Training by a qualified representative of the pump manufacturer shall be conducted as combined classroom and hands-on instruction. Conduct training at the Owner's facilities at a time mutually agreeable to the Owner and equipment manufacturer. The qualified representative of the pump manufacturer shall have complete knowledge of the operational and maintenance requirements of the equipment.

3.04 Field Painting

A. All shop primed surfaces shall be cleaned and painted as specified in Section 09 91 00 of these Specifications.

3.05 Cleaning

A. Prior to acceptance of the work of this section, thoroughly clean all installed materials, equipment and related areas in accordance with the requirements of Section 01 74 00 of these Specifications.

END OF SECTION

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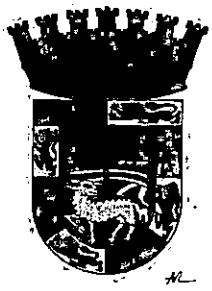

Board of County Commissioners
St. Johns County Florida

BID NO: 18-57

OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES

BID DOCUMENTS
PROJECT SPECIFICATIONS

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

FINAL: 03/23/18

TABLE OF CONTENTS

FRONT END BID DOCUMENTS

PROJECT SPECIFICATIONS/DRAWINGS/TECHNICAL DOCUMENTS

SEALED BID MAILING LABEL

END OF TABLE OF CONTENTS

BID NO: 18-57 **NOTICE TO BIDDERS**

Notice is hereby given that sealed bids will be received **until 2:00 P.M.** on **Wednesday, April 25, 2018** by the St. Johns County Purchasing Department, located at 500 San Sebastian View, St. Augustine, Florida 32084 for **Bid No: 18-57; Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades**. 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 give consideration and shall be returned to the sender unopened.

Scope of Work:
The project includes upgrades and modifications to three (3) wastewater lift stations located at various locations within St. Johns County and general include: mobilization/demobilization, site work, removal/replacement of existing lift station infrastructure, replacement of piping, replacement of pumps, replacement of wet well top slab and application of wet well liner, bypass pumping, all instrumentation and electrical, testing, and all permits associated with lift station modifications, per technical specifications and drawings.

The lift station are located at the following addresses:

1. Ocean Oaks Pump Station (PS 53); located at 10 Beach St., St. Augustine, FL 32080
2. Food Lion Pump Station (PS 79); located at 160 Lewis Point Rd, St. Augustine, FL 32086
3. Cypress Lakes Pump Station (PS 125); located at 4399 Cypress Links Blvd, Elkton, FL 32033

Minimum Qualifications
Prime bidder must be fully licensed to do business in the State of Florida and be currently licensed as a Certified Underground Utility Contractor or Certified General Contractor in the State of Florida, and provide proof of licensure with the submitted Bid Proposal. 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
There will be a **Mandatory** Pre-Bid Conference on Tuesday, April 3, 2018 at 9:30 AM at the St. Johns County Utility Department, 1205 State Road 16, St. Augustine, FL 32084. Attendance is required at the Pre-Bid Conference 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
Documents related to this bid may be obtained from Onvia DemandStar, Inc., at the following web address: www.demandstar.com by requesting St. Johns County Bid Document **#18-57.** 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: www.sjcfl.us/BCC/Purchasing/Open_Bids.aspx. Check the County's site for download availability and any applicable fees. Bid Documents may also be requested, ***in writing***, from the St. Johns County Purchasing Department Point of Contact, Leigh Daniels, CPPB, via email: ldaniels@sjcfl.us or fax:(904) 209-0155.

Point of Contact
Any and all questions related to this project shall be directed, ***in writing***, to Leigh Daniels, CPPB, Procurement Supervisor, SJC Purchasing Department, via email to ldaniels@sjcfl.us or fax to (904) 209-0155. Questions must be submitted, ***in writing***, no later than four o'clock **(4:00PM) on Tuesday, April 10, 2018**, 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 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 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 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 contract(s) are 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.

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

INSTRUCTION TO BIDDERS

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

PROJECT: BID NO.: 18-57; Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades

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 Agreement, 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)

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 or SJC Purchasing, in the number and for the purchase sum, if any, 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 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

There will be a **Mandatory** Pre-Bid Conference on Tuesday, April 3, 2018 at 9:30 AM at the St. Johns County Utility Department, 1205 State Road 16, St. Augustine FL 32084. Attendance is required at the Pre-Bid Conference 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.**

DESIGNATED POINT OF CONTACT

The County's Designated Point of Contact for this Bid is Leigh Daniels, CPPB, Procurement Supervisor, St. Johns County Purchasing Department. Any and all questions and/or inquiries shall be directed to Ms. Daniels, ***in writing***, via email at ldaniels@sjcfl.us or fax to (904) 209-0155. 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 contract(s) are 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 Leigh Daniels, CPPB, Procurement Supervisor, SJC Purchasing Department, via email to ldaniels@sjcfl.us or fax to (904) 209-0155. Questions must be submitted, ***in writing***, no later than four o'clock **(4:00PM) on Tuesday, April 10, 2018**, 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 listed in this Document.

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: 18-57; Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades"

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 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 be currently licensed as a Certified Underground Utility Contractor or Certified General Contractor in the State of Florida, and provide proof of licensure with the submitted Bid Proposal. 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. Each Bidder must submit Attachment "H" Experience of Bidder Form.

Proof of qualifications shall be provided by completing and submitting Attachment "C" – License/Certification List 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. If no Subcontractors or major material suppliers are required, so state there on.

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.

Subcontractors 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 the St. Johns County Standard Agreement between Owner and Contractor where the basis of payment is a Stipulated Sum. In the event of a conflict in specifications or contract requirements the more stringent shall apply.

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 **Two Hundred Seventy (270)** consecutive calendar days from the date stipulated on the Notice to Proceed. Final completion shall be attained **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:

Original Contract Amount	Daily Charge Per Calendar Day
$50,000 and under	$763 Over
$50,000 but less than $250,000	$958
$250,000 but less than $500,000	$1,099
$500,000 but less than $2,500,000	$1,584
$2,500,000 but less than $5,000,000	$2,811
$5,000,000 but less than $10,000,000	$3,645
$10,000,000 but less than $15,000,000	$4,217
$15,000,000 but less than $20,000,000	$4,698
$20,000,000 and over	$6,323 plus 0.00005 of any amount over $20 million

(Round to nearest whole dollar)

INSURANCE
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

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.

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.

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 Contract, adequate Workers' Compensation Insurance in at least such amounts as are required by the law for all of its 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.

END OF SECTION

OFFICIAL COUNTY BID FORM WITH ATTACHMENTS

BID NO: 18-57

OFFICIAL COUNTY BID FORM
ST. JOHNS COUNTY, FLORIDA

PROJECT: **OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES**

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: 18-57, OCEAN OKAS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES 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: OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES
as per plans and specifications.

BASE BID PRICE:

$_____
Base Bid Price (Numerical)

_____/100 Dollars
Base 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.

ARC FLASH ALLOWANCE*:

$ 6,000.00
Total Testing Service Allowance Price (Numerical)

Six Thousand and Zero /100 Dollars
(Amount written or typed in words)

**$2,000.00 for each lift station.*

FPL ALLOWANCE*:

$ 7,500.00
Total FPL Allowance (Numerical)

Seven Thousand and Five Hundred /100 Dollars
(Amount written or typed in words)

**The allowance shown is an estimated unit price allowance and will be adjusted (+/-) upon receipt of an invoice from FPL. $1,500 for Ocean Oaks Lift Station and $6,000.00 for Food lion Lift Station.*

TOTAL BID PRICE (Base Bid + Allowances):

$ _____
Total Bid Price (Numerical)

_____/100 Dollars
Total Bid Price (Amount written or typed 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 Lump Sum 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 Unit Price 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" – Experience of Bidder 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.: 18-57

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: 18-57; Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades, in St. Johns County, Florida.

The affiant further states that no more that 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.: 18-57

ATTACHMENT "B"
CERTIFICATES 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 it's 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.: 18-57

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

BID NO.: 18-57

ATTACHMENT "D"
LIST OF PROPOSED SUBCONTRACTORS/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:

Company Name	Division/Discipline	Primary Contact Name	Contact Number and Email Address

BID NO.: 18-57

ATTACHMENT "E"

St. Johns County Board of County Commissioners
Conflict of Interest Disclosure Form

Project (RFQ, RFP, BID) Number/Description: Bid No 18-57: Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades

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.: 18-57

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.: 18-57

ATTACHMENT "G"

CERTIFICATE OF INSURANCE

INSERT CERTIFICATE OF INSURANCE HERE

BID NO.: 18-57

ATTACHMENT "H"

EXPERIENCE OF BIDDER

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

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.

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

By: _____ _____
Bidder Date

_____
Authorized Signature

DATE OF CONTRACT	CLIENT'S NAME, ADDRESS, PHONE AND EMAIL	CONTRACT AMOUNT	PROJECT AND LOCATION

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?_____If Yes, explain: _____

_____

Has your company ever been sued? _____If Yes, explain and/or submit court decision or judgment, as applicable:

_____

_____

BID NO.: 18-57

BID BOND

STATE OF FLORIDA
COUNTY OF ST. JOHNS

KNOW ALL MEN BY THESE PRESENTS, that _____ as Principal, and as Surety, are held and firmly bound unto St. Johns County, Florida, in the penal sum of Dollars ($_____) 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 _____, 20___.

For
OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES
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 _____ A.D., 20___, 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.

BID NO.: 18-57

WITNESSES:

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

WITNESSES:

_____

_____

_____

_____
PRINCIPAL:

_____
NAME OF FIRM:

_____
SIGNATURE OF AUTHORIZED OFFICER (AFFIX SEAL)

_____
TITLE

_____
BUSINESS ADDRESS

_____
CITY STATE

WITNESS:

_____

_____
SURETY:

_____
CORPORATE SURETY

_____
ATTORNEY-IN-FACT (AFFIX SEAL)

_____
BUSINESS ADDRESS

_____
CITY STATE

_____
NAME OF LOCAL INSURANCE AGENCY

SEALED BID MAILING LABEL

BID NO: 18-57
OCEAN OAKS, FOOD LION, AND CYPRESS LAKES LIFT STATION UPGRADES

Cut along the outer border and affix this label to your sealed bid envelope to identify it as a "Sealed BID"

SEALED BID • DO NOT OPEN

SEALED BID NO.:	**BID NO: 18-57**
BID TITLE:	**Ocean Oaks, Food Lion, and Cypress Lakes Lift Station Upgrades**
DUE DATE/TIME:	**By 2:00PM – April 25, 2018**
SUBMITTED BY:	
	Company Name
	Company Address
	Company Address
DELIVER TO:	St. Johns County Purchasing Dept. ATTN: Leigh Daniels 500 San Sebastian View St. Augustine FL 32084

END OF DOCUMENT