

AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____ in the year 2018 by and between **NASSAU COUNTY BOARD OF COUNTY COMMISSIONERS**, a political subdivision of the State of Florida, hereinafter referred to as "County" and **SGS CONTRACTING SERVICES, INC.**, a Florida Corporation, whose business address is located at 23625 W. US HWY 27, High Springs, FL 32643, hereinafter referred to as "Contractor".

County and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows but not limited to:

A. Demolition: Contractor's work includes the demolition and removal of all internal components of one (1) or two (2) 55-ft diameter clarifiers, further identified as Clarifier #1 and Clarifier #2 as shown on contract drawings. Demolition includes, but is not limited to:

1. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted).
2. Scum skimmer, trough and connection piping (wall penetration piping to remain, unless otherwise noted).
3. Sludge rakes and squeegees, as well as, supporting structures.
4. Catwalk and railings from the stairs to the center support structures.
5. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the Clarifier's concrete base.
6. Control panel, electrical and data wiring, and conduit.

Items to remain include:

1. Existing access stairs for Clarifier #1 and Clarifier #2.
2. Existing walkway around Clarifier #1 wall.
3. Structures required to connect and support the stairs and existing circumferential walkway around Clarifier #1.

B. Contractor shall furnish all labor, equipment, materials, tools and incidental items required to install and place into proper operation of two (2) circular scraper

Initials _____

clarifiers (Clarifier #1 is base bid, Clarifier #2 is bid alternate) including walkway and railings from the stairs to the center support structure. Design and calculations to be performed by equipment vendor. All equipment shall be installed as shown on the plans, as recommended by the supplier, and in compliance with all OSHA, local, state, and federal codes and regulations.

C. Clarifiers - Contractor shall furnish complete with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the Clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation.

D. Additional Clarifier #1 work shall include:

1. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
2. Major or additional crack repairs shall be included in Bid Items 3c. This may include crack injection and additional surface repairs.
3. Regrouting of the entire floor/base.
4. External concrete pressure wash, cleaning, crack repairs and repainting.
5. Blasting and coatings of existing structural support bolts for the existing circumferential walkway and access stair mounts. Where required, bolts for the existing circumferential walkway and access stair mounts shall be replaced per Bid Item 5 (See **Exhibit 2**).

E. Additional Clarifier #2 work shall include:

1. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
2. Major or additional crack repairs shall be included in Bid Items 8c. This may include crack injection and additional surface repairs.
3. Regrouting of the entire floor/base.
4. External concrete pressure wash, crack repairs and repainting.
5. Installation of a new circumferential walkway.

All Work shall be in accordance with the construction drawings, specifications and Contract Documents.

Initials_____

ARTICLE 2 - THE PROJECT

- 2.01** The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

**Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF)
Clarifier Rehabilitation Project
Bid Number NC 18-010
Nassau County, Florida**

ARTICLE 3 - ENGINEER OF RECORD

- 3.01** The Project has been designed by **GAI Consultants, Inc.**, who is to act as the County's representative, assume all duties and responsibilities and have the rights and authority assigned to Engineer of Record in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of the Essence

- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- B. The Contractor hereby agrees to commence Work under this Agreement on a date to be specified in written "Notice to Proceed" of the County and to fully complete the Project as specified in Section 4.02 of this Agreement.

4.02 Days to Achieve Substantial Completion and Final Payment

The Work will be substantially completed within **270/330** calendar days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions and completed and ready for final payment in accordance with Paragraph 14.07.B of the General Conditions within **30** calendar days from the date of Substantial Completion. Total Contract Time shall be **300/360** calendar days; for everyday the Work goes beyond Substantial Completion, a day will be removed from Final Completion so the total days equal **300/360** calendar days.

4.03 Liquidated Damages

Initials_____

- A. Contractor and the County recognize that time is of the essence of this Agreement and that the County will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense and difficulties involved in proving in legal or arbitration proceeding the actual loss suffered by the County if the Work is not completed on time. Accordingly, instead of requiring any such proof, the County and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay the County **\$1,000.00** for each day that expires after the time specified in Paragraph 4.02 for Substantial Completion and until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by the County, Contractor shall pay the County **\$500.00** for each day that expires after the time specified in Paragraph 4.02 for completion and readiness for Final Payment until the Work is completed and ready for Final Payment.

ARTICLE 5 - CONTRACT PRICE

- 5.01** The County shall pay Contractor for completion of the Work in accordance with the Contract Documents in current funds equal to the sum of the amounts determined pursuant to Paragraph 14 "Payments to Contractor and Completion" of the General Conditions and Paragraphs 5.01(A) and 5.01(B) below:

- A. For all Work, at the prices stated in the Contractor's Bid, attached hereto as **Exhibit 2**.
- B. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated in Contractor's Bid for a Total of All Unit Prices (Including Alternates one (1) and two (2)) of:

Seven Hundred Ninety-Seven Thousand, Seven Hundred Dollars

\$797,700.00

As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classification are to be made by Engineer of Record as provided in paragraph 9.07 of the General Conditions. The final payment for all Unit Price Work shall be an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual

Initials_____

completed and accepted quantity of each item. Unit prices have been computed as provided in Paragraph 11.03 of the General Conditions.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by the County as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. The County shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment once each month during performance of the Work as provided in Paragraphs 6.02(A)(1) and 6.02(A)(2) below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07(A) of the General Conditions (and in the case of Unit Price Work based on the number of units completed), or in the event there is no schedule of values, as provided in the General Requirements:
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as Engineer of Record may determine or the County may withhold, including, but not limited to, liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:
 - a. 90% of the Work completed (with the balance being retainage).
 - b. 90% of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
 2. Upon Substantial Completion, the County shall pay an amount sufficient to increase total payments to Contractor to 95% of the Contract Price (with the balance being retainage), less such amounts as Engineer of Record shall determine or the County may withhold, for incomplete work and for other items in accordance with Paragraph 14.02 of the General Conditions.

6.03 Final Payment

- A. Upon Final Completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, the County shall pay the remainder of the Contract Price as recommended by Engineer of Record as provided in said Paragraph 14.07.
- B. Final Release of Retainage and acceptance of the Project must be approved by the Board of County Commissioners.

ARTICLE 7 - INTEREST

- 7.01** All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 0% per annum.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

- 8.01** In order to induce the County to enter into this Agreement, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
 - B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all federal, state, and local laws and regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.
 - E. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations,

- tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work, or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor, including applying the specific means, methods, techniques, sequences and procedures of construction, if any, expressly required by the Bidding Documents, and safety precautions and programs incident thereto.
- F. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. Contractor is aware of the general nature of work to be performed by the County and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports, drawings and exhibits identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies and data with the Contract Documents.
- I. Contractor has given Engineer of Record written notice of all conflicts, errors, ambiguities or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer of Record is acceptable to Contractor.
- J. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of the Work.

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
1. This Agreement
 2. Project Manual Table of Contents
 3. General Conditions
 4. Supplementary Conditions
 5. General Requirements/Technical Specifications
 6. Appendices (A and B)

Initials_____

7. Addenda (#1- #4)
 8. Exhibits to this Agreement incorporated by reference as if set forth herein (enumerated as follows):
 1. General Information and Insurance Requirements
 2. Contractor's Bid
 9. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Performance Bond
 - b. Payment Bond
 - c. Notice to Proceed
 - d. Work Change Directives
 - e. Change Orders
 - f. Certificate of Substantial Completion
 - g. Certificate of Final Inspection
 - h. Certificate of Engineer
 - i. Certificate of Final Completion
 - j. Contractor's Release
 - k. Drawings and Plans
 - l. Supplemental Agreements
 - m. Contractor's Waiver of Lien (Partial)
 - n. Contractor's Waiver of Lien (Final and Complete)
 - o. Subcontractor/Vendor's Waiver of Lien (Final and Complete)
 - p. Consent of Surety to Final Payment
 - q. Instructions to Bidders
 - r. Documentation submitted by Contractor prior to Notice of Award (if any)
- B. The documents listed in Paragraph 9.01(A) are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified or supplemented as provided in paragraph 3.04 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 Terms

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

Initials_____

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any law or regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the County and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 Other Provisions

- A. Public Records Requirement:

The County is a public agency subject to Chapter 119, Florida Statutes. **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (904) 530-6250, DMOODY@NASSAUCOUNTYFL.COM, 96161 NASSAU PLACE, YULEE, FLORIDA 32097.** Under this Agreement, to the extent that the contractor is providing services to the County, and pursuant to Section 119.0701, Florida Statutes, the Contractor shall:

1. Keep and maintain public records required by the public agency to perform the service.
2. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter, or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.
4. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the Contractor or keep and maintain public records required by the public agency to perform the service. If the Contractor transfers all public records to the public agency upon completion of the 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 the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

[Remainder of page intentionally left blank]

Initials_____

IN WITNESS WHEREOF, the County and Contractor have signed this Agreement in triplicate. One counterpart each has been delivered to the County, Contractor, and Engineer of Record. All portions of the Contract Documents have been signed or identified by the County and Contractor or identified by Engineer of Record on their behalf.

This Agreement will be effective on the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver (which is the Effective Date of the Agreement).

COUNTY

Nassau County Board of County Commissioners

Signed: _____

Title: _____

Date: _____

[CORPORATE SEAL]

Attest: _____

Title: _____

Address for giving notices:

Phone: _____ FAX: _____

CONTRACTOR

SGS Contracting Services, Inc.

Signed: _____

Title: _____

Date: _____

[CORPORATE SEAL]

Attest: _____

Title: _____

Address for giving notices:

Phone: _____ FAX: _____

License _____

(Where applicable)

Approved as to form by County Attorney
Agent for service of process:

Signature

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

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

Initials _____

**NASSAU AMELIA UTILITIES (NAU) WWTF
CLARIFIER REHABILITATION PROJECT**

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT & CONTRACTING REQUIREMENTS

00 11 10	Advertisement for Bids
00 21 15	Instructions to Bidders
00 41 15	Bid Form
00 43 15	Bid Bond
00 43 35	Tabulation of Subcontractors & Suppliers
00 44 55	Florida Trench Safety Act Certification
00 45 13	Statement of Bidder's Qualifications
00 45 19	Non-collusion Affidavit
00 45 20	Drug Free Workplace Certificate
00 45 30	Sworn Statement Under Section 287.133(3)(a), Florida Statutes, On Public Entity Crimes
00 45 35	Bidder's Statement of Disputes, Litigation, Arbitration, And Surety Completion, Last Three (3) Years
00 45 40	E-Verify Affidavit of Compliance
00 51 00	Notice Of Award
00 52 15	Agreement
00 55 00	Notice To Proceed
00 61 15	Performance Bond
00 61 16	Payment Bond
00 62 76	Application and Certificate for Progress Payment

00 63 15	Contractor's Request for Information
00 63 36	Field Order
00 63 49	Work Change Directive
00 63 63	Change Order Request Form
00 65 16	Certificate of Substantial Completion
00 65 19	Certificate of Final Completion
00 65 20	Waiver and Release of Lien upon Progress Payment
00 65 21	Waiver and Release of Lien upon Final Payment
00 72 15	Standard General Conditions of the Construction Contract
00 73 15	Supplementary Conditions

DIVISION 01 - GENERAL REQUIREMENTS

01 00 00	General Requirements
01 11 00	Summary of Work
01 12 16	Sequence of Construction
01 22 50	Measurement and Payment
01 29 73	Schedule of Values
01 29 76	Applications for Payment
01 31 13	Construction Schedule
01 31 19	Project Meetings
01 32 33	Construction Photographs
01 33 23	Submittals
01 35 29	Safety in Wastewater Works

Initials_____

01 41 23	Permits and Fees
01 45 16	Quality Control
01 52 00	Construction Facilities
01 57 26	Dust Control
01 65 00	Delivery, Storage and Handling
01 77 19	Project Closeout
01 78 23	Operating and Maintenance Data
01 78 36	Warranties and Bonds
01 91 14	Start-up and Demonstration

DIVISION 02 – EXISTING CONDITIONS

02 41 13	Demolition
----------	------------

DIVISION 03 – CONCRETE

03 60 00	Grout
03 93 00	Concrete Rehabilitation

DIVISION 05 – METALS

05 50 13	Miscellaneous Metal
----------	---------------------

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

07 92 00	Joint Sealants
----------	----------------

DIVISION 09 – FINISHES

09 90 00	Painting and Coating
----------	----------------------

DIVISION 26 – ELECTRICAL

26 05 02	Basic Electrical Materials and Methods
----------	--

DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT

43 10 50 Pipe and Fittings-General

DIVISION 46 – WATER AND WASTEWATER EQUIPMENT

46 43 21 Secondary Clarifier Rehabilitation

APPENDIX A

Nassau County As-Builts requirement Check List

APPENDIX B

Plans/Drawings

EXHIBIT 1

General Information and Minimum Insurance Requirements

EXHIBIT 2

Contractor's Bid

SECTION 00 55 00

NOTICE TO PROCEED

TO: _____
CONTRACTOR

ADDRESS

CITY STATE ZIP

PROJECT: **NASSAU AMELIA UTILITIES (NAU) WASTEWATER TREATMENT
FACILITY (WWTF)
CLARIFIER REHABILITATION PROJECT**
Contract No. CM2619/Bid Number NC18-010
Nassau County, Florida

You are hereby notified to commence work in accordance with the Agreement dated _____,
20__.

The Contract time for Substantial Completion is _____ consecutive calendar days from the
date of commencement.

The Contract time for Final Completion is _____ consecutive calendar days from the date of
Substantial Completion.

The Contract time commences to run _____, 20__.

The date of Substantial Completion is _____, 20__.

The date of Final Completion is _____, 20__.

Nassau County Board of County Commissioners

BY: _____

TITLE: _____

DATE: _____

You are required to return an acknowledged copy of the Notice to Proceed to The Nassau County
Board of County Commissioners, c/o John A. Crawford, Ex-Officio Clerk, 76347 Veterans Way,
Suite 456, Yulee, Florida 32097.

Initials_____

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged

this _____ day of _____, 20____.

BY: _____

TITLE: _____

END OF SECTION

Initials_____

SECTION 00 61 15

PERFORMANCE BOND

Any singular reference to Contractor, Surety, County, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*): SURETY (*Name, and Address of Principal Place of Business*):

COUNTY (*Name and Address*):

CONTRACT

Effective Date of

Agreement:

Amount:

Description (*Name and Location*):

BOND

Bond Number:

Date (*Not earlier than Effective Date of
Agreement*):

Amount:

Modifications to this Bond Form:

Initials_____

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

EJCDC No. C-610 (2007 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, and the American Institute of Architects.

Initials _____

Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to County for the performance of the Contract, which is incorporated herein by reference.

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.
2. If there is no County Default, Surety's obligation under this Bond shall arise after:
 - 2.1 County has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that County is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If County, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive County's right, if any, subsequently to declare a Contractor Default; and
 - 2.2 County has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and
 - 2.3 County has agreed to pay the Balance of the Contract Price to:
 1. Surety in accordance with the terms of the Contract; or
 2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.
3. When County has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:
 - 3.1 Arrange for Contractor, with consent of County, to perform and complete the Contract; or
 - 3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to County for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by County and contractor selected with County's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to County the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by County resulting from Contractor Default; or
 - 3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to County and, as soon as practicable after the amount is determined, tender payment therefor to County; or
 2. Deny liability in whole or in part and notify County citing reasons therefor.
4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety

Initials_____

shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from County to Surety demanding that Surety perform its obligations under this Bond, and County shall be entitled to enforce any remedy available to County. If Surety proceeds as provided in Paragraph 3.4, and County refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice County shall be entitled to enforce any remedy available to County.

5. After County has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to County shall not be greater than those of Contractor under the Contract, and the responsibilities of County to Surety shall not be greater than those of County under the Contract. To the limit of the amount of this Bond, but subject to commitment by County of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

- 5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;
- 5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and
- 5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

6. Surety shall not be liable to County or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than County or its heirs, executors, administrators, or successors.

7. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

8. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located, and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

9. Notice to Surety, County, or Contractor shall be mailed or delivered to the address shown on the signature page.

10. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be

Initials_____

construed as a statutory bond and not as a common law bond.

11. Definitions.

- 11.1 Balance of the Contract Price: The total amount payable by County to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by County in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
- 11.2 Contract: The agreement between County and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
- 11.4 County Default: Failure of County, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – *(Name, Address and Telephone)*

Surety Agency or Broker:

County's Representative *(Engineer or other party)*:

END OF SECTION

Initials_____

SECTION 00 61 16

PAYMENT BOND

Any singular reference to Contractor, Surety, County, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*): SURETY (*Name, and Address of Principal Place of Business*):

COUNTY (*Name and Address*):

CONTRACT

Effective Date of Agreement:

Amount:

Description (*Name and Location*):

BOND

Bond Number:

Date (*Not earlier than Effective Date of Agreement*):

Amount:

Modifications to this Bond Form:

Initials_____

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

EJCDC No. C-615(A) (2007 Edition)

Originally prepared through the joint efforts of the Surety Association of America, Engineers Joint Contract Documents Committee, the Associated General Contractors of America, the American Institute of Architects, the American Subcontractors Association, and the Associated Specialty Contractors.

Initials_____

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to County to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to County, this obligation shall be null and void if Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2 Defends, indemnifies, and holds harmless County from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided County has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no County Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to County, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2 Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to County, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to County, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by County to Contractor or to Surety, that is sufficient compliance.
6. Reserved.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by County to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and County accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to County's priority to use the funds for the completion of the Work.

Initials_____

9. Surety shall not be liable to County, Claimants, or others for obligations of Contractor that are unrelated to the Contract. County shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders, and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to Surety, County, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, County, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions

15.1 Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

15.2 Contract: The agreement between County and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 County Default: Failure of County, which has neither been remedied nor waived, to pay Contractor as required by the Contract, or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – (*Name, Address, and Telephone*)

Surety Agency or Broker:

County's Representative (*Engineer or other*):

END OF SECTION

Initials_____

**SECTION 00 62 76
APPLICATION AND CERTIFICATE FOR
PROGRESS PAYMENT**

COUNTY: _____

CONTRACTOR: _____

Purchase Order No.: _____ Project Title: _____

Engineer/Architect: _____

Engineer/Architect Project No.: _____ Contract Number: _____

Progress Payment No.: _____ for Period _____ to _____

1. Original Contract Sum.\$ _____

2. Net Change by Change Orders.\$ _____

3. Contract Sum to Date (Line 1 + Line 2)\$ _____

4. Work Completed to Date \$ _____

5. Amount Retained (Percent) \$ _____

6. Total Earned Less Retainage (Line 4 minus Line 5). \$ _____

7. Less Previous Payments.\$ _____

8. CURRENT PAYMENT DUE. \$ _____

CERTIFICATION OF CONTRACTOR

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from COUNTY on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR'S legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to COUNTY at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to COUNTY indemnifying COUNTY against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

_____ Contractor	_____ Date
By: _____ (Authorized Representative)	_____ Title

CERTIFICATION OF ENGINEER / ARCHITECT

In accordance with the Contract Documents, based upon on-site observations by the undersigned or duly authorized representatives or assistants, the Engineer / Architect certifies to the County that to the best of its knowledge, information and belief, the Work has progressed as indicated, the quality of the Work is

Initials _____

in accordance with the Contract Documents and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED:.....\$ _____
 (Attach explanation if amount certified differs from the amount applied for)

ENGINEER / ARCHITECT:

By: _____
 (Date) (Firm)

AFFIDAVIT OF CONTRACTOR

STATE OF _____

COUNTY OF _____

Before me this day personally appeared _____ who, being
 first duly sworn, deposes and says:

That he is the _____ of _____, and the
 Contractor on the following described public works project:

JOB DESCRIPTION: _____

CONTRACTING AUTHORITY: Nassau County Board of County Commissioners

That all persons who furnish labor, supplies or materials or did work in connection with such
 improvements set out in the CONTRACT have been paid, to date, in full, including all
 subcontractors. AND FURTHER AFFIANT SAYETH NOT.

By: _____

WITNESS my hand and official seal, this _____ day of _____, 20_____.

 Notary Public
 My Commission Expires:

Initials _____

Project Title: _____ County Purchase Order No.: _____

Progress Payment No.: _____ Engineer / Architect Project No.: _____

[illegible]

END OF SECTION

Initials_____

SECTION 00 63 15

CONTRACTOR'S REQUEST FOR INFORMATION

TO: _____

FROM: _____(CONTRACTOR) DATE: _____

CONTRACTOR REQUEST FOR INFORMATION NO.: _____

PROJECT NAME: _____

CONTRACT NUMBER: _____ PURCHASE ORDER NO.: _____

QUESTION:

BY: _____ DATE: _____

REPLY:

BY: _____ DATE: _____

END OF SECTION

Initials_____

SECTION 00 63 36

FIELD ORDER

PROJECT: _____ REQUEST NO: _____
CONTRACT NO.: _____ PURCHASE ORDER NO.: _____
CONTRACTOR: _____

You are hereby directed to execute promptly this Field Order which interprets the Contract Documents or orders minor changes in the Work without change in Contract Price or Contract Time.

If you consider that a change in Contract Price or Contract Time is required, please submit a Work Change Directive to the County immediately and before proceeding with this Work.

Field Order: _____

Attachments: (Listing of attached documents that support description)

1. Work Change Directive No _____
2. _____
3. _____
4. _____
5. _____

BY: _____ DATE: _____

END OF SECTION

Initials _____

SECTION 00 63 49

WORK CHANGE DIRECTIVE

PROJECT: _____ REQUEST NO: _____

CONTRACT NO.: _____ PURCHASE ORDER NO.: _____

CONTRACTOR: _____

You are directed to proceed promptly with the following change(s):

Description: _____

Purpose of Work Directive Change: _____

Attachments: _____

If a claim is made that the above change(s) have affected the Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining a change in Contract Price:

☐ Time and materials

☐ Unit prices

☐ Cost plus fixed fee

☐ Other _____

Estimated increase (decrease) in Contract Price: \$ _____

If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Method of determining change in Contract Time:

☐ Contractor's records

☐ County's records

☐ Other _____

Estimated increase (decrease) in Contract Time: _____ days.

If the change involves an increase, the estimated time is not to be exceeded without further authorization.

AUTHORIZED BY:

DATE:

END OF SECTION

Initials _____

SECTION 00 63 63

CHANGE ORDER REQUEST FORM

(Instructions on 00 63 63-2)

No.

PROJECT
DATE OF ISSUANCE EFFECTIVE DATE

NASSAU COUNTY BOARD OF COUNTY COMMISSIONERS

COUNTY Contract / Purchase Order No.:
CONTRACTOR

ENGINEER / ARCHITECT

You are directed to make the following changes in the Contract Documents.

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:

Original Contract Price
\$ _____

CHANGE IN CONTRACT TIMES:

Original Contract Times

Ready for Final Payment: _____
(days and dates)

Net change from previous Change Orders No. ___ to No. ___
\$ _____

Net change from previous Change Orders No. ___ to No. ___

(days)

Contract Price prior to this Change Order
\$ _____

Contract Times Prior to this Change Order

Substantial Completion: _____

Ready for Final Payment: _____
(days and dates)

Net Increase (decrease) of this Change Order
\$ _____

Net Increase (decrease) of this Change Order

(days)

Contract Price with all approved Change Orders
\$ _____

Contract Times with all approved Change Orders

Substantial Completion: _____

Ready for Final Payment: _____
(days and dates)

RECOMMENDED:

APPROVED:

ACCEPTED:

By: _____
Engineer/Architect (Authorized Signature)

By: _____
COUNTY (Authorized Signature)

By: _____
Contractor (Authorized Signature)

Date: _____

Date: _____

Date: _____

CHANGE ORDER

Initials _____

INSTRUCTIONS

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Contract Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating change order items to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed, any effect of a Change Order, thereon, should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract

Times, a Field Order may be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer / Architect / Etc. initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from the County or both.

Once Engineer / Architect / Etc. has completed and signed the form, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to the County for approval. Engineer should make distribution of executed copies after approval by the County.

If a change only applies to Contract Price or to Contract Times, cross out the part of the tabulation that does not apply.

END OF SECTION

Initials_____

SECTION 00 65 16

CERTIFICATE OF SUBSTANTIAL COMPLETION

Project: _____

Purchase Order No.: _____ Contract No.: _____

This Certificate of Substantial Completion applies to:

☐ All work under Contract ☐ Portion of work described as follows:

The Work to which this Certificate applies has been inspected by authorized representatives of the COUNTY and the CONTRACTOR and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on : _____.
DATE

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above date of Substantial Completion.

The date of Substantial Completion is the date upon which all guarantees and warranties begin.

SIGNED:

NASSAU COUNTY CONSTRUCTION INSPECTOR (if applicable)

By: _____ DATE: _____

NASSAU COUNTY PROJECT MANAGER

By: _____ DATE: _____

NASSAU AMELIA UTILITIES

By: _____ DATE: _____

ENGINEER OF RECORD:

By: _____ DATE: _____

CONTRACTOR:

By: _____ DATE: _____

Initials _____

**TENTATIVE LIST OF ITEMS TO BE COMPLETED OR CORRECTED
(PUNCH LIST)**

Date: _____ Contract No.: _____ Purchase Order No.: _____

Project: _____

Contractor: _____

This list may not be all-inclusive, and the failure to include an item does not alter the responsibility of the CONTRACTOR to complete all the Work in accordance with the Contract Documents.

NO:

ITEM:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
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_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

END OF SECTION

Initials_____

SECTION 00 65 19

CERTIFICATE OF FINAL COMPLETION

Project: _____

Purchase Order No.: _____ Contract No.: _____

This Certificate of Final Completion applies to:

The Work under this Contract has been inspected by authorized representatives of the COUNTY and the CONTRACTOR and all Work is hereby declared to be complete in accordance with the Contract Documents on: _____

DATE

SIGNED:

NASSAU COUNTY CONSTRUCTION INSPECTOR (if applicable)

By: _____ DATE: _____

NASSAU COUNTY PROJECT MANAGER

By: _____ DATE: _____

NASSAU AMELIA UTILITIES

By: _____ DATE: _____

ENGINEER OF RECORD:

By: _____ DATE: _____

CONTRACTOR:

By: _____ DATE: _____

END OF SECTION

Initials_____

SECTION 00 65 20

WAIVER AND RELEASE OF LIEN UPON PROGRESS PAYMENT

The undersigned lienor, in consideration of the progress payment in the amount of \$_____
_____, hereby waives and releases its lien and right to claim a lien for labor, services or materials
furnished through (date) _____ to (customer) _____ on the job of
(COUNTY property) _____, to the following described property:

This waiver and release does not cover any retention of labor, services, or materials furnished after the
date specified.

Dated on _____, 20__.

Lienor's Name _____

Address _____

By _____

Printed _____

NOTE: This is a statutory form prescribed by Section 713.20, Florida Statutes.

END OF SECTION

Initials _____

SECTION 00 65 21

WAIVER AND RELEASE OF LIEN UPON FINAL PAYMENT

The undersigned lienor, in consideration of the final payment in the amount of \$ _____
_____, hereby waives and releases its lien and right to claim a lien for labor, services or materials
furnished through (date) _____ to (customer) _____ on the job of
(COUNTY property) _____ to the following described property:

Dated on _____, 20____.

Lienor's Name _____

Address _____

By _____

Printed _____

NOTE: This is a statutory form prescribed by Section 713.20, Florida Statute.

END OF SECTION

Initials _____

Section 00 72 15

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

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Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

Initials_____

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between County and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

Article 1 – Definitions and Terminology

- 1.01 Defined Terms
- 1.02 Terminology

Article 2 – Preliminary Matters

- 2.01 Delivery of Bonds and Evidence of Insurance
- 2.02 Copies of Documents
- 2.03 Commencement of Contract Times; Notice to Proceed
- 2.04 Starting the Work
- 2.05 Before Starting Construction
- 2.06 Preconstruction Conference; Designation of Authorized Representatives
- 2.07 Initial Acceptance of Schedules

Article 3 – Contract Documents: Intent, Amending, Reuse

- 3.01 Intent
- 3.02 Reference Standards
- 3.03 Reporting and Resolving Discrepancies
- 3.04 Amending and Supplementing Contract Documents
- 3.05 Reuse of Documents
- 3.06 Electronic Data

Article 4 – Availability of Lands; Subsurface and Physical Conditions; Hazardous Environmental Conditions; Reference Points

- 4.01 Availability of Lands
- 4.02 Subsurface and Physical Conditions
- 4.03 Differing Subsurface or Physical Conditions
- 4.04 Underground Facilities
- 4.05 Reference Points
- 4.06 Hazardous Environmental Condition at Site

Article 5 – Bonds and Insurance

- 5.01 Performance, Payment, and Other Bonds
- 5.02 Licensed Sureties and Insurers
- 5.03 Certificates of Insurance
- 5.04 Contractor's Insurance
- 5.05 County's Liability Insurance
- 5.06 Property Insurance
- 5.07 Waiver of Rights
- 5.08 Receipt and Application of Insurance Proceeds
- 5.09 Acceptance of Bonds and Insurance; Option to Replace

5.10 Partial Utilization, Acknowledgment of Property Insurer

Article 6 – Contractor’s Responsibilities

- 6.01 Supervision and Superintendence
- 6.02 Labor; Working Hours
- 6.03 Services, Materials, and Equipment
- 6.04 Progress Schedule
- 6.05 Substitutes and “Or-Equals”
- 6.06 Concerning Subcontractors, Suppliers, and Others
- 6.07 Patent Fees and Royalties
- 6.08 Permits
- 6.09 Laws and Regulations
- 6.10 Taxes
- 6.11 Use of Site and Other Areas
- 6.12 Record Documents
- 6.13 Safety and Protection
- 6.14 Safety Representative
- 6.15 Hazard Communication Programs
- 6.16 Emergencies
- 6.17 Shop Drawings and Samples
- 6.18 Continuing the Work
- 6.19 Contractor’s General Warranty and Guarantee
- 6.20 Indemnification
- 6.21 Delegation of Professional Design Services

Article 7 – Other Work at the Site

- 7.01 Related Work at Site
- 7.02 Coordination
- 7.03 Legal Relationships

Article 8 – County’s Responsibilities

- 8.01 Communications to Contractor
- 8.02 Replacement of Engineer
- 8.03 Furnish Data
- 8.04 Pay When Due
- 8.05 Lands and Easements; Reports and Tests
- 8.06 Insurance
- 8.07 Change Orders
- 8.08 Inspections, Tests, and Approvals
- 8.09 Limitations on County’s Responsibilities
- 8.10 Undisclosed Hazardous Environmental Condition
- 8.11 Evidence of Financial Arrangements
- 8.12 Compliance with Safety Program

Article 9 – Engineer’s Status During Construction

- 9.01 County’s Representative
- 9.02 Visits to Site
- 9.03 Project Representative

Initials_____

- 9.04 Authorized Variations in Work
- 9.05 Rejecting Defective Work
- 9.06 Shop Drawings, Change Orders and Payments
- 9.07 Determinations for Unit Price Work
- 9.08 Decisions on Requirements of Contract Documents and Acceptability of Work
- 9.09 Limitations on Engineer's Authority and Responsibilities
- 9.10 Compliance with Safety Program

Article 10 – Changes in the Work; Claims

- 10.01 Authorized Changes in the Work
- 10.02 Unauthorized Changes in the Work
- 10.03 Execution of Change Orders
- 10.04 Notification to Surety
- 10.05 Claims

Article 11 – Cost of the Work; Allowances; Unit Price Work

- 11.01 Cost of the Work
- 11.02 Allowances
- 11.03 Unit Price Work

Article 12 – Change of Contract Price; Change of Contract Times

- 12.01 Change of Contract Price
- 12.02 Change of Contract Times
- 12.03 Delays

Article 13 – Tests and Inspections; Correction, Removal or Acceptance of Defective Work

- 13.01 Notice of Defects
- 13.02 Access to Work
- 13.03 Tests and Inspections
- 13.04 Uncovering Work
- 13.05 County May Stop the Work
- 13.06 Correction or Removal of Defective Work
- 13.07 Correction Period
- 13.08 Acceptance of Defective Work
- 13.09 County May Correct Defective Work

Article 14 – Payments to Contractor and Completion

- 14.01 Schedule of Values
- 14.02 Progress Payments
- 14.03 Contractor's Warranty of Title
- 14.04 Substantial Completion
- 14.05 Partial Utilization
- 14.06 Final Inspection
- 14.07 Final Payment
- 14.08 Final Completion Delayed
- 14.09 Waiver of Claims

Article 15 – Suspension of Work and Termination

- 15.01 County May Suspend Work
- 15.02 County May Terminate for Cause
- 15.03 County May Terminate For Convenience
- 15.04 Contractor May Stop Work or Terminate

Article 16 – Dispute Resolution

- 16.01 Methods and Procedures

Article 17 – Miscellaneous

- 17.01 Giving Notice
- 17.02 Computation of Times
- 17.03 Cumulative Remedies
- 17.04 Survival of Obligations
- 17.05 Controlling Law
- 17.06 Headings

16. DEFINITIONS AND TERMINOLOGY

16.1 *Defined Terms*

Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

Addenda—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

Agreement—The written instrument which is evidence of the agreement between County and Contractor covering the Work.

Application for Payment—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

Asbestos—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.

Bid—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidder—The individual or entity who submits a Bid directly to County.

Bidding Documents—The Bidding Requirements and the proposed Contract Documents (including all Addenda).

Bidding Requirements—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.

Change Order—A document recommended by Engineer which is signed by Contractor and County and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

Claim—A demand or assertion by County or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

Contract—The entire and integrated written agreement between the County and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

Contract Documents—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.

Contract Price—The moneys payable by County to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).

Contract Times—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.

Contractor—The individual or entity with whom County has entered into the Agreement.

Cost of the Work—See Paragraph 11.01 for definition.

Drawings—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.

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

Engineer—The individual or entity named as such in the Agreement.

Field Order—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

General Requirements—Sections of Division 1 of the Specifications.

Hazardous Environmental Condition—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.

Hazardous Waste—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.

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

Liens—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.

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

Notice of Award—The written notice by County to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, County will sign and deliver the Agreement.

Notice to Proceed—A written notice given by County to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.

County—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.

PCBs—Polychlorinated biphenyls.

Petroleum—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.

Progress Schedule—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.

Project—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

Project Manual—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.

Radioactive Material—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

Resident Project Representative—The authorized representative of Engineer who may be assigned to the Site or any part thereof.

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

Schedule of Submittals—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.

Schedule of Values—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

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

Site—Lands or areas indicated in the Contract Documents as being furnished by County upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by County which are designated for the use of Contractor.

Specifications—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

Subcontractor—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

Substantial Completion—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

Successful Bidder—The Bidder submitting a responsive Bid to whom County makes an award.

Supplementary Conditions—That part of the Contract Documents which amends or supplements these General Conditions.

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

Underground Facilities—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.

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

Work—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

Work Change Directive—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by County and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

16.2 Terminology

The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

Intent of Certain Terms or Adjectives:

The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in

the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

Day:

The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

Defective:

The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:

does not conform to the Contract Documents; or

does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by County at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

Furnish, Install, Perform, Provide:

The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.

When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

17. PRELIMINARY MATTERS

17.1 Delivery of Bonds and Evidence of Insurance

When Contractor delivers the executed counterparts of the Agreement to County, Contractor shall also deliver to County such bonds as Contractor may be required to furnish.

Evidence of Insurance: Before any Work at the Site is started, Contractor and County shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and County respectively are required to purchase and maintain in accordance with Article 5.

17.2 Copies of Documents

County shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

17.3 Commencement of Contract Times; Notice to Proceed

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

17.4 Starting the Work

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

17.5 Before Starting Construction

Preliminary Schedules: Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

- a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
- a preliminary Schedule of Submittals; and
- a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

17.6 Preconstruction Conference; Designation of Authorized Representatives

Before any Work at the Site is started, a conference attended by County, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

At this conference County and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

17.7 Initial Acceptance of Schedules

At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.

The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

18. CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

18.1 Intent

The Contract Documents are complementary; what is required by one is as binding as if required by all.

It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to County.

Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

18.2 Reference Standards

Standards, Specifications, Codes, Laws, and Regulations

Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of County, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to County, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

18.3 Reporting and Resolving Discrepancies

Reporting Discrepancies:

Contractor's Review of Contract Documents Before Starting Work: Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual

Initials_____

knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

Contractor's Review of Contract Documents During Performance of Work: If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

Contractor shall not be liable to County or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

Resolving Discrepancies:

Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or

the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

18.4 Amending and Supplementing Contract Documents

The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.

The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;

Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or

Engineer's written interpretation or clarification.

Initials_____

18.5 Reuse of Documents

Contractor and any Subcontractor or Supplier shall not:

have or acquire any title to or Countyship rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or

reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of County and Engineer and specific written verification or adaptation by Engineer.

The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

18.6 Electronic Data

Unless otherwise stated in the Supplementary Conditions, the data furnished by County or Engineer to Contractor, or by Contractor to County or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.

When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

19. AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

19.1 Availability of Lands

County shall furnish the Site. County shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. County will obtain in a timely manner and pay for easements for permanent structures or permanent changes in

Initials_____

existing facilities. If Contractor and County are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in County's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

Upon reasonable written request, County shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and County's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

19.2 Subsurface and Physical Conditions

Reports and Drawings: The Supplementary Conditions identify:

those reports known to County of explorations and tests of subsurface conditions at or contiguous to the Site; and

those drawings known to County of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against County or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

19.3 Differing Subsurface or Physical Conditions

Notice: If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

Initials_____

is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or

is of such a nature as to require a change in the Contract Documents; or

differs materially from that shown or indicated in the Contract Documents; or

is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify County and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

Engineer’s Review: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of County’s obtaining additional exploration or tests with respect thereto, and advise County in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

Possible Price and Times Adjustments:

The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:

such condition must meet any one or more of the categories described in Paragraph 4.03.A; and

with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

Contractor knew of the existence of such conditions at the time Contractor made a final commitment to County with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract

Initials_____

Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

Contractor failed to give the written notice as required by Paragraph 4.03.A.

If County and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither County or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

19.4 *Underground Facilities*

Shown or Indicated: The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to County or Engineer by the Countys of such Underground Facilities, including County, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

County and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and

the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:

reviewing and checking all such information and data;

locating all Underground Facilities shown or indicated in the Contract Documents;

coordination of the Work with the Countys of such Underground Facilities, including County, during construction; and

the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

Not Shown or Indicated:

If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the County of such Underground Facility and give written notice to that

Initials_____

County and to County and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If County and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, County or Contractor may make a Claim therefor as provided in Paragraph 10.05.

19.5 *Reference Points*

County shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of County. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

19.6 *Hazardous Environmental Condition at Site*

Reports and Drawings: The Supplementary Conditions identify those reports and drawings known to County relating to Hazardous Environmental Conditions that have been identified at the Site.

Limited Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against County or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

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

procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or

other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or

any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify County and Engineer (and promptly thereafter confirm such notice in writing). County shall promptly consult with Engineer concerning the necessity for County to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, County shall take such actions as are necessary to permit County to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

Contractor shall not be required to resume Work in connection with such condition or in any affected area until after County has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If County and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.

If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then County may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If County and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. County may

Initials_____

have such deleted portion of the Work performed by County's own forces or others in accordance with Article 7.

To the fullest extent permitted by Laws and Regulations, County shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate County to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless County and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

20. BONDS AND INSURANCE

20.1 *Performance, Payment, and Other Bonds*

Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.

All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570

Initials_____

(amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.

If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify County and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

20.2 Licensed Sureties and Insurers

All bonds and insurance required by the Contract Documents to be purchased and maintained by County or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

20.3 Certificates of Insurance

Contractor shall deliver to County, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by County or any other additional insured) which Contractor is required to purchase and maintain.

County shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which County is required to purchase and maintain.

Failure of County to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of County to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.

County does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.

The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to County in the Contract Documents.

20.4 *Contractor's Insurance*

Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:

claims under workers' compensation, disability benefits, and other similar employee benefit acts;

claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

claims for damages insured by reasonably available personal injury liability coverage which are sustained:

by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or

by any other person for any other reason;

claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

claims for damages because of bodily injury or death of any person or property damage arising out of the Countyship, maintenance or use of any motor vehicle.

The policies of insurance required by this Paragraph 5.04 shall:

with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) County and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

Initials_____

include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;

include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;

contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to County and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);

remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and

include completed operations coverage:

Such insurance shall remain in effect for two years after final payment.

Contractor shall furnish County and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to County and any such additional insured of continuation of such insurance at final payment and one year thereafter.

20.5 County's Liability Insurance

In addition to the insurance required to be provided by Contractor under Paragraph 5.04, County, at County's option, may purchase and maintain at County's expense County's own liability insurance as will protect County against claims which may arise from operations under the Contract Documents.

20.6 Property Insurance

Unless otherwise provided in the Supplementary Conditions, County shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:

include the interests of County, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;

- be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 - include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 - cover materials and equipment stored at the Site or at another location that was agreed to in writing by County prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 - allow for partial utilization of the Work by County;
 - include testing and startup; and
 - be maintained in effect until final payment is made unless otherwise agreed to in writing by County, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- County shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of County, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to County and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- County shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any

of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, County shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, County shall in writing advise Contractor whether or not such other insurance has been procured by County.

20.7 *Waiver of Rights*

County and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect County, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. County and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by County as trustee or otherwise payable under any policy so issued.

County waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to County's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by County; and

loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by County during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.

Initials_____

Any insurance policy maintained by County covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

20.8 Receipt and Application of Insurance Proceeds

Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with County and made payable to County as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. County shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

County as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to County's exercise of this power. If such objection be made, County as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, County as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, County as fiduciary shall give bond for the proper performance of such duties.

20.9 Acceptance of Bonds and Insurance; Option to Replace

If either County or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. County and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

20.10 Partial Utilization, Acknowledgment of Property Insurer

If County finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

21. CONTRACTOR'S RESPONSIBILITIES

21.1 Supervision and Superintendence

Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of County or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to County and Engineer except under extraordinary circumstances.

21.2 Labor; Working Hours

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

Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without County's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

21.3 *Services, Materials, and Equipment*

Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of County. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

21.4 *Progress Schedule*

Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.

Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

21.5 *Substitutes and "Or-Equals"*

Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.

"Or-Equal" Items: If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed

item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:

in the exercise of reasonable judgment Engineer determines that:

- (i) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
- (ii) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
- (iii) it has a proven record of performance and availability of responsive service.

Contractor certifies that, if approved and incorporated into the Work:

- (iv) there will be no increase in cost to the County or increase in Contract Times; and
- (v) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

Substitute Items:

If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.

Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.

Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

- (vi) shall certify that the proposed substitute item will:

perform adequately the functions and achieve the results called for by the general design,

be similar in substance to that specified, and

Initials_____

be suited to the same use as that specified;

(vii) will state:

the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,

whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with County for other work on the Project) to adapt the design to the proposed substitute item, and

whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;

(viii) will identify:

all variations of the proposed substitute item from that specified, and

available engineering, sales, maintenance, repair, and replacement services; and

(ix) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.

Engineer's Evaluation: Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

Special Guarantee: County may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

Initials_____

Engineer's Cost Reimbursement: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse County for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse County for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with County) resulting from the acceptance of each proposed substitute.

Contractor's Expense: Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

21.6 *Concerning Subcontractors, Suppliers, and Others*

Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to County as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom County may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to County in advance for acceptance by County by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, County's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by County of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of County or Engineer to reject defective Work.

Contractor shall be fully responsible to County and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:

shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between County or Engineer and any such Subcontractor, Supplier or other individual or entity; nor

shall create any obligation on the part of County or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of County and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against County, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

21.7 Patent Fees and Royalties

Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of County or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by County in the Contract Documents.

To the fullest extent permitted by Laws and Regulations, County shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages

Initials_____

(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless County and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

21.8 Permits

Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. County shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. County shall pay all charges of utility County's for connections for providing permanent service to the Work.

21.9 Laws and Regulations

Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither County nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.

Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or

time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If County and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

21.10 Taxes

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

21.11 Use of Site and Other Areas

Limitation on Use of Site and Other Areas:

Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the County or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

Should any claim be made by any such County or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless County and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such County or occupant against County, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

Removal of Debris During Performance of the Work: During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

Cleaning: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by County. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and

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

Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

21.12 *Record Documents*

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

21.13 *Safety and Protection*

Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

all persons on the Site or who may be affected by the Work;

all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Countys of adjacent property and of Underground Facilities and other utility Countys when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

Contractor shall comply with the applicable requirements of County's safety programs, if any. The Supplementary Conditions identify any County's safety programs that are applicable to the Work.

Contractor shall inform County and Engineer of the specific requirements of Contractor's safety program with which County's and Engineer's employees and representatives must comply while at the Site.

All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of County or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to County and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

21.14 Safety Representative

Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

21.15 Hazard Communication Programs

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

21.16 Emergencies

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

21.17 *Shop Drawings and Samples*

Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

Shop Drawings:

Submit number of copies specified in the General Requirements.

Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

Samples:

Submit number of Samples specified in the Specifications.

Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

Submittal Procedures:

Before submitting each Shop Drawing or Sample, Contractor shall have:

reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

Engineer's Review:

Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

Resubmittal Procedures:

Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

Initials_____

21.18 Continuing the Work

Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with County. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as County and Contractor may otherwise agree in writing.

21.19 Contractor's General Warranty and Guarantee

Contractor warrants and guarantees to County that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.

Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

normal wear and tear under normal usage.

Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

observations by Engineer;

recommendation by Engineer or payment by County of any progress or final payment;

the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by County;

use or occupancy of the Work or any part thereof by County;

any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

any inspection, test, or approval by others; or

any correction of defective Work by County.

21.20 Indemnification

To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless County and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and

Initials_____

against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

In any and all claims against County or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:

the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

21.21 Delegation of Professional Design Services

Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.

If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, County and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to

the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.

County and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided County and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.

Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

22. OTHER WORK AT THE SITE

22.1 Related Work at Site

County may perform other work related to the Project at the Site with County's employees, or through other direct contracts therefor, or have other work performed by utility Countys. If such other work is not noted in the Contract Documents, then:

written notice thereof will be given to Contractor prior to starting any such other work;
and

if County and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.

Contractor shall afford each other contractor who is a party to such a direct contract, each utility County, and County, if County is performing other work with County's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility Countys and other contractors to the extent that there are comparable provisions

Initials _____

for the benefit of Contractor in said direct contracts between County and such utility Countys and other contractors.

If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

22.2 Coordination

If County intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:

the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

the specific matters to be covered by such authority and responsibility will be itemized;
and

the extent of such authority and responsibilities will be provided.

Unless otherwise provided in the Supplementary Conditions, County shall have sole authority and responsibility for such coordination.

22.3 Legal Relationships

Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of County.

Each other direct contract of County under Paragraph 7.01.A shall provide that the other contractor is liable to County and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.

Contractor shall be liable to County and any other contractor under direct contract to County for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

23. COUNTY'S RESPONSIBILITIES

23.1 Communications to Contractor

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

23.2 *Replacement of Engineer*

In case of termination of the employment of Engineer, County shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

23.3 *Furnish Data*

County shall promptly furnish the data required of County under the Contract Documents.

23.4 *Pay When Due*

County shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

23.5 *Lands and Easements; Reports and Tests*

County's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to County's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

23.6 *Insurance*

County's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

23.7 *Change Orders*

County is obligated to execute Change Orders as indicated in Paragraph 10.03.

23.8 *Inspections, Tests, and Approvals*

County's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

23.9 *Limitations on County's Responsibilities*

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

23.10 Undisclosed Hazardous Environmental Condition

County's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

23.11 Evidence of Financial Arrangements

Upon request of Contractor, County shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy County's obligations under the Contract Documents.

23.12 Compliance with Safety Program

While at the Site, County's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which County has been informed pursuant to Paragraph 6.13.D.

24. ENGINEER'S STATUS DURING CONSTRUCTION

24.1 County's Representative

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

24.2 Visits to Site

Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of County, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for County a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep County informed of the progress of the Work and will endeavor to guard County against defective Work.

Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

24.3 *Project Representative*

If County and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If County designates another representative or agent to represent County at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

24.4 *Authorized Variations in Work*

Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on County and also on Contractor, who shall perform the Work involved promptly. If County or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

24.5 *Rejecting Defective Work*

Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

24.6 *Shop Drawings, Change Orders and Payments*

In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.

In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.

In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.

In connection with Engineer's authority as to Applications for Payment, see Article 14.

24.7 *Determinations for Unit Price Work*

Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon County and Contractor, subject to the provisions of Paragraph 10.05.

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

Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between County and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.

Engineer will, with reasonable promptness, render a written decision on the issue referred. If County or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

Engineer's written decision on the issue referred will be final and binding on County and Contractor, subject to the provisions of Paragraph 10.05.

When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to County or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

24.9 *Limitations on Engineer's Authority and Responsibilities*

Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

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

Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

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

Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

24.10 *Compliance with Safety Program*

While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

25. **CHANGES IN THE WORK; CLAIMS**

25.1 *Authorized Changes in the Work*

Without invalidating the Contract and without notice to any surety, County may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

If County and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

25.2 *Unauthorized Changes in the Work*

Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

Initials_____

25.3 *Execution of Change Orders*

County and Contractor shall execute appropriate Change Orders recommended by Engineer covering:

changes in the Work which are: (i) ordered by County pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or County's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;

changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and

changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

25.4 *Notification to Surety*

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

25.5 *Claims*

Engineer's Decision Required: All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by County or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.

Notice: Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph

12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

Engineer's Action: Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:

deny the Claim in whole or in part;

approve the Claim; or

notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.

In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon County and Contractor, unless County or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.

No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

26. COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

26.1 Cost of the Work

Costs Included: The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by County, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by County and Contractor. Such employees shall include, without limitation, superintendents, foremen, and

other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by County.

Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless County deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to County. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to County, and Contractor shall make provisions so that they may be obtained.

Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by County, Contractor shall obtain competitive bids from subcontractors acceptable to County and Contractor and shall deliver such bids to County, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

Supplemental costs including the following:

The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by County with the advice of Engineer, and the costs of transportation, loading,

Initials_____

unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of County. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

The cost of utilities, fuel, and sanitary facilities at the Site.

Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.

The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

Costs Excluded: The term Cost of the Work shall not include any of the following items:

Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.

Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

Initials_____

Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.

Contractor's Fee: When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.

Documentation: Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

26.2 Allowances

It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to County and Engineer.

Cash Allowances:

Contractor agrees that:

the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

Contingency Allowance:

Contractor agrees that a contingency allowance, if any, is for the sole use of County to cover unanticipated costs.

Initials_____

Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

26.3 Unit Price Work

Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

County or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

there is no corresponding adjustment with respect to any other item of Work; and

Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or County believes that County is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

27. CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

27.1 Change of Contract Price

The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:

where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or

where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or

where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

Contractor's Fee: The Contractor's fee for overhead and profit shall be determined as follows:

a mutually acceptable fixed fee; or

if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;

for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;

where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

the amount of credit to be allowed by Contractor to County for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and

when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

Initials_____

27.2 *Change of Contract Times*

The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

27.3 *Delays*

Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by County, acts or neglect of utility Countys or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

If County, Engineer, or other contractors or utility Countys performing other work for County as contemplated by Article 7, or anyone for whom County is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility Countys not under the control of County, or other causes not the fault of and beyond control of County and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.

County, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

28. TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

28.1 Notice of Defects

Prompt notice of all defective Work of which County or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

28.2 Access to Work

County, Engineer, their consultants and other representatives and personnel of County, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

28.3 Tests and Inspections

Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

County shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:

for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;

that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and

as otherwise specifically provided in the Contract Documents.

If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for County's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or

acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to County and Engineer.

If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.

Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

28.4 Uncovering Work

If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and County shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, County may make a Claim therefor as provided in Paragraph 10.05.

If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

28.5 County May Stop the Work

If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, County may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of County to stop the Work shall not give rise to any duty on the part

of County to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

28.6 Correction or Removal of Defective Work

Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair County's special warranty and guarantee, if any, on said Work.

28.7 Correction Period

If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by County or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to County and in accordance with County's written instructions:

repair such defective land or areas; or

correct such defective Work; or

if the defective Work has been rejected by County, remove it from the Project and replace it with Work that is not defective, and

satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.

If Contractor does not promptly comply with the terms of County's written instructions, or in an emergency where delay would cause serious risk of loss or damage, County may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

Initials _____

In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

28.8 *Acceptance of Defective Work*

If, instead of requiring correction or removal and replacement of defective Work, County (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, County may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to County's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and County shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, County may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to County.

28.9 *County May Correct Defective Work*

If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, County may, after seven days written notice to Contractor, correct, or remedy any such deficiency.

In exercising the rights and remedies under this Paragraph 13.09, County shall proceed expeditiously. In connection with such corrective or remedial action, County may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the

Work all materials and equipment stored at the Site or for which County has paid Contractor but which are stored elsewhere. Contractor shall allow County, County's representatives, agents and employees, County's other contractors, and Engineer and Engineer's consultants access to the Site to enable County to exercise the rights and remedies under this Paragraph.

All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by County in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and County shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, County may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by County of County's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

28.10 Schedule of Values

The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

28.11 Progress Payments

Applications for Payments:

At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that County has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment

Initials_____

are covered by appropriate property insurance or other arrangements to protect County's interest therein, all of which must be satisfactory to County.

Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

Review of Applications:

Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to County or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to County, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

the Work has progressed to the point indicated;

the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and

the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

By recommending any such payment Engineer will not thereby be deemed to have represented that:

inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or

Initials_____

there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by County or entitle County to withhold payment to Contractor.

Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

to supervise, direct, or control the Work, or

for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or

for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or

to determine that title to any of the Work, materials, or equipment has passed to County free and clear of any Liens.

Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to County stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect County from loss because:

the Work is defective, or completed Work has been damaged, requiring correction or replacement;

the Contract Price has been reduced by Change Orders;

County has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or

Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

Payment Becomes Due:

Ten days after presentation of the Application for Payment to County with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by County to Contractor.

Initials_____

Reduction in Payment:

County may refuse to make payment of the full amount recommended by Engineer because:

claims have been made against County on account of Contractor's performance or furnishing of the Work;

Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to County to secure the satisfaction and discharge of such Liens;

there are other items entitling County to a set-off against the amount recommended; or

County has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

If County refuses to make payment of the full amount recommended by Engineer, County will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. County shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by County and Contractor, when Contractor remedies the reasons for such action.

Upon a subsequent determination that County's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

28.12 Contractor's Warranty of Title

Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to County no later than the time of payment free and clear of all Liens.

28.13 Substantial Completion

When Contractor considers the entire Work ready for its intended use Contractor shall notify County and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

Promptly after Contractor's notification, County, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

Initials_____

If Engineer considers the Work substantially complete, Engineer will deliver to County a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. County shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to County, notify Contractor in writing, stating the reasons therefor. If, after consideration of County's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to County and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from County.

At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to County and Contractor a written recommendation as to division of responsibilities pending final payment between County and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless County and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on County and Contractor until final payment.

County shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

28.14 Partial Utilization

Prior to Substantial Completion of all the Work, County may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which County, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by County for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

County at any time may request Contractor in writing to permit County to use or occupy any such part of the Work which County believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, County, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.

Contractor at any time may notify County and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially

complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

Within a reasonable time after either such request, County, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify County and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

28.15 Final Inspection

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

28.16 Final Payment

Application for Payment:

After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

The final Application for Payment shall be accompanied (except as previously delivered) by:

all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;

consent of the surety, if any, to final payment;

a list of all Claims against County that Contractor believes are unsettled; and

complete and legally effective releases or waivers (satisfactory to County) of all Lien rights arising out of or Liens filed in connection with the Work.

Initials_____

In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by County, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which County might in any way be responsible, or which might in any way result in liens or other burdens on County's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to County to indemnify County against any Lien.

Engineer's Review of Application and Acceptance:

If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to County for payment. At the same time Engineer will also give written notice to County and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

Payment Becomes Due:

Thirty days after the presentation to County of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum County is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by County to Contractor.

28.17 Final Completion Delayed

If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, County shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by County for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with

the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

28.18 Waiver of Claims

The making and acceptance of final payment will constitute:

- a waiver of all Claims by County against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
- a waiver of all Claims by Contractor against County other than those previously made in accordance with the requirements herein and expressly acknowledged by County in writing as still unsettled.

29. SUSPENSION OF WORK AND TERMINATION

29.1 County May Suspend Work

At any time and without cause, County may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

29.2 County May Terminate for Cause

The occurrence of any one or more of the following events will justify termination for cause:

Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

Contractor's disregard of Laws or Regulations of any public body having jurisdiction;

Contractor's repeated disregard of the authority of Engineer; or

Contractor's violation in any substantial way of any provisions of the Contract Documents.

Initials_____

If one or more of the events identified in Paragraph 15.02.A occur, County may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:

exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

incorporate in the Work all materials and equipment stored at the Site or for which County has paid Contractor but which are stored elsewhere; and

complete the Work as County may deem expedient.

If County proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by County arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to County. Such claims, costs, losses, and damages incurred by County will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, County shall not be required to obtain the lowest price for the Work performed.

Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.

Where Contractor's services have been so terminated by County, the termination will not affect any rights or remedies of County against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by County will not release Contractor from liability.

If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

29.3 County May Terminate For Convenience

Upon seven days written notice to Contractor and Engineer, County may, without cause and without prejudice to any other right or remedy of County, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

Initials_____

completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;

all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

reasonable expenses directly attributable to termination.

Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

29.4 Contractor May Stop Work or Terminate

If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by County or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) County fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to County and Engineer, and provided County or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from County payment on the same terms as provided in Paragraph 15.03.

In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or County has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to County and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

30. DISPUTE RESOLUTION

30.1 Methods and Procedures

Either County or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the

Initials_____

American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

County and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, County or Contractor:

elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or

agrees with the other party to submit the Claim to another dispute resolution process; or

gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

31. MISCELLANEOUS

31.1 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or

delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

31.2 Computation of Times

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

31.3 Cumulative Remedies

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of

them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

31.4 Survival of Obligations

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

31.5 Controlling Law

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

31.6 Headings

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

SECTION 00 73 15

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (EJCDC C-700, 2007 Edition). All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract have the meanings assigned to them in the General Conditions.

ARTICLE 1 DEFINITIONS AND TERMINOLOGY

SC-1.01.A Amend the Defined Terms for “21, *General Requirements*” to “The General Requirements pertain to all Sections of the specifications”.

SC-1.01.A Add the following sentence to “27. Notice of Award”: “When requested by COUNTY, the Notice of Award may be issued by the ENGINEER.”

SC-1.01.A Add the following sentence to “28. Notice to Proceed”: “When requested by COUNTY, the Notice to Proceed may be issued by ENGINEER.”

SC 1.01.A Add the following new Defined Terms:

52. SURETY – The person, firm, or corporation which is bound by the contract bonds with and for Contractor (Principal); and which is held and firmly bound unto County for the conditions of obligations set forth in said bonds.

53. ARCHITECT/ENGINEER – The person, firm or corporation named as the ENGINEER in the Agreement.

54. PROVIDE – As used in the Project Manual, means to furnish and install, complete and ready for intended use.

55. PRODUCT – As used in the Project Manual, includes materials, fabrications, systems and equipment.

ARTICLE 2 PRELIMINARY MATTERS

SC-2.02.A Amend the first sentence of paragraph 2.02.A of the General Conditions by changing “up to ten” to “five”.

Add the following new subparagraphs to paragraph 2.05A:

Initials_____

- SC-2.05.A Amend the first sentence of paragraph 2.05.A of the General Conditions by changing “Within 10 days after the Effective Date of the Agreement” to “At the Preconstruction Conference”.
- SC-2.05A.4 Contractor shall perform no portion of the Work at any time without Contract Documents or, where specified, approved Shop Drawings for such portion of the Work.
- SC-2.05A.5 By executing the Contract, Contractor represents that he has visited the site, familiarized himself with the local conditions under which the Work is to be performed, and correlated his observations with the requirements of the Contract Documents.

Add the following new paragraph immediately after paragraph 2.05.A.5:

- SC-2.05.B Before any Work at the Site is started, Contractor shall deliver to the County, certificates of insurance that Contractor is required to purchase and maintain in accordance with Article 5.

Add the following new paragraph immediately after paragraph 2.06.B:

- SC-2.06.C County may issue Notice to Proceed at the Preconstruction Conference. Contractor shall begin the Work within twenty-four (24) hours of the date given in the Notice to Proceed. If the Contractor does not start the Work within fourteen (14) calendar days after this date, County may, at his discretion, terminate Contractor in accordance with paragraph 15.02.

Delete paragraph 2.07.A in its entirety and insert the following in its place:

- SC-2.07.A All schedules as set forth in Article 2 shall be submitted and accepted by the County and Engineer within 30 days of NTP. Should any schedule not be accepted within 30 days of the NTP, it will be considered a breach of contract and reason for termination of the contract for cause in accordance with the General Conditions, Section 15.02.

ARTICLE 3 CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

Add the following sentence to Paragraph 3.01B:

- SC-3.01.B Contractor shall be responsible for the construction and coordination of the parts of the Project, and all systems provided shall be completely compatible and fully functional without additional cost to County.

Add the following new subparagraph to paragraph 3.02.A:

SC-3.02.A.3. Sections of Division 01 - General Requirements govern the execution of all sections of the Specifications.

ARTICLE 4 AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

Add the following to the end of paragraph 4.01.C:

SC-4.01.C Contractor shall obtain said land rights at his own expense and without liability to the County. Contractor shall not enter upon private property without first obtaining written permission from the rightful property County.

Amend the last sentence in paragraph 4.03.C.3 to read:

SC-4.03.C.3 However, County, Engineer and Engineer's Consultants shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

ARTICLE 5 BONDS AND INSURANCE

Delete paragraph 5.01.B in its entirety and insert the following in its place:

SC-5.01.B All Bonds shall be in the form prescribed by the Contract Documents or other form approved by County. All else notwithstanding, the terms of all Bonds shall be substantially in the form prescribed by Chapter 255, Florida Statutes. All Bonds shall be executed by Contractor and a corporate bonding company licensed to transact such business in the State of Florida and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570. Contractor will cause the Bonds to be recorded with the Clerk of the Circuit Court in the county in which the Work is to be performed. Failure to execute bonds in the form prescribed may constitute non-responsiveness on the part of the Contractor. The expense for all Bonds shall be the Contractor's responsibility.

Add the following to the end of paragraph 5.02.A:

SC-5.02.A Certificates of insurance shall be issued by a company with a Best's rating of at least B+ authorized to do business in the State of Florida. County must approve non-rated insurers. If used, County shall be shown as Certificate Holder, Engineer as Additional Insured and provide a 30-day cancellation notice.

Delete paragraph 5.03.B in its entirety and insert the following in its place:

Initials_____

SC-5.03.B Insurance policies written on a "Claims Made" form is not acceptable without County's approval.

Add the following new paragraphs immediately after paragraph 5.03.E:

SC-5.03.F Umbrella Liability insurance is preferred, but an Excess Liability equivalent is acceptable. Whichever type of coverage is provided, it shall not be more restrictive than the underlying insurance policy coverages, including, but not limited to the coverage Trigger, defense, notice of occurrence/accident/circumstances, notice of claim and extended reporting period.

SC-5.03.G No work shall commence under this contract until the required Certificate(s) have been provided. Work shall not continue after expiration (or cancellation) until new Certificate(s) have been provided. Non-continuance of work after expiration (or cancellation) of Certificate(s) will not constitute a delay beyond Contractor's control as defined in paragraph 12.03.

SC-5.03.H Contractor shall arrange for its insurers' policies to include, or be endorsed to include, a severability or interest/cross liability provision, so that County will be treated as if a separate policy were in existence, but without increasing the policy limits.

SC-5.03.I Contractor's deductibles/self-insured retentions shall be disclosed to County and may be disapproved by the latter. They shall be reduced or eliminated at the option of County. Contractor is responsible for the amount of any deductible or self-insured retention.

SC-5.03.J These insurance requirements shall not relieve or limit the liability of Contractor. County does not in any way represent that these types or amounts of insurance are sufficient or adequate to protect Contractor's interests or liabilities, but are merely minimums.

SC-5.03.K Insurance required of Contractor or any other insurance of Contractor shall be considered primary, and insurance or self-insurance of County shall be considered excess, as may be applicable to claims that arise out of this contract.

SC-5.03.L Receipt of Certificates or other documentation of insurance or policies or copies of policies by County, or by any of its representatives, which indicate less coverage than required does not constitute a waiver of the Contractor's obligation to fulfill the insurance requirements herein.

SC-5.03.M The Contractor shall either (a) require each subcontractor to produce and maintain the same coverage as required of the Contractor, or (b) insure the activities of subcontractors in his own policy.

Initials_____

SC-5.03.N These insurance requirements are minimums and may not be adequate to cover Contractor exposures.

Add the following new paragraphs immediately after paragraph 5.04.B:

SC-5.04.C The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts shown in Exhibit 1 of the contract documents, or greater where required by Laws and Regulations:

Delete paragraphs 5.06 through 5.10 in their entirety except for paragraph 5.06.D and insert the following in place of 5.09.A:

SC-5.09.A If County has any objection to the coverage afforded by or other provisions of Bonds or insurance required to be purchased and maintained by Contractor in accordance with Article 5 on the basis of non-conformance with the Contract Documents, County shall so notify Contractor in writing within ten days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. Contractor shall provide to County such additional information in respect of insurance provided as County may reasonably request.

ARTICLE 6 CONTRACTOR'S RESPONSIBILITIES

Add the following to the end of paragraph 6.01.A:

SC-6.01.A County reserves the right to reject any means, methods, techniques, sequences or procedures proposed by Contractor which:

1. will constitute or create a hazard to the Work or to the persons or damage to property or existing utilities; or
2. will not produce finished work in accordance with the terms of the contract Documents.

County's failure to exercise his right to reject such means, methods, techniques, sequences or procedures shall not relieve the Contractor of his obligation to accomplish the result intended in the Contract Documents nor shall the exercise of such right create a cause of action for damages.

Add the following new paragraph immediately after paragraph 6.02.B:

SC-6.02.C Engineer shall record time and costs required by Engineer and Engineer's Consultants to provide inspection services due to Contractor's working beyond regular working hours as defined in the General Requirements. County's

Initials _____

reimbursement for the charges shall be a deduction from Contractor's Partial Payment(s).

Add the following new paragraphs immediately after paragraph 6.05.A.2.d:

SC-6.05.A.2.e Each action mentioned above required for review of proposed substitute items of material or equipment shall be followed in the order given. Failure to do so shall be cause for rejection of the proposed substitution.

SC-6.05.A.2.f Contractor shall reimburse County for the charges of Engineer or Engineer's Consultants for evaluation of substitutions. County's reimbursement for the charges shall be a deduction from the Contractor's Partial Payment(s).

Add the following to the end of paragraph 6.06.A:

SC -6.06.A Contractor shall not subcontract part(s) or the work, the aggregate cost of which is greater than 50 percent of the contract price, without prior written approval by County. Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work that bind Subcontractors to Contractor by the terms of the Contract Documents insofar as applicable to the work of Subcontractors and to give Contractor the same power as regards terminating any subcontract that County may exercise over Contractor under any provision of the Contract Documents. Nothing contained in the subcontract shall create any contractual relationship between Subcontractor and County. Each Subcontractor shall discharge all duties and responsibilities of Contractor to County covered by his subcontract.

Add the following to the end of paragraph 6.06.B:

SC-6.06.B Subcontractors and Suppliers shall be identified on the form provided in the Bidding Requirements.

Add the following to the end of paragraph 6.08.A:

SC-6.08.A Permits, licenses, and easements for permanent structures or permanent changes in existing facilities shall be secured and paid for by County, unless otherwise specified.

Add the following to the end of paragraph 6.09.A:

SC-6.09.A Contractor shall also cause all Subcontractors to comply with all federal, state, county, and municipal laws, ordinances, rules, and regulations bearing on the conduct of the Work.

Add the following to the end of paragraph 6.09.B:

Initials_____

SC-6.09.B If Contractor observes that the Contract Documents are at variance with said laws, ordinances, rates, or regulations, Contractor shall promptly notify Engineer of Record and the County in writing, and any necessary changes shall be adjusted as provided in the Contract Documents. Contractor shall not proceed with the Work until so instructed by County.

Add the following to the end of paragraph 6.12.A:

SC-6.12.A Annotations of record documents shall be legible, precise, and complete as determined by Engineer of Record and the County.

Add the following new paragraph after paragraph 6.13.F:

SC-6.13.G Contractor shall be responsible at all times for precautions to achieve the protection of all persons, including employees and property. Contractor shall make special effort to detect hazardous conditions and shall take prompt action where necessary to avoid accident, injury, or property damage. OSHA and all other applicable safety laws and ordinances shall be followed as well as American National Standards Institute Safety Standards. All accidents, injuries, claims, or potential claims shall be reported promptly to County.

Add the following new paragraph immediately after paragraph 6.17.E.1:

SC-6.17.E.2 Contractor shall reimburse County for the charges of the County and the County's Consultants for costs generated as a result of more than two submittals of any one Shop Drawing or Sample being required for evaluation due to rejection for noncompliance of the original submittal or lack of information required by the Contract Documents. County's reimbursement for the charges shall be a deduction from Contractor's Partial Payment(s).

SC-6.20.A Amend the first paragraph of 6.20.A of the General Conditions by changing "(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court: or arbitration or other dispute resolution costs)" to "(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs)".

Add the following new paragraph immediately after paragraph 6.20.C:

SC-6.20.D Neither Contractor nor County shall sell, transfer, assign, or otherwise dispose of the contract or any portion thereof, or any right, title, or interest therein, or any obligations thereunder, without written consent of the other party.

ARTICLE 8 COUNTY'S RESPONSIBILITIES

Initials_____

SC-8.02 Amend paragraph 8.02 of the General Conditions by striking out the following words: “to whom Contractor makes no reasonable objection.”

ARTICLE 9 ENGINEER'S STATUS DURING CONSTRUCTION

Add the following new paragraph immediately after paragraph 9.05.A:

SC-9.05.B Contractor shall reimburse the County for the charges of Engineer and Engineer's Consultants for any additional field observations, engineering analysis, correspondence, meetings, or other work due to non-complying or defective construction, materials, or equipment performed or furnished by the Contractor, Subcontractors, or Suppliers. County's reimbursement for the charges shall be a deduction from the Contractor's Partial Payment(s).

ARTICLE 10 CHANGES IN THE WORK; CLAIMS

SC-10.05.B Amend the first sentence of paragraph 10.05.B of the General Conditions by changing “(but in no event later than 30 days)” to “(but in no event later than 15 days)”.

ARTICLE 11 COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK

Add the following new paragraphs immediately after paragraph 11.01.A.5.i:

SC-11.01.A.5.j The cost of specific consideration for the indemnifications set forth in paragraph 6.20.

SC-11.01.A.5.k The cost of compliance with current local, state and federal safety regulations.

Add the following new paragraphs immediately after paragraph 11.03.D:

SC-11.03.E If County objects to Contractor's quoted adjustment in Unit Price Work set forth in paragraph 11.03.D, County may assign such work to its own forces or another contractor.

SC-11.03.F County reserves the right to delete any Unit Price Work without financial penalty incurred from Contractor.

ARTICLE 12 CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

Add the following new paragraph immediately after paragraph 12.02.B:

Initials_____

SC-12.02.C On the 21st of each month, or the next following business day, the Contractor shall submit to the County and Engineer a request for weather days. Failure to submit the request forfeits the right to claim weather days for that period and any previous period. The County will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions or related adverse soil conditions that prevent the Contractor from productively performing controlling items of work resulting in:

(1) The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items due to adverse weather conditions.

No additional compensation will be made for delays caused by the effects of inclement weather.

ARTICLE 13 TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

Add the following to the end of paragraph 13.03.A:

SC-13.03.A Contractor shall reimburse County for the charges of Engineer and Engineer's Consultants for all costs due to work not being ready for tests and/or inspections when the Contractor has notified Engineer that work is ready for tests and/or inspections. Contractor shall reimburse County for all failed tests and subsequent retests. Reimbursement for the charges shall be a deduction from the Contractor's Partial Payment(s).

Delete paragraph 13.03.B of the General Conditions and add the following in its place:

SC-13.03.B The Contractor shall obtain and employ an independent testing laboratory to provide the services specified herein and shall include all costs for these services in the contract price. The Contractor shall submit for approval by the County and Engineer, the independent testing laboratory, including qualifications.

Copies of all testing agency invoices submitted to the Contractor for payment shall be forwarded with the Contractor's request for partial payment. Invoices shall be submitted routinely throughout the project and shall be pertinent to the partial payment period under consideration. Testing agency invoices in excess of sixty (60) days old shall not be considered for payment. Invoices shall clearly indicate type and amount of test performed, unit and total cost, and shall indicate if the invoiced testing cost is a result of retests required due to the Contractor's failure to achieve specified requirements. The cost of retesting due to test failure will be borne by the Contractor. Payment to the Contractor for testing shall not be made without the required itemized invoicing.

- SC-13.08.A Amend the first sentence of 13.08.A by changing “(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs)” to “(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs)”.
- SC-13.09.C Amend the first sentence of 13.09.C by changing “(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs)” to “(including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or other dispute resolution costs)”.

ARTICLE 14 PAYMENTS TO CONTRACTOR AND COMPLETION

Delete paragraph 14.02.A.2 in its entirety and insert the following in its place:

- SC-14.02.A.2 Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor certifying that Contractor has disbursed to all subcontractors and suppliers having an interest in the contract their pro rata shares of the payment out of previous progress payments received by Contractor for all work completed and materials furnished in the previous work period, less a retainage withheld by Contractor pursuant to an agreement with a subcontractor. Within 30 days of receipt for the final progress payment or any other payments received thereafter except the final payment, Contractor shall pay all subcontractors and suppliers having an interest in the contract their pro rata shares of the payment for all work completed and materials furnished.

Add the following words to the end of paragraph 14.02.B.1:

“or direct Engineer to present the Application to County with Engineer's recommendation of partial payment.”

- SC-14.02.B.2 After the word “schedules”, add the words “and the Contract Documents”.

Add the following new paragraph immediately after paragraph 14.02.B.2.c:

- SC-14.02.B.2.d Contractor's other obligations under the Contract Documents have been fulfilled.

Delete paragraph 14.05.A.4 in its entirety.

Amend paragraph 14.09.A.1 to read:

- SC-14.09.A.1 A waiver of all Claims by County against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the

terms of any special guarantees specified therein whenever said failure occurs or from Contractor's continuing obligations under the Contractor Documents; and

Add the following new paragraph immediately after paragraph 14.09.A.2:

SC-14.09.A.3 The acceptance of final payment by Contractor designated and identified by Engineer as final payment shall be and shall operate as a release to County of all claims and all liability to Contractor other than claims in stated amounts as may be specifically excepted by Contractor for all things done or finished in connection with the Work and for every act of County and others relating to or arising out of the Work. Any payment, however, final or otherwise, shall not release Contractor or Contractor's Surety(ies) from any obligations under the Contract Documents or Bonds.

ARTICLE 15 SUSPENSION OF WORK AND TERMINATION

SC-15.02.A. 1 After the word "Contractor's", add the words "start the work in accordance with the Notice to Proceed or Contractor's".

ARTICLE 16 DISPUTE RESOLUTION

Add the following new paragraph immediately after paragraph 16.01.C.3

SC-16.01.D Venue for any mediation shall be in Nassau County, Florida. Venue for any litigation shall be in state court in Nassau County, Florida.

END OF SECTION

Initials_____

General Requirements/Technical Specifications

SECTION 01 00 00

GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 QUALIFICATION

- A. The Bidder shall be able to demonstrate that it possesses the necessary proficiency and experience, the Bidder's Firm shall have been regularly engaged in the construction of projects involving the installation of process equipment at municipal water/wastewater treatment facilities in Florida for at least the last five consecutive years and shall have completed at least five projects of similar size, value, and complexity within the last five years. The Bidder shall be a Florida state certified General Contractor. The Bidder shall perform at least 50% of the contract work with his/her own forces.

1.02 EXISTING UTILITIES AND STRUCTURES

- A. The existing utilities and facilities shall be located from the County's and other records. Guaranty is not made that all existing facilities are shown/located or that those shown/located are entirely accurate. The Contractor shall assure themselves of any utilities, structures or facilities prior to performing any Work. Prior to the start of Work, the Contractor shall request the County to advise him of the location of their facilities in the vicinity. The County and the Engineer will assume no liability for damages sustained or costs incurred because of the Contractor's operations in the vicinity of existing utilities or structures. The Contractor shall notify the Engineer of any deviation between existing conditions and the information provided by the Engineer or County.

1.03 PRESERVING WATER QUALITY

- A. The Contractor shall exercise extreme care to minimize degradation of water quality at the site. All necessary provisions shall be taken to insure compliance with the water quality standards of the State of Florida.
- B. The Contractor shall take steps to collect and dispose of all sewage that leaks and/or spills during the performance of this contract. The County must be notified immediately. The Contractor is responsible for any necessary cleanup. Any leakage or spillage shall be cleaned up to the satisfaction of the NAU, the Nassau County Health Department, and Florida Department of Environmental Protection.

Initials_____

1.04 PROTECTION OF EXISTING AND ADJACENT PROPERTIES

- A. Unless indicated otherwise, all shrubbery, paved streets and walks, fences and walls, adjacent structures and equipment shall be fully protected against damage during each stage of the project. Any damage by the Contractor shall be fully restored to its condition at the start of construction.

1.05 RESTORATION OF DAMAGED SURFACES, STRUCTURES, AND PROPERTY

- A. Where pavement, trees, shrubbery, fences or other property or surface structures not designated as pay items, have been damaged, removed or disturbed by the Contractor, whether deliberately or through failure to carry out the requirements of the Contract Documents, state laws, municipal ordinances or the specific direction of the Engineer, or through failure to employ usual and reasonable safeguards, such property and surface structures will be replaced or repaired at the expense of the Contractor to a condition equal to that before Work began within a time frame approved by the Engineer.

1.06 SUBSTITUTIONS (NOT USED)

1.07 WATER

- A. The Contractor shall provide water for their use for construction purposes. The Contractor shall be responsible for the installation of an County water meter at a location approved by the Engineer. The Contractor shall install and maintain necessary supply connections and piping for same.

1.08 SANITARY FACILITIES

- A. The Contractor shall provide temporary restroom facilities for field crews as permitted by the Nassau County Health Department. Existing County facilities are not available for use by the Contractor.

1.09 WORKING HOURS

- A. Work under this contract shall not be performed on County, State and/or national holidays or during such events as the Fernandina Beach Shrimp Festival, Nassau County School System FCAT (as identified at the pre-bid conference), except in time of emergency, and then only under written permission from the County who shall be the sole judge as to the urgency of that situation. Available workdays to perform work will not include night time work, weekend work, or work before 8:00 am or after 5:00 pm (40 hours per work week).

Should the Contractor deem it necessary to work on Sundays, holidays, or beyond daylight hours in order to comply with his construction schedule or because of an emergency, the Contractor shall request permission of the County. If, in the

Initials_____

opinion of the County, the need is bona fide, the County will authorize the Contractor to work such hours as may be necessary.

- B. Should the County approve work time beyond regular hours, the following hourly rates shall be applied as the County's reimbursement of Engineer of Record's fee to be paid by Contractor for expenses defined in Supplemental Conditions SC-6.02.C, SC-6.05.A.2.f, SC-6.17.E., SC-9.05.B and SC-13.03.A.

1. Engineer	\$202.69
2. Project Engineer	\$115.49
3. Construction Administrator	\$134.92
4. Inspector	\$96.07
5. Administrative Assistant	\$53.21
6. Consultant Construction Engineering Inspection (CEI)	\$69.35

- C. Contractor shall schedule the work to have only one clarifier out of service at a time.

1.10 ASSEMBLIES OR UNITS

- A. Where the Contractor is required to furnish and install an assembly or unit, the Contractor shall furnish all component parts as required by the manufacturer of the unit.

1.11 ACCESS TO THE WORK SITE

- A. The Contractor may use only the roads and/or easements designated by the County for access to the work locations. The Contractor shall be responsible for maintaining, protecting and restoring the routes to the satisfaction of the County and Engineer.

1.12 BARRICADES AND LIGHTS

- A. The Contractor shall furnish and erect such barricades, fences, lights, and danger signals and shall provide such other precautionary measures for the protection of persons or property and of the work as necessary. Barricades shall be painted in a color that will be visible at night. From sunset to sunrise, the Contractor shall furnish and maintain at least one light at each barricade and sufficient numbers of barricades shall be erected to keep vehicles from being driven on or into any work under construction.
- B. The Contractor will be held responsible for all damage to the work due to failure of barricades, signs, and lights to protect it and whenever evidence is found of such damage, the Contractor shall immediately remove the damaged portion and replace it at his cost and expense. The Contractor's responsibility for the

maintenance of barricades, signs, and lights shall not cease until the project has been accepted by the County.

1.13 SECURITY

- A. The Contractor shall be fully responsible for the safety and security of the work area. Any temporary measures required to maintain the security of the area shall be the Contractor's responsibility.
- B. The WWTF is a restricted entry facility. Security codes are required to enter the facility gate. NAU will issue a temporary gate code to the Contractor. This code will be changed if any of Contractor's employees are terminated from their employment.

1.14 TRENCH SAFETY ACT

- A. All work shall conform to the Trench Safety Act. Contractor shall include in his price the cost of conforming to the Trench Safety Act.

1.15 PROJECT SCHEDULE

- A. The Contractor shall develop and submit to the Engineer and County for approval an initial progress schedule and a construction phasing plan demonstrating complete fulfillment of all contract requirements including all activities of subcontractors, equipment vendors and suppliers. An updated schedule shall be submitted with each pay request.

1.16 TEST OR OPERATION

- A. Upon completion of work, it shall be the Contractor's responsibility to turn the installation over to the County in good operating condition. This shall be demonstrated by a test run of the system by the Contractor in the presence of the County and/or Engineer.

1.17 REMOVAL OF ALL TEMPORARY FACILITIES & RESTORATION OF SITE

- A. Upon completion of the work, it shall be the responsibility of the Contractor to remove all temporary facilities including but not limited to pumps, fences, signs, temporary power, materials or other debris. The site, adjacent properties and County facilities, shall be restored to condition equal to that before Work began.

1.18 RECORD DOCUMENTS

- A. The Contractor shall maintain on site one set of the following record documents for use to record actual revision to the Work:
1. Exhibits
 2. Specifications
 3. Addenda
 4. Change Orders and other modifications to the Contract
 5. Approved Shop Drawings, product data, and samples
- B. The Contractor shall provide As Built Redline Drawings for partial releases and final release submittals. With each submittal provide survey data, signed and sealed by the Contractor's Florida Licensed Surveyor, to support elevation information depicted on the record drawings.
- The final record drawings shall correctly and accurately show all the new installation reflecting surveyed information performed, signed and sealed by a professional land surveyor and mapper registered in the State of Florida. The drawings shall be neat and legible. All elevations shall be based on State Plane Coordinates NAVD-88 Datum. Record drawings shall comply with Nassau County Engineering Services As-Builts Requirement Checklist.
- C. Upon completion of the project, final record drawings will be provided to the County on CD-Rom, Autocad DWG format, along with one set of PDF (24"x36") along with a complete set of all survey data, signed and sealed by a professional Land Surveyor and Mapper in the State of Florida.
- D. Engineer-of-Record\County reserves the right to review Contractor's As-Built drawings during course of construction.
- E. Final pay and connections to any existing utility main will not be approved until Record Drawings are approved and accepted by Engineer-of-Record\County.

1.19 PROVISION FOR THE CONTROL OF DUST

- A. The Contractor shall take the necessary steps to prevent objectionable blowing or drifting of dust, sand, and other debris where the construction occurs in residential, commercial, or other developed areas.

Initials_____

- B. Extreme precautions shall be taken during construction to minimize the amount of dust created. Wetting the site or other means as directed by the County, may be required for control of dirt.

1.20 OBSTRUCTION

- A. The attention of the Contractor is drawn to the fact that during construction at the project site, the Contractor will encounter electrical lines. The Contractor shall exercise extreme care before and during construction to locate and flag these lines so as to avoid damage to the existing lines. Should damage occur to an existing line, the Contractor shall repair the line at no cost to the County.
- B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of construction, are temporarily stayed in position while the work proceeds in the vicinity of the pole and that the utility or other companies concerned be given reasonable advance notice of any such construction activities by the Contractor.

1.21 CLEAN-UP

- A. The Contractor shall maintain the site of the work in a neat condition. The Contractor shall remove all excess materials, excess excavated materials and all debris resulting from his operations within a time frame approved by the Engineer.
- B. The Contractor shall clean each clarifier while each clarifier is out of service for the rehabilitation of each clarifier. Contractor is responsible for removing and disposing all debris, grits, sand and sludge from each clarifier without any additional cost to the County. Contractor is responsible for drainage of each clarifier.

1.22 DESIGN PROFESSIONALS REPRESENTING COUNTY

- A. Various Design Professionals (i.e. Civil, Mechanical, Electrical, etc.) as consultants to the County prepared the specifications for the project. The County may have the various Design Professionals provide services to the County during construction phase of the project. The Design Professionals will be representatives of the County and visits to the site by the Design Professionals will be on the basis of paragraph 1.22 of this section. Also paragraph 1.23 of this section includes the various Design Professionals for this project.

1.23 VISITS TO SITE BY COUNTY'S REPRESENTATIVE

- A. The County's representative will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the

Initials_____

executed work and to determine, in general, if the work is proceeding in accordance with the Contract Documents.

- B. The County's representative's efforts will be directed toward providing for the County a greater degree of confidence that the completed work will conform to these specifications. On the basis of such visits and on-site observations, the County's representative will keep the County informed of the progress of the work and will endeavor to guard the County against defects and deficiencies in the work.

1.24 LIMITATIONS ON COUNTY'S REPRESENTATIVE RESPONSIBILITIES

- A. Neither the County's representative's authority to act under these specifications or elsewhere in other documents nor any decision made by the County's representative in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the County's representative to the Contractor, any sub-Contractor, any manufacturer, fabricator, supplier or distributor, or any of their agents or employees or any other person performing any of the work.
- B. The County's representative shall not be responsible to the Contractor's means, methods, techniques, sequences or procedures of construction, or safety precautions and programs incident thereto, and the County's representative shall not be responsible for the Contractor's failure to perform the work in accordance with these specifications.
- C. The County's representative shall not be responsible for the acts or omissions of the Contractor or of any sub-Contractors, or of any other persons at the site or otherwise performing any of the work.

1.25 WARRANTY

- A. The Contractor shall be responsible for defects in materials (including latent defects) or workmanship for a period of one year after the date of final acceptance of the project by the County. Such defects include, but not limited to, any settlement noted in backfill, fill, or in structures built over the backfill or fill during the warranty period in accordance with the General Conditions will be considered to be caused by improper compaction methods and shall be corrected by the Contractor at no cost to the County. Structures damaged by settlement shall be restored to their original condition by the Contractor at no cost to the County.
- B. The Contractor shall furnish factory warranty on all equipment furnished for the performance and completion of the project against defects in materials and/or workmanship. The factory warranty shall become effective for a period of one year after the date of final acceptance of the project by the County. Should any

defects in materials or workmanship be brought to the attention of the Contractor within the factory warranty period, the Contractor shall replace at no cost to the County.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 11 00

SUMMARY OF WORK

PART 1 – GENERAL

1.01 LOCATION OF WORK: The project site is at the following locations in Nassau County, Florida:

A. 5390 First Coast Highway, Fernandina Beach, FL 32034.

1.02 DESCRIPTION OF WORK:

F. Demolition: Contractors work includes the demolition and removal of all internal components of one (1) or two (2) 55-ft diameter clarifiers, further identified as Clarifier #1 and Clarifier #2 as shown on contract drawings. Demolition includes, but not limited to:

Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)

Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)

Sludge rakes and squeegees, as well as, supporting structures.

Catwalk and railings from the stairs to the center support structures.

Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.

Initials_____

Control panel, electrical and data wiring, and conduit.

Items to remain include:

4. Existing access stairs for Clarifier #1 and Clarifier #2.
 5. Existing walkway around Clarifier #1 wall.
 6. Structures required to connect and support the stairs and existing circumferential walkway.
- G. Contractor shall furnish all labor, equipment, materials, tools, and incidental items required to install and place into proper operation of two (2) circular scraper clarifiers (Clarifier No. 1 is base bid, Clarifier No. 2 is bid alternate) including walkway and railings from the stairs to the center support structure. Design and calculations to be performed by equipment vendor. All equipment shall be installed as shown on the plans, as recommended by the supplier, and in compliance with all OSHA, local, state, and federal codes and regulations.
- H. Contractor shall furnish complete with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation.
- I. Additional Clarifier #1 work shall include:
6. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
 7. Major or additional crack repairs shall be included in Bid Items 3c. This may include crack injection and additional surface repairs.
 8. Regrouting of the entire floor/base
 9. External concrete pressure wash, cleaning, crack repairs and repainting.
 10. Blasting and coatings of existing structural support bolts for the existing circumferential walkway and access stair mounts. Where required, bolts for the existing circumferential walkway and access stair mounts shall be replaced per Bid Item 5.
- J. Additional Clarifier #2 work shall include:

Initials_____

1. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
2. Major or additional crack repairs shall be included in Bid Items 8c. This may include crack injection and additional surface repairs.
3. Regrouting of the entire floor/base
4. External concrete pressure wash, crack repairs and repainting.
5. Installation of a new circumferential walkway

1.03 CONTRACTOR'S DUTIES: Except as specifically noted, the Contractor shall provide and pay for the following:

- A. All labor, materials and equipment.
- B. Tools, construction equipment and machinery.
- C. Utilities required for construction.
- D. Other services and facilities necessary for the proper execution of work completion including incidental items not detailed or called for, but which are required for the proper completion of the project.
- E. All legally required sales, consumer and use taxes.
- F. All applicable permits, government fees and licenses.
- G. Survey services for construction layout including equipment, piping, fitting, valve laying schedule and record drawings shall comply with Nassau County Engineering Services As-Builts Requirement Checklist.
- H. All required testing and clearances for placing in service.
- I. Restore all sites and structures that are damaged by the Contractor during the execution of this contract at no additional cost to the County.

1.04 CONTRACTOR SHALL ALSO BE REQUIRED TO PERFORM THE FOLLOWING:

- A. Comply with all codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on the performance of work.
- B. Promptly submit written notice to the Engineer of observed variances of Contract Documents from legal requirements; it is not the Contractor's responsibility to make certain drawings and specifications comply with codes and regulations.

Initials_____

- C. Enforce strict discipline and good order among employees. Do not employ unfit persons or those not skilled in assigned tasks.

1.05 WORK SEQUENCE:

- A. Coordinate with County.
- B. Contractors construction schedule will be subject to approval by the Engineer and updated on a monthly basis.
- C. Notify Engineer and County 96 hours (minimum) in advance of removing any facility from service, permanently or temporarily. Removal from service of any facility shall be preapproved by County.

1.06 CONTRACTORS USE OF PREMISES:

- A. Do not unreasonably encumber sites with materials or equipment.
- B. Assume full responsibility for protection and safekeeping of products stored on premises.
- C. Move any stored products interfering with operation of County.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 12 16

SEQUENCE OF CONSTRUCTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. In performing the work shown and specified, the Contractor shall plan and schedule his work in accordance with Section 01 31 13 - Construction Schedule. The work is being performed on active utility facilities which must be maintained in operation throughout construction.

1.02 CONSTRUCTION SCHEDULE

- A. The Construction Schedule shall be submitted by the Contractor in accordance with Section 01 31 13 - Construction Schedule and Section 02 41 13 – Demolition.
- B. Proposed construction sequence:
 - 1. Clarifier No. 1
 - 2. Clarifier No. 2
- C. Contractor may propose an alternate construction sequence for review and approval by the County.

1.03 CONSTRUCTION PLAN

- A. A plan of construction and operation shall be submitted by the Contractor ten (10) days prior to conducting the Work, showing the proposed sequence, equipment, etc. for review.
- B. The plan should include the following items:
 - 1. Continuous operation of the WWTF is of critical importance. A plan to schedule and conduct activities to enable existing facilities to operate continuously.
 - 2. The sequence shall outline the proposed schedule and duration of each activity required to complete the project and shall conform to the following:

Initials_____

- a. Work on Clarifier No. 1 shall commence as soon after the Notice to Proceed is issued as possible. All work shall be completed and Clarifier No. 1 returned to service prior to beginning work on Clarifier No. 2 that requires it to be removed from service.
 - b. Clarifier No. 2 shall be removed from service only after Clarifier No. 1 is placed into service.
- C. Coordination with the WWTF personnel is essential. Any requested plant shutdowns shall be submitted in writing no later than 5 days prior to the requested shutdown. Any work that will require disconnecting or taking any equipment out of service shall be cleared with the NAU prior to the work being performed.

1.04 USE OF FACILITIES BEFORE COMPLETION

- A. The County reserves the right to enter and use any portion of the constructed facilities before substantial completion of the whole work to be done under this Contract.

1.05 CONNECTION OF EXISTING SYSTEMS

- A. All connections to existing systems shall be performed in such a manner that no damage and minimal interruption is caused to the existing installation. On completion of his installation, the Contractor shall remove the plug or blind flange. All areas of work shall be completed and brought on line without disturbing ongoing operations of the facility. Any damage caused to existing installations shall be repaired or replaced by the Contractor at no additional cost to the County.

1.06 COORDINATION WITH PERSONNEL

- A. Before commencing work involving removing or placing in operation existing or new facilities, the Contractor shall notify the County at least twenty (20) days in advance in writing. The Contractor is hereby notified that the Water and Wastewater Plants are active plants and that their operation shall not be interrupted at any time for any reason during the contract period.
- B. Only the County's appointed representative can authorize the shutdown of portions of the facilities. The Contractor shall, under no circumstances, interfere with any facility component without the County's authorization, in writing, and without supervision by the County.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 COORDINATION WITH EXISTING UTILITIES AND OTHER AGENCIES

- A. In the event that the Work involves existing utilities owned by the County or other agencies, the Contractor shall notify all utilities in writing with a copy to the County and the Engineer before construction is started and shall coordinate his activities with them. The Contractor shall cooperate with the Countys of utility lines that may require temporary interruption of service in order to minimize the interruption. The Contractor shall call SUNSHINE a minimum of 72 hours prior to any excavation for location of existing underground facilities.

3.02 COOPERATION

- A. The Contractor shall allow the County or his agents, and other project contractors or their agents, to enter facilities being constructed under this Contract for the purpose of constructing, installing, operating, maintaining, removing, repairing, altering or replacing such equipment, pipes, sewers, conduits, manholes, wires, or other structures and appliances which may be required to be installed at or in the Work. The Contractor shall cooperate with all the aforesaid parties and shall allow reasonable provisions for the prosecution of any other work by the County, or others, to be done in connection with his work, or in connection with normal use of the facilities.

END OF SECTION

Initials_____

SECTION 01 22 50

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Work under this Contract shall be paid as designated below under the appropriate items associated with the Bid Schedule. Payment shall be in accordance with Lump Sum or Unit Price bid by the Contractor in his proposal.
- B. When Lump Sum prices are contained in the Bid Schedule, the Contractor shall provide a detailed schedule of values for Lump Sum cost acceptable to the Engineer of Record and the County, which will be used for estimating partial payment requests.
- C. Contractual costs for work not specifically mentioned under a payment item and which are incidental to the overall conduct of the work shall be included in the individual items at the Contractor's option. No additional charges shall be made to the County for items not specifically mentioned under individual payment items. Examples of these types of costs include, but are not limited to, the following: bonds, insurance, permits, licenses, traffic control, dust control, clean-up, temporary access, temporary facilities, soil erosion control, temporary drainage, temporary offices, restoration of disturbed areas, temporary utilities, test pits locating existing utilities, temporary water and sewer, surveying, layout, and other items similar to above.

1.02 TYPICAL PAYMENT ITEM COSTS

- A. No separate payment will be made for the following items. The cost of such work shall be included in the unit price of applicable pay items listed in the Bid Schedule unless otherwise noted in the construction plans:
1. Clearing and grubbing including removal and disposal of all above and below ground improvements such as but not limited to trees, brush, residential commercial and bridge structures, septic tanks and drain-fields, roadway pavement and concrete, drainage and utilities systems, etc. unless otherwise specified.
 2. Trench and roadway excavation, including rock and cemented coquina excavation and disposal, excavation and removal of unsuitable soils and unsuitable materials of any nature unless otherwise specified.
 3. Structure excavation including rock and cemented coquina excavation and disposal, excavation and disposal of unsuitable materials of any nature except as otherwise

Initials_____

specified.

4. Dewatering and disposal of surplus water, prevention of sediment and erosion pollution and prevention of flooding
5. Structural fill, backfill, including furnishing, placement, compaction and final grading of suitable fill material, pipe bedding and compacted granular material.
6. The temporary removal and replacement of fences and walls.
7. Foundation and borrow materials, except as otherwise specified.
8. Paved and unpaved roadway restoration or replacement including but not limited to all disturbed improvements within the right of way, adjacent traffic signal system components included within the limits of lump sum work, unless otherwise specified.
9. Shoring, sheeting and worksite safety.

B. Methods of Measurement - Generally:

1. Units of measurement shall be defined in general terms as follows:

Linear Feet (LF)

Square Feet (SF)

Square Yards (SY)

Cubic Yards (CY)

Each (EA)

Sacks (SK)

Lump Sum (LS)

2. Unit Price Contracts/Items:

Linear Feet (LF) shall be measured along the horizontal length of the centerline of the installed material, unless otherwise specified. Pipe shall be measured along the length of the

Initials_____

completed pipeline, regardless of the type of joint required, without deduction for the length of valves or fittings. Pipe included within the limits of lump sum items will not be measured.

Square Feet (SF), Square Yards (SY), Cubic Yards (CY), Each (EA) and Sacks (SK) shall be measured as the amount of the unit of measure installed and compacted within the limits specified and shown in the Specifications and Drawings. Slope angles and elevations shall be measured using land-surveying equipment. CONTRACTOR shall provide supporting documentation (i.e. drawings, delivery tickets, invoices, survey calculations, etc.) to verify actual installed quantities.

C. Lump Sum Contracts/Items - Generally:

1. Quantities provided in the Schedule of Values are for the purpose of estimating the completion status for progress payments. Payment will be made for each individual item on a percentage of completion basis as estimated by the Contractor and approved by the County
2. Adjustments to costs provided in the accepted Schedule of Values may be made only by Change Order.
3. The County reserves the right to delete any item included in the Schedule of Values and decrease the Contract Price by the scheduled amount for the item deleted.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 BID ITEMS

Base Bid: Clarifier 1

A. Bid Item No. 1 – General Requirements.

Measurement: Measurement of various items for Mobilization and Demobilization shall not be made for payment and all items shall be included in the lump sum price. This lump sum price shall not exceed 5% of the Bid Price.

Payment: Payment of 50 percent of the applicable lump sum price for the item shall be full compensation for the Work consisting of the preparatory Work and operations in mobilizing for beginning Work on the Contract, including, but not limited to, movement of those personnel,

Initials_____

equipment, supplies and incidentals to the project site, preparation of submittals, and for the establishment of temporary offices and buildings, safety equipment and first aid supplies, project signs, field surveys, sanitary and other facilities required by these specifications, and State and local laws and regulations.

The costs of General Requirements (Section 01 00 00), bonds, permits, and any required insurance, project signs, and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included. This Work also consist of the general project management of the Work including, but not limited to, field supervision and office management, as well as other incidental cost for management of the Work during the duration of the Contract. This Work also includes maintenance of the field offices for the duration of the Contract.

Payment of the remaining 50 percent of the applicable lump sum price for this item also consists of demobilization or the operations normally involved in ending Work on the project including, but not limited to, termination and removal of temporary utility service and field offices; demolition and removal of temporary structures and facilities; restoration of Contractor storage areas; disposal of trash and rubbish, and any other post-construction work necessary for the proper conclusion of the Work.

B. Bid Item No. 2 – Demolition of Existing Internal Component.

K. A single lump sum payment shall be made for the demolition and removal of all exiting internal components. Demolition includes, but not limited to:

- a. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)
- b. Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)
- c. Sludge rakes and squeegees, as well as, supporting structures.
- d. Catwalk and railings from the stairs to the center support structures.
- e. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.
- f. Control panel, electrical and data wiring, and conduit.

L. Items to remain include:

Initials_____

- a. Existing access stairs for Clarifier #1.
- b. Existing walkway around Clarifier #1 wall.
- c. Structures required to connect and support the stairs and existing circumferential walkway.

M. Any items not listed in this section of the bid that the contractor deems necessary to demo to complete the work shall be included in this lump sum payment. No additional payment will be made for demolition unless previously approved by the County.

C. Bid Item No. 3 - Concrete Repairs with Coatings.

Bid Item No. 3a – Internal.

- 1. Bid Item No. 3a.1 – Crack Repairs. Payment for this item will be made at the unit price bid per linear foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal concrete crack repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for leak repairs. Estimated quantity: 10 LF.
- 2. Bid Item No. 3a.2 – Structural Repairs. Payment for this item will be made at the unit price bid per cubic foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal structural repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for this type of repairs. Estimated quantity: 10 CF.
- 3. Bid Item No. 3a.3 – Surface Repairs. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal concrete surface repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

Bid Item No. 3b – External. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and

Initials_____

required for Clarifier No.1 external concrete repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

Bid Item No. 3c – Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 3a and 3b. The unit price bid for this item is the payment, on per square foot basis, for all labor, equipment and material for all work necessary and required for additional crack repairs for Clarifier No. 1 described in Section 03 93 00 for which payment is not provided under other bid items. This item includes, but is not limited to, mobilization of all required equipment for the repairs. Measurements for additional crack repairs shall be approved by the Engineer. Estimated quantity is 50 square feet.

- D. Bid Item No. 4 - Clarifier Equipment - Installed and Grouted. Payment of the applicable lump sum price shall be full compensation for furnishing a circular scraper clarifier completely with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation. Unit of measurement is lump sum.
- E. Bid Item No. 5 – Walkway Bolts Replacement. Payment for walkway bolts will be made at the unit price bid per item. This price shall constitute full compensation for providing all labor, equipment and material to perform the required work when ordered by the Engineer. The Engineer will determine which items, if any, in this section will be performed based on future inspections of the existing clarifiers. Work on each item in this section is not to begin until specifically authorized by the County. Estimated quantity: 50 each.
- F. Bid Item No. 6 – Electrical and Instrumentation. The Work included in this item consists of providing and installing the equipment, materials, supplies, labor, etc. necessary to supply adequate electrical power to all electrical devices and facilities as shown on the Drawings. Unit of measurement is lump sum.

Alternate 1: Clarifier 2

- G. Bid Item No. 7 – Demolition of Existing Internal Component.
1. A single lump sum payment shall be made for the demolition and removal of all exiting internal components. Demolition includes, but not limited to:
 - a. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)

Initials_____

- b. Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)
 - c. Sludge rakes and squeegees, as well as, supporting structures.
 - d. Catwalk and railings from the stairs to the center support structures.
 - e. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.
 - f. Control panel, electrical and data wiring, and conduit.
2. Items to remain include:
- a. Existing access stairs for Clarifier #2.
3. Any items not listed in this section of the bid that the contractor deems necessary to demo to complete the work shall be included in this lump sum payment. No additional payment will be made for demolition unless previously approved by the County.

H. Bid Item No. 8 - Concrete Repairs with Coatings.

Bid Item No. 8a – Internal.

- 1. Bid Item No. 8a.1 – Crack Repairs. Payment for this item will be made at the unit price bid per linear foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal concrete crack repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for leak repairs. Estimated quantity: 10 LF.
- 2. Bid Item No. 8a.2 – Structural Repairs. Payment for this item will be made at the unit price bid per cubic foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal structural repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for this type of repairs. Estimated quantity: 10 CF.
- 3. Bid Item No. 8a.3 – Surface Repairs. Payment of the applicable lump sum price shall be full compensation for all labor,

Initials_____

equipment and material for all work necessary and required for Clarifier No.2 internal concrete surface repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

Bid Item No. 8b – External. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 external concrete repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

Bid Item No. 8c – Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 8a and 8b. The unit price bid for this item is the payment, on per square foot basis, for all labor, equipment and material for all work necessary and required for additional crack repairs for Clarifier No. 2 described in Section 03 93 00 for which payment is not provided under other bid items. This item includes, but is not limited to, mobilization of all required equipment for the repairs. Measurements for additional crack repairs shall be approved by the Engineer. Estimated quantity is 50 square feet.

- I. Bid Item No. 9 - Clarifier Equipment - Installed and Grouted. Payment of the applicable lump sum price shall be full compensation for furnishing a circular scraper clarifier completely with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation. Unit of measurement is lump sum.
- J. Bid Item No. 10 – New Circumferential Walkway. Payment for this item shall be full compensation for furnishing all labor, equipment, materials, tools and incidental item required to install new circumferential walkway around Clarifier No. 2 as shown on contract drawings. Unit of measurement is lump sum.
- K. Bid Item No. 11 – Electrical and Instrumentation. The Work included in this item consists of providing and installing the equipment, materials, supplies, labor, etc. necessary to supply adequate electrical power to all electrical devices and facilities as shown on the Drawings. Unit of measurement is lump sum.

Alternate 2: Materials Upgrade (Stainless Steel)

- L. Bid Item No. 12 – Clarifier No. 1. Based on Bid Item No. 4, payment for this item shall include the added cost to upgrade the Manufacturer's System Warranty,

Initials_____

covering Labor, Workmanship and Materials for Clarifier No. 1. This shall include material upgrade using stainless steel, all in accordance with the Plans and Specifications. Unit of measurement is lump sum.

- M. Bid Item No. 13 – Clarifier No. 2. Based on Bid Item No. 9, payment for this item shall include the added cost to upgrade the Manufacturer's System Warranty, covering Labor, Workmanship and Materials for Clarifier No. 2. This shall include material upgrade using stainless steel, all in accordance with the Plans and Specifications. Unit of measurement is lump sum.

END OF SECTION

SECTION 01 29 73

SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Submit to the Engineer a Schedule of Values allocated to the various lump sum portions of the Work, at the Pre-Construction Conference, and as otherwise specified or requested to be submitted earlier as evidence of the Apparent Low Bidder's qualifications.
2. Upon request of the Engineer support the values with data which will substantiate their correctness. The data shall include, but not be limited to quantity of materials, all sub-elements of the activity, and their units of measure.
3. The Schedule of Values shall establish the actual value for each activity of the Work to be completed taken from the Construction Schedule, and shall be used as the basis for the Contractor's Applications for Payment.

B. Related Requirements Described Elsewhere:

1. Section 01 29 76 Application for Payment

Initials_____

1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

- A. Type schedule on 8-1/2 inch x 11 inch white paper. Contractor's standard forms and computer printouts may be considered for approval by the Engineer upon Contractor's request. Identify schedule with:
 - 1. Title of project and location.
 - 2. County and purchase order number.
 - 3. Engineer and project number.
 - 4. Name and address of Contractor.
 - 5. Contract designation.
 - 6. Date of submission.
- B. Schedule shall list the installed value of the component parts of the Work in sufficient detail to serve as a basis for computing item prices for progress payments during construction.
- C. Identify each line item with the number and the title of the respective section of the Specifications.
- D. For each major item of the Work, list sub-values of major products or operations under the major item.
- E. For the various portions of the Work:
 - 1. The amount for each item shall reflect a total installed cost including a directly proportional amount of the Contractor's overhead and profit.
 - 2. For items on which progress payments will be requested for stored materials, break down the value into:
 - a. The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials. Payment for materials shall be limited to the invoiced amount only.
 - b. The total installed value.
- F. Round off figures to nearest dollar amount.
- G. The sum of the costs of all items listed in the schedule shall equal the total Contract Price.

Initials_____

- H. For each item which has an installed value of more than \$15,000, provide a breakdown of costs to list major products or operations under each item.

1.03 SUBSCHEDULE OF UNIT MATERIAL VALUES

- A. Submit a separate schedule of unit prices for materials to be stored on site and for those materials incorporated into the Work for which progress payments will be requested.
- B. The unit values for the materials shall be broken down into:
 - 1. Cost of the material, delivered and unloaded at the site, with taxes paid.
 - 2. Copies of paid invoices for component material shall be included with the payment request in which the material first appears.
- C. Only materials unique to the project may be billed when stored on site. Materials of standard use such as conduit, wire, small-diameter pipe, steel, etc., shall not be accepted for payment.
- D. The installed unit value multiplied by the quantity listed shall equal the percentage of the cost of that item in the Schedule of Values.

1.04 REVIEW AND RESUBMITTAL

- A. After review by Engineer, revise and resubmit Schedule of Values and Schedule of Unit Material Values as required.
- B. Resubmit revised schedules in same manner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 29 76

APPLICATIONS FOR PAYMENT

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Administrative and procedural requirements governing the Contractor's Applications for Payment.

1.02 SCHEDULE OF VALUES:

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of the Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 - a. Contractor's Construction Schedule.
 - b. Application for Payment forms, including Continuation Sheets.
 - c. List of subcontractors.
 - d. Schedule of allowances.
 - e. Schedule of alternates.
 - f. List of products.
 - g. List of principal suppliers and fabricators.
 - h. Schedule of submittals.
 - 2. Submit the Schedule of Values to the Engineer at the earliest possible date but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.
 - 3. Subschedules: Where Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.

Initials_____

- B. Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of the Engineer.
 - c. Project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of both labor and materials.
 3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items.
 4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
 5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or

equipment, purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.

6. Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Unit-Cost Allowances: Show the line-item value of unit-cost allowances, as a product of the unit cost, multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents.
8. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.03 APPLICATIONS FOR PAYMENT:

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Engineer and paid for by the County. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.
- B. Payment-Application Times: The date for each progress payment is the 15th day of each month. The period covered by each Application for Payment starts on the day following the end of the preceding period and ends 15 days prior to the date for each progress payment.
- C. Payment-Application Forms: Use forms provided by the County for Applications for Payment. Same copies are included in Section 00 62 76 - Application and Certificate for Progress Payment.
- D. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Engineer will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.

- E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to NAU by a method ensuring receipt within 24 hours. One copy shall be complete, including waivers of lien and similar attachments, when required.
- F. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application.
 - 1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit final or full waivers for such items.
 - 3. Waiver Forms: Submit waivers of lien on forms provided herein, and executed as indicated.
 - 4. Waiver Forms: Submit waivers of lien on forms which comply with State statutes, and executed in a manner, acceptable to the County.
- G. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment, include the following:
 - 1. List of subcontractors.
 - 2. List of principal suppliers and fabricators.
 - 3. Schedule of Values.
 - 4. Contractor's Construction Schedule (preliminary if not final).
 - 5. Schedule of principal products.
 - 6. Schedule of unit prices.
 - 7. Submittal Schedule (preliminary if not final).
 - 8. List of Contractor's staff assignments.
 - 9. List of Contractor's principal consultants.
 - 10. Copies of building permits.

11. Copies of authorizations and licenses from governing authorities for performance of the Work.
 12. Initial progress report.
 13. Report of preconstruction meeting.
 14. Certificates of insurance and insurance policies.
 15. Performance and payment bonds.
 16. Data needed to acquire the County's insurance.
 17. Initial settlement survey and damage report, if required.
- H. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.
1. This application shall reflect Certificates of Partial Substantial Completion issued previously for County occupancy of designated portions of the Work.
 2. Administrative actions and submittals that shall precede or coincide with this application include:
 - a. Occupancy permits and similar approvals.
 - b. Warranties (guarantees) and maintenance agreements.
 - c. Test/adjust/balance records.
 - d. Maintenance instructions.
 - e. Meter readings.
 - f. Startup performance reports.
 - g. Changeover information related to County's occupancy, use, operation, and maintenance.
 - h. Final cleaning.
 - i. Application for reduction of retainage and consent of surety.

Initials_____

- j. Advice on shifting insurance coverages.
 - k. Final progress photographs.
 - l. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.
- I. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:
- 1. Completion of Project closeout requirements.
 - 2. Completion of items specified for completion after Substantial Completion.
 - 3. Ensure that unsettled claims will be settled.
 - 4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
 - 5. Transmittal of required Project construction records to the County.
 - 6. Certified property survey.
 - 7. Proof that taxes, fees, and similar obligations were paid.
 - 8. Removal of temporary facilities and services.
 - 9. Removal of surplus materials, rubbish, and similar elements.
 - 10. Removal of any access codes and/or locks used by the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 31 13
CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Within ten (10) days after the Notice to Proceed, prepare and submit to the Engineer an estimated initial construction progress schedule for the work.
- B. Submit revised progress schedules on a monthly basis or as necessary.
- C. No partial payments shall be approved by the Engineer until there is an approved construction progress schedule on hand.
- D. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor's schedule.

1.02 RELATED REQUIREMENTS

- A. Section 01 11 00: Summary of Work
- B. Section 01 31 19: Project Meetings

1.03 FORM OF SCHEDULES

- A. Prepare schedules in the form of a horizontal bar chart.
 - 1. Provide separate horizontal bar for each trade or operation within each structure or item.
 - 2. Horizontal time scale: in weeks from start of construction and identify the first work day of each month.
 - 3. Scale and spacing: allow space for notations and future revisions.

- B. Format of listings: the chronological order of the start of each item of work.
- C. Identification of listings: by major specification section numbers as applicable and structure.

1.04 CONTENT OF SCHEDULES

A. Construction Progress Schedule:

1. Show the complete sequence of construction by activity.
2. Show the dates for the beginning of, and completion of, each major element of construction. Specifically list, but not limited to (shown in no particular order):
 - a. Permits and Shop Drawing Submittals
 - b. Ordering and Receiving of Materials and Equipment
 - c. Inspection of Existing Systems
 - d. Major Work Items including Installation of Equipment and Appurtenances
 - e. Testing
 - f. Restoration
 - g. Startup
 - h. As-built Drawings
3. Show projected dollar cash flow requirements for each month of construction.
4. Show projected manhour requirements for each month of construction.

B. Submittals Schedule for Shop Drawings. Show:

1. The dates for Contractor's submittals.
2. The dates submittals will be required for County furnished products, if applicable.

Initials_____

3. The dates approved submittals will be required from the Engineer. Allow no less than twenty-one (21) calendar days for review and approval of shop drawings and samples by the Engineer. No less than thirty (30) calendar days will be required for major equipment that requires review by more than one engineering discipline.

C. A list of all long lead items (equipment, materials, etc.).

1.05 PROGRESS REVISIONS

- A. Indicate progress of each activity to date of submission by shading a portion of the bar and showing percentage of completion. Show actual percentage of completion for each item as of the 20th day of each month during construction.
- B. Show changes occurring since previous submission of schedule:
 1. Major approved changes in scope.
 2. Activities modified since previous submission.
 3. Revised projections of progress and completion.
 4. Other identifiable changes.
- C. Provide a narrative report as needed to define:
 1. Problem areas, anticipated delays, and the impact on the schedule.
 2. Corrective action recommended, and its effect.
 3. The effect of changes on schedules of subcontractors if applicable.

1.06 SUBMISSIONS

- A. Submit an initial schedule to the Engineer within ten (10) days after the Notice to Proceed.
 1. The Engineer will review schedules and return review copy within 15 days after receipt.
 2. If required, resubmit within five (5) days after return of review copy.
- B. Submit four (4) copies of revised monthly progress schedules with that month's application for payment.

1.07 DISTRIBUTION

- A. Distribute copies of the reviewed schedules to:
 - 1. Engineer.
 - 2. Job site file.
 - 3. Subcontractors.
 - 4. Other concerned parties.
 - 5. County (two copies).
- B. Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

1.08 CHANGE ORDERS

- A. Upon approval of a change order, the approved changes shall be reflected in the next scheduled revision or update submittal by Contractor.

1.09 SCHEDULE MONITORING

- A. At not less than monthly intervals or when specifically requested by Engineer, Contractor shall submit to the Engineer of an updated schedule for those activities that remain to be completed.
- B. The updated schedule shall be submitted in the form, sequence, and number of copies requested for the initial schedule.

1.10 PROGRESS MEETINGS

- A. For the monthly progress meeting, Contractor shall submit a three (3) week look-ahead schedule showing all activities in progress, uncompleted or scheduled to be worked during the three weeks. The three (3) weeks include the current week plus the next two (2) weeks. All activities shall be from the approved schedule and must be as shown on the schedule unless behind or ahead of schedule.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

PART 1- GENERAL

1.01 DESCRIPTION

A. Scope of Work

1. The Contractor shall cooperate and coordinate with NAU to schedule and administer the preconstruction meeting, periodic progress meetings, and specifically called meetings throughout the progress of the Work. The Contractor shall:
 - a. Prepare agenda for meetings.
2. Representatives of Contractor, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
3. The County will attend meetings to ascertain that the Work is expedited consistent with Contract Documents and construction schedules.
4. The Engineer shall provide meeting minutes of the preconstruction meeting and each progress meeting in its entirety.

B. Related Requirements Described Elsewhere:

1. Construction Schedules: Section 01 31 13.

1.02 PRE-CONSTRUCTION

Initials_____

- A. A preconstruction conference will be scheduled after award of contract and prior to beginning work. This meeting shall be attended by Engineer of Record, the County, and an authorized representative of Contractor.
- B. Meeting will consider matters of contract administration and initial construction operations.
- C. Contractor shall submit proposed construction schedule prior to or at preconstruction conference; see Section 01 33 23.

1.03 PROGRESS MEETINGS

- A. Periodic progress meetings will be held at a time and place mutually agreed upon at preconstruction conference. A responsible representative of Contractor who can bind Contractor/subcontractor to decisions shall attend. A responsible representative of other subcontractors working on site shall also attend.
- B. Meetings will be held to coordinate and expedite progress of work and shall be conducted by Contractor. Contractor and each subcontractor on site shall submit a written report at each meeting indicating:
 - 1. Work progress since last meeting.
 - 2. Upcoming work sequences and schedules.
 - 3. Requests for information.
- C. Contractor shall record meeting minutes and shall distribute a written summary of items discussed to all parties involved in the project within 48 hours of each meeting. The written summary shall document all issues discussed and decisions reached at progress meeting.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 32 33

CONSTRUCTION PHOTOGRAPHS

PART 1- GENERAL

1.0.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for construction photographs.

1.0.2 SUBMITTALS

- A. Submit CD's as specified in Section 01 33 23, Submittals and in PART 3 - this Section.
- B. Photographer shall submit a digital sample set of the type and quality required during construction, for review and acceptance by Engineer.

1.0.3 QUALITY ASSURANCE

- A. All photographs shall be taken and processed by a qualified photographer with experience in construction photography.

PART 2- PRODUCTS

2.01 PHOTOGRAPHIC REQUIREMENTS

Specified in PART 3, this Section.

PART 3- EXECUTION

3.01. PHOTOGRAPHS

- A. Contractor shall be responsible for photographs along the entire construction site to show the existing and general condition of the site prior to construction. Each photo will be required to have a date stamp in the lower right corner.
- B. Photographs shall be taken of the following areas and at the following times.
 - 1. Existing Site conditions before Site work is started. Number of views shall be adequate to cover the Site.

Initials_____

2. Finished Project after completion of Work. Number of views shall be adequate to show the finished Work. It is particularly important to provide a view of the restoration of the site upon completion of construction.
3. If Project is not completed during the Contract Time or authorized extensions, photographs shall continue to be taken at no increase in Contract Price.

C. Digital Images

1. Submit two (2) complete sets of digital image electronic files on a CD prior to starting work.
 - a. Provide images in JPEG format, with minimum 150 dpi resolutions.
 - b. Submit images that have same aspect ratio as the sensor, uncropped.
 - c. The photos shall be labeled electronically on each photograph. The label shall contain the Project Name and Number, date of exposure, and description of view.
 - d. Each disk submitted shall be labeled with Project name
 - e. Identify electronic media with date digital photographs were taken

D. Deliver prints to Engineer.

END OF SECTION

SECTION 01 33 23

SUBMITTALS

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Administrative and procedural requirements for submittals required for performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Shop Drawings.
 - 3. Product Data.
 - 4. Samples.
 - 5. Quality assurance submittals.

1.02 DEFINITIONS:

- A. Coordination Drawings show the relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in the space provided or to function as intended.
- B. Field samples are full-size physical examples erected on-site to illustrate finishes, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.
- C. Mockups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

1.03 SUBMITTAL PROCEDURES:

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

Initials_____

2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination. The Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
 3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
 - a. Allow 15 working days for initial review. Allow additional time if the Engineer must delay processing to permit coordination with subsequent submittals.
 - b. If an intermediate submittal is necessary, process the same as the initial submittal.
 - c. Allow 15 working days for reprocessing each submittal.
 - d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Engineer sufficiently in advance of the Work to permit processing.
- B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.
1. Provide a space approximately 4 by 5 inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
 2. Include the following information on the label for processing and recording action taken.
 - a. Project name.
 - b. Date.
 - c. Name and address of the Engineer.
 - d. Name and address of the Contractor.
 - e. Name and address of the subcontractor.

- f. Name and address of the supplier.
 - g. Name of the manufacturer.
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
- C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Engineer using a transmittal form. The Engineer will not accept submittals received from sources other than the Contractor without Contractor's review and approval markings and the action taken.
- D. Provide required Product Code Certification with Shop Drawings. Submittals that do not have Product Code Certification included will be returned for resubmission.

1.04 SHOP DRAWINGS:

- A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents.
 - 1. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings.
 - 2. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
 - 1. Dimensions.
 - 2. Identification of products and materials included by sheet and detail number.
 - 3. Compliance with specified standards.
 - 4. Notation of coordination requirements.
 - 5. Notation of dimensions established by field measurement.
 - 6. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

- C. Submittals: Submit one reproducible and one blue- or black line print; the reproducible will be returned.

1.05 PRODUCT DATA:

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
 - 1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Product Data not so marked will be returned without review. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
 - 2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
- B. Submittals: Submit 2 copies of each required submittal; submit 4 copies where required for maintenance manuals. Submit additional copies as required by the Contractor for distribution. The Engineer will retain one and will return the others marked with action taken and corrections or modifications required.
- C. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities.

1.06 SAMPLES:

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include

partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.

1. Mount or display Samples in the manner to facilitate review of qualities indicated. Prepare Samples to match the Engineer's sample. Include the following:
 - a. Specification Section number and reference.
 - b. Generic description of the Sample.
 - c. Sample source.
 - d. Product name or name of the manufacturer.
 - e. Compliance with recognized standards.
 - f. Availability and delivery time.
 2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the submittal and the actual component as delivered and installed.
 - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least 3 multiple units that show approximate limits of the variations.
 - b. Refer to other Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
 3. Submit a full set of choices where Samples are submitted for selection of color, pattern, texture, or similar characteristics from a range of standard choices. The Architect will review and return preliminary submittals with the Architect's notation, indicating selection and other action.
 4. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.
- B. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work. Show distribution on transmittal forms.

1.07 QUALITY ASSURANCE SUBMITTALS:

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.
- C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 01 Section "Quality Control."

1.08 ENGINEER'S ACTION:

- A. Except for submittals for the record or information, where action and return is required, the Engineer will review each submittal, mark to indicate action taken, and return promptly. Compliance with specified characteristics is the Contractor's responsibility regardless of action indicated.
- B. Action Stamp: The Engineer will stamp each submittal with a uniform, action stamp. The Engineer will mark the stamp appropriately to indicate the action taken. Do not use, or allow others to use, submittals marked "Not Approved, Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.
- C. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Engineer will return the submittal marked "Action Not Required."
- D. Unsolicited Submittals: The Engineer will return unsolicited submittals to the sender without action.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 35 29

SAFETY IN WASTEWATER WORKS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

The Contractor shall be responsible for conducting all work in a safe manner and shall take reasonable precautions to ensure the safety and protection of workers, property, and the general public. The Contractor's responsibility for protecting the public is described in Article 6 of the "General Conditions".

All construction work shall be conducted in accordance with the latest applicable requirements of Part 1926 of the Occupational Safety and Health Act, Safety and Health Regulations for Construction, Section 107 of the Contract Work Hours and Safety Standards Act, as well as any other local or state safety codes and regulations.

The Contractor shall designate a trained and qualified employee who is to be responsible for ensuring that the work is performed safely and in conformance with all applicable regulations. The name and resume of the designated safety supervisor shall be submitted to the Engineer prior to commencing any construction work.

The Contractor shall determine for himself the safety hazards involved in executing the work and the precautions necessary to conduct the work safely. If the Contractor is unsure as to any special hazards which may be unique to the various processes and facilities at the treatment plant, it shall be his responsibility to contact the Engineer and request such information in writing prior to beginning the work.

The Contractor shall bear all risks associated with performing the work and shall fully indemnify the County and Engineer.

Contractor shall be solely responsible for and shall assume 100% responsibility for all safety related requirements. Neither the County nor the Engineer shall be responsible for any safety violations or injuries/damages that may be sustained/incurred as a result of the violation of any safety related requirements."

1.02 SPECIAL REQUIREMENTS

Initials_____

- A. The Contractor's attention is directed to the fact that construction activities at wastewater facilities will occasionally involve work in potentially hazardous environments in which oxygen deficient, toxic, or explosive conditions may exist. Additional hazards arise from the presence of pathogens in the wastewaters and sludge found in the treatment plant and from the slimes and scum layers that coat walking and working surfaces. In dealing with these hazards, the Contractor shall take special precautions to ensure worker safety. Such precautions shall include, but shall not be limited to, the following, as applicable:

Installing temporary forced air ventilation equipment and ducts for fresh air in enclosed areas.

Using pneumatic tools and equipment instead of electric-driven equipment in hazardous areas.

Avoiding the use of cutting torches, field welding, and grinders in hazardous areas.

Cleaning and disinfecting working surfaces with hot water high pressure washers prior to commencing work.

Installing sealed wooden baffles or bulkheads to isolate working areas from hazardous atmospheres.

Providing portable oxygen meters, combustible gas detectors, and hydrogen sulfide detectors to continuously monitor the atmosphere in enclosed working areas.

Providing safety harnesses, safety lines, and recovery crews for workers in hazardous areas.

Providing self-contained breathing apparatus with spare air cylinders for workers in hazardous areas.

Providing dry chemical fire extinguishers and connected fire hoses in areas where a danger of fire or explosion exists.

Providing adequate, oxygen-equipped, first aid facilities.

Providing suitable wash-up areas and facilities for workers.

Installing temporary lighting using explosion-proof fixtures in hazardous environments.

Installing approved warning and hazard signs and posting safety procedures.

Instructing all workers as to the hazards present, the procedures to be followed, and the proper function and use of all safety and emergency equipment furnished.

Prior to commencing work on existing facilities and equipment, the Contractor shall notify the Plant Superintendent and shall ensure that the source of electrical energy to all affected equipment is shut off and locked out at the appropriate motor control center. Local switches and push-button stations, where provided, shall be locked in the off position.

Prior to entering or commencing work in a hazardous area, the Contractor shall ensure that all safety and emergency equipment is in place and in satisfactory operating condition.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 41 23

PERMITS AND FEES

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. County Responsibilities: The County will obtain the FDEP permit if required.
- B. Contractor responsibilities: Obtain and pay for all other permits and licenses required by authorities having jurisdiction, including but not limited to: land clearing permit, NPDES Notice of Intent and dewatering permit.
- C. Contractor shall be responsible to adhere to all provisions, requirements, and cost contained in all permits applicable to this project.

Initials_____

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 01 45 16

QUALITY CONTROL

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Administrative and procedural requirements for quality control services and testing and inspection laboratory services.

1.02 GENERAL:

- A. Specific quality control requirements for individual construction activities are specified in the Sections that specify those activities. Those requirements, including inspections and tests, cover production of standard products as well as customized fabrication and installation procedures.
- B. Inspections, test and related actions specified are not intended to limit the Contractor's quality control procedures that facilitate compliance with Contract Document requirements.
- C. Requirements for the Contractor to provide quality control services required by the Engineer, County, or authorities having jurisdiction are not limited by provisions of this Section.

1.03 CONTRACTOR RESPONSIBILITIES:

- A. Provide inspections, tests and similar quality control services specified in individual Specification Sections as the Contractor's responsibility and as required by governing authorities; these services include those specified to be performed by an independent agency and not by the Contractor. Include costs for these services in the Contract Sum.

Initials_____

- B. Provide and pay for costs of retesting and other related costs when:
1. Results of required inspections, tests or similar services prove unsatisfactory and do not indicate compliance with Contract Document requirements, regardless of whether the original test was the Contractor's responsibility.
 2. Construction is revised or replaced by the Contractor, where tests were required on original construction.
 3. Additional testing is needed or required by the Contractor.
 4. Additional trips to the project are necessary by an agency when scheduled times for tests and inspections are cancelled and the agency is not notified sufficiently in advance of cancellation to avoid the trip.
- C. Cooperate with agencies performing required inspections, tests and similar services and provide reasonable auxiliary services as requested.
1. Notify the agency sufficiently in advance of operations to permit assignment of personnel.
 2. Provide access to the Work and furnish incidental labor and facilities necessary to facilitate inspections and tests.
 3. Take adequate quantities of representative samples of materials that require testing and assist the agency in taking samples.
 4. Provide facilities for storage and curing of test samples.
 5. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 6. Secure and protect samples and test equipment at the Project site.
- D. Coordinate the sequence of activities to accommodate required services with a minimum of delay and coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
- E. Schedule times for inspections, tests, taking samples and similar activities.

1.04 COUNTY RESPONSIBILITIES:

Initials_____

- A. Provide inspections, tests and similar quality control services specified, except where they are specifically indicated as the Contractor's responsibility or are provided by another identified entity.
 - 1. Costs for these services are not included in the Contract Sum.
 - 2. The County will employ and pay for the services of an independent agency, testing laboratory or other qualified firm to perform the services required.
 - 3. The County reserves the right to contract an independent agency to conduct testing on any portion of the work.

1.05 TESTING AGENCIES RESPONSIBILITIES:

- A. Cooperate with the Engineer and Contractor in performance of their duties; provide qualified personnel to perform required inspections and tests.
- B. Notify the Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of their services.
- C. Agencies are not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.
- D. Agencies shall not perform any duties of the Contractor.

1.06 SUBMITTALS:

- A. Independent testing agencies shall submit 2 copies of certified written reports of each inspection, test or similar service to the Engineer and to the Contractor.
- B. Report Data: Written reports of each inspection, test or similar service shall include:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.

5. Names of individuals making the inspection or test.
6. Designation of the Work and test method.
7. Identification of product and Specification Section.
8. Complete inspection or test data.
9. Test results and interpretations of test results.
10. Ambient conditions at the time of sample-taking and testing.
11. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting.

1.07 QUALIFICATION OF SERVICE AGENCIES:

- A. Engage inspection and testing service agencies, including independent testing laboratories, which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and which specialize in the types of inspections and tests to be performed.
- B. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the State in which the Project is located.
- C. Inspection and testing agencies engaged by the Contractor shall be acceptable to Engineer and County.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 REPAIR AND PROTECTION:

- A. Upon completion of inspection, testing, sample-taking and similar services, repair damaged construction and restore substrates and finishes to eliminate deficiencies, including deficiencies in visual qualities of exposed finishes

- B. Protect construction exposed by or for quality control service activities, and protect repaired construction.
- C. Repair and protection is the Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing or similar services.

END OF SECTION

SECTION 01 52 00

CONSTRUCTION FACILITIES

PART 1 - GENERAL

- 1.01 DESCRIPTION: The following criteria shall govern the furnishing of and paying for temporary construction and service items. Such items shall be instituted at the beginning and maintained for the life of the work or until removal or termination is approved by the Engineer.
- 1.02 TEMPORARY FACILITIES:
 - A. Drinking Water: The Contractor shall provide cool water with dispensing utilities.
 - B. Construction Water: The Contractor shall provide temporary water for construction at the project site. The Contractor shall provide proper back flow devices in order to comply with regulations concerning back flow & cross connection.
 - C. It shall be the Contractor's responsibility to provide temporary electrical power for construction purposes.
 - D. Toilet Facilities: The Contractor shall furnish a portable, job-site toilet enclosure facility through a local company specializing and licensed in this business. The toilet enclosure shall be located on the project site at a point approved by the County. It shall be maintained daily by the supplying company and removed from the project site upon completion of the project.
- 1.03 SECURITY:

- A. General: The Contractor shall provide security, as necessary or required, to protect work and property at all times.
- B. Rodents and Other Pests: The Contractor, through debris removal, etc., shall control the creation of rodent or pest problems. Should such develop, the Contractor shall secure services of exterminator to control.
- C. Debris Control: Keep premises clean and free from accumulation of debris and rubbish. Provide trash and debris receptacles and require use. Remove from site at least weekly.
- D. Cleaning: As work is completed by trades, areas of work shall be cleaned in preparation for next trade, inspections or general safety of property and person.
- E. Project Safety: The Contractor shall comply with all applicable governmental and insuring company requirements relative to construction and project safety. Either the superintendent or another company representative on the site during all working hours, shall be trained in project safety and designated as Contractor's Safety Director.

1.04 QUALITY ASSURANCE:

- A. Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
 - 1. Building Code Requirements
 - 2. Health and Safety Regulations
 - 3. Utility Company Regulations
 - 4. Police, Fire Department and Rescue Squad Rules
 - 5. Environmental Protection Regulations

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 57 26

DUST CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION

Limit blowing dust caused by construction operations by applying water or employing other appropriate means or methods to maintain dust control.

1.02 PROTECTION OF ADJACENT PROPERTY

The bidders shall visit the site and note the buildings, landscaping, roads, parking areas and other facilities near the work site that may be damaged by their operations. The Contractor shall make adequate provision to fully protect the surrounding area and will be held fully responsible for all damages resulting from his operations.

Dust, Fumes, Spray, or Spills:

Protect all existing facilities (indoors or out) from damage by the above hazards (indoors or out);

Protect motors, bearings, electrical gear, instrumentation, and building or other surfaces from dirt, dust, welding fumes, paint spray, spills or droppings causing wear, corrosion, malfunction, failure or defacement by enclosure, sprinkling or other dust palliatives, masking and covering, exhausting or containment.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 65 00

DELIVERY, STORAGE AND HANDLING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section specifies the general requirements for the delivery handling, storage and protection for all items required in the construction of the Work. Specific requirements, if any, are specified with the related item.

1.02 TRANSPORTATION AND DELIVERY

- A. Transport and handle items in accordance with manufacturer's instructions.
- B. Schedule delivery to reduce long term onsite storage prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the Engineer.
- C. Coordinate delivery with installation to ensure minimum holding time for items that are hazardous, flammable, easily damaged or sensitive to deterioration.
- D. Deliver products to the site in manufacturer's original sealed containers or other packing systems, complete with instructions for handling, storing, unpacking, protecting and installing.
- E. All items delivered to the site shall be unloaded and placed in a manner which will not hamper the Contractor's normal construction operation or those of subcontractors and other contractors and will not interfere with the flow of necessary traffic.
- F. Provide necessary equipment and personnel to unload all items delivered to the site. Delivery shall not be accepted by County's personnel.
- G. Promptly inspect shipment to assure that products comply with requirements, quantities are correct, and items are undamaged. For items furnished by others (i.e. County, other contractors), notify Engineer verbally, and in writing, of any problems.

Initials_____

1.03 STORAGE AND PROTECTION

- A. Store and protect products in accordance with the manufacturer's instructions, with seals and labels intact and legible. Storage instruction shall be studied by the Contractor. Instructions shall be carefully followed and a written record of this kept by the Contractor. Arrange storage to permit access for inspection.
- B. Store loose granular materials on solid flat surface in a well-drained area. Prevent mixing with foreign matter.
- C. Cement and lime shall be stored under a roof and off the ground and shall be kept completely dry at all times. All structural, miscellaneous and reinforcing steel shall be stored off the ground or otherwise to prevent accumulation of dirt or grease, and in a position to prevent accumulations of standing water and to minimize rusting. Beams shall be stored with the webs vertical. Precast concrete shall be handled and stored in a manner to prevent accumulations of dirt, standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in manner to reduce breakage, cracking and spalling to a minimum.
- D. Mechanical, electrical equipment and instruments are subject to corrosive damage by the atmosphere if stored outdoors, even when covered by canvas. Such materials shall be stored in a weather-tight building to prevent corrosive or other heat and moisture related damage. The building may be a temporary structure on the site or elsewhere, but it must be satisfactory to the Engineer. Building shall be provided with adequate ventilation to prevent condensation. Maintain temperature and humidity within range required by manufacturers of the equipment to be stored.
 - 1. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guaranty the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

1.04 STORAGE AND HANDLING OF EQUIPMENT ON SITE

- A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed:

Initials_____

1. Materials shall not be shipped until approved by the Engineer. The intent of this requirement is to avoid unnecessary delivery of unapproved materials and to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall major equipment or finish products be delivered to the site more than one month prior to installation without written authorization from the Engineer. Materials shipped to the site, or temporarily stored off-site in approved locations, shall be stored in accordance with Paragraph 1.04, herein.
2. All equipment having moving parts such as gears, electric motors, etc. and/or instruments shall be stored in a temperature and humidity controlled building approved by the Engineer, until such time as the equipment is to be installed.
3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.
4. Manufacturer's storage instructions shall be carefully studied by the Contractor and reviewed with the Engineer by him. These instructions shall be carefully followed and a written record of this kept by the Contractor.
5. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half the load, once weekly for an adequate period of time to insure that the equipment does not deteriorate from lack of use.
6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the work, if stored for longer than ninety (90) days, shall have the bearings cleaned, flushed and lubricated prior to testing and startup, at no extra cost to the County.
7. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equivalent to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

Initials_____

1.05 SPARE PARTS

- A. Spare parts for certain equipment provided under Divisions 43: Process Gas And Liquid Handling, Purification, And Storage Equipment has been specified in the pertinent sections of the Specifications. The Contractor shall collect and store all spare parts so required in an area to be designated by the Engineer. In addition, the Contractor shall furnish to the Engineer an inventory listing all spare parts, the equipment they are associated with, the name and address of the supplier, and the delivered cost of each item. Copies of actual invoices for each item shall be furnished with the inventory to substantiate the delivered cost.

1.06 GREASE, OIL AND FUEL

- A. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. The County shall be furnished with a year's supply of require lubricants including grease and oil of the type recommended by the manufacturer with each item of equipment supplied.
- B. The Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial break-in of the equipment, which in no event shall be any longer than three (3) weeks of operation. This shall be completed prior to release of retainage.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 77 19
PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Administrative and procedural requirements for project closeout.
 - 1. Inspection procedures.
 - 2. Project record document submittal.
 - 3. Final cleaning.

1.02 SUBSTANTIAL COMPLETION:

- A. Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.
 - 1. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
 - 2. Advise County of pending insurance change-over requirements.
 - 3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents - refer to Section 01 78 36 Warranties and Bonds.
 - 4. Obtain and submit releases enabling the County unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
 - 5. Submit record drawings, maintenance manuals, and similar final record information.
 - 6. Complete start-up testing of systems, and instruction of the County's operating and maintenance personnel. Discontinue or change over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

Initials_____

7. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.
- B. When the Contractor considers the Work to be substantially complete, he shall submit a written notice to the Engineer that the Work, or designated portion of the Work, is complete and ready for inspection.
- C. Within 5 days of receipt of a request for inspection, the Engineer will either proceed with inspection or advise the Contractor of unfulfilled requirements. When the Engineer and County concur that the Work, or designated portion of the Work, is substantially complete, the Engineer will prepare the Certificate of Substantial Completion following inspection.
- D. Should the Engineer determine that the Work is not substantially complete, he will advise the Contractor of construction or other requirements that must be completed or corrected before the certificate will be issued.
 1. The Engineer will repeat inspection when requested and assured that the Work has been substantially completed.
 2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.03 FINAL COMPLETION:

- A. When Contractor considers the Work to be complete, he shall submit written certification to the Engineer that the Work is completed and ready for final inspection. Include the following:
 1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations.
 2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 3. Submit a certified copy of the Engineer's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Engineer.
 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion, or when the County took possession of and responsibility for corresponding elements of the Work.

Initials_____

5. Submit consent of surety to final payment.
 6. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
- B. The Engineer will inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Engineer.
1. Upon completion of inspection, the Engineer will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete, or of obligations that have not been fulfilled but are required for final acceptance.
 2. If necessary, reinspection process will be repeated.

1.04 RECORD DOCUMENT SUBMITTALS:

- A. Maintain at the site one complete set of record documents; protect from deterioration and loss in a secure, fire-resistive location.
1. Provide access to record documents for the Engineer's reference during normal working hours.
 2. Label each document "PROJECT RECORD" in 2 inch high printed letters.
 3. Do not use for construction purposes.
- B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.
 2. Mark new information that was not shown on Contract Drawings or Shop Drawings.
 3. Show horizontal control dimensions in two directions at right angles for each underground fitting, valve, and appurtenance. Horizontal control

dimensions shall be tied to a permanent above ground marker such as a building or tank slab. Show elevations of storm sewers, gravity sewers including laterals, electric cables, television cables, telephone cables, force mains, water mains crossed, and any other underground utilities and structures. Information shall be obtained by surveying by a professional engineer or land surveyor registered in the State of Florida.

4. Note related Change Order numbers where applicable.
 5. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.
- C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction.
1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
 2. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation.
 3. Note related record drawing information and Product Data.
- D. Record Product Data: Maintain one copy of each Product Data submittal.
1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations.
 2. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation.
 3. Note related Change Orders and mark-up of record drawings and Specifications.
- E. Record Sample Submitted: Immediately prior to the date or dates of Substantial Completion, the Contractor will meet at the site with the Engineer and the County to determine which of the submitted Samples that have been maintained during progress of the Work are to be transmitted to the County for record purposes. Comply with delivery to the County's Sample storage area.

- F. Record Survey: Provide as-built survey prepared in accordance with the minimum technical standards for surveying as set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 61G17-6 Florida Administrative Code, pursuant to Section 472.027 Florida Statutes.
- G. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work.
- H. At Contract close-out, deliver one copy of Record Documents to Engineer for County. Accompany submittal with transmittal letter in duplicate containing the following information:
 - 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 his authorized representative.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 FINAL CLEANING:

- A. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program.
- B. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion and maintain until final completion, except in areas occupied or designated by County.
 - 1. Remove labels that are not permanent labels.
 - 2. Clean exposed exterior to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition.
 - 3. Leave concrete floors broom clean.

Initials_____

4. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances.
 5. Clean plumbing fixtures to a sanitary condition.
 6. Clean light fixtures and lamps.
 7. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances.
 8. Sweep paved areas broom clean; remove stains, spills and other foreign deposits.
 9. Rake grounds that are neither paved nor planted, to a smooth even-textured surface.
 10. Restore/grade dirt roadways to pre-construction conditions.
- C. Remove temporary protection and facilities installed for protection of the Work during construction.
- D. Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the County's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
- E. Where extra materials of value remaining after completion of associated Work have become the County's property, arrange for disposition of these materials as directed.

END OF SECTION

Initials_____

SECTION 01 78 23

OPERATING AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. Compile product data and related information appropriate for County's maintenance and operation of products furnished under Contract.
 - a. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent sections of Specifications.
2. Instruct County's personnel in maintenance of products and in operation of equipment and systems.

B. Related Requirements Described Elsewhere:

1. Project Closeout: Section 01 77 19
2. Process Gas and Liquid Handling, Purification, and Storage Equipment: Division 43.

1.02 QUALITY ASSURANCE

A. Preparation of data shall be done by personnel:

1. Trained and experienced in maintenance and operation of described products.
2. Familiar with requirements of this Section.
3. Skilled as technical writer to the extent required to communicate essential data.
4. Skilled as draftsman competent to prepare required drawings.

1.03 FORM OF SUBMITTALS

- A. Prepare data in form of an instructional manual for use by County's personnel.**

Initials_____

B. Format:

1. Size: 8-1/2 inches x 11 inches.
2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data.
4. Drawings:
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Reduce larger drawings and fold to size of text pages but not larger than 14 inches x 17 inches.
5. Provide fly-leaf for each separate product, or each piece of operating equipment.
 - a. Provide typed description of projects and major component parts of equipment.
 - b. Provide identification tabs.
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
 - a. Title of Project.
 - b. Identity of separate structure as applicable.
 - c. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality , three D-ring type binders with durable and cleanable white plastic covers. Binders shall be presentation type with clear vinyl covers on front, back and spine. Binders shall include two sheet lifters and two, horizontal inside pockets.
2. Maximum D-ring width: 2 inches.
3. When multiple binders are used, correlate the data into related consistent groupings.

- D. In addition to standard operation and maintenance manuals, all manufacturers supplying equipment specified in Divisions 43 shall submit their operation and maintenance manuals on magnetic media/floppy disks in Microsoft Word, WordPerfect or text, ".txt" formats. All graphic files shall be in BMP, PCS, CDR, JPEG, DWG, DXF or PDF formats.

1.04 CONTENT OF MANUAL

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
1. Contractor, name of responsible principal, address and telephone number.
 2. A list of each product required to be included, indexed to content of the volume.
 3. List, with each product, name, address and telephone number of:
 - a. Subcontractor, manufacturer and installer name, addresses and telephone numbers.
 - b. A list of each product required to be included, indexed to content of the volume.
 - c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement equipment including name, address and telephone number.
 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
- B. Product Data:
1. Include only those sheets which are pertinent to the specific product.
 2. Annotate each sheet to:
 - a. Clearly identify specific product or part installed.
 - b. Clearly identify data applicable to installation.
 - c. Delete references to inapplicable information.
 3. Operation and maintenance information as herein specified.

4. Record shop drawings as submitted and approved with all corrections made for each product.

C. Drawings:

1. Supplement product data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
2. Coordinate drawings with information in Project Record Documents to assure correct illustration of completed installation.
3. Do not use Project Record Documents as maintenance drawings.

D. Written test, as required to supplement product data for the particular installation:

1. Organize in consistent format under separate headings for different procedures.
2. Provide logical sequence of instruction of each procedure.

E. Copy of each warranty, bond and service contract issued.

1. Provide information sheet for County's personnel, give:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties or bonds.

1.05 MANUAL FOR MATERIALS AND FINISHES

- A. Submit six (6) copies of complete manual in final form.
- B. Content: for architectural products, applied materials and finishes:
 1. Manufacturer's data, giving full information on products.
 - a. Catalog number, size, composition.
 - b. Color and texture designations.

- c. Information required for reordering special manufacturing products.
- 2. Instructions for care and maintenance.
 - a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods which are detrimental to product.
 - c. Recommended schedule for cleaning and maintenance.
- C. Content, for moisture protection and weather-exposed products:
 - 1. Manufacturer's data, giving full information on products.
 - a. Applicable standards.
 - b. Chemical composition.
 - c. Details of installation.
 - 2. Instructions for inspection, maintenance and repair.
- D. Additional requirements for maintenance data: Respective sections of Specifications.

1.06 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit six (6) copies of complete manual in final form.
- B. Content, for each unit of equipment and system, as appropriate:
 - 1. Description of unit and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 - d. Summary of information listed on equipment and motor data plates.

2. Operating procedures:
 - a. Start-up, break-in, routine and normal operating instructions.
 - b. Regulation, control, stopping, shut-down and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
3. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Alignment, adjusting and checking.
4. Servicing and lubrication required.
5. Manufacturer's printed operating and maintenance instructions.
6. Description of sequence of operation by control manufacturer.
7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.
8. As-installed control diagrams by controls manufacturer.
9. Each Contractor's coordination drawings.
 - a. As-installed color coded piping diagrams.
10. Charts of valve tag numbers, with location and function of each valve.
11. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.

Initials_____

12. Other data as required under pertinent sections of specifications.
 13. Approved record shop drawings with all corrections made, and a copy of the warranty statement, checkout memo, demonstration test procedures and demonstration test certification.
- C. Content, for each electric and electronic systems, as appropriate:
1. Description of system and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Circuit directories and panel boards.
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 3. As installed color coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Adjustment and checking.
 6. Manufacturer's printed operating and maintenance instructions.

7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 8. Other data as required under pertinent sections of specifications.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of County's personnel.
- E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.07 SUBMITTAL SCHEDULE

- A. Submit two (2) copies of preliminary draft of proposed formats and outlines of contents of Operation and Maintenance Manuals within 90 days after Notice to Proceed.
- B. Submit two (2) copies of completed data in preliminary form no later than 20 days following Engineer's review of the last shop drawing of a product and/or other submittal specified under Section 01 33 23, but no later than delivery of equipment. One (1) copy will be returned with comments to be incorporated into the final copies and the other copy will be retained on-site for use in any early training.
- C. Submit six (6) copies of approved manual in final form directly to the offices of the Engineer, GAI Consultants, Inc., within 10 days after the reviewed copy or last item of the reviewed copy is returned.
- D. Provide six (6) copies of addenda to the operation and maintenance manuals as applicable and certificates as specified within 30 days after final inspection.

1.08 INSTRUCTION OF COUNTY'S PERSONNEL

- A. Prior to demonstration test, fully instruct County's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction. Review contents of manual with County's operating and maintenance personnel in full detail to explain all aspects of operations and maintenance.
- C. Instructors shall be fully qualified personnel as outlined within the individual equipment specifications. If no specific training specifications are listed with the equipment, the Contractor shall provide the instruction with qualified Contractor personnel.

- D. The Contractor shall provide a list to the County indicating the date, time and instructors that will be present for all training sessions.
- E. The instructors shall provide for and prepare lesson scopes and handouts for up to five individuals designated by the County that outline the items to be covered. Separate sessions for operation and maintenance instruction shall be provided consecutively. Handouts shall be submitted to the County with at least one week's notice prior to the training sessions.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 78 36

WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 RELATED REQUIREMENTS:

- A. General provisions of Contract, including General and Supplementary Conditions.
- B. Warranties and certificates for specific products - Respective Specification Sections.
- C. Project Closeout - Section 01 77 19.

1.02 SECTION INCLUDES:

- A. Administrative and procedural requirements for warranties, bonds, and certifications required by the Contract Documents, including County's Standard Maintenance Warranty Bond, manufacturers' standard warranties on products and special warranties.

1.03 WARRANTY REQUIREMENTS:

- A. Contractor shall warrant all work covered under this Agreement to be free from defects for a period of one year after the date of final acceptance of the project by the County.
- B. When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work or abandon in-place if acceptable to County in a manner that is acceptable to County.
- C. When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
- D. Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the County has benefited from use of the Work through a portion of its anticipated useful service life.

Initials_____

- E. Written warranties made to the County are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the County can enforce such other duties, obligations, rights, or remedies.
- F. The County reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.
- G. The County reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence is presented that entities required to countersign such commitments are willing to do so.

1.04 SUBMITTALS:

- A. Submit written warranties to the County before requesting inspection for Substantial Completion. If the County's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the County.
- B. When a designated portion of the Work is completed and occupied or used by the County, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the County within fifteen days of completion of that designated portion of the Work.
- C. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the County for approval prior to final execution.
- D. Provide written certifications of compliance and other commitments and agreements for continuing services in a form which includes all pertinent information including:
 - 1. Quantities and dates of shipments.
 - 2. Attestment that materials incorporated into the Work comply with specified requirements. Certification shall not be construed as relieving the Contractor from furnishing satisfactory materials, if the material is later found to not meet specified requirements.
 - 3. Signature of officer of company.

Initials_____

4. Laboratory test reports submitted with certificates of compliance shall show dates of testing, specification requirements under which testing was performed, and results of tests.
- E. Refer to individual Sections of Divisions 02 through 46 for specific content requirements, and particular requirements for submittal of special warranties.
- F. Form of Submittal:
1. Compile 3 copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer.
 2. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 3. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 in. by 11 in. paper.
 4. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.
 5. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

Initials_____

SECTION 01 91 14

START-UP AND DEMONSTRATION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Demonstrate to County and Engineer that the Work functions as a complete and operable system under normal and emergency operating conditions.
- B. Contractor shall provide all materials, personnel, equipment and expendables as needed and as specified to perform the required start-up and demonstration tests.

PART 2 - PRODUCTS

2.01 START-UP PLAN

- A. Submit for approval by the Engineer a detailed start-up plan outlining the schedule and sequence of all tests and start-up activities, including submittal of checkout forms, submittal of demonstration test procedures, start-up, demonstration and testing, submittal of certification of completed demonstration and training. Start-up and commissioning may not begin until the plan is approved by the Engineer.

PART 3 - EXECUTION

3.01 COMPONENT TEST AND CHECK-OUT

- A. Start-up Certification: Prior to system start-up, successfully complete all the testing required of the individual components of the Work. Submit six (6) copies of CHECK-OUT MEMO'S for each individual component or piece of equipment, signed by the Contractor or the subcontractor and the manufacturer's representative. All copies of the Operation and Maintenance Manuals must be provided before start-up may begin. These forms shall be completed and submitted before Instruction in Operation to County or a request for initiating any final inspections. Insert one (1) copy of this form into the applicable section of each Operation and Maintenance Manual.
- B. Demonstrate to the Engineer and the County's representative, that all temporary jumpers and/or bypasses have been removed and that all of the components are operating under their own controls as designated.

Initials_____

- C. Coordinate start-up activities with the County's operating personnel at the treatment plant site and with the Engineer prior to commencing system start-up.

3.02 START-UP

- A. Confirm that all equipment is properly energized, that the valves are set to their normal operating condition and that the flow path through the new Work is unobstructed.
- B. Slowly fill each hydrostatic structure in the process flow stream with water.
- C. Initiate start-up and training in accordance with and with the use of the plant operation and maintenance manuals.
- D. Observe the component operation and make adjustments as necessary to optimize the performance of the Work.
- E. Coordinate with County for any adjustments desired or operational problems requiring debugging.
- F. Make adjustments as necessary.

3.03 START-UP DEMONSTRATION AND TESTING

- A. After all Work components have been constructed, field tested, and started up in accordance with the individual Specifications and manufacturer requirements, and after all Check-Out Forms have been completed and submitted, perform the Start-Up Demonstration and Testing. The demonstration period shall be held upon completion of all systems at a starting date to be agreed upon in writing by the County or his representative. Prior to beginning the start-up demonstration testing, the Contractor shall submit a detailed schedule of operational circumstances for approval by the Engineer. The schedule of operational circumstances shall describe, in detail, the proposed test procedures for each piece of equipment. Provide similar test procedure forms for each piece of equipment or section of the Work to include all particular aspects and features of that equipment or section of the Work and as specified in the Technical Sections of the Specifications.
- B. The Start-Up Demonstration Testing will be conducted for five (5) consecutive days. The Work must operate successfully during the five (5) day testing period in the manner intended. If the Work does not operate successfully, or if the start-up is interrupted due to other contracts, the problems will be corrected and the test will start over from day one. The party causing the interruption will be subject to the assessment of actual damages due to delay.

- C. During the start-up demonstration period, operate the Work, instruct designated plant operating personnel in the function and operation of the Work, and cause various operational circumstances to occur. As a minimum, these circumstances will include average and peak daily flows, random equipment or process failures, tank overflows, surcharges, interlocks and bypasses. Demonstrate the essential features of the equipment and its relationship to other equipment. The approved schedule of operational circumstances and Demonstration Test Procedures Forms will be used as the agenda during the Start-Up Demonstration Testing period for all equipment and sections of the Work. Coordination of the demonstration test schedule will be accomplished through the Engineer.
- D. Acceptability of the Work's performance will be based on the Work performing as specified under these actual and simulated operating conditions, to provide water treatment facilities functioning as intended and as defined in the Contract Documents. The intent of the start-up demonstration and testing is for the Contractor to demonstrate to the County and the Engineer that the Work will function as a complete and operable system under normal, as well as emergency operating conditions, and is ready for final acceptance.
- E. Demonstrate the essential features of all the mechanical systems including, but not limited to, the following as they apply to the Work. Each system shall be demonstrated once only, after completion of satisfactory testing.
- F. Demonstrate the essential features of all electrical and instrumentation systems including, but not limited to, the following as they apply to the work:
 - 1. Electrical systems controls and equipment.
 - 2. Supervisory control and data acquisition system.
 - 3. Communications systems.
 - 4. LED Lighting fixtures (including relamping and replacing lenses).
 - a. Exit and safety fixtures.
 - b. Fixtures, indoor and outdoor.
 - c. Floodlighting.
 - 5. Panelboards.
 - a. Distribution panels.
 - b. Lighting panels.

- c. Main panels, power panels.
 - d. Switchboard.
 - 6. Generator Transfer Switch (automatic).
 - 7. Wiring devices.
 - a. Face plates.
 - b. Low-voltage controls.
 - c. Outlets: convenience, special purpose.
 - d. Switches: regular, time.
- G. Upon successful completion of the Start-up, Demonstration and Testing, the County's personnel will receive the specified training for each system. Training of the County's personnel will not be considered valid unless it takes place using a system that has successfully passed the Start-up, Demonstration and Testing.
- H. Upon completion of all specified operator training, the Contractor shall submit to the Engineer six (6) copies of the Certificate of Completed Demonstration Form, for each item of equipment or system in the Work, signed by the Contractor, Subcontractor, Engineer, and the County. Insert one (1) copy of this form in the applicable section of each Operation and Maintenance Manual. A sample Certificate of Completed Demonstration Form is attached.

Initials_____

CERTIFICATE OF COMPLETED DEMONSTRATION FORM

<input type="checkbox"/> COUNTY	_____	No. Copies	_____	CERTIFICATE OF COMPLETED DEMONSTRATION MEMO NO. _____
<input type="checkbox"/> ENGINEER:	_____	No. Copies	_____	
<input type="checkbox"/> ARCHITECT:	_____	No. Copies	_____	
<input type="checkbox"/> CONTRACTOR:	_____	No. Copies	_____	
<input type="checkbox"/> FIELD:	_____	No. Copies	_____	
<input type="checkbox"/> OTHER:	_____	No. Copies	_____	

PROJECT DATA

NAME: NAU WWTF
LOCATION: _____
COUNTY: _____
OTHER: _____

CONTRACT DATA

NUMBER: _____
DATE: _____
DRAWING NO: _____
SPECIFICATION
SECTION: _____

NOTE TO CONTRACTOR:

Submit five (5) copies of all information listed below for checking at least one (1) week before scheduled demonstration of the Work. After all information has been approved by the Engineer, give the County a Demonstration of Completed Systems as specified and have the County sign five (5) copies of this form. After this has been done, a written request for a final inspection of the system shall be made.

MEMORANDUM:

This memo is for the information of all concerned that the County has been given a Demonstration of Completed Systems on the work covered under this Specification Section. This conference consisted of the system operation, a tour on which all major items of equipment were explained and demonstrated, and the following items were given to the County:

- (a) County's copy of Operation and Maintenance Manual for equipment or systems specified under this Section containing approved submittal sheets on all items, including the following:
 - (1) Maintenance information published by manufacturer on equipment items.
 - (2) Printed warranties by manufacturers of equipment items.
 - (3) Performance verification information as recorded by the Contractor.
 - (4) Check-Out Memo on equipment by manufacturer's representative.
 - (5) Written operating instructions on any specialized items.
 - (6) Explanation of guarantees and warranties on the system.
- (b) Prints showing actual "As-Built" conditions.

Initials _____

- (c) A demonstration of the system in operation and of the maintenance procedures which will be required.

(Name of General Contractor)

By: _____
(Authorized Signature, Title and Date)

(Name of Subcontractor)

By: _____
(Authorized Signature, Title and Date)

Operation and Maintenance Manuals, Instruction Prints, Demonstration and Instruction in
Operation Received:

(Name of County)

By: _____
(Authorized Signature/Title/Date)

END OF SECTION

Initials_____

SECTION 02 41 13

DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. This Section includes furnishing all labor, materials, equipment and incidentals required and demolish, modify, alter, and convert existing structures, equipment, tanks and pipelines as required for the construction of rehabilitation of Clarifiers No. 1 and No.2 as shown on the Drawings and as specified herein.
2. This Section covers demolition necessary to allow existing plant operation during the construction phase to rehab existing Clarifiers No. 1 and No. 2. This Section also includes complete removal of the existing internal piping, mechanical, electrical equipment, existing and miscellaneous appurtenances encountered during construction operations.
3. This Section calls attention to certain activities necessary to maintain and facilitate operations during and immediately following construction and does not purport to cover all of the activities necessary. Exercise due concern for plant operation and diligently direct all activities toward maintaining continuous operation of the existing plant and minimizing operation inconvenience.
4. Demolition includes:
 - a. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)
 - b. Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)
 - c. Sludge rakes and squeegees, as well as, supporting structures.
 - d. Catwalk and railings from the stairs to the center support structures.
 - e. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.

Initials_____

f. Control panel, electrical and data wiring, and conduit.

5. The electrical subcontractor shall disconnect the power to electrical wiring from equipment to be removed. The Contractor shall then be responsible for removing all existing wiring, conduit, switches, junction boxes, pull boxes and other electrical devices.
6. The Contractor shall examine the proposed site, visit the proposed site and determine for himself the extent of the demolition work, the extent work whichever is affected therein and all conditions under which he is required to perform the various operations.
7. Clean each clarifier while each clarifier is out of service for the rehabilitation. Contractor shall pay all disposal costs associated with the removal all debris, grits, sand and sludge from each clarifier, as well as oil and grease from drive units.
8. Inspect site prior to commencing work. Determine scope of applicable site conditions. Prior to commencement of demolition activities, Contractor shall document in writing and photograph all existing conditions. Digital copies of all photos, at a size no smaller than 4" x 6" at 150 dpi minimum resolution, shall be provided to the County and Engineer for future reference. The Contractor shall be held responsible for any damages not documented in the submittal prior to commencement of demolition activities.
9. Commencing work constitutes Contractor's acceptance of site conditions, both surface and subsurface. No extra payment shall accrue to Contractor by virtue of unknown conditions or difficulties of performing this demolition work.

1.02 PERMITS AND NOTICES

- A. Permits and Licenses: Contractor shall obtain all necessary permits and licenses for performing the demolition work and shall furnish a copy of same to the Engineer prior to commencing the work. The Contractor shall comply with the requirements of the permits.
- B. Notices: Contractor shall issue written notices of planned demolition to companies or local authorities owning utility conduit, wires or pipes running to or through the project site. Copies of said notices shall be furnished to the Engineer.
- C. Utility Services: Contractor shall notify in writing utility companies or local authorities furnishing gas, water, electrical, telephone or sewer service to remove

Initials_____

any equipment owned by them in structures to be demolished and to remove, disconnect, cap or plug their services to facilitate demolition. Copies of notices shall be furnished to the Engineer.

1.03 CONDITIONS OF STRUCTURES

- A. Conditions existing at the time of inspection for bidding purposes will be maintained by the County insofar as practicable. However, variation among the structures may occur prior to the start of demolition work.

1.04 RULES AND REGULATIONS

- A. The Standard Building Code shall control the demolition, modification or alteration of the existing buildings or structures.
- B. No blasting shall be done on site. The Contractor shall not bring or store any explosives on site.
- C. Disposal of wastewater contents, disinfection and disposal of demolished plant components shall be in accordance with FDEP rules and regulations.
- D. Comply with the current provisions of the following Codes and Standards:
 - 1. ASTM - American Society for Testing and Materials.
 - 2. Standard Specifications B Agency Specified
 - 3. Uniform Building Code

1.05 DISPOSAL OF MATERIAL

- A. Salvageable material shall become the property of the County, if the County so requests. The Contractor shall dismantle all materials to such a size that it can be readily handled, and deliver any of this salvageable material requested by the County to a storage area designated by the County.
- B. Delivery and Storage: Do not deliver to the job site nor store thereon demolition equipment and materials prior to receiving written notice to proceed. Confine storage to areas approved by the County.
- C. Disposal: Legally dispose of off site products of demolition during or at end of each day's work. Contractor shall pay all disposal costs associated with the project
- D. The following materials are examples of the type that the County desires to keep:

1. Pipes and valves greater than 6 inches in diameter (exclusive of buried items).
 2. All machinery and equipment.
 3. All electric panels.
 4. Scrap aluminum or other valuable recyclable metals.
- E. All components are formally in contact with sewage is to be washed by the Contractor with a solution consisting hypochlorite and 50% water. The washwater is to be disposed of into the onsite sanitary system by the Contractor.
- F. Any materials that the County rejects shall become the Contractor's property and must be removed from the site.
- G. Waste Concrete and masonry shall be hauled to a legal disposal site by the Contractor.
- H. All other waste metal, wood and other material shall be hauled to a waste disposal site by the Contractor.
- I. The storage of or sale of removed items on the site shall not be allowed.
- J. The Contractor shall dispose of sludge, and grit at the NAU approved location.

1.06 SUBMITTALS

- A. The Contractor shall submit to the Engineers for approval, the proposed demolition and removal plan for the structures and modifications as specified herein prior to the start of work. The Contractor shall include in the schedule the coordination of shutoff, capping and continuation of utility service as required. The demolition and removal plan shall include as a minimum, the following:
1. A detailed sequence of demolition and removal work to ensure the uninterrupted progress of the WWTF operations and the expeditious completion of the work.
 2. Written evidence of approval by the County's lead operator of the work plan.
 3. Sequencing and coordination of the work with inspections and subsequent repairs.

- B. Before commencing work, all modifications necessary to bypass the structure to be demolished shall be completed. Contractor shall coordinate with the County's personnel to determine the locations of the relevant valves and fittings.

1.07 TRAFFIC AND ACCESS

- A. The Contractor shall conduct demolition and modification operations, and the removal of equipment and debris to ensure minimum interference with roads, streets and walks, both on-site and off-site, and to ensure minimum interference with occupied or used facilities.
- B. The Contractor shall at all time maintain safe and convenient access to the existing site.
- C. Do not close or obstruct streets or walks without permission from the County and Engineer. Provide alternate traffic routes around closed or obstructed access ways.
- D. Special attention is directed towards maintaining safe and convenient access to the existing facilities remaining in service by plant personnel and plant associated vehicles. Relocation of the Contractor's materials or equipment due to uncoordinated interruption will be at the Contractor's expense.

1.08 EXISTING UTILITIES

- A. The Contractor shall cooperate with the County and utility companies to shut off utilities serving structures of the existing facilities as required by demolition operations.
- B. The Contractor shall be solely responsible for making all necessary arrangements and for performing any necessary work involved in connection with the discontinuance or interruption of all public and private utilities or services under the jurisdiction of the County or utility companies.

1.09 POLLUTION CONTROL

- A. The Contractor shall use water sprinkling, temporary enclosures, and/or other suitable methods as necessary to limit the amount of dust rising and scattering in the air to the lowest level practical. The Contractor shall comply with the governing regulations governing such nuisances.
- B. The Contractor shall clean up all dust, dirt and debris caused by demolition operations. The Contractor shall return all plant and adjacent areas to conditions existing prior to the start of work.

1.07 PROTECTION:

A. Protection of Existing Site Improvements

1. References: Verify and maintain benchmarks, monuments and other reference points.
2. Replace if disturbed or destroyed.
3. Protection: Protect existing improvements noted to remain within designated limit(s) of work. Supply shoring, bracing, reinforcing and barricades as required.
4. Utilities: Keep in operation existing utility circuits and piping to remain except at the direction of the County.
5. Repair: If damage to site improvements to remain occurs during the course of the work, restore to the satisfaction of the County at no additional cost.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 SEQUENCE OF WORK

- A. The sequence of demolition and renovation of existing facilities shall proceed in accordance with the approved demolition and removal plan specified in Section 01 12 16 Sequence of Construction.

3.02 REMOVAL OF EXISTING FACILITIES

- A. The Contract Documents indicate existing facilities to be demolished, salvaged, and/or relocated. Auxiliary utilities including such services as water, air, chemicals, drainage, lubrication, fluid power, electrical wiring, controls, and instrumentation are not necessarily indicated. The Contractor shall verify the scope of the Work to remove the equipment indicated; coordinate its shutdown, removal, replacement, or relocation; and submit an outage plan in accordance with Section 01 12 16 – Sequence of Construction. The removal of existing facilities for demolition, salvage, and relocation shall include the following requirements:
1. Exposed piping including vents, drains, and valves shall be removed. Where exposed piping penetrates existing floors and walls, the piping, including pipe support, anchors, and bolts, shall be removed. Resultant openings in the structure shall be repaired as indicated.

Initials_____

2. When existing pipe is removed, the Contractor shall plug the resulting open ends whether or not so indicated. Where removed piping is exposed, the remaining piping shall be blind-flanged.
- B. Existing equipment, non-buried valving and piping, and appurtenances shall be removed or abandoned in-place as specified herein.
- C. Patching as required by Division 03:
 1. Where removals leave holes and damaged surfaces exposed in the finished Work, patch and repair to match adjacent finished surface as texture and finish.
 2. Where new Work is to be applied to existing surfaces, perform removals and patching in a manner to provide surfaces suitable for receiving the new Work.
 3. Patching shall be as specified and indicated, and shall include:
 - a. Fill holes and depressions left as a result of removals in existing concrete walls with an approved patching material, applied in accordance with the manufacturer's printed instructions.
- D. All non-buried equipment, piping and appurtenances shall be cleaned, flushed and drained. Equipment to be retained by the County as specified in Paragraph 1.05, above, shall be dismantled sufficiently to permit thorough cleaning and draining. All valves shall be left open.

3.03 QUALITY CONTROL

- A. The Contractor shall protect all existing materials and equipment to be salvaged or reused from damage.
- B. The Contractor shall cap or plug all lines to be abandoned. The Contractor shall place covers and label all junction boxes, conduits and wire as abandoned.
- C. The Contractor shall promptly repair any and all damage caused to remaining facilities at no cost to the County.
- D. Regulatory Requirements: Demolish existing site improvements as specified herein, in an orderly and careful manner. Comply with all local codes and ordinances.
- E. Equipment: Use equipment specifically designed for the demolition of each type

Initials_____

of material.

- F. Labor: Employ workmen skilled in the use of the equipment being utilized for demolition.

3.04 REHABILITATION

- A. Certain areas of existing structures, piping, conduits, and the like will be affected by Work necessary to complete modifications under this Contract. The Contractor shall be responsible to rehabilitate those areas affected by its construction activities.
- B. Pipes, castings, or conduits shall be grouted in place by pouring in grout under a head of at least 4 inches. The grout shall be poured or rammed or vibrated into place to fill completely the space between the pipes, castings, or conduits, and the sides of the openings so as to obtain the same water tightness as through the wall itself. The grouted casings shall then be water cured.
- C. In locations where the surface of the grout will be exposed to view, the non-shrink grout shall be recessed approximately 1/2-inch and the recessed area filled with cement mortar grout.
- D. When new piping is to be connected to existing piping, the existing piping shall be cut square and ends properly prepared for the connection. Any damage to the lining and coating of the existing piping shall be repaired. Dielectric insulating joints shall be installed at interconnections between new and existing piping.
- E. Where existing piping, supports, and associated appurtenances are removed, the Contractor shall rehabilitate the affected area such that little or no evidence of the previous installation remains.
- F. The area of concrete to be rehabilitated shall be scored by saw cutting clean, straight lines to a minimum depth of 1-1/2 inches, and concrete within the scored lines removed to a depth of 1-1/2 inches (or the depth of cover over reinforcing steel, whichever is less). The area within the scored lines shall be patched with non-shrink grout to match the adjacent grade and finish.

3.05 DISPOSAL

- A. Demolition and removal of debris shall minimize interference with roads, streets, walks, and other adjacent occupied or used facilities that shall not be closed or obstructed without permission from the County. Alternate routes shall be provided around closed or obstructed traffic ways.

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- B. Site debris, rubbish, and other materials resulting from reconstruction operations shall be legally removed and disposed of. Structures and equipment to be demolished shall be cleaned prior to demolition and the wash water properly disposed of. No trace of these structures shall remain prior to placing of backfill in the areas from which structures were removed.
- C. Refuse, debris, and waste materials resulting from demolition and clearing operations shall not be burned.

3.06 CLEANING

- A. During and upon completion of work, the Contractor shall promptly remove tools and equipment, surplus materials, rubbish, debris, and dust and shall leave areas affected by Work in a clean, approved condition.
- B. Adjacent structures shall be cleaned of dust, dirt, and debris caused by reconstruction, as requested by the Engineer or directed by governing authorities, and adjacent areas shall be returned to condition existing prior to start of Work.

END OF SECTION

SECTION 03 60 00

GROUT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Scope of Work: The work included in this Section consists of grouting the various items listed hereinafter and indicated on the Drawings.

1.02 SUBMITTALS

- A. Submit to the Engineer, in accordance with Section 01 33 23, Submittals, showing materials of construction and details of installation for:
 - 1. Commercially manufactured nonshrink cementitious grout. The submittal shall include catalog cuts, technical data, storage requirements, product

Initials_____

life, working time after mixing, temperature considerations, conformity to required ASTM standards and Material Safety Data Sheet.

2. Commercially manufactured nonshrink epoxy grout. The submittal shall include catalog cuts, technical data, storage requirements, product life, working time after mixing, temperature considerations, conformity to required ASTM standards and Material Safety Data Sheet.
3. Cement grout. The submittal shall include the type and brand of the cement, the gradation of the fine aggregate, product data on any proposed admixtures and the proposed mix of the grout.
4. Concrete grout. The submittal shall include the mix design, constituent quantities per cubic yard and the water/cement ratio.

B. Laboratory Test Reports

1. Submit laboratory test data as required for concrete to be used as concrete grout.

C. Certifications

1. Certify that commercially manufactured grout products and concrete grout admixtures are suitable for use in contact with wastewater after 3 days curing.

D. Qualifications

1. Grout manufacturers shall submit documentation that they have at least 10 years experience in the production and use of the proposed grouts which they will supply.

1.03 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

1. ASTM C33 - Specification for Concrete Aggregates
2. ASTM C150 - Specification for Portland Cement
3. ASTM C531 - Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical Resistant Mortars, Grouts and Monolithic Surfacing and Polymer Concretes

4. ASTM C579 - Standard Test Method for Compressive Strength of Chemical Resistant Mortars, Grouts and Monolithic Surfacing and Polymer Concretes
 5. ASTM C827 - Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures
 6. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
 7. ASTM D696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics.
- B. U.S. Army Corps of Engineers Standard (CRD)
1. CRD C-621 - Corps of Engineers Specification for Nonshrink Grout
- C. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.04 QUALITY ASSURANCE

- A. Qualifications
1. The Contractor shall submit certification documents showing that application Contractor have at least 3 years experience in the use of the proposed grouts which they will use.
- B. Pre-installation Conference
1. Well in advance of grouting, hold a pre-installation meeting to review the requirements for surface preparation, mixing, placing and curing procedures for each product proposed for use. Parties concerned with grouting shall be notified of the meeting at least 10 days prior to its scheduled date.
- C. Services of Manufacturer's Representative
1. A qualified field technician of the nonshrink grout manufacturer, specifically trained in the installation of the products, shall attend the pre-installation conference and shall be present for the initial installation of each type of nonshrink grout. Additional services shall also be provided, as required, to correct installation problems.
- D. Field Testing

1. All field testing and inspection services required shall be provided by the Contractor using an independent third-party test lab. The Contractor shall sample the materials and shall provide any ladders, platforms, etc, for access to the work. The methods of testing shall comply in detail with the applicable ASTM Standards.

1.05 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the jobsite in original, unopened packages, clearly labeled with the manufacturer's name, product identification, batch numbers and printed instructions.
- B. Store materials in full compliance with the manufacturer's recommendations. Total storage time from date of manufacture to date of installation shall be limited to 6 months or the manufacturer's recommended storage time, whichever is less.
- C. Material which becomes damp or otherwise unacceptable shall be immediately removed from the site and replaced with acceptable material at no additional expense to the County.
- D. Nonshrink cement-based grouts shall be delivered as preblended, prepackaged mixes requiring only the addition of water.
- E. Nonshrink epoxy grouts shall be delivered as premeasured, prepackaged, three component systems requiring only blending as directed by the manufacturer.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Nonshrink Cementitious Grout
 1. Nonshrink cementitious grouts shall meet or exceed the requirements of ASTM C1107, Grades B or C and CRD C-621. Grouts shall be portland cement based, contain a pre-proportioned blend of selected aggregates and shrinkage compensating agents and shall require only the addition of water. Nonshrink cementitious grouts shall not contain expansive cement or metallic particles. The grouts shall exhibit no shrinkage when tested in conformity with ASTM C827.
 - a. General purpose nonshrink cementitious grout shall conform to the standards stated above and shall be SikaGrout 212 by Sika Corp.; Set Grout by Master Builders, Inc.; Gilco Construction Grout by

Initials_____

Gifford Hill & Co.; Euco NS by The Euclid Chemical Co.; NBEC Grout by U. S. Grout Corp. or equivalent.

- b. Flowable (Precision) nonshrink cementitious grout shall conform to the standards stated above and shall be Masterflow 928 by Master Builders, Inc.; Hi-Flow Grout by the Euclid Chemical Co.; SikaGrout 212 by Sika Corp.; Supreme Grout by Gifford Hill & Co.; Five Star Grout by U. S. Grout Corp. or equivalent.

B. Nonshrink Epoxy Grout

1. Nonshrink epoxy-based grout shall be a pre-proportioned, three component, 100 percent solids system consisting of epoxy resin, hardener, and blended aggregate. It shall have a compressive strength of 14,000 psi in 7 days when tested in conformity with ASTM D695 and have a maximum thermal expansion of 30×10^{-6} when tested in conformity with ASTM C531. The grout shall be Ceilcote 648 CP by Master Builders Inc.; Five Star Epoxy Grout by U.S. Grout Corp.; Sikadur 42 Grout-Pak by Sika Corp.; High Strength Epoxy Grout by the Euclid Chemical Co. or equivalent.

C. Cement Grout

1. Cement grouts shall be a mixture of one part portland cement conforming to ASTM C150, Types I, II, or III and 1 to 2 parts sand conforming to ASTM C33 with sufficient water to place the grout. The water content shall be sufficient to impart workability to the grout but not to the degree that it will allow the grout to flow.

D. Concrete Grout

1. Concrete grout shall be proportioned with cement, pozzolan (below the water line), coarse and fine aggregates, water, water reducer and air entraining agent to produce a mix having an average strength of 2500 psi at 28 days, or 2500 psi nominal early strength. Coarse aggregate size shall be 3/8-in for small repair or 1/2-in maximum large repair. Slump should not exceed 5-in and should be as low as practical yet still retain sufficient workability.
2. Synthetic reinforcing fibers shall be added to the concrete grout mix at the rate of 1.5 lbs of fibers per cubic yard of grout. Fibers shall be added from the manufacturer's premeasured bags and according to the manufacturer's recommendations in a manner which will ensure complete dispersion of the fiber bundles as single monofilaments within the concrete grout.

E. Water

Initials_____

1. Potable water, free from injurious amounts of oil, acid, alkali, organic matter, or other deleterious substances.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Grout shall be placed over cured concrete which has attained its full design strength unless otherwise approved by the Engineer.
- B. Concrete surfaces to receive grout shall be clean and sound; free of ice, frost, dirt, grease, oil, curing compounds, laitance and paints and free of all loose material or foreign matter which may effect the bond or performance of the grout.
- C. Roughen concrete surfaces by chipping, sandblasting, or other mechanical means to ensure bond of the grout to the concrete. Remove loose or broken concrete. Irregular voids or projecting coarse aggregate need not be removed if they are sound, free of laitance and firmly embedded into the parent concrete.
 1. Air compressors used to clean surfaces in contact with grout shall be the oilless type or equipped with an oil trap in the air line to prevent oil from being blown onto the surface.
- D. Remove all loose rust, oil or other deleterious substances from metal embedments or bottom of baseplates prior to the installation of the grout.
- E. Concrete surfaces shall be washed clean and then kept moist for at least 24 hours prior to the placement of cementitious or cement grout. Saturation may be achieved by covering the concrete with saturated burlap bags, use of a soaker hose, flooding the surface, or other method acceptable to the Engineer. Upon completion of the 24 hour period, visible water shall be removed from the surface prior to grouting. The use of an adhesive bonding agent in lieu of surface saturation shall only be used when approved by the Engineer for each specific location of grout installation.
- F. Epoxy-based grouts do not require the saturation of the concrete substrate. Surfaces in contact with epoxy grout shall be completely dry before grouting.
- G. Construct grout forms or other leakproof containment as required. Forms shall be lined or coated with release agents recommended by the grout manufacturer. Forms shall be of adequate strength, securely anchored in place and shored to resist the forces imposed by the grout and its placement.

Initials_____

1. Forms for epoxy grout shall be designed to allow the formation of a hydraulic head and shall have chamfer strips built into forms.
- H. Level and align the structural or equipment bearing plates in accordance with the structural requirements and the recommendations of the equipment manufacturer.
- I. Equipment shall be supported during alignment and installation of grout by shims, wedges, blocks or other approved means. The shims, wedges and blocking devices shall be prevented from bonding to the grout by appropriate bond breaking coatings and removed after grouting unless otherwise approved by the Engineer.

3.02 INSTALLATION - GENERAL

- A. Mix, apply and cure products in strict compliance with the manufacturer's recommendations and this Section.
- B. Have sufficient manpower and equipment available for rapid and continuous mixing and placing. Keep all necessary tools and materials ready and close at hand.
- C. Maintain temperatures of the foundation plate, supporting concrete, and grout between 60 and 90 degrees F during grouting and for at least 24 hours thereafter or as recommended by the grout manufacturer, whichever is longer. Take precautions to minimize differential heating or cooling of baseplates and grout during the curing period.
- D. Take special precautions for hot weather or cold weather grouting as recommended by the manufacturer when ambient temperatures and/or the temperature of the materials in contact with the grout are outside of the 60 and 90 degrees F range.
- E. Install grout in a manner which will preserve the isolation between the elements on either side of the joint where grout is placed in the vicinity of an expansion or control joint.
- F. Reflect all existing underlying expansion, control and construction joints through the grout.

3.03 INSTALLATION - CEMENT GROUTS AND NONSHRINK CEMENTITIOUS GROUTS

- A. Mix in accordance with manufacturer's recommendations. Do not add cement, sand, pea gravel or admixtures without prior approval by the Engineer.

- B. Avoid mixing by hand. Mixing in a mortar mixer (with moving blades) is recommended. Pre-wet the mixer and empty excess water. Add premeasured amount of water for mixing, followed by the grout. Begin with the minimum amount of water recommended by the manufacturer and then add the minimum additional water required to obtain workability. Do not exceed the manufacturer's maximum recommended water content.
- C. Placements greater than 3-in in depth shall include the addition of clean, washed pea gravel to the grout mix when approved by the manufacturer. Comply with the manufacturer's recommendations for the size and amount of aggregate to be added.
- D. Place grout into the designated areas in a manner which will avoid segregation or entrapment of air. Do not vibrate grout to release air or to consolidate the material. Placement should proceed in a manner which will ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces. Provide grout holes as necessary.
- E. Place grout rapidly and continuously to avoid cold joints. Do not place cement grouts in layers. Do not add additional water to the mix (retemper) after initial stiffening.
- F. Just before the grout reaches its final set, cut back the grout to the substrate at a 45 degree angle from the lower edge of bearing plate unless otherwise approved by the Engineer. Finish this surface with a wood float (brush) finish.
- G. Begin curing immediately after form removal, cutback, and finishing. Keep grout moist and within its recommended placement temperature range for at least 24 hours after placement or longer if recommended by the manufacturer. Saturate the grout surface by use of wet burlap, soaker hoses, ponding or other approved means. Provide sunshades as necessary. If drying winds inhibit the ability of a given curing method to keep grout moist, erect wind breaks until wind is no longer a problem or curing is finished.

3.04 INSTALLATION - NONSHRINK EPOXY GROUTS

- A. Mix in accordance with the procedures recommended by the manufacturer. Do not vary the ratio of components or add solvent to change the consistency of the grout mix. Do not overmix. Mix full batches only to maintain proper proportions of resin, hardener and aggregate.
- B. Monitor ambient weather conditions and contact the grout manufacturer for special placement procedures to be used for temperatures below 60 or above 90 degrees F.

Initials_____

- C. Place grout into the designated areas in a manner which will avoid trapping air. Placement methods shall ensure the filling of all spaces and provide full contact between the grout and adjoining surfaces. Provide grout holes as necessary.
- D. Minimize "shoulder" length (extension of grout horizontally beyond base plate). In no case shall the shoulder length of the grout be greater than the grout thickness.
- E. Finish grout by puddling to cover all aggregate and provide a smooth finish. Break bubbles and smooth the top surface of the grout in conformity with the manufacturer's recommendations.
- F. Epoxy grouts are self curing and do not require the application of water. Maintain the formed grout within its recommended placement temperature range for at least 24 hours after placing, or longer if recommended by the manufacturer.

3.05 INSTALLATION - CONCRETE GROUT

- A. Screed underlying concrete to the grade shown on the Drawings. Provide the surface with a broomed finish, aligned to drain. Protect and keep the surface clean until placement of concrete grout.
- B. Remove the debris and clean the surface by sweeping and vacuuming of all dirt and other foreign materials. Wash the tank slab using a strong jet of water. Flushing of debris into tank drain lines will not be permitted.
- C. Saturate the concrete surface for at least 24 hours prior to placement of the concrete grout. Saturation may be maintained by ponding, by the use of soaker hoses, or by other methods acceptable to the Engineer. Remove excess water just prior to placement of the concrete grout. Place a cement slurry immediately ahead of the concrete grout so that the slurry is moist when the grout is placed. Work the slurry over the surface with a broom until it is coated with approximately 1/16 to 1/8-in thick cement paste. [(A bonding grout composed of 1 part portland cement, 1.5 parts fine sand, an approved bonding admixture and water, mixed to achieve the consistency of thick paint, may be substituted for the cement slurry.)]
- D. Place concrete grout to final grade using the scraper mechanism as a guide for surface elevation and to ensure high and low spots are eliminated. Unless specifically approved by the equipment manufacturer, mechanical scraper mechanisms shall not be used as a finishing machine or screed.
- E. Provide grout control joints as indicated on the Drawings.
- F. Finish and cure the concrete grout as specified for cast-in-place concrete.

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3.06 SCHEDULE

A. The following list indicates where the particular types of grout are to be used:

1. General purpose nonshrink cementitious grout: Use at all locations where non shrink grout is called for on the plans except for base plates greater in area than 3-ft wide by 3-ft long and except for the setting of anchor rods, anchor bolts or reinforcing steel in concrete.
2. Flowable nonshrink cementitious grout: Use under all base plates greater in area than 3-ft by 3-ft. Use at all locations indicated to receive flowable nonshrink grout by the Drawings. The Contractor, at his/her option and convenience, may also substitute flowable nonshrink grout for general purpose nonshrink cementitious grout.
3. Nonshrink epoxy grout: Use for the setting of anchor rods, anchor bolts and reinforcing steel in concrete and for all locations specifically indicated to receive epoxy grout.
4. Cement grout: Cement grout may be used for grouting of incidental base plates for structural and miscellaneous steel such as post base plates for platforms, base plates for beams, etc. It shall not be used when nonshrink grout is specifically called for on the Drawings or for grouting of primary structural steel members such as columns and girders.
5. Concrete grout: Use for overlaying the base concrete under scraper mechanisms of clarifiers to allow more control in placing the surface grade.

END OF SECTION

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SECTION 03 93 00

CONCRETE REHABILITATION

PART 1 -GENERAL

1.01. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Except as shown or specified, the Work of this Section shall conform to the requirements of International Concrete Repair Institute (ICRI), 3166 S. River Rd., Suite 132, Des Plaines, IL 60018, (847) 827-0830, www.icri.org.
 - 1. ICRI Guideline No. 310.1R-2008 Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion (formerly Guideline No. 03730).
- C. ACI Repair Application Procedures RAP-1, RAP-6 and RAP-7

1.02. SUMMARY

- A. Section Includes:
 - 1. Type I – Concrete Crack Repairs
 - 2. Type I A – Crack or Joint Surface Filling
 - 3. Type I B – Crack Injection Repair
 - 4. Type II – Concrete Surface Repairs
 - 5. Type III – Concrete Repair with Exposed Reinforcing
 - 6. Type IV – Concrete Repairs with Replacement of Corroded Reinforcing
 - 7. Type V – Patching Holes Less than 1.5 in (Anchor Bolt Holes)

Initials_____

8. Type VI – Filling Voids and Penetrations Without Reinforcing

1.03. PRE-INSTALLATION MEETING

- A. Conduct a pre-installation meeting with design engineer after the Contractor completes the following:
 - 1. Empty concrete vessels
 - 2. Pressure wash concrete vessels
 - 3. Identify repair areas and type of repair
 - 4. Prepare and submit for the Engineer approval a field report listing the identified repair areas, type of repair and the estimated quantity (square footage or item) for each repair listed.
- B. Schedule pre-installation meeting after the date the Contractor receives the field report Engineer's approval.
- C. Pre-installation meeting: Contractor and Engineer will review jointly on site the Engineer's approved field report to agree in the type of repairs and the estimated quantities. Once Contractor and Engineer agree in type of repairs, the Contractor can proceed with the repairs.

1.04. ACTION SUBMITTALS

- A. Product Data: For each type of product. Include construction details, material descriptions, chemical composition, physical properties, test data, and mixing, preparation, and application instructions.
 - 1. Repair Procedures: for each type of repair, the Contractor shall submit a proposed application procedure including materials, surface preparation and cleaning, proportioning, equipment, application method, finishing, and curing information.

1.05. INFORMATIONAL SUBMITTALS

- A. Qualification Data: For product installers and manufacturers.
- B. Material Certificates: For each type of product supplied for mixing or adding to products at Project site.
- B. Product Test Reports: For each proposed product, provide tests performed by manufacturer and witnessed by a qualified testing agency.

Initials_____

- D. Field quality-control reports.

1.06. QUALITY ASSURANCE

- A. Manufacturer Qualifications: Each product manufacturer shall employ factory-trained technical representatives who are available for consultation and Project site inspection and assistance at no additional cost.
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by the manufacturer to apply the products proposed for this project.
- C. Maintenance Program: Prepare a written plan for maintenance of work, including each phase or process, protection of surrounding materials during operations, and control of debris and runoff during the Work. Describe in detail materials, methods, equipment, and sequence of operations to be used for each phase of work.

1.07. DELIVERY, STORAGE AND HANDLING

- A. Comply with manufacturer's written instructions for minimum and maximum temperature requirements and other conditions for storage.
- B. Store cementitious materials off the ground, under cover, in a dry location.
- C. Store aggregates covered and in a dry location; maintain grading and other required characteristics and prevent contamination.

1.08. FIELD CONDITIONS

- A. Environmental Limitations for Epoxies: Do not apply when air and substrate temperatures are outside limits permitted by manufacturer. During hot weather, cool epoxy components before mixing, store mixed products in shade, and cool unused mixed products to retard setting. Do not apply to wet substrates unless approved by manufacturer.
 - 1 Use only Class A epoxies when substrate temperatures are below or are expected to go below 40 deg F (5 deg C) within 8 hours.
 - 2 Use only Class A or B epoxies when substrate temperatures are below or are expected to go below 60 deg F (16 deg C) within 8 hours.
 - 3 Use only Class C epoxies when substrate temperatures are above and are expected to stay above 60 deg F (16 deg C) for 8 hours.

- B. Cold-Weather Requirements for Cementitious Materials: Do not apply unless concrete-surface and air temperatures are above 40 deg F (5 deg C) and will remain so for at least 48 hours after completion of Work.
- C. Cold-Weather Requirements for Cementitious Materials: Comply with the following procedures:
 - 1. When air temperature is below 40 deg F (5 deg C), heat patching material ingredients and existing concrete to produce temperatures between 40 and 90 deg F (5 and 32 deg C).
 - 2. When mean daily air temperature is between 25 and 40 deg F (minus 4 and plus 5 deg C), cover completed Work with weather-resistant insulating blankets for 48 hours after repair or provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 48 hours after repair.
 - 3. When mean daily air temperature is below 25 deg F (minus 4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for 48 hours after repair.
- D. Hot -Weather Requirements for Cementitious Materials: Protect repair work when temperature and humidity conditions produce excessive evaporation of water from patching materials. Provide artificial shade and wind breaks, and use cooled materials as required. Do not apply to substrates with temperatures of 90 deg F (32 deg C) and above.

PART 2 –PRODUCTS

2.0.1 MATERIALS, GENERAL

- A. Source Limitations: Obtain each color, grade, finish, type, and variety of product from single source with resources to provide products of consistent quality in appearance and physical properties.
- B. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

2.0.2 TYPE I A – CRACK OR JOINT SURFACE FILLING

- A. Concrete Surface Preparation:
 - 1. Route crack to a width of ¼” and ¼” depth.
 - 2. Clean out debris and loose concrete; vacuum or blow clear with compressed air.

3. Crack surface must be clean, dry and free of oil. Grease and other contaminants. Take precaution to prohibit surface from becoming contaminated prior to product application.

B. Primer (immersion service only):

1. Sikaflex 429
2. Approved Equal

C. Polyurethane, elastomeric sealant/adhesive:

1. Sikaflex-1 A
2. Approved Equal

2.0.3 TYPE I B – CRACK INJECTION REPAIR (WATERPROOF)

A. Concrete Surface Preparation:

1. Clean the crack surface thoroughly.
2. Seal the crack surface with Sikaset Plug or other approved surface sealing material.

B. Injection Port Installation and Application:

1. Contractor shall submit a proposed application procedure including size of injections, holesize, spacing, flushing procedure, injection pressure, proportioning, equipment, reinjection timing, curing and patching information.

C. Materials – Hydrophilic Polyurethane

1. Sikafix HH with Sikafix Accelerator
2. DeNeef HydroActive Flex LV

2.0.4 TYPE II – CONCRETE SURFACE REPAIRS

A. Concrete Surface Preparation:

1. Remove all loose materials, deteriorated concrete, laitance, existing coatings and other bond-inhibiting materials from the surface in accordance with SSPC-SP13/NACE 6 minimum surface profile of ICRI-

CSP6.

2. The edges of the repair should be saw cut perpendicular to the surface to a depth of at least 1/4". Break out the complete repair area to a minimum depth of 1/4" up to the sawed edge to prevent feather edging. Avoid cutting the reinforcing steel.
3. Surface must be clean, dry and free of oil, grease and other contaminants. Take precaution to prohibit surface from becoming contaminated prior to product application.

B. Bonding Agent:

- 1 Tnemec Series 217 (scrub coat)
- 2 Sherwin Williams Sher-Crete one coat @ 20 mils DFT.
- 3 Sika Armatex 110 EpoCem one coat @ 20 mils DFT.

C. Repair Mortar:

- 1 Tnemec Series 217
- 2 Sherwin Williams Steel-Seam **FT910**
- 3 SikaRepair 224

2.0.5 TYPE III – CONCRETE REPAIR WITH EXPOSED REINFORCING

A. Surface Preparation:

1. Concrete
 - a. Remove all loose materials, deteriorated concrete, laitance, existing coatings and other bond-inhibiting materials from the surface in accordance with SSPC-SP13/NACE 6 minimum surface profile of ICRI-CSP6.
 - b. The edges of the repair should be saw cut perpendicular to the surface to a depth of at least 1/4". Break out the complete repair area to a minimum depth of 1/4" up to the sawed edge to prevent feather edging. Avoid cutting the reinforcing steel.
 - c. Surface must be clean, dry and free of oil, grease and other contaminants. Take precaution to prohibit surface from becoming

Initials_____

contaminated prior to product application.

2. Steel Reinforcement

- a. Remove rust and active corrosion by sandblasting or mechanical wire brushing to produce white metal finish.
- b. Surface must be clean, dry and free of oil, grease and other contaminants. Take precaution to prohibit surface from becoming contaminated prior to product application.

B. Bonding Agent:

1. Concrete

- a. Tnemec Series 217 (scrub coat)
- b. Sherwin Williams Sher-Crete one coat @ 20 mils OFT.
- c. Sika Armatec 110 EpoCemor one coat @ 20 mils OFT.

2. Steel Reinforcing

- a. Tnemec Omnithane Series 1 @ 2.5-3.5 mils OFT.
- b. Sherwin Williams Sher-Crete two coats @ 10 mils OFT each.
- c. Sika Armatec 110 EpoCem two coats @ 20 mils OFT each.

C. Repair Mortar:

- 1 Tnemec Series 217
- 2 Sherwin Williams Steel-Seam FT91 0
- 3 SikaRepair 224

2.0.6 TYPE IV – CONCRETE REPAIRS WITH REPLACEMENT OF CORRODED REINFORCING

A. Surface Preparation:

1. Concrete

- a. Remove all loose materials, deteriorated concrete, laitance, existing coatings and other bond-inhibiting materials from the surface in accordance with SSPC-SP13/NACE 6 minimum surface profile of

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ICRI-CSP6.

- b. The edges of the repair should be saw cut perpendicular to the surface to a depth of at least ¼". Break out the complete repair area to a minimum depth of ¼" up to the sawed edge to prevent feather edging. Avoid cutting the reinforcing steel.
- c. Surface must be clean, dry and free of oil, grease and other contaminants. Take precaution to prohibit surface from becoming contaminated prior to product application.

2. Steel Reinforcement

- a. Where section loss of reinforcing bar is more than 25 percent, or 20 percent in two or more adjacent bars, cut bars and remove and replace per structural drawing details. Remove additional concrete as necessary to provide at least 3/4-inch clearance at existing and replacement bars. Splice replacement bars to existing bars according to ACI 318 (ACI 318M) by lapping, welding, or using mechanical couplings.
- b. Remove remaining rust and active corrosion by sandblasting or mechanical wire brushing to produce white metal finish.
- c. Surface must be clean, dry and free of oil, grease and other contaminants. Take precaution to prohibit surface from becoming contaminated prior to product application.

B. Bonding Agent:

1.

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rete

- a. Tnemec Series 217 (scrub coat)
- b. Sherwin Williams Sher-Crete one coat @ 20 mils OFT.
- c. Sika Armatex 110 EpoCem one coat @ 20 mils OFT.

2. Steel Reinforcing

- a. Tnemec Omnithane Series 1 @ 2.5-3.5 mils OFT.
- b. Sherwin Williams Sher-Crete two coats @ 10 mils OFT each.

Initials_____

- c. Sika Armatec 110 EpoCem two coats @ 20 mils OFT each.

C. Repair Mortar:

- 1. Tnemec Series 217
- 2. Sherwin Williams Steel-Seam FT910
- 3. SikaRepair 224
- 4. SikaTop 123 Plus

2.0.7 TYPE V – PATCHING HOLES LESS THAN 1.5 IN (ANCHOR BOLT HOLES)

A. Surface Preparation:

- 1. Clean out hole after removing anchor, pipe, bolt, or other installed item.
- 2. Brush out hole with a bottle-brush or similar tool, and compressed air.
- 3. Follow patching mortar manufacturer's detailed installation instructions.

B. Bonding Agent:

- 1. Tnemec Series 217 (scrub coat)
- 2. Sherwin Williams Sher-Crete one coat @ 20 mils OFT.
- 3. Sika Armatec 110 EpoCemor one coat @ 20 mils OFT.

C. Repair Mortar:

- 1 SikaDur 31 Hi-Mod Gel
- 2 Euclid Duralcrete Gel
- 3 SurePoxy H M Gel by Kaufman Products

2.0.8 TYPE VI – FILLING VOIDS AND PENETRATIONS WITHOUT REINFORCING

A. Surface Preparation:

- 1. Concrete

- a. Remove all loose materials, deteriorated concrete, laitance, existing coatings and other bond-inhibiting materials from the surface in accordance with SSPC-SP13/NACE 6 minimum surface profile of ICRI-CSP6.
- b. The edges of the repair should be saw cut perpendicular to the surface to a depth of at least ¼". Break out the complete repair area to a minimum depth of ¼" up to the sawed edge to prevent feather edging. Avoid cutting the reinforcing steel.
- c. Surface must be clean, dry and free of oil, grease and other contaminants. Take precaution to prohibit surface from becoming contaminated prior to product application.

B. Bonding Agent:

1.

Conc

rete

- a. Tnemec Series 217 (scrub coat)
- b. Sherwin Williams Sher-Crete one coat @ 20 mils OFT.
- c. Sika Armatex 110 EpoCem one coat @ 20 mils OFT.

C. Repair Mortar:

5. Tnemec Series 217
6. Sherwin Williams Steel-Seam FT910
7. SikaRepair 224
8. SikaTop 123 Plus

PART 3 -EXECUTION

3.0.1 EXAMINATION

- A. Notify County seven days in advance of dates when areas of deteriorated or delaminated concrete and deteriorated reinforcing bars will be located.
- B. Locate areas of deteriorated or delaminated concrete using hammer or chaindrag sounding and mark boundaries. Mark areas for removal by simplifying and

Initials_____

squaring off boundaries. At columns and walls make boundaries level and plumb unless otherwise indicated.

- C. Pachometer Testing: Locate at least three reinforcing bars using a pachometer, and drill test holes to determine depth of cover. Calibrate pachometer using depth of cover measurements, and verify depth of cover in removal areas using pachometer.
- D. Perform surveys as the Work progresses to detect hazards resulting from concrete-maintenance work.

3.0.2 PREPARATION

- A. Ensure that supervisory personnel are on-site and on duty when concrete maintenance work begins and during its progress.
- B. Preparation for Removal of Deteriorated Concrete: Examine construction to be repaired to determine best methods to safely and effectively perform concrete maintenance work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed in the course of repair.
 - 1 Verify that affected utilities have been disconnected and capped.
 - 2 Inventory and record the condition of items to be removed for reinstallation or salvage.
 - 3 Provide and maintain shoring, bracing, and temporary structural supports as required to preserve stability and prevent unexpected or uncontrolled movement, settlement, or collapse of construction being demolished and construction and finishes to remain.
- C. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from concrete maintenance work.
 - 1. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.
 - 2. Use only proven protection methods appropriate to each area and surface being protected.
 - 3. Provide barricades, barriers, and temporary directional signage to exclude public from areas where concrete maintenance work is being performed.

4. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of concrete maintenance work.
 5. Contain dust and debris generated by concrete maintenance work and prevent it from reaching the public or adjacent surfaces.
 6. Use water-mist sprinkling and other wet methods to control dust only with adequate, approved procedures and equipment that ensure that such water will not create a hazard or adversely affect other building areas or materials.
 7. Protect floors and other surfaces along haul routes from damage, wear, and staining.
 8. Provide supplemental sound-control treatment to isolate removal and dismantling work from other areas of the building.
 9. Protect adjacent surface and equipment by covering them with heavy polyethylene film and waterproof masking tape. If practical, remove items, store, and reinstall after potentially damaging operations are complete.
 10. Neutralize and collect alkaline and acid wastes for disposal off County's property.
 11. Dispose of debris and runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- D. Existing Drains: Prior to the start of work in an area, test drainage system to ensure that it is functioning properly. Notify Engineer immediately of inadequate drainage or blockage. Do not begin work in an area until the drainage system is in working order.
- 1 Prevent solids such as aggregate or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from concrete maintenance work.
 - 2 Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.
- E. Concrete Removal:
- 1 Provide shoring, bracing, and supports as necessary. Strengthen or add new supports when required during progress of removal work. Do not overload

Initials_____

structural elements with debris.

- 2 Saw-cut perimeter of areas indicated for removal to a depth of at least 1/4" deep. Make cuts perpendicular to concrete surfaces and no deeper than cover on reinforcement.
- 3 Remove deteriorated and delaminated concrete by breaking up and dislodging from reinforcement.
- 4 Remove additional concrete if necessary to provide a depth of removal of at least 1/4" deep over entire removal area.
- 5 Where half or more of the perimeter of reinforcing bar is exposed, bond between reinforcing bar and surrounding concrete is broken, or reinforcing bar is corroded, remove concrete from entire perimeter of bar and to provide at least a 3/4" clearance around bar.
- 6 Test areas where concrete has been removed by tapping with hammer, and remove additional concrete until unsound and disbonded concrete is completely removed.
- 7 Provide surfaces with a fractured profile of at least 1/4" in depth that are approximately perpendicular or parallel to original concrete surfaces. At columns and walls, make top and bottom surfaces level unless otherwise directed.
- 8 Thoroughly clean removal areas of loose concrete, dust, and debris.

3.0.3 APPLICATION

- A. General: Comply with manufacturer's written instructions and recommendations for application of products, including surface preparation.

3.0.4 FIELD QUALITY CONTROL

- A. Contractor will coordinate with the County and Engineer to allow for them to observe that the repairs are being conducted in accordance with the Contract Documents.

3.0.5 MANUFACTURER REPRESENTATION

- A. The product manufacturer(s)' representative will be required to attend the following to observe and provide guidance on the installation of the repair system:
 - 1 One (1) Pre-installation Meeting for each repair system to be installed

Initials_____

- 2 Four (4) field progress meetings
- 3 One (1) Substantial Walkthrough

END OF SECTION

SECTION 05 50 13

MISCELLANEOUS METAL

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install all miscellaneous metal complete as shown on the Contract Drawings and as specified herein.

1.02 QUALITY ASSURANCE

- A. Standards: Design, manufacturing and assembly of elements of the products herein specified shall be in accordance with, but not limited to, published standards of the following as applicable:

- 1. Aluminum Association (AA)

- a. AA M31C22A41

- (1) M31: Mechanical Finish, Fine Satin

- (2) C22: Finish, Medium Matte

- (3) A41: Clear Anodic Coating, Class I

- 2. American Society for Testing and Materials (ASTM)

- a. ASTM A36 - Standard Specification for Carbon Structural Steel

- b. ASTM A48 - Standard Specification for Gray Iron Castings

- c. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

- d. ASTM A108 - Standard Specification for Steel Bars, Carbon, Cold Finished, Standard Quality

Initials_____

- e. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
- f. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- g. ASTM A240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
- h. ASTM A276 - Standard Specification for Stainless Steel Bars and Shapes
- i. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
- j. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- k. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
- l. ASTM A536 - Standard Specification for Ductile Iron Castings
- m. ASTM A1008 - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable
- n. ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
- o. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate

- p. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
 - q. ASTM B429 - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube
 - r. ASTM F3125 - High Strength Structural Bolts, Steel and Alloy Steel, Heat Treated, 120 ksi (830 MPa) and 150 ksi (1040 MPa) Minimum Tensile Strength, Inch and Metric Dimensions
 - 3. American Iron and Steel Institute (AISI)
 - a. Specification for Structural Steel Buildings
 - 4. American Welding Society (AWS)
 - a. AWS D1.1 - Structural Welding Code Steel
 - b. AWS D1.2 - Structural Welding Code - Aluminum
 - 5. Federal Specifications
 - a. FS-FF-B-575C - Bolts, Hexagonal and Square
 - 6. Occupational Safety and Health Administration (OSHA)
 - 7. Florida Building Code (FBC)
 - 8. International Building Code (IBC)
 - 9. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.
- B. The work of this Section shall be completely coordinated with the work of other Sections and the Contract Drawings. Verify, at the site, both the dimensions and work of other trades adjoining items of work in this Section before fabrication and installation of items herein specified.

Initials_____

- C. Furnish to the pertinent trades all items included under this Section that are to be built into the work of other Sections.
- D. All welding shall be performed by AWS certified welders. Welding of steel shall conform to AWS D1.1 and welding of aluminum shall conform to AWS D1.2.

1.02 SUBMITTALS

- A. Submit to the Engineer, in accordance with Section 01 33 23 - Submittals showing materials of construction and details of installation for:
 - 1. Shop drawings showing sizes, finishes, locations, required hardware, and accessories and details for all fabricated metal work, threaded fasteners, and welds. Indicated welds, both shop and field, by symbols conforming to AWS Standards. Shop drawings for continually furnished items will be waived provided the Contractor submits a letter naming the manufacturer who will furnish these items and provide this manufacturer has on file with the Engineer a certified standard drawing containing in the information specified above and herein which has been approved by the Engineer.
 - 2. Setting diagrams, erection plans, templates, and directions for the installation of backing plates, anchors, and other items.
 - 3. Catalog descriptions of manufacturers' standard items.
 - 4. Working Drawings and calculations for Contractor design hatches and gratings.
 - 5. Specific instructions for all phases of installation including bolt hole size, preparation, placement, procedures, and instructions for safe handling of anchoring systems.
 - 6. Samples: submit samples as requested by the Engineer during the course of construction.
 - 7. Design Data:
 - a. Submit signed and sealed calculations or test data by Professional Engineer licensed in the State of Florida demonstrating that the railings will resist the loads specified in the Florida Building Code, latest edition

Initials_____

- b. Submit manufacturer's load and deflection tables for grating.
- 8. Test Reports:
 - a. Certified copy of mill test reports on each aluminum proposed for use showing the physical properties and chemical analysis.
- 9. Certificates:
 - a. Submit certification that the railing system is in compliance with OSHA requirements and the Florida Building Code, latest edition
 - b. Submit certificates that welders have been qualified under AWS, within the previous 12 months, to perform the welds required under this Section.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Identify and match mark, if applicable, all materials, items, and fabrications for installation or field assembly
- B. Wherever practicable, deliver items to the site as complete units, ready for installation with all anchors, hangers, fasteners, and miscellaneous metal items needed for installation included.
- C. Deliver items to be incorporated into the work of other trades in sufficient time to be checked prior to installation.
- D. Provide adequate storage facilities at the site for the protection and storage of all delivered materials. Handle and store in such a manner as to not damage factory finishes.
- E. Repair items which have become damage or corroded to the satisfaction of the Engineer prior to incorporating them into the work as not additional cost to the County.

1.04 PROJECT/SITE REQUIREMENTS

- A. Field measurements shall be taken at the site, prior to fabrication of items, to verify or supplement indicated dimensions and to ensure proper fitting of all items. Measurements shown in the Contract Drawings or provided in these Project Specification shall be field verified prior to fabrication and final installation of items.

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- | | | |
|-----|---|--|
| | b. Interior and Architectural Use | ASTM A240, Type 304 |
| 11. | Stainless Steel Bolts | ASTM A276, Type 316
Nuts, and Washers |
| 12. | Carbon Steel Bolts and Studs | ASTM A307, Grade A
(hot dip galvanized nuts and
washers where noted) |
| 13. | High Strength Steel Bolts, Nuts and Washers | ASTM F3125 (mechanically
galvanized per ASTM B695, Class 50, where noted) |
| | a. Elevated Temperature Exposure | Type I |
| | b. General Application | Type I or Type II |
| 14. | Galvanizing | ASTM A123, Zn w/0.5
percent minimum Ni |
| 15. | Galvanizing, hardware | ASTM A153, Zn w/0.5
percent minimum Ni |

2.03 ANCHORS, BOLTS AND FASTENING DEVICES

- A. Anchor bolt material shall be ASTM A307 unless otherwise noted.
- B. Unless otherwise noted, bolts for the connection of carbon steel or iron shall be steel machine bolts; bolts for the connection of galvanized steel or iron shall be galvanized steel or stainless steel machine bolts; and bolts for the connection of aluminum or stainless steel shall be stainless steel machine bolts.
- C. Unless otherwise noted, expansion anchors shall be zinc plated carbon steel wedge type anchors complete with nuts and washers. Type 316 stainless steel, wedge type anchors shall be used where they will be submerged or exposed to the weather or where stainless steel wedge type anchors are required. When the length or embedment of the bolt is not noted on the Contract Drawings, provide length sufficient to place the wedge and expansion sleeve portion of the bolt at least 1-inch behind the concrete reinforcing steel. Expansion anchors shall be Hilti, Kwik-bolt II; ITW Redhead trubolt, or equivalent approved by the Engineer.

Initials_____

- D. Compound masonry expansion anchors shall be lead expansion sleeve type anchors complete with nuts and washers. Anchors shall be precision die-cast zinc alloy with a minimum of two (2) lead alloy expansion sleeves. When the length or embedment of the bolt is not noted on the Contract Drawings, provide length sufficient to place the wedge and expansion sleeve portion of the bolt at least 1-inch behind the concrete reinforcing steel. Expansion anchors shall be Star Expansion Industries, Star Slugin, or equivalent approved by the Engineer.
- E. Adhesive capsule anchors shall be a two-part stud and capsule chemical resin anchoring system. Capsules shall contain premeasured amounts of polyester or vinyl ester resin, aggregate and a hardener contained in a separate vial within the capsule. Stud assemblies shall consist of an all-thread anchor rod with nut and washer. Adhesive capsule anchors shall be Hilti, HVU Adhesive Anchor; or equivalent approved by the Engineer.
- F. Adhesive anchors, for fastening to hollow concrete block or brick, shall be a three-part stud, screen and chemical dispenser anchoring system. Adhesive cartridges shall contain premeasured amounts of resin and hardener which are mixed and deposited in a screen tube by a dispenser. Stud assemblies shall consist of an all-thread anchor rod with nut and washer. Anchors shall be Hilti, HIT C-20 System, or equivalent approved by the Engineer.
- G. Automatic end welded headed anchor studs shall be flux ended studs made from cold drawn steel, ASTM A108 Grades C-1010 through C-1020. Headed anchor studs shall be Nelson, H4L Headed Concrete Anchors, or equivalent approved by the Engineer
- H. Machine bolts and nuts shall conform to Federal Specification FF-B-575C. Bolts and nuts shall be hexagon type. Bolts, nuts, screws, washers and related appurtenances shall be Type 316 stainless steel.
- I. Toggle bolts shall be Hilti, Toggler Bolt or equivalent.

2.04 METAL GRATING

- A. Grating shall have rectangular, 3/16-inch thick, bearing bars spaced 1-3/16-inch on center with cross bars spaced at 4-inch on center. All grating panels shall be banded with a bar the same size as the bearing bars.
 - 1. Grating shall not exceed the fabricator's maximum recommended span, and meet or exceed the following load and deflection criteria for the maximum span length at the opening being covered by the grating.

- a. The grating shall produce a deflection of 1/360 of the span or less under a uniform live load of 100-psf on the maximum span.
 - b. The grating shall produce a deflection of 1/360 of the span or less under a concentrated live load of 300-lbs applied at the mid point of the maximum span.
- 2. Openings 2-inch or greater in diameter/dimension and grating edges shall be banded with a bar of the same depth and thickness as the bearing bars. Cut bearing bars or cross bars shall be welded to the banding bar.
- 3. Provide trench grating with symmetrical cross bar arrangement.
- 4. Grating clamps, nuts, bolts, washers and other fastening devices for grating and grating supports shall be Type 316 stainless steel. All grating shall be anchored to the supporting system using saddle clips.
- B. Aluminum grating material shall be aluminum alloy 6063-T6 with an anodized finish. Cross bars shall be attached to the bearing bars with interlocked swaged joints. The grating shall be Type BS by Harsco Industrial; Type 19 SG-4 by Ohio Gratings, Inc.; or equivalent.
- C. Metal frames and supports for grating shall be of the same material as the grating unless otherwise shown on the Contract Drawings. Where aluminum supports are used, they shall be fabricated from aluminum alloy 6061-T6.

2.05 RAILINGS

- A. Handrail and railing systems shall comply with the requirements of OSHA and FBC.
- B. Aluminum railing and handrail shall be a welded or mechanically fastened, seamless, extruded aluminum pipe system. Rails shall be 6063-T6 alloy. Posts shall be 6061-T6 alloy. Splice and reinforcing sleeves, brackets, end caps, toeboards, etc, shall be aluminum alloy 6063-T6 or 6061-T6. Cast fittings shall be aluminum alloy No. 214. Railing system fastening hardware shall be Type 304 stainless steel. Aluminum shall have a mill finish. After welding, aluminum shall be anodized. All railing, posts, toeboards and exposed aluminum shall be anodized with an architectural Class I satin finish providing a minimum coating thickness of 0.7 mils and a minimum coating weight of 32 milligrams per square inch in compliance with AA M12C22A41.
- C. Railings shall be 2 rail welded railing systems, as shown on the Contract Drawings, fabricated with 1½-inch nominal diameter pipe. Posts shall be

Initials_____

Schedule 80 pipe, minimum and rails and handrail shall be Schedule 40 pipe, minimum. Posts and top rails shall be continuous. Spacing of posts shall not exceed 5-foot on center and shall be uniformly spaced except as otherwise shown on the Contract Drawings. Posts will be required on each side of structure expansion joints. All railing posts shall be vertical.

- D. Welds shall be circumferential welds ground smooth and even to produce a railing that is neat in appearance and structurally sound. Welding methods shall be in conformity with AWS standards for the materials being joined. All rail to post connections shall be coped and fastened by continuous welds. There shall be no burrs, sharp edges or protrusions on any weld on any part of the handrail system. After fabrication, the welds and surrounding area shall be cleaned and hand buffed to blend with the adjacent finish. All mechanical fasteners shall be unobtrusively located in countersunk holes with the top flush with the surface of the rail. Bends in the railing shall be as indicated by the Contract Drawings. No distortion of the circular railing shape will be allowed. Bends and terminal sections shall be made without the use of fittings. Corner bends shall be mitered and welded bends.
- E. Railing shall be assembled in sections as long as practical but shall not be greater than 24-foot in length. A field splice shall be used when an assembled section is to be attached to another section. Field splices shall be used in all railing panels that cross over structure expansion joints.
 - 1. Field splices shall use internal splice sleeves located within 8-inch of railing posts. The sleeve shall be welded to the rail on one side and fastened with a set screw to the rail on other side. The field splice shall be detailed to take the differential expansion between the railing system and the supporting structure.
 - 2. When the field splice occurs in a railing panel crossing a structure expansion joint, the sleeve shall be welded to the rail on one side and be free to slide in the rail on other side. The field splice shall be detailed to take the same movement as the structure expansion joint.
- F. The bases or supports for railing posts and handrail shall be the types indicated on the Contract Drawings.
 - 1. Where non-removable railing is set in concrete, the posts shall be placed in 2½-inch diameter formed concrete openings and firmly caulked with a nonsulphur compound, hydraulic cement equivalent to Por-Rok by Minwax Construction Products Division Sterling Drug, Montvale, NJ. Collars shall be placed around the post bases and fastened in place with set screws on the side of the post away from the walkway. Posts shall be placed with the centerline 4-inch from the edge of the concrete except that posts shall be set at the centerline of concrete curbs.

Initials_____

2. Stainless steel and aluminum railing posts, which may collect condensation, shall have a 3/16-inch drain hole drilled immediately above the concrete encased area, the base flange, or supporting socket on the side away from the walking area. The bottom of the rail post between the drain hole and the bottom of the post shall be filled with an inert material such as a compressed closed cell neoprene rod.
 3. Where handrail is to be fastened to walls, the rails shall be provided with screwed wall flanges fastened to the walls with three 3/8-inch stainless steel flat head machine screws.
- G. Safety gates, for railing openings, shall be fabricated of matching pipe and rail material and configuration. The gates shall be self-closing gates with approved stop, latch and stainless steel closure spring and hinges.
- H. Barrier chains, for railing openings, shall be fabricated of stainless steel chains. Chain shall be 1/4-inch stainless steel links, with eleven links per foot as manufactured by Eastern Chain Works, Inc., NY; Lawrence Metal Products, Inc. or equivalent. Chains shall be fastened to the handrail posts at the elevation of each rail. One (1) end of each chain shall be connected to one (1) post with a 1/4-inch diameter stainless steel eye bolt and the other end shall be connected to the other post by means of a heavy chromium plated bronze swivel eye slide harness snap and a similar eye bolt.
- I. Toeboards shall be provided on all railing adjacent to a drop in elevation of 4-feet or more. Toeboards are not required on the inclined portion of stairway railings or where concrete or steel curbs, 4-inch or more in height, are present. Toeboards shall be 4-inch high channels of the same material as the railing. The channels shall have a minimum thickness of 1/8-inch and have flanges of not less than 3/4-inch nor more than 1 1/2-inch in width. Toeboards shall be positioned with a maximum clearance of 1/4-inch from the floor and fastened to railing posts with 1/4-inch stainless steel U-bolts, with J-bolts at corner posts and with clip angles and two (2) 1/4-inch stainless steel expansion bolts at walls.
- J. All railings shall be properly protected by paper, or by an approved coating or by both against scratching, splashes or mortar, paint, or other defacements during transportation and erection and until adjacent work by other trades has been completed. After protective materials are removed, the surfaces shall be made clean and free from stains, marks, or defects of any kind.

- A. All miscellaneous metal work shall be formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability. Holes shall be drilled or punched. Edges shall be smooth and without burrs. Fabricate supplementary pieces necessary to complete each item though such pieces are not definitely shown or specified.
- B. Connections and accessories shall be of sufficient strength to safely withstand the stresses and strains to which they will be subjected. Exposed joints shall be close fitting and jointed where least conspicuous. Threaded connections shall have the threads concealed where practical. Welded connections shall have continuous welds or intermittent welds as specified or shown. The face of welds shall be dressed flush and smooth. Welding shall be on the unexposed side as much as possible in order to prevent pitting or discoloration of the aluminum exposed surface. Grind smooth continuous welds that will be exposed. Provide holes for temporary field connections and for attachment of the work of other trades.
- C. Miscellaneous aluminum items shall include: beams, angles, closure angles, grates, hatches, floor plates, stop plates, stair nosings, and any other miscellaneous aluminum called for on the Contract Drawings and not otherwise specified.
- D. Angle frames for hatches, beams, grates, etc, shall be complete with welded strap anchors attached.
- E. Aluminum diamond plate and floor plate shall have a minimum thickness of $\frac{3}{8}$ -inch. Frames and supports shall be of aluminum construction. Fastening devices and hardware shall be Type 304 stainless steel. Plates shall have a mill finish.
- F. Stair treads for aluminum stairs shall have abrasive non-slip nosing in accordance with OSHA and other applicable standards.
- G. Aluminum nosing at concrete stairs shall be Wooster Products, Inc.; Alumogrit Treads, Type 116; similar by Barry Pattern & Foundry Co.; or Peterson Company. Furnish with wing type anchors and flat head stainless steel machine screws, 12-inches O.C. Nosing shall also be used at concrete ladder openings. Nosing shall a single piece for each step extending to within 3-inches at each side of stair or full ladder width. Set nosing flush with stair tread finish at concrete stairs. Furnish treads with heavy duty protective tape cover.
- H. Miscellaneous aluminum items shall have a cleaned and degreased mill finish.

2.07 MISCELLANEOUS STEEL

- A. All miscellaneous metal work shall be formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability. Holes shall be drilled or punched. Edges shall be smooth and without burrs. Fabricate supplementary pieces necessary to complete each item though such pieces are not definitely shown or specified.
- B. Connections and accessories shall be of sufficient strength to safely withstand the stresses and strains to which they will be subjected. Exposed joints shall be close fitting and jointed where least conspicuous. Threaded connections shall have the threads concealed where practical. Welded connections shall have continuous welds or intermittent welds as specified or shown. The face of welds shall be dressed flush and smooth. Grind smooth continuous welds that will be exposed. Provide holes for temporary field connections and for attachment of the work of other trades.
- C. Miscellaneous steel items shall include: beams, angles, lintels, metal stairs, support brackets, base plates for other than structural steel or equipment, closure angles, bridge crane rails, monorail hoist beams, holddown straps and lugs, door frames, splice plates, subframing at roof openings and any other miscellaneous steel called for on the Contract Drawings and not otherwise specified.
- D. Structural steel angle and channel door frames shall be shop coated with primer. Frames shall be fabricated with not less than three (3) anchors on each jamb.
- E. Steel pipe pieces for sleeves, lifting attachments and other functions shall be Schedule 40 pipe unless otherwise shown on the Contract Drawings or specified elsewhere. Wall and floor sleeves, of steel pipe, shall have welded circumferential steel waterstops at mid-length.
- F. Lintels, relief angles or other steel supporting masonry or embedded in masonry shall be shop coated with primer.
- G. All steel finish work shall be thoroughly cleaned, by effective means, of all loose mill scale, rust and foreign matter and shall be given one shop coat of primer compatible with the finish coat after fabrication but before shipment. Paint shall be omitted within 3-inches of proposed field welds. Paint shall be applied to dry surfaces and shall be thoroughly and evenly spread and well worked into joints and other open spaces.
- H. Galvanizing, where required, shall be the hot-dip zinc process after fabrication. Coating shall be not less than 2-oz/sq ft of surface.
- I. Interior Metal Stud Wall Framing;

Initials_____

Minimum 16 gauge metal studs for load bearing walls.
Minimum 20 gauge metal studs for non-load bearing walls.
Minimum 16 gauge metal studs for any exterior framed walls.

- J. All free standing walls must be braced at the top every 6-foot maximum and every 4-feet minimum.
- K. Metal furring shall be fastened maximum of 24-inch O.C. vertically while maintaining 16-inch O.C. spacing.
- L. All framing will maintain 16-inch O.C. spacing.

2.08 MISCELLANEOUS STAINLESS STEEL

- A. All miscellaneous metal work shall be formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability. Holes shall be drilled or punched. Edges shall be smooth and without burrs. Fabricate supplementary pieces necessary to complete each item though such pieces are not definitely shown or specified.
- B. Connections and accessories shall be of sufficient strength to safely withstand the stresses and strains to which they will be subjected. Exposed joints shall be close fitting and jointed where least conspicuous. Threaded connections shall have the threads concealed where practical. Welded connections shall have continuous welds or intermittent welds as specified or shown. The face of welds shall be dressed flush and smooth. Grind smooth continuous welds that will be exposed. Provide holes for temporary field connections and for attachment of the work of other trades.
- C. Miscellaneous stainless steel items shall include: beams, angles, bar racks and any other miscellaneous stainless steel called for on the Contract Drawings or otherwise specified.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install all items except those to be embedded in concrete which shall be installed under Division 03. Items to be attached to concrete or masonry after such work is completed shall be installed in accordance with the details shown. Fastening to wood plugs in masonry will not be permitted.
- B. Abrasions in the shop primer shall be touched up immediately after erection. Areas left unprimed for welding shall be painted with primer after welding.

Initials_____

- C. Zinc coating which has been burned by welding, abraded, or otherwise damaged shall be cleaned and repaired after installation. The damage area shall be thoroughly cleaned by wire brushing and all traces of welding flux and loose or cracked zinc coating removed prior to painting. The cleaned area shall be painted with two (2) coats of zinc oxide-zinc dust paint conforming to the requirements of Military Specifications MIL-P-15145. The paint shall be properly compounded with a suitable vehicle in the ratio of one part zinc oxide to four parts zinc dust by weight.
- D. Specialty products shall be installed in accordance with the manufacturer's recommendations.
- E. Expansion bolts shall be checked for tightness a minimum of 24 hours after initial installation.
- F. Install adhesive capsule anchors using manufacture's recommended drive units and adapters and in compliance with the manufacturer's recommendations.
- G. Headed anchor studs shall be welded in accordance with manufacturer's recommendations.
- H. All railings shall be erected to line and plumb.
- I. All steel surfaces that come into contact with exposed concrete or masonry shall receive a protective coating of an approved heavy bitumastic troweling mastic applied in accordance with the manufacturer's instructions prior to installation.
- J. Where aluminum contacts a dissimilar metal, apply a heavy brush coat of zinc-chromate primer followed by two (2) coats of aluminum metal and masonry paint to the dissimilar metal.
- K. Where aluminum contacts masonry or concrete, apply a heavy coat of approved alkali resistant paint to the masonry or concrete.
- L. Where aluminum contacts wood, apply two coats of aluminum metal and masonry paint to the wood.
- M. Between aluminum grating, aluminum stair treads, or aluminum handrail brackets and steel supports, insert 1/4-inch thick neoprene isolator pads, 85 plus or minus 5 Shore A durometer, sized for full width and length of bracket or support.

END OF SECTION

Initials_____

SECTION 07 92 00

JOINT SEALANTS

PART 1 – GENERAL

1.01 DESCRIPTION

- A. Scope of Work: Sealants and joint backing.

1.02 SUBMITTALS

- A. Submit for approval product data, samples, guarantees, and certification of all materials specified, in accordance with Section 01 33 23: Submittals.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Materials shall be stored and handled so as to prevent the inclusion of foreign matter or the damage of materials by water, heat, sunlight or breaking, and shall be stored in original containers until ready for use. Material showing evidence of damage shall be rejected.

1.04 WARRANTY AND GUARANTEES

- A. Submit a written one (1) year guarantee on sealant type caulking work against joint failure. Joint failure is defined as: leaks of air or water; evidence of loss of adhesion between sealant and joint edge; evidence of loss of cohesion, fading of sealant material; migration of sealant. Refer to Section 01 78 36; Warranties and Bonds for additional requirements.

PART 2 – PRODUCTS

2.01 MATERIALS, GENERAL

- A. General: Sealants of formulation and qualities indicated that are recommended for applications indicated and that accommodate indicated percentage change in joint width existing at time of installation without failing either adhesively or cohesively,
- B. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- C. Colors: Provide color of exposed joint sealants to comply with the following:

Initials_____

1. Provide selections made by Architect from manufacturer's full range of standard colors for products of type indicated.

2.02 SEALANTS

- A. Silicone emulsion sealant complying with ASTM C834 and, except for weight loss measured per ASTM C792, with ASTM C920 that accommodates joint movement of not more than 25 percent in both extension and compression for a total of 50 percent.

2.03 TAPE SEALANTS

- A. Tape Sealant: Solvent-free, butyl-based tape sealant with a solids content of 100 percent formulated to be nonstaining, paintable, and nonmigrating in contact with nonporous surfaces with or without reinforcement thread to prevent stretch and packaged on rolls with a release paper on one side.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Joints:
 1. All joints shall be thoroughly cleaned; loose particles shall be blown out or vacuumed from joints. Material to be contacted by sealant shall be dry, fully free of laitance, loose aggregate, form release agents, curing compounds, water repellents and other surface treatments.
 2. Joint packing shall be installed in all joints to receive sealant where required. Packing shall be sized to require 20 to 50 percent (20% - 50%) compression upon insertion, and shall be placed so that sealant depth is approximately one-half (1/2) joint width. In joints not of sufficient depth to allow packing, polyethylene bondbreaking tape shall be installed at back of joint. Lengthwise stretching of packing materials shall be avoided.
 3. Masking tape shall be applied where required to protect adjacent surfaces. Tape shall be adhered in continuous strips in alignment with joint edge and removed immediately after joints have been sealed and tooled.
 4. Joints shall be primed where required by sealant manufacturer, to receive sealant in accordance with manufacturer's instructions. Primer shall be brushed uniformly upon all surfaces of joint. Sufficient drying time shall be allowed before caulking.

Initials_____

3.02 APPLICATION

A. Sealant:

1. Mixing and application of sealant shall be as recommended by sealant manufacturer.
2. Material which has exceeded the manufacturer's recommended potential open time (POT Life) shall not be used.
3. Sealant and caulking material shall be applied under pressure to fill joints completely with prevention of air pockets or voids. Joints shall be tooled concave.

B. Locations:

1. Sealants shall be applied around penetrations of floor slabs and walls for piping, conduits, ductwork and similar items, at top of slabs and exterior face of walls, around perimeter of door frames and windows, louvers and vents, and at other locations shown on the Drawings. Thresholds shall be set in full bed of sealant.

- C. Cleaning: Adjacent surfaces shall be cleaned free of sealant and soiling resulting from this work and as work progresses, using solvent or cleaning agent as recommended by the manufacturer. All finished work shall be left in a neat, clean condition. Where any sealant material will permanently stain surfaces, these surfaces shall be masked out to prevent such staining.

END OF SECTION

Initials_____

SECTION 09 90 00

PAINTING AND COATINGS

GENERAL

RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SUMMARY

This specification defines the methods of surface preparation, coating systems, and methods of application for painting as outlined herein.

The work includes painting/coating and finishing of the following items:

1. Turntable Drive Unit and Motors
2. Walkway/Access Bridge Supports, Trusses, Beams, Girders, and Other Structural Components
3. Influent Well, Effluent Trough, Scum Outlet Port, and Interior Clarifier Wall

The omission of minor items in the schedule of work shall not relieve the Contractor of his obligation to include such items where they come within the general intent of the specification as stated herein.

The Contractor shall furnish all supervision, labor, tools, materials, equipment, scaffolding or other structures, and supervision required for the transportation, unloading, storage, and application of the paint/coating and associated products covered by this specification.

The Contractor or subcontractor shall be certified and licensed for painting/coating and shall have a minimum of five (5) years of experience performing similar projects in the State of Florida.

The Contractor shall perform surface preparation and application of the painting/coating strictly as specified herein, or if not specified herein, as recommended by the Painting/Coating Manufacturer or the Manufacturer's Representative for each item as specified herein or elsewhere.

Initials_____

The following items will not be painted/coated:

1. Any code requiring labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.
2. Any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts, unless otherwise indicated.
3. Aluminum handrails, walkways, windows, louvers, and grating unless otherwise specified herein or elsewhere.
4. Signs and nameplates.
5. Finish hardware.
6. Products with polished chrome, or nickel finish.
7. Plastic switch plates and receptacle plates.
8. Flexible couplings, lubricated bearing surfaces, insulation and metal and plastic pipe interior.
9. Sprinkler heads.

All work shall be done in strict accordance with this specification, Contract Documents, and the painting package, including manufacturer's printed instructions.

The Contractor will obtain, at its own expense, all permits, licenses and inspections and shall comply with all laws, codes, ordinances, rules, and regulations promulgated by authorities having jurisdiction, which may bear on the work. This compliance will include Federal Public Law 91-596 more commonly known as the "Occupational Safety and Health Act of 1970."

Surfaces to be painted: (Refer to Section 3.8 Coating Systems Schedule for description of surfaces to be painted/coated, preparation, and their specified coating systems).

DEFINITIONS

Abbreviations and Terms:

Initials_____

1. SSPC - Society for Protective Coatings
2. ASTM - American Society of Testing Materials
3. NACE - National Association of Corrosion Engineers
4. NSF - National Sanitation Foundation (Standard 61)
5. AWWA - American Water Works Associates (AWWA D102-97)
6. ICRI - International Concrete Repair Institute
7. CSP - Concrete Surface Profile (1-9)
8. PSDS - Product Safety Data Sheet
9. MPI - Master Painters Institute

MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

Field Painting: is the painting of new or rebuilt items at the job site. Field painting shall be the responsibility of the Contractor.

Shop Painting: is the painting of new or rebuilt items in the shop prior to delivery to the jobsite.

Exterior: outside, exposed to weather

Interior Dry: inside, not subject to immersion service

Interior Wet: inside, subject to immersion service

Exterior Wet; outside, subject to immersion service

RESOLUTION OF CONFLICTS

Initials_____

It shall be the responsibility of the General Contractor to arrange a meeting prior to the start of painting/coating between the contractors, the painting/coating manufacturer, whose products are to be used, County, and County's Representative. All aspects of surface preparation, application and coating systems as specified herein will be reviewed at this meeting.

Clarification shall be requested promptly from the County's Representative when instructions are lacking, conflicts occur in the specification, or the procedure seems improper or inappropriate for any reason.

It shall be the responsibility of the Painting/Coating Manufacturer to have their factory representative meet in person with the Contractor and County's Representative a minimum of three (3) times during the job as a consultant on surface preparation, mil thickness of coating and proper application of coating unless meeting is determined to be unnecessary by the County's Representative.

SUBMITTALS

Product Data: For each type of product. Include preparation requirements and application instructions.

See "Writing Guide" Article in the Evaluations for discussion of first subparagraph below.

Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

Indicate VOC content.

Data Sheets:

1. For each paint system, furnish a PSDS, the manufacturer's Technical Data Sheets, and paint colors available (where applicable) for each product used in the paint system. The PSDS form is appended to the end of this section.
2. Submit required information on a system-by-system basis.
3. Furnish copies of paint system submittals to the coating applicator.
4. Indiscriminate submittal of manufacturer's literature only is not acceptable.
Samples for Initial Selection: For each type of topcoat product indicated.

Delete "Samples for Initial Selection" Paragraph above if colors and other characteristics are preselected and specified or scheduled. Retain "Samples for Verification" Paragraph below with or without above.

Initials_____

Samples for Verification: For each type of coating system and each color and gloss of topcoat indicated.

1. Submit Samples on rigid backing, 8 inches square.
2. Apply coats on Samples in steps to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

Product List: Cross-reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

Quality Control Submittals:

1. Applicator's Experience: List of references substantiating experience.
2. Factory Applied Coatings: Manufacturer's certification stating factory applied coating system meets or exceeds requirements specified.
3. If the manufacturer of finish coating differs from that of shop primer, provide both manufacturers written confirmation that materials are compatible.
4. Manufacturer's written instructions and special details for applying each type of paint.
5. Manufacturers' Certificate of Proper Installation.

MAINTENANCE MATERIAL SUBMITTALS

Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

DELIVERY, STORAGE, AND HANDLING

Materials shall be delivered to the job site in the original packages with seals unbroken and with legible unmutilated labels attached. Packages shall not be opened until they are inspected by the County's Representative and required for use. All painting materials shall be stored in a clean, dry, well-ventilated place, protected from sparks, flame, and direct rays of the sun or from excessive heat. Paint susceptible to damage from low temperatures shall be kept in a heated storage

Initials_____

space when necessary. The Contractor shall be solely responsible for the protection of the materials stored by him at the job site. Empty coating cans shall be required to be neatly stacked in an areas designated by the County or County's Representative and removed from the job site on a schedule determined by the County or County's Representative. County and/or County's Representative may request a notarized statement from the Contractor detailing all materials used on the project.

Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

INSPECTION OF SURFACES

Before application of the prime coat and each succeeding coat, all surfaces to be coated shall be subject to inspection by the County's Representative or the coating manufacturer. Any defects or deficiencies shall be corrected by the Contractor before application of any subsequent coating.

Samples of surface preparation and of painting systems shall be furnished by the Contractor to be used as a standard throughout the job, unless omitted by the County's Representative.

When any appreciable time has elapsed between coatings, previously coated areas shall be carefully inspected by the Painting/Coating Manufacture or their factory representative, and where, in his opinion, surfaces are damaged or contaminated, they shall be cleaned and recoated at the Contractor's expense. Recoating times of manufacturer's printed instructions shall be followed.

Coating thickness shall be determined by the use of a properly calibrated "Nordson-Mikrotest" "Positest" Coating Thickness Gauge (or equal) for ferrous metal or an OG232 "Tooke" Paint Inspection gauge (or equal) for non-ferrous and cementitious surfaces. Please note that use of the "tooke" gauge is classified as a destructive test and repairs due to testing shall be performed by the Contractor. Thickness testing shall be performed in the presence of the County's representative.

Prior to coating and if more than two days has elapsed between coats, the surface shall be testing for chloride contamination.

Initials_____

EQUIPMENT & PREPARATION OF MATERIALS

Effective oil and water separators shall be used in all compressed air lines serving spray painting and sandblasting operations to remove oil or moisture from the air before it is used. Separators shall be placed as far as practical from the compressor.

All equipment for application of the paint and the completion of the work shall be furnished by the Contractor in first-class condition and shall comply with recommendations of the painting/coating manufacturer.

Mechanical mixers, capable of thoroughly mixing the pigment and vehicle together, shall mix the paint/coating prior to use where required by manufacturer's instructions; thorough hand mixing will be allowed for small amounts up to one (1) gallon. Pressure pots shall be equipped with mechanical mixers to keep the pigment in suspension, when required by manufacturer's instructions. Otherwise, intermittent hand mixing shall be done to assure that no separation occurs. All mixing shall be done in accordance with SSPC Vol. 1, Chapter 4, "Practical Aspects, Use and Application of Paints" and/or with manufacturer's recommendations.

Catalysts or thinners shall be as recommended by the manufacturer and shall be added or discarded strictly in accordance with the manufacturer's instruction.

1.10 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between **50 and 95 deg F**.
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than **5 deg F** above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior coatings in snow, rain, fog, or mist.

PRODUCTS

MANUFACTURERS

Tnemec Coatings, Kansas City, MO

Carboline Coatings Co., St. Louis, MO.

Corrocoat - 6525 Greenland Road, Jacksonville, FL.

PPG Industrial Coatings - One PPG Place, Pittsburgh, PA.

Initials_____

Sherwin-Williams, 601 Canal Rd; Cleveland, OH.

HIGH-PERFORMANCE COATINGS, GENERAL

MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."

Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
3. If retaining subparagraph below, coordinate products retained, if any, in other Part 2 articles, to ensure that one manufacturer can provide products for an entire system.
4. Products shall be of same manufacturer for each coat in a coating system.
5. Material Quality: Manufacturer's highest quality products and suitable for intended service.
6. Materials Including Primer and Finish Coats: Produced by same manufacturer.
7. Thinners, Cleaners, Driers, and Other Additives: As recommended by manufacturer of the particular coating.

Retain second option in "VOC Content" Paragraph below if required for LEED-NC, LEED-CI, or LEED-CS Credit IEQ 4.2; coordinate with products selected. For names of products that comply, see products listed as complying with LEED VOC limits on "MPI Approved Products Lists."

VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.

Retain "Low-Emitting Materials" Paragraph below if required for LEED for Schools.

Low-Emitting Materials: Interior coatings shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method

Initials_____

for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

All new piping, appurtenances and equipment shall be purchased shop lined and/or coated with touch up kits provided for damage caused during installation.

Colors, where not specified, shall match as close as possible to the existing color of the existing facilities or as selected by the County or County's Representative.

All coatings in contact with potable water need to be NSF Tested and Certified in accordance with ANSI/NSF Standard 61.

Paint used in successive field coats shall be produced by the same manufacturer. Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to underlying paint. Shop paint shall be of the same type and manufacturer as used for field painting by the Contractor.

Emulsion and alkyd paints shall contain a mildewcide and both the paint and mildewcide shall conform to OSHA and Federal requirements, including Federal specification TT-P-19.

Finish coats containing lead shall not be allowed. Oil shall be pure boiled linseed oil.

Rags shall be clean painters rags, completely sterilized.

SOURCE QUALITY CONTROL

Testing of Coating Materials: County reserves the right to invoke the following procedure:

1. County will engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. County may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

Initials_____

EXECUTION

EXAMINATION

Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

Concrete: 12 percent.

Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

Proceed with coating application only after unsatisfactory conditions have been corrected.

Application of coating indicates acceptance of surfaces and conditions.

SURFACE PREPARATION

The surface shall be cleaned as specified for the paint system being used. All cleaning shall be as outlined in the Steel Structures Painting Council's Surface Preparation Specification, unless otherwise noted. If surfaces are subject to contamination, other than mill scale or normal atmospheric rusting, the surfaces shall be pressure washed, and acid or caustic pH residues neutralized, in addition to the specified surface preparation. Surfaces close to the coast shall be checked for chloride contamination.

Standards for Surface Preparation:

SSPC-SP1 Chemical and/or Solvent Cleaning: Remove all grease, oil, salt, acid, alkali, dirt, dust, wax, fat, foreign matter, and contaminants, etc. by one of the following methods: steam cleaning, alkaline cleaning, or volatile solvent cleaning.

SSPC-SP2 Hand Tool Cleaning: Removal of loose rust, loose mill scale, and loose paint to a clean sound substrate by hand chipping, scraping, sanding, and wire brushing.

Initials_____

SSPC-SP3 Power Tool Cleaning: Removal of loose rust, loose mill scale, and loose paint to a clean sound substrate by power tool chipping, descaling, sanding, wire brushing, and grinding.

SSPC-SP5 (NACE-1) White Metal Blast Cleaning: Complete removal of all mill scale, rust, rust scale, previous coating, etc., leaving the surface a uniform gray-white color.

SSPC-SP6 (NACE-3) Commercial Grade Blast Cleaning: Complete removal of all dirt, rust scale, mill scale, foreign matter, and previous coatings, etc., leaving only shadows and/or streaks caused by rust stain and mill scale oxides. At least 66% of each square inch of surface area is to be free of all visible residues, except slight discoloration.

SSPC-SP7 (NACE-4) Brush-Off Blast Cleaning: Removal of rust scale, loose mill scale, loose rust, and loose coatings, leaving tightly bonded mill scale, rust and previous coatings. On concrete surfaces, brush-off blast cleaning shall remove all laitance, form oils, and solid contaminants. Blasting should be performed sufficiently close to the surface so as to open up surface voids, bug holes, air pockets, and other subsurface irregularities, but so as not to expose underlying aggregate.

SSPC-SP10 (NACE-2) Near-White Blast Cleaning: Removal of all rust scale, mill scale, previous coating, etc., leaving only light stains from rust, mill scale, and small specks of previous coating. At least 95% of each square inch of surface area is to be free of all visible residues and the remainder shall be limited to slight discoloration.

SSPC-SP11 Power Tool Cleaning to Bare Metal: Complete removal of rust, rust scale, mill scale, foreign matter, and previous coatings, etc., to a standard as specified on a Commercial Grade Blast Cleaning (SSPC-SP6, NACE-3) by means of power tools that will provide the proper degree of cleaning and surface profile.

SSPC-SP12 (NACE-2) Surface Preparation by Water Jetting: Surface preparation of steel and other substrates by ultra-high pressure water jetting.

SSPC-SP13 (NACE-6) Surface Preparation of Concrete: Surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems.

SSPC-SP14 (NACE-8) Industrial Blast Cleaning: Surface preparation standards for industrial blast cleaning allowing for traces of tightly adherent mill scale, rust, & coating residues on 10% of the surface.

SSPC-SP15 Commercial Grade Power Tool Cleaning: Commercial grade power tool cleaning a steel surface to produce a 1.0-mil surface profile. This method of cleaning falls between SP3 & SP11.

SSPC-SP16 Brush-Off Blast Cleaning of Non-Ferrous Metals: Brush-off blast cleaning of coated or uncoated metal surfaces other than carbon steel prior to the application of a protective coating system. Roughen and clean coated and uncoated non-ferrous metal substrates, including, but not limited to, galvanized surfaces, stainless steel, copper, aluminum, and brass.

Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

Coordination of shop-applied prime coats with high-performance coatings is critical.

Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

Clean surfaces with pressurized water. The pressure range used for cleaning is to be selected by the Contractor based on the surface condition and coating manufacturer's specifications.

Abrasive blast clean surfaces to comply with SSPC-SP 7/NACE No. 4.

Retain "Steel Substrates" Paragraph below if steel is not shop primed or if shop primer is removed in the field.

Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.

Initials_____

SSPC-SP 7/NACE No. 4.

SSPC-SP 11.

SSPC-SP 6/NACE No. 3.

SSPC-SP 10/NACE No. 2.

SSPC-SP 5/NACE No. 1.

Retain "Shop-Primed Steel Substrates" Paragraph below if primers are shop applied and are not removed in the field.

Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

Galvanized-metal substrates should not be chromate passivated if primers are field applied. If galvanized metal is chromate passivated, consult manufacturers for appropriate surface preparation and primers.

Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.

If necessary, insert requirements for acid etching aluminum.

Aluminum Substrates: Remove loose surface oxidation.

Ductile Iron Surface Preparation shall conform to NAPF Section 500 "Coatings and Linings".

Visual standards – SSPC-VIS-1(Swedish SIS OS 5900), "Pictorial Surface Preparation Standards for Painting Steel Surfaces," and the National Association of Corrosion Engineers, "Blasting Cleaning Visual Standards" TM-01-70 and TM-01-75 shall be considered as standards for proper surface preparation.

Visual standards from International Concrete Repair Institute CSP1-9 for degree of roughness and surface profile of concrete.

Oil, grease, soil, dust, etc., deposited on the surface preparation that has been completed shall be removed prior to painting according to SSPC-SP1 Solvent Cleaning.

Weld flux, weld spatter and excessive rust scale shall be removed by Power Tool Cleaning as per SSPC-SP11-87T.

Initials_____

All weld seams, sharp protrusions, and edges shall be ground smooth prior to surface preparation or application of any coatings.

All areas requiring field welding shall be masked off prior to shop coating, unless waived by the County's Representative.

All areas which require field touch-up after erection, such as welds, burnbacks, and mechanically damaged areas, shall be cleaned by thorough Power Tool as specified in SSPC-SP11-87T.

Touch-up systems will be same as original specification except that approved manufacturer's organic zinc-rich shall be used in lieu of inorganic zinc where this system was originally used. Also strict adherence to manufacturer's complete touch-up recommendations shall be followed. Any questions relative to compatibility of products shall be brought to the County's Representative's attention; otherwise, Contractor assumes full responsibility.

PRETREATMENTS

When specified, the surface shall be pretreated in accordance with the specified pretreatment prior to application of the prime coat of paint.

APPLICATION

Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."

Use applicators and techniques suited for coating and substrate indicated.

Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.

Coat backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

If tinting is not required, delete first paragraph below. Different tints will show through as topcoat erodes.

Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of

Initials_____

finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

Paint shall be applied only on thoroughly dry surfaces and during periods of favorable weather, unless otherwise allowed by the paint/coating manufacturer. Except as provided below, painting shall not be permitted when the atmospheric temperature is below 50° F, or when freshly painted surfaces may be damaged by rain, fog, dust, or condensation, and/or when it can be anticipated that these conditions will prevail during the drying period. Note some materials may have a lower minimum atmospheric temperature and manufacturer's recommendation shall be followed.

No coatings shall be applied unless surface temperature is a minimum of 5° above dew point; temperature must be maintained during curing.

Dew Point: temperature at which moisture will condense on surface. No coatings should be applied unless surface temperature is a minimum of 5° above this point. Temperature must be maintained during curing.

Example: If air temperature is 70°F and relative humidity is 65%, the dew point is 57°F. No coating should be applied unless surface temperature is 62°F minimum.

No coatings shall be applied unless the relative humidity is below 85%.

Suitable enclosures to permit painting during inclement weather may be used if provisions are made to control atmospheric conditions artificially inside the enclosure, within limits suitable for painting throughout the painting operations.

Field Painting in the immediate vicinity of, or on, energized electrical and rotating equipment, and equipment and/or pipes in service shall not be performed without the approval of the County's Representative.

The Contractor's scaffolding shall be erected, maintained, and dismantled without damage to structures, machinery, equipment or pipe. Drop cloths shall be used where required to protect buildings and equipment. All surfaces required to be clear for visual observations shall be cleaned immediately after paint application.

Initials_____

The prime coat shall be applied immediately following surface preparation and in no case later than the same working day. All paint shall be applied by brushing, paint mitt and roller, conventional spraying, or airless spraying, using equipment approved by the paint/coating manufacturer.

Each coat of paint shall be recoated as per manufacturer's instructions. Paint/coating shall be considered re-coatable when an additional coat can be applied without any detrimental film irregularities such as lifting or loss of adhesion. Follow the manufactures printed recoat times.

Surfaces that will be inaccessible after assembly shall receive either the full specified paint system or three shop coats of the specified primer before assembly.

Finish colors shall be in accordance with the County's Direction or match existing colors and shall be factory mixed (i.e., there shall be no tinting by the Contractor).

All edges and weld seams in immersion service shall receive a "stripe coat" (applied by brush) after the 1st coat.

All hairline cracks or patches shall receive "stripe coat" of the 1st coat prior to application of the full 1st coat.

APPLICATION OF PAINT

By Brush and/or Rollers:

Top quality, properly styled brushes and rollers shall be used. Rollers with a baked phenol core shall be utilized.

The brushing or rolling shall be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Brush or roller strokes shall be made to smooth the film without leaving deep or detrimental marks.

Surfaces not accessible to brushes or rollers may be painted by spray, by dauber or sheepskins, and paint mitt.

It may require two (2) coats to achieve the specified dry film thickness if application is by brush and roller.

Air, Airless, or Hot Spray:

The equipment used shall be suitable for the intended purpose, shall be capable of properly atomizing the paint to be applied and shall be equipped with suitable pressure regulators and gauges.

Initials_____

Paint shall be applied in a uniform layer, with a 50% overlap pattern. All runs and sags should be brushed out immediately or the paint shall be removed and the surface resprayed.

High build coatings should be applied by a crosshatch method of spray application to ensure proper film thickness of the coating.

Areas inaccessible to spray shall be brushed; if also inaccessible to brush, daubs or sheepskins shall be used, as authorized by the manufacturer.

Special care shall be taken with thinners and paint temperatures so that paint of the correct formula reaches the receiving surface.

Nozzles, tips, etc., shall be of sizes and designs as recommended by the manufacturer of the paint being sprayed.

The first coat on concrete surfaces in immersion service should be thinned, then sprayed and backrolled or roller applied.

FIELD QUALITY CONTROL

Dry Film Thickness Testing: County may engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.

Contractor shall touch up and restore coated surfaces damaged by testing.

If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

CLEANING AND PROTECTION

At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.

At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

Initials_____

It shall be the responsibility of the Contractor to protect at all times, in areas where painting is being done, floors, materials of other crafts, equipment, vehicles, fixtures, and finished surfaces adjacent to paint/coating work. Cover all electric plates, surface hardware, nameplates, gauge glasses, etc., before start of painting/coating work.

At the option of the County's Representative during the course of this project, the Contractor will contain all spent abrasives, old paint chips, paint overspray and debris by means suitable to the County's Representative, including but not limited to, full shrouding of the area.

If shrouding is required, the Contractor must provide a complete design of the intended shroud or cover. Care must be taken not to modify or damage the structure during the use of the shroud. If damage should occur, the Contractor is held responsible for all repairs.

At completion of the work, remove all paint/coating where spilled, splashed, splattered, sprayed or smeared on all surfaces, including glass, light fixtures, hardware, equipment, painted, and unpainted surfaces.

After completion of all painting, the Contractor shall remove from job site all painting/coating equipment, surplus materials, and debris resulting from the Work.

The Contractor is responsible for the removal and proper disposal of all hazardous materials from the jobsite in accordance with Local, State, and Federal requirements as outlined by the United States Environmental Protection Agency (USEPA).

A notarized statement shall be presented to the County and County's Representative that all hazardous materials have been disposed of properly including but not limited to: name of disposal company, disposal site, listing of hazardous materials, weights of all materials, cost per pound and USEPA registration number.

EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

Painting/coating all items specified here in shall be in accordance with the manufacturer's recommendations for surface preparation, painting/coating system and application methods. If the painting/coating surface preparation, painting/coating system, dry film thicknesses, and application methods specified herein are in conflict the manufacturer's recommendations, the manufacturer's recommendations shall supersede what is specified herein:

Steel – New Steel Components, which are not factory pre-coated

Initials_____

Exterior Exposure (Non-Immersion)

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

		<u>DFT-Mils</u>
Primer:	90-97 Tneme-Zinc	2.5 – 3.5
Intermediate Coat:	66HS Hi-Build Epoxoline	2.0 – 3.0
Finish Coat:	1074-Endura-Shield UVX	<u>2.0 – 5.0</u>
		6.5 – 11.5
		Minimum 6.5 Mils DFT

Interior Exposure (Non-Immersion)

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

		<u>DFT Mils</u>
Primer:	66HS Hi-Build Epoxoline	3.0 – 5.0
Finish Coat:	66HS Hi-Build Epoxoline	<u>3.0 – 5.0</u>
		6.0 – 10.0
		Minimum 6.0 Mils

Immersion

Surface Preparation: SSPC-SP10 Near White Blast Cleaning, a minimum blast profile of 1.5 mils.

		<u>DFT-Mils</u>
Primer:	66HS Hi-Build Epoxoline	5.0 – 6.0
Finish Coat:	66HS Hi-Build Epoxoline	<u>5.0 – 6.0</u>
		10.0 – 12.0
		Minimum 10.0 Mils

Ductile Iron – Exposed (Outside Diameter)

Surface Preparation: Clean factory primer per SSPC-SP7 for removal of rust scale, loose mill scale, loose rust, and loose coatings.

		<u>DFT-Mils</u>
Primer:	66HS Hi-Build Epoxoline	3.0 - 5.0
Intermediate Coat:	66HS Hi-Build Epoxoline	4.0 - 6.0
Finish Coat:	1074-Endura-Shield UVX	<u>2.0 – 3.0</u>
		9.0-14.0
		Minimum 9.0 Mils

Initials_____

Concrete - Submerged Structural Fabrications (Influent Well, Effluent Trough, Scum Outlet Port, and Interior Clarifier Wall)

Surface Preparation: Abrasive blast clean per SSPC-SP13 with a CSP 5 or better finish. Repair mortar shall be as required for cracks and surface repairs.

		<u>DFT-Mils</u>
Resurfacer:	Series 218 MortarClad	1/16"-1/2"
Finish Coat:	Series 262 Elasto-Shield,	50
		Minimum 54

Concrete – Exteriors of Existing Concrete

Surface Preparation: Remove all dirt, oil, grease, chalk, and loose paint per High Pressure Water Blast (Min 3500 PSI).

		<u>DFT-Mils</u>
Primer:	151 Elasto-Grip	300-350 sq ft
per gallon		
Intermediate Coat:	156 Enviro-Crete	5.0 – 8.0
Finish coat:	156 Enviro-Crete	<u>5.0 – 8.0</u>
		11.0 –16.0

END OF SECTION

SECTION 26 05 02

BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.01 DEFINITIONS

- A. Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, shall be as defined in IEEE 100.
- B. The technical sections referred to herein are those specification sections that describe products, installation procedures, and equipment operations and that refer to this section for detailed description of submittal types.
- C. The technical paragraphs referred to herein are those paragraphs in PART 2 - PRODUCTS and PART 3 - EXECUTION of the technical sections that describe products, systems, installation procedures, equipment, and test methods.

1.02 SUBMITTALS

- A. Submittals required in the sections which refer to this section shall conform to the requirements of Section 01 33 23 - Submittals and to the following additional requirements. Submittals shall include the manufacturer's name, trade name, place of manufacture, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and technical paragraph reference. Submittals shall also include applicable federal, military, industry, and technical society publication references, and years of satisfactory service, and other information necessary to establish contract compliance of each item to be provided. Photographs of existing installations are unacceptable and will be returned without approval.
- B. Manufacturer's Catalog Data: Submittals for each manufactured item shall be current manufacturer's descriptive literature of cataloged products, equipment drawings, diagrams, performance and characteristic curves, and catalog cuts. Handwritten and typed modifications and other notations not part of the manufacturer's preprinted data will result in the rejection of the submittal. Should manufacturer's data require supplemental information for clarification, the supplemental information shall be submitted as specified for certificates of compliance.
- C. Drawings: Submit drawings a minimum of 14 by 20 inches in size using a minimum scale of 1/8 inch per foot, except as specified otherwise. Include wiring diagrams and installation details of equipment indicating proposed location, layout and arrangement, control panels, accessories, piping, ductwork, and other

Initials_____

items that must be shown to ensure a coordinated installation. Wiring diagrams shall identify circuit terminals and indicate the internal wiring for each item of equipment and the interconnection between each item of equipment. Drawings shall indicate adequate clearance for operation, maintenance, and replacement of operating equipment devices.

- D. Instructions: Where installation procedures or part of the installation procedures are required to be in accordance with manufacturer's instructions, submit printed copies of those instructions prior to installation. Installation of the item shall not proceed until manufacturer's instructions are received. Failure to submit manufacturer's instructions shall be cause for rejection of the equipment or material.
- E. Certificates: Submit manufacturer's certifications as required for products, materials, finishes, and equipment as specified in the technical sections. Certificates from material suppliers are not acceptable. Preprinted certifications and copies of previously submitted documents will not be acceptable. The manufacturer's certifications shall name the appropriate products, equipment, or materials and the publication specified as controlling the quality of that item. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as"; "achieve the same end use and results as materials formulated in accordance with the referenced publications"; or "equal or exceed the service and performance of the specified material." Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance.
1. Reference Standard Compliance: Where equipment or materials are specified to conform to industry and technical society reference standards of the organizations such as American National Standards Institute (ANSI), American Society for Testing and Materials (ASTM), National Electrical Manufacturers Association (NEMA), Underwriters Laboratories Inc. (UL), and Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance.
 2. Independent Testing Organization Certificate: In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. The certificate shall state that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.
- F. Operation and Maintenance Manuals: Comply with the requirements of the technical sections.

1. Operating Instructions: Submit text of posted operating instructions for each system and principal item of equipment as specified in the technical sections.

1.03 QUALITY ASSURANCE

- A. Material and Equipment Qualifications: Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year period shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2-year period. Where two or more items of the same class of equipment are required, these items shall be products of a single manufacturer; however, the component parts of the item need not be the products of the same manufacturer unless stated in the technical section.
- B. Regulatory Requirements: Equipment, materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70.
- C. Alternative Qualifications: Products having less than a 2-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturers' factory or laboratory tests, is furnished.
- D. Service Support: The equipment items shall be supported by service organizations which are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.
- E. Manufacturer's Nameplate: Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.
- F. Modification of References: In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officer.

1.04 POSTED OPERATING INSTRUCTIONS

- A. Provide for each system and principal item of equipment as specified in the technical sections for use by operation and maintenance personnel. The operating

Initials_____

instructions shall include the following:

1. Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.
 2. Start up, proper adjustment, operating, lubrication, and shutdown procedures.
 3. Safety precautions.
 4. The procedure in the event of equipment failure.
 5. Other items of instruction as recommended by the manufacturer of each system or item of equipment.
- B. Print or engrave operating instructions and frame under glass or in approved laminated plastic. Post instructions where directed. For operating instructions exposed to the weather, provide weather-resistant materials or weatherproof enclosures. Operating instructions shall not fade when exposed to sunlight and shall be secured to prevent easy removal or peeling.

1.05 NAMEPLATES

- A. ASTM D 709. Provide laminated plastic nameplates for each panelboard, equipment enclosure, relay, switch, and device; as specified in the technical sections or as indicated on the drawings. Each nameplate inscription shall identify the function and, when applicable, the position. Nameplates shall be melamine plastic, 0.125 inch thick, white with black center core. Surface shall be matte finish. Corners shall be square. Accurately align lettering and engrave into the core. Minimum size of nameplates shall be one by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block style.

1.06 ELECTRICAL REQUIREMENTS

- A. Electrical installations shall conform to ANSI C2, NFPA 70, and requirements specified herein.
- B. Motors and Equipment: Provide electrical components of mechanical equipment, such as motors, motor starters, control or push-button stations, float or pressure switches, solenoid valves, and other devices functioning to control mechanical equipment, including control wiring and conduit for circuits rated 100 volts or less, to conform with the requirements of the section covering the mechanical equipment. Extended voltage range motors shall not be permitted. The interconnecting power wiring and conduit, control wiring rated 120 volts (nominal) and conduit, the motor control equipment forming a part of motor control centers, and the electrical power circuits shall be provided under Division

26.

- C. Provide motors, controllers, integral disconnects, and contactors with their respective pieces of equipment when indicated. Extended voltage range motors shall not be permitted. Control voltage for controllers and contactors shall not exceed 120 volts nominal. When motors and equipment furnished are larger than sizes indicated, the cost of additional electrical service and related work shall be included under the section that specified that motor or equipment. Where fuse protection is specifically recommended by the equipment manufacturer, provide fused switches in lieu of non-fused switches indicated.
- D. Wiring and Conduit: Provide internal wiring for components of packaged equipment as an integral part of the equipment. Provide power wiring and conduit for field-installed equipment, and motor control equipment forming part of motor control centers or switchgear assemblies, the conduit and wiring connecting such centers, assemblies, or other power sources to equipment. Control wiring and conduit shall be provided under, and conform to the requirements of the section specifying the associated equipment.
- E. New Work: Provide electrical components of mechanical equipment, such as motors, motor starters (except starters/controllers which are indicated as part of a motor control center), control or push-button stations, float or pressure switches, solenoid valves, integral disconnects, and other devices functioning to control mechanical equipment, as well as control wiring and conduit for circuits rated 100 volts or less, to conform with the requirements of the section covering the mechanical equipment. Extended voltage range motors shall not be permitted. The interconnecting power wiring and conduit, control wiring rated 120 volts (nominal) and conduit, the motor control equipment forming a part of motor control centers, and the electrical power circuits shall be provided under Division 26, except internal wiring for components of packaged equipment shall be provided as an integral part of the equipment. When motors and equipment furnished are larger than sizes indicated, provide any required changes to the electrical service as may be necessary and related work as a part of the work for the section specifying that motor or equipment.
- F. Modifications to Existing Systems: Where existing mechanical systems and motor-operated equipment require modifications, provide electrical components under Division 26.

1.07 INSTRUCTION TO COUNTY'S PERSONNEL

- A. Where specified in the technical sections, furnish the services of competent instructors to give full instruction to designated County's personnel in the adjustment, operation, and maintenance of the specified systems and equipment, including pertinent safety requirements as required. Instructors shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as

Initials_____

well as practical operation and maintenance work. Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the Government for regular operation. The number of man-days (8 hours per day) of instruction furnished shall be as specified in the individual section. When more than 4 man-days of instruction are specified, use approximately half of the time for classroom instruction. Use other time for instruction with equipment or system. When significant changes or modifications in the equipment or system are made under the terms of the contract, provide additional instructions to acquaint the operating personnel with the changes or modifications.

Initials_____

1.08 LOCKOUT REQUIREMENTS

- A. Provide disconnecting means capable of being locked out for machines and other equipment to prevent unexpected startup or release of stored energy in accordance with 29 CFR 1910.147. Mechanical isolation of machines and other equipment shall be in accordance with requirements of relative Divisions.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PAINTING OF EQUIPMENT

- A. **Factory Applied:** Electrical equipment shall have factory-applied painting systems which shall, as a minimum, meet the requirements of NEMA ICS 6 corrosion-resistance test and the additional requirements specified in the technical sections.
- B. **Field Applied:** Paint electrical equipment as required to match finish of adjacent surfaces or to meet the indicated or specified safety criteria. Painting shall be as specified in the section specifying the associated electrical equipment.

3.02 NAMEPLATE MOUNTING

- A. Provide number, location, and letter designation of nameplates as indicated. Fasten nameplates to the device with a minimum of two sheet-metal screws or two rivets.

END OF SECTION

Initials_____

SECTION 43 10 50

PIPE AND FITTINGS-GENERAL

PART 1) - GENERAL

1.0.1 REQUIREMENTS

- A. Work Included: The work in this section shall include the furnishing, installation, and testing of all pipe, fittings and structures, and furnishing the equipment, labor, and appurtenances for the installation of piped utilities. All work shall be completed as shown on the plans and as specified in related sections and hereunder.
- B. Where pipe supports are not indicated, it is the Contractor's responsibility to develop the details necessary to design and construct mechanical piping systems to accommodate the specific equipment provided, and to provide spacers, adapters, and connectors for a complete and functional system.

1.0.2 SUBMITTALS

- A. Submit a piping laying schedule showing every pipe length, fitting, valve and pipe supports. The pipe-laying schedule shall include pipe pressure class, type of valve and type of pipe support.
- B. Submit manufacturer's data for pipes, fittings and appurtenances.
- C. Submit certified affidavit of compliance with material specifications for all pipe, fittings, and appurtenances.
- D. Submit hydrostatic proof, sustained pressure and burst strength reports for tests performed by the manufacturer prior to shipping.
- E. Welding certificates.

1.0.3 RECORD DRAWINGS

- A. Submit record drawings prepared by a professional land surveyor that accurately record actual installed horizontal and vertical location of pipe, fittings, valves and other appurtenances in accordance with these specifications.
- B. Accurately record all deviations from engineering specifications on the record drawing submittal.
- C. Refer to Section 01 77 19 Project Closeout for additional requirements.

1.0.4 DELIVERY, STORAGE, AND HANDLING

Initials_____

- A. Piping materials, fittings, valves, and accessories shall be delivered in a clean and undamaged condition and stored off the ground for protection against oxidation caused by ground contact.
- B. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
- C. Defective or damaged materials shall be replaced with new materials.

PART 2) - PRODUCTS

2.0.1 GENERAL

- A. Tests
 - 1. Except where otherwise indicated, materials used in the manufacture of the pipe shall be tested in accordance with the applicable specifications and standards.
 - 2. The Contractor shall be responsible for performing material tests.
- B. Welding Requirements
 - 1. Steel Support Welding: Qualify processes and operators according to AWS D1.1.
 - 2. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
 - a. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
 - b. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- C. Welder Qualifications
 - 1. Welding shall be performed by skilled welders and welding operators who have adequate experience in the methods and materials to be used.
 - 2. Welders shall be qualified under the provisions of AWS D1.1 and the ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."

Initials_____

3. Machines and electrodes similar to those used in the Work shall be used in qualification tests.
4. Qualification testing of welders and materials used during testing is part of the Work.

2.0.2 PIPE

A. Polyvinyl Chloride (PVC) Pipe: Pipe shall be manufactured from clean virgin Type I, Grade I rigid, unplasticized polyvinyl chloride resin (Class 12454-A or Class 12454-B) conforming to ASTM D1784. The PVC compound shall have an established hydrostatic design basis (HDB) of 4000 psi as described in ASTM D2837. The pipe shall bear the National Sanitation Foundation (NSF) seal for potable water pipe. Pipe should meet the following requirements:

1. Pipe with diameters less than 4" shall be Class 200 with a minimum Standard Dimension Ratio (SDR) of 21 and shall be in accordance with ASTM D-2241.
2. Pipe with diameters of 4" to 12" for water mains shall have a minimum dimension ratio (DR) of 18, Class 150, and shall be manufactured in accordance with AWWA Specifications C-900 latest revision. Pipe with diameters of 14" and larger for water mains shall have a minimum dimension ratio (DR) of 25, Class 165, and shall be manufactured in accordance with AWWA Specification C-905 latest revision or Pressure Class 350 ductile iron pipe may be used.
3. Pipe with diameters of 4" to 12" for sewer force mains shall have a minimum dimension ratio (DR) of 25, Class 100, and shall be manufactured in accordance with AWWA Specification C-900 latest revision. Pipe with diameters of 14" and larger for sewer force mains shall have a minimum dimension ratio (DR) 25, Class 165, and shall be manufactured in accordance with AWWA Specification C-905 latest revision or Pressure Class 350 ductile iron pipe.
4. Sanitary gravity sewer pipe shall have a minimum standard dimensional ratio (SDR) of 35, for installations up to 13 feet in depth, and shall be manufactured in accordance with ASTM D3034. Sanitary gravity sewer pipe shall have a minimum standard dimensional ratio (SDR) of 26 for installations deeper than 13'.
5. PVC Pipe Restrainers shall be EBBA Megalug Series 2000, or approved equal.
6. PVC PIPE COLORS

WATER - Blue

Initials_____

SEWER - Green (Force main); Green (Gravity Sewer)

REUSE – Purple

- B. Ductile Iron Pipe: Ductile iron pipe (DIP) and fittings shall meet or exceed the following requirements:
1. Pipe and fittings shall be the diameter shown on the plans.
 2. Pressure Class 350 in accordance with AWWA C 150.
 3. Cast in accordance with AWWA C 151.
 4. Cement lining in accordance with AWWA C 104 except on air piping or as otherwise noted.
 5. All lines below grade shall be constructed with push-on joints and mechanical joints at fittings.

2.0.3 FITTINGS

- A. Polyvinyl Chloride (PVC) Fittings: Connections and fittings for pipe 1 ½" and smaller shall be solvent welded sleeve type joint. Connections and fittings for pipe 2" and 2 ½" in diameter shall be rubber 26 compression ring type. Pipe shall be extruded with integral thickened wall bells without increase in DR. Rubber ring gaskets shall consist of synthetic compounds meeting the requirements of ASTM Designation D1869, and suitable for the designated service. Fittings for Pressure mains 3" and larger (water lines or, sewage force mains) shall be ductile iron with mechanical joint rubber compression ring type joints.

All piping (PVC, Polyethylene tubing) shall have a type TWH insulated PVC copper conductor, #14 solid strand wire that is strapped to the pipe at ten-foot intervals.

- B. Ductile Iron Fittings: Ductile iron fittings shall conform to AWWA C 104, AWWA C 110 for standard body and AWWA C 153 for compact body fittings, and meet the following requirements:
1. Buried fittings shall be mechanical joint and supplied with the proper adapter and/or transition gasket for use with PVC pipe.
- C. Couplings:
1. Flexible couplings for use in joining gravity pipe of differing materials and/or sizes shall be constructed of elastomeric polyvinyl chloride conforming to ASTM C 443, C 1173, D 5926 and secured to the

Initials_____

connecting pipes using stainless steel screw type band clamps. Flexible couplings shall be similar to Series 1056 as manufactured by Fernco, Inc., Series 151 as manufactured by Indiana Seal, Series MR as manufactured by Mission Rubber Company, or approved equal.

- D. Restrained Joint Fittings: If mechanical restraining glands are used as restraining mechanisms on joints, dimensions of the glands shall be such that they can be used with the standardized mechanical joint bell and tee head bolts conforming to the requirements of AWWA C 111 and AWWA C 153.
- E. High Density Polyethylene Fittings (Smooth Bore Pipe): Fittings shall conform to AASHTO M 294. Fabricated fittings shall be welded on the interior and exterior at all junctions.

PART 3) - EXECUTION

3.0.1 PIPING SYSTEMS--COMMON REQUIREMENTS

- i) General: Install piping as described below, except where system sections specify otherwise. Individual piping system specification sections in Division 43 specify piping installation requirements unique to the piping system.
- ii) General Locations and Arrangements: Exhibits (plans, schematics, and diagrams) indicate general location and arrangement of piping systems. Install piping as indicated in the submitted piping-laying schedule.
- iii) Install components having pressure rating equal to or greater than system operating pressure.
- iv) Install piping free of sags and bends.
- v) Install exposed interior and exterior piping at right angles or parallel to building walls. Diagonal runs are prohibited.
- vi) Install piping tight to slabs, beams, joists, columns, walls, and other building elements.

- vii) Locate groups of pipes parallel to each other, spaced to permit valve servicing.
- viii) Install fittings for changes in direction and branch connections.
- ix) Piping Joint Construction: Join pipe and fittings as follows and as specifically required in individual piping system sections.
 - (1) Ream ends of pipes and tubes and remove burrs.
 - (2) Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

3.0.2 ERECTION OF METAL SUPPORTS AND ANCHORAGE

- i) Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.

3.0.3 CUTTING AND PATCHING

- i) Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces necessary for mechanical installations. Perform cutting by skilled mechanics of the trades involved.
- ii) Repair cut surfaces to match adjacent surfaces.

3.0.4 GROUTING

- i) Install nonmetallic nonshrink grout for equipment base plates and anchors. Mix grout according to manufacturer's printed instructions. Section 03 60 00 Grouting.
- ii) Clean surfaces that will come into contact with grout.
- iii) Provide forms for placement of grout, as required.
- iv) Avoid air entrapment when placing grout.
- v) Place grout around anchors.
- vi) Cure placed grout according to manufacturer's printed instructions.

END OF SECTION

Initials_____

SECTION 46 43 01

CLARIFIER REHABILITATION

PART 1 – GENERAL

SCOPE OF WORK

- N. Demolition: Contractors work includes the demolition and removal of all internal components of one (1) or two (2) 55-ft diameter clarifiers, further identified as Clarifier #1 and Clarifier #2 as shown on contract drawings and specified in Section 01 11 00 Summary of Work.
- O. Contractor shall furnish all labor, equipment, materials, tools, and incidental items required to install and place into proper operation of one (1) or two (2) circular scraper clarifiers including walkway and railings from the stairs to the center support structure. Design and calculations to be performed by equipment vendor. All materials and equipment shall be installed as shown on the plans, as recommended by the supplier, and in compliance with all OSHA, local, state, and federal codes and regulations. All materials and equipment shall be the materials specified in Section 2.02 unless otherwise noted.
- P. Clarifier mechanisms shall be installed within one (1) or two (2) existing 55 feet diameter concrete basins as shown on contract drawings.
- Q. Clarifiers 1 and 2 - Contractor shall furnish complete with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation.
- R. Any additional work for Clarifier #1 or/and Clarifier #2 is specified in Section 01 11 00 Summary of Work.
- S. Contractor shall be responsible for coordination of all related parts of work. Contractor shall verify all structures, piping, wiring, and components are compatible. Contractor shall be responsible for all structural and other alterations required to accommodate equipment differing in dimensions or other characteristics from these specifications and drawings.

SUBMITTALS

Provide shop drawings and product data in accordance with section 01 33 23 for the equipment being furnished, to include at minimum the following:

Initials_____

Certified shop drawings showing the details of construction, dimensions and anchor bolt requirements.

Complete wiring diagrams detailing all required field connections.

Descriptive literature, brochures, and/or catalogs of submitted equipment.

Calculations showing the structural capability of the clarifier mechanism to withstand the momentary peak torque.

Structural calculations for walkways and platforms

Complete bill of materials for the equipment.

List of Manufacturer's recommended spare parts.

Calculations substantiating the continuous torque rating of the main gear set in accordance with standard ANSI / AGMA 2001.

Operation and maintenance manuals in accordance with the requirements of Section 01 78 23.

Manufacturer's valid ISO 9001:2008 certificate of registration

Equipment weights and lifting points.

Short and long term storage requirements.

Manufacturer's installation instructions.

Installation Reference Lists

Valid Welder Certifications

A copy of Manufacturer's factory warranty.

REFERENCE STANDARDS

American Iron and Steel Institute (AISI).

American National Standards Institute (ANSI).

American Society for Testing Materials (ASTM).

American Bearing Manufacturers Association (ABMA).

Initials_____

American Gear Manufacturers Association (AGMA).

National Electrical Manufacturers Association (NEMA).

Underwriters Laboratory (UL).

Anti-friction Bearing Manufacturers' Association (AFBMA), Bearing Life Specifications

QUALITY ASSURANCE

Qualifications: Qualified Manufacturers shall have a minimum 15 years' experience manufacturing clarifiers, with no fewer than 20 operating installations of the type specified herein located in the USA. Manufacturer shall provide a list of 5 names and dates of installations for verification by the Engineer or County's Representative.

A single manufacturer shall provide all components including but not limited to the clarifier, motors, gear reducers, controls, and control panels as a complete integrated package to ensure proper coordination, compatibility, and operation of the system.

Clarifier shall be Manufacturer's standard product and only modified as necessary to comply with the drawings, specifications, and specified service conditions.

All welding is performed in accordance with American Welding Society (AWS) Structural Welding Code.

All stainless steel components shall undergo a passivation process to ensure maximum resistance to corrosion. All stainless steel surfaces shall be thoroughly cleaned and blasted according to ASTM A380. The use of nitric and hydrofluoric acid passivation is not acceptable due to the negative impact these chemicals have on the environment.

Contractor shall guarantee all equipment against faulty or inadequate design, improper assembly or installation, defective workmanship or materials, and breakage or other failure. Materials shall be suitable for service conditions.

All equipment shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practices. The fabrication shall be performed by the equipment manufacturer at the manufacturer's facility located within the continental USA; all welding shall be performed by direct employees of the manufacturer, each welder shall be certified in accordance with AWS or ASME. Welder certificates shall be provided to the Engineer upon request.

Initials_____

Each clarifier shall have the Manufacturer's name, address, and product identification information on a corrosion resistant nameplate securely affixed to the equipment.

Clarifier manufacturer shall be ISO 9001:2008 certified and provide the Engineer with a copy of a valid certificate of registration.

WARRANTY

The equipment shall be warranted by the manufacturer for a period of one (1) year after the date of final acceptance of the project by the County.

DELIVERY, STORAGE, AND HANDLING

Shipping

Ship equipment, material, and spare parts complete except where partial disassembly is required by transportation regulations or for protection of components.

Pack spare parts in containers bearing labels clearly designating contents and equipment for which they are intended.

Receiving and Storage:

Store and safeguard equipment, material, and spare parts. All spare parts must be stored in accordance with manufacturer's recommendations.

OPERATION AND MAINTENANCE MANUALS

The manufacturer shall furnish operation and maintenance manuals in accordance with the requirements of Section 01 78 23 – Operating and Maintenance Manuals.

PART 2 - PRODUCTS

2.0.1 ACCEPTABLE MANUFACTURERS

- B. Clarifier(s) shall be in compliance with these specifications and plans and shall be supplied by the following manufacturer:

Ovivo USA LLC, Salt Lake City, Utah

Westech Engineering, Inc., Salt Lake City, Utah

Kusters Water, Spartanburg, SC

Initials_____

2.0.2 CLARIFICATION EQUIPMENT

C. GENERAL DESIGN REQUIREMENTS

1. Per Section 00 41 15 Bid Form, there are Base Bid and Alternate Bid 2 for clarifier materials.

- a. Base Bid: All fabricated metal components shall be hot dip galvanized (HDG) steel. This shall include the platform base/members for the walkway.
- b. Alternate Bid 2: All fabricated metal components shall be AISI Type 304 stainless steel. The platform base/members for the walkway shall be 304 stainless steel or aluminum.

Except where otherwise indicated, all plates and structural members designed for submerged service shall have a minimum thickness of ¼ inch.

Welding: All non-submerged steel shall be continuously seal welded. Stitch or skip welding is not permitted.

The clarifier components shall be designed for all bolted connections, field welding will not be permitted.

The Contractor shall be required to make any necessary modifications to the new or existing concrete to accommodate the equipment furnished. The manufacturer shall ensure the manufacturer furnished anchor bolt templates are properly designed for the application.

Edge Grinding: Sharp projections of cut or sheared edges of ferrous metal shall be ground to a radius by a power grinder as required to ensure satisfactory coating adhesion.

All bolts, nuts, anchor bolts and washers shall be Type 304 Stainless Steel, intended for submerged service.

D. DESIGN CRITERIA

AGMA Rated Continuous Torque (ft-lbs):	15,000
Momentary Peak Torque (ft-lbs):	30,000

Existing Tank Diameter (ft):	55
Sidewater Depth (ft):	Clarifier #1 - 11'; Clarifier #2 -10.5'
Tank Freeboard	Clarifier #1 - 24"; Clarifier #2 -18"
Floor Slope (in/in):	1:12
Minimum Drive Motor Horsepower:	0.75
Operational Environment:	Non Hazardous
Stainless Steel Hardware Grade:	304 / 316

E. PERFORMANCE AND DESIGN REQUIREMENTS

1. Each clarifier shall be capable of processing the specified maximum flow of municipal wastewater and shall be capable of efficiently separating solids from the treated liquid.

All components shall be designed and manufactured so the clarifiers can withstand the structural force exerted by momentary peak torque. All structural and functional parts shall be adequately sized to prevent deflection and vibration which could impair operation.

F. CLARIFIER COMPONENTS

1. Center Column

- a. The center column shall Support entire sludge collector mechanism including inboard end of the access bridge; sized and designed by collector manufacturer. Minimum wall thickness of 1/4 inch; mounted at center of basin. Shall be provided and designed to support all required static and dynamic loads. The column shall be designed for 2 times the continuous operating torque.
- b. The bottom of the column shall have a bolting flange for anchorage to the concrete tank using stainless steel anchor bolts. The Manufacturer shall provide a steel template/grout shield to accurately locate anchors and allow for grouting beneath the pier after final plumbing.
- c. The column shall have gusset plates located at the top and bottom flanges for added strength.

Center Drive Cage

- a. The drive cage shall be capable of carrying dead load of rake arms plus its own dead load, as well as design total torque assuming entire design torque is distributed uniformly along each rake arm:

Initials_____

bolted to spur gear assembly that rotates center cage; bolted to rake arms and influent well hangers (if used).

- b. Structural calculations shall be provided verifying the structural ability of the drive cage. The cage shall be designed for 2 times the continuous operating torque.

Feedwell with Energy Dissipating Inlet (EDI)

- a. The influent feedwell shall be constructed of minimum 3/16-inch thick steel plate with stiffening angles. The top of the feedwell shall extend 3-inches above the maximum clarifier water level and shall be provided with a least four (4) baffled slots at water level to permit escape of floating material.
- b. Feedwell plate sections shall be designed to bolt together.
- c. Mounted concentric with center column, supported by center cage; top edge approximately 4 inches above water surface; designed to diffuse influent into tank to greatest extent possible by use of energy-dissipating nozzles. Closed and sealed bottom within 1 inch of center column.
- d. The EDI well shall be equipped with multiple curved outlet ports located on the side of the well. The ports shall be arranged evenly around the EDI and shall discharge the liquid into the direction of rotation to further dissipate energy and enhance flocculation.
- e. Grit drains shall be provided on the EDI.
- f. EquaFlo 360 or equal for EDI design: The manufacturer of this product shall be solely responsible for the design of this configuration based upon the Contract Documents.

Rotating Rake Arms

- a. Each designed for 2 times the continuous torque. Total torque shall be assumed to be distributed uniformly along each rake arm.
- b. Rake arm design shall conform to slope of tank floor; consisting of structural triangular or box trusses attached rigidly to the center cage. Shall not incorporate use of any tie rods; self-supporting and without tie rods. Flights shall be a minimum 6" deep.

- c. Squeegees shall be provided on each blade, and shall allow for 2-inches of vertical adjustment. Squeegees shall be attached with stainless steel hardware. The rake blades shall be properly spaced to insure complete raking of the basin floor twice per revolution.

Walkways and Service Platform

- a. Welded truss or beam bridge construction and composed of two main members laterally braced together. UHMW-PE slide plates and stainless steel anchor bolts for wall support shall be provided.
- b. Bridge shall be capable of supporting dead loads plus minimum walkway live load of 50 pounds per square foot with deflection of maximum $L/360$ of span for dead load plus live loads; cambered for $1/3$ live load plus dead load.
- c. Walkway shall be supported at the drive service platform and the concrete wall. The service platform shall be located around the center drive and provide a minimum clearance of 2 feet 0 inches around all sides of the drive mechanism for maintenance and service.
- d. Circumferential walkway shall be supported by the concrete wall with support brackets as required.
- e. Handrail: The walkways and platform shall be provided with mechanical handrail 42" high, double row 1.5" diameter aluminum pipe, and 0.25" x 4" kickplates or 4" tall extruded toeboards on both sides. Walkway trusses may serve as the handrail if the top chord is 3'-6" above the walking surface.
- f. Decking: The entire walkway shall be covered with aluminum I-bar grating, 1.25" thick, attached with aluminum grating clips and stainless steel hardware. The service platform shall be covered with 0.25" aluminum checkered plate.

Skimmer and Scum Removal

- a. General
 - 1) The clarifier manufacturer shall furnish two (2) skimming devices as part of each clarifier mechanism. Each skimming

Initials_____

mechanism shall be arranged to sweep the surface of the sedimentation compartment, automatically removing scum and floating material to a scum box at the periphery of the tank.

b. Skimmer Construction

- 1) The rotating scum skimmer shall include a horizontal plate skimmer blade supported by vertical members extending up from the rake arms. The blade shall extend from the influent feedwell to the hinged scum skimmer assembly at the tank periphery.

c. Scum Skimmer Assembly

- 1) A hinged scum skimmer assembly shall be mounted on the outer end of the skimmer blade. The hinged scum skimmer assembly shall be designed to form a pocket for trapping the scum. The hinged arrangement shall insure continual contact and proper alignment between wiper blade, scum baffle, and ramp as the blade travels up the scum box ramp. The wiper blade shall have a wearing strip on its outer end which contacts the scum baffle and a neoprene strip on its lower and inner edge. The neoprene wipers shall be a minimum 1/4 inch thickness. The scum is trapped as the wiper blade meets the ramp and is raised up the ramp to be deposited into the scum trough for disposal.

d. Scum Box

- 1) The scum box shall be supported from the tank wall and connected to the scum withdrawal piping. It shall be made of 1/4 inch thick welded plate. The box shall have a scum trough, vertical sides, and a sloping approach ramp that extends from 1-1/2 inches above water level to 5-1/2 inches below. A similar ramp shall be provided at the opposite end to allow the skimmer blade to lower back to the operating position. A flexible connector shall be provided for connection to the Contractor supplied scum withdrawal piping in the tank wall.

e. Scum Flushing Valve

- 1) A valve shall be attached to the scum box which automatically opens and allows clarified liquid into the

scum box to flush out solids. The valve shall actuate at every pass of the scum skimmer over the scum box, allowing sufficient delay after deposit of the solids before flushing begins. Delay and flush duration shall be adjustable. The opening and closing of the scum flushing valve shall be one smooth continuous movement. The valve shall provide 2 to 5 gallons of flush water per each pass of the skimmer assembly.

f. Scum Baffle

- 1) The baffle shall consist of 1/4 inch thick x 12 inches deep fiberglass sections. In the area of the scum box the scum baffle shall extend to 24 inches starting approximately 6 feet before and ending 2 feet after the scum box. The baffle sections shall be curved and fastened to the launder wall with adjustable FRP support brackets, stainless steel fasteners, and anchor bolts.

Effluent Weir

- a. The effluent weir and scum baffle to be furnished and installed under this section shall be as shown on the Contract Drawings and as specified herein.
- b. The effluent weir shall consist of FRP sections, fastened to the tank wall with Type 304 stainless steel anchor bolts and hex nuts and FRP washers to allow for vertical adjustment. The Contractor shall seal all joints between walls and weirs with a suitable waste resistant and chlorine resistant mastic. Effluent weir shall be a v-notch weir as shown on the Drawings. Effluent weir shall be adjustable once installed as shown on the standard details on the Drawings.

Center Drive Mechanism

General: The center clarifier drive mechanism shall consist of an electrical motor, primary reducer, intermediate gear reducer and a main gear set consisting of a spur pinion and internal tooth spur gear.

Motor: The clarifier drive shall be driven by an electric motor. The motor shall be minimum 3/4 horsepower and shall be totally enclosed, fan cooled, with a 1.15 service factor, and have bearings with a minimum B10 rating of 50,000 hours. Operating electric current will be 230/460 volt, 3 phase, and 60 hertz. Each motor will be NEMA Design B employing Class F insulation designed for an ambient temperature of 40 °C.

Primary Reducer Design: A mechanical primary reducer shall be provided to transmit torque to the intermediate reducer. The reducer shall consist of a helical style gearbox, chain and sprocket set. The helical reducer shall have an AGMA Class II rating, 1.4 service factor. The chain and sprocket shall be 3/4" pitch, No. 60 steel roller chain, designed in accordance with ANSI B 29.1. A shear pin and hub shall be provided on the driven sprocket. The shear pin shall be sized for 150% of the continuous design torque. All chains and sprockets shall be fully enclosed in an OSHA compliant, 304 stainless steel guard.

Intermediate Reducer Design: The intermediate reducer shall be a worm and worm gear type, providing no less than 45% gear efficiency. Lubrication of the worm gearing shall be oil or grease. The worm gear reducer shall be designed for a 200,000 hr. service life at the designed rpm and torque. The output shaft of the intermediate reducer shall be keyed to a heat treated spur pinion. The worm gear shall be centrifugally cast bronze driven by a heat treated worm pinion. The worm and worm gear shall be designed and rated in accordance with ANSI/AGMA standard 6034.

Final Reducer Design: The main gear shall include an internal tooth spur gear and spur pinion. The main gear material shall be forged alloy steel, induction hardened to a minimum 53Rc. The pinion shall be constructed from AISI 4150 steel, hardened to a minimum 340 Bhn.

Turntable Base: Cast iron, ASTM A48 Class 40 minimum 40,000 psi tensile strength; able to be bolted to center column and to provide support for internal spur gear, the entire rotating collector mechanism and one end of the access bridge. Fabricated steel housing are not permitted.

Main Bearing: The main bearing shall consist of a full complement of hardened steel chrome ball bearings (1" minimum), each riding on four replaceable hardened steel strip liners. Each liner shall be 3/8" x 3/8" square, heat treated to a minimum 48-50 Rc. The bearing

Initials_____

liners shall be independently replaceable without the need to remove the clarifier drive, Access Bridge or platform.

Torque Overload Protection Design: The clarifier drive shall include a mechanical lateral displacement torque overload protection system. Rotational style overload devices are not permitted due to their inherent inaccuracy. Two overload switches shall be provide, one for “alarm” set at 100% of the continuous design torque, and one for “motor cut-off” set at 130% of the continuous design torque. Additionally a shear pin shall be provided set at 150% of the continuous design torque. All switches shall be current rated for 120 VAC. Each switch shall be NEMA rated for the specified environment identified Drawings. The torque indication gage shall include a needle and scale from 0-150% of the load.

Condensate Removal: A condensate removal system shall be included to automatically remove condensate from the main gear housing. The condensate removal system shall be designed to provide constant removal of condensate from the main gear housing. A minimum of 6” clearance shall be provided below the low point drain to allow for easy access by plant personnel.

Coatings if applicable: Each clarifier drive mechanism shall be factory coated with 2 coats (2-3 mils per coat, minimum DFT) of Tnemec epoxy prior to shipment.

2.0.3 CONTROLS AND INSTRUMENTATION

G. GENERAL

1. The clarifier control panel shall be the supplier’s standard UL listed enclosure and wired for 230/460 volts, 3-phase, 60 Hz electrical service. The enclosure shall be furnished completely pre-wired and tested, requiring only mounting and connection to field mounted electrical devices. The control panel shall include all equipment required to control the clarifier specified herein.
2. The control panel enclosure shall be NEMA 4X. The enclosure shall house the control devices, relays, terminal blocks, and motor starter. All hinges and latches shall be corrosion-resistant.

H. OPERATION

1. The control system shall be equipped with one (1) ON / OFF position selector switch. In the Off mode the clarifier drive will not run. In the ON mode

Initials_____

the clarifier drive shall run continuously. The following items shall be included in each control panel.

- a. Clarifier run light (green)
- b. Torque “alarm” light (amber)
- c. Torque “motor cut out” light (red)
- d. UL 508 Listed industrial controls label
- e. “Alarm” horn
- f. Reset push button
- g. On/Off selector switch
- h. Relays and transformers as required
- i. Main power disconnect

I. COMPONENTS

1. Enclosure

- a. Enclosures shall be NEMA 4X.
- b. Enclosure shall house the circuit breaker, motor starter, control devices, relays, and terminal blocks.

2. Control Devices

- a. Pilot devices shall be mounted on the enclosure front panel door.
- b. Indicator lights shall be LED type. Selector switches shall be heavy duty NEMA 4X. type.
- c. Control transformer shall be protected by two (2) primary fuses and one (1) secondary fuse. The 120 volt secondary shall have one leg grounded.
- d. Auxiliary relay contacts shall be included for clarifier drive, Run, Off, alarm, and motor cut out overload signal outputs. The contacts shall be rated 10 amp, 240 VAC, resistive load.

Initials_____

2.0.4 SOURCE QUALITY CONTROL

- J. Clarifier components and control panel shall be factory assembled and tested to ensure proper fit and satisfactory operation. Equipment shall be shipped in the minimal practical number of pieces for minimal field assembly by the Contractor.

2.0.5 SHOP PAINTING

- K. Stainless steel and aluminum surfaces shall not be painted. Gearboxes, Motors, and other manufactured components will receive the manufacturer's standard weather- and corrosion-resistant coating. All fabricated steel components which are not factory pre-coated shall be field prepared and coated in accordance with Section 09 90 00.

2.0.6 SPARE PARTS

- L. The intent of this specification is to provide uninterrupted operation for a minimum period of two (2) years. To meet this objective the clarifier manufacturer shall supply any spare parts, excluding lubricants that are required to meet this time frame. As a minimum, provide the following spare parts, per clarifier::

1. Two (2) Hydraulic Oil Filters (if required)

One (1) Sight glass for each main drive housing containing oil

One (1) Set of Skimmer Neoprene

PART 3 – EXECUTION

3.01 INSTALLATION AND TESTING

- M. Contractor shall notify County seven (7) days prior to taking clarifier out of service.
- N. Contractor shall coordinated project schedule and work to ensure uninterrupted clarifier operation during holiday weekends (e.g. 4th of July, Memorial and Labor Day).
- O. Contractor shall verify all dimensions in the field to ensure compliance of equipment dimensions with the drawings. Contractor shall notify Engineer of any significant deviations.
- P. Installation of the equipment shall be in strict accordance with the contract documents and the Manufacturer's instructions and shop drawings. Manufacturer

Initials_____

shall supply anchor bolts for the equipment. Contractors shall install the anchor bolts in accordance with the Manufacturer's recommendations.

Q. Supplier shall furnish the services of a factory-trained Service Engineer for One (1) trip and one (1) day for installation inspection services and One (1) trip and two (2) days for start-up, commissioning, and operator training for each unit.

1. Equipment shall not be energized, or "bumped", to check the electrical connection for motor rotation without installation inspection and the Service Engineer present.

The Service Engineer shall test rotate each clarifier for 2 complete revolutions, inspect the installation, and make recommendations for any necessary mechanical adjustments by the Contractor.

The Service Engineer shall conduct a torque test during the start-up and commissioning to demonstrate proper operation of the overload system.

If additional field service beyond the days and trips specified is required due to the mechanisms not being fully operational, at the time of service requested by the Contractor, the additional service days will be at the Contractor's expense.

END OF SECTION

Initials_____

APPENDIX A

AS-BUILTS REQUIREMENTS



Nassau County Engineering Services Department
96161 Nassau Place
Yulee, Florida 32097

Rebecca Hiers-Bray, PE
Public Works Director

AS-BUILTS REQUIREMENT CHECKLIST:

The Following list is intended to highlight the majority of the as-built requirements for Construction projects in Nassau County. This list should not be considered to be all-inclusive as each project is unique in nature and may require additional information that can only be determined during the course of the project's completion. Generally, however, the AS-BUILT information shall contain the following:

1. AS-BUILTS should be based on the design plans as approved through the DRC process. The submitted as-builts should be at the same scale and have the same orientation as the design files.
2. AS-BUILTS should have the same page numbering as the design plans, and the cover of the AS-BUILT plans should have all sheets to include lot grading from the design plans listed with sheets not "AS-BUILT" stricken through.
3. AS-BUILTS should display the original design information as displayed on the plan sheets with the design information stricken through and the as-built information displayed in bold adjacent to the design information.
4. AS-BUILTS shall be accompanied by an "Engineer's Certification" form from the Engineer of Record. (Exhibit 3&4)
5. Three (3) sets of fully signed and sealed AS-BUILTS should be submitted along with a CADD file(s) containing the AS-BUILT information. CADD files should be in State Plane coordinates (NAD 83) with a vertical datum of NGVD 1929. Furthermore, CADD files should be submitted in ACAD 2004 or ACAD 2006 only.
6. Northings and Easting of all drainage structures should be included.
7. The plans should be clearly legible and all structure notes, distances, angles and elevations should be clearly readable.
8. If the plan represents a phase of a development, then that phase should be clearly identified for clarity and avoid confusion with future phases.
9. There should be a north arrow and scale on each sheet.



10. A legend should be included explaining the symbols used in the plans.
11. ALL sheets must be signed and sealed by a surveyor licensed in the State of Florida.
12. There should be sufficient "plan" and "as-built" elevations shown to verify that the streets were constructed substantially in accordance with the approved construction plans. Generally, the County will review all low points and high points in the street and verify that the minimum grade exists for each street. On straight sections between high and low points elevations should be taken every 200 feet.
13. All street curve radii should be shown on the plans or in a table.
14. Street widths and curb type should be identified for each street on each sheet.
15. Whenever there are islands within the streets the as-builts should include dimensions for these islands.
16. The paved radii of all Cul-de-Sacs should be listed and Cul-De-Sac center and edge of pavement or gutter elevations at quarter points shall be shown.
17. All underdrains should be shown with size, lengths, inverts and cleanouts all shown.
18. Where swales are utilized there should be sufficient flow line elevations and ditch cross sections to verify capacity of the channel.
19. There should be a comparison table of design and as-built pipe sizes, lengths, invert elevations, and pipe slopes.
20. The as-built surface area of the pond(s) at Normal Water Level (design) and Top of Bank (as-built) should be included.
21. The bottom elevation and area should be shown (2 locations min. per pond).

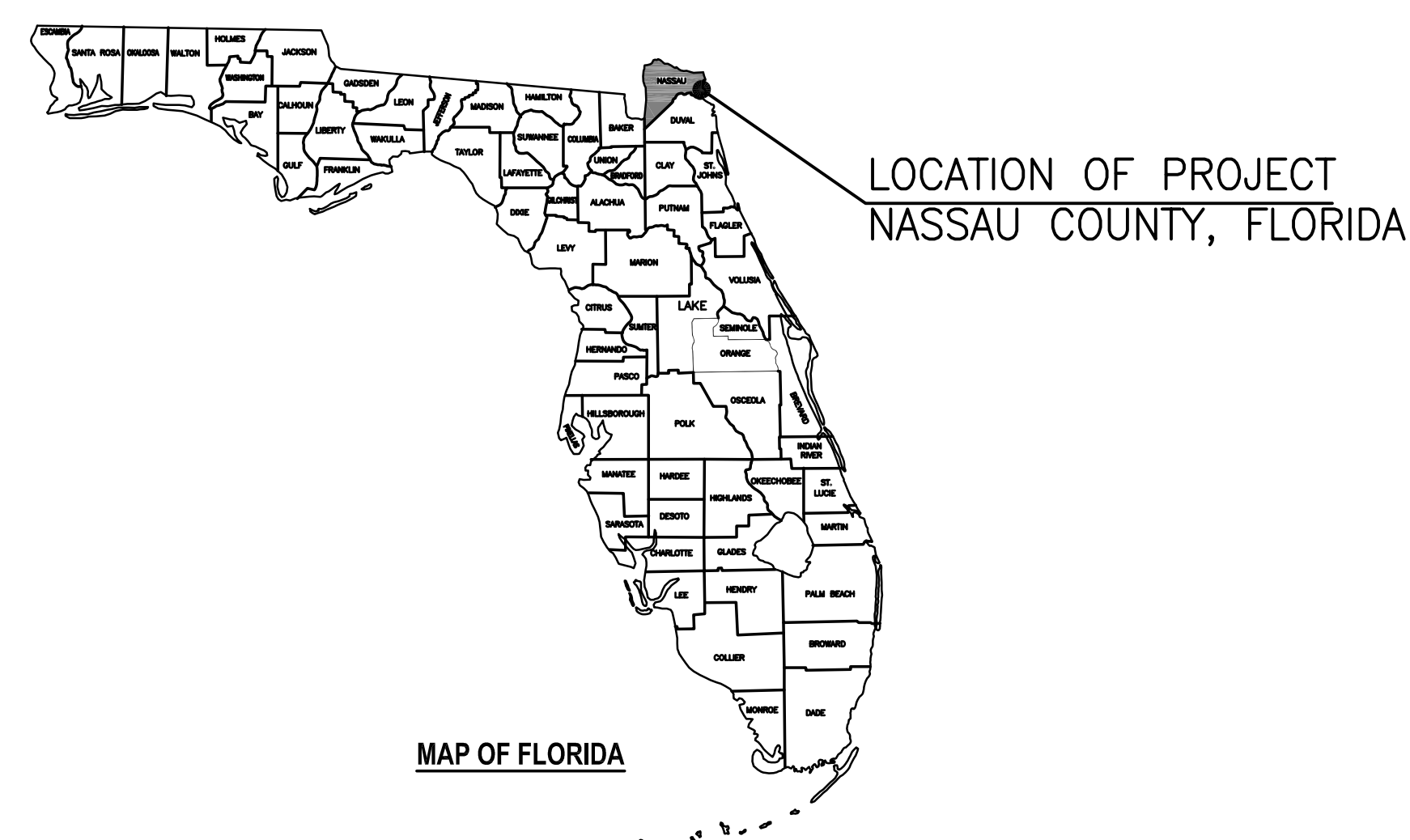


22. The surveyor shall certify by note (for each pond) that no slope is greater than 1:4 above the design NWL, unless the pond is fenced.
23. All structures in the pond (overflow weirs, etc.) should be included.
24. All watermain and sewermain locations, dimensions, etc.
25. All easements required (or on a plat) should be shown on the "As- Builts" and improvement located so as to verify improvements are within the easement. Easement not recorded as part of the recorded plat including drainage and right-of-way easements shall also be identified as "as-built". For these easements the book and page of their record, property to whom easement is dedicated and date of filing should be shown on as the "as-built". All improvements intended to be within these easements shall be shown as the "as-builts" to verify the improvements are within the easement. Wetlands are not reviewed by Nassau County and need not be shown.
26. Depict all storm drain repair locations and method.

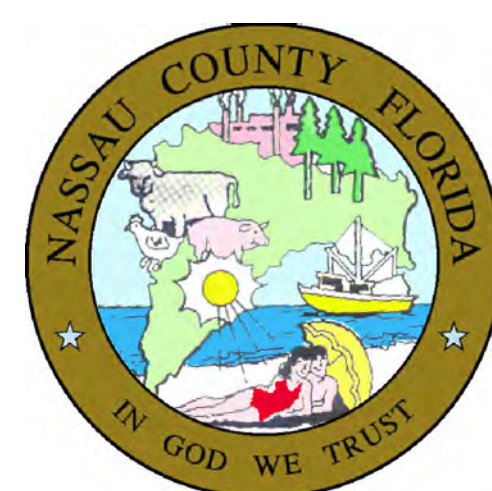
APPENDIX B

PLANS/DRAWINGS

NASSAU COUNTY - AMELIA ISLAND WWTP CLARIFIERS #1 AND #2 REHABILITATION PROJECT



Prepared For:



96135 NASSAU PLACE
SUITE 1
YULEE, FL 32097

Prepared By:



gai consultants

1301 RIVERPLACE BOULEVARD
SUITE 900
JASKSON, FLORIDA 32207
PHONE: (904) 363-1110

June, 2018

NASSAU PROJECT NO. CM1831-WA12
PROJECT BID NUMBER. NC18-010

NASSAU COUNTY OFFICIALS

COMMISSION CHAIRMEN	PAT EDWARDS
COMMISSION VICE CHAIR:	JUSTIN M. TAYLOR
COMMISSIONER:	DANIEL B. LEEPER
COMMISSIONER:	GEORGE V. SPICER
COMMISSIONER:	STEPHEN W. KELLEY
MANAGER:	SHANEA JONES
PUBLIC WORKS DIRECTOR:	BECKY HEIRS-BRAY, P.E.

LOCATION MAP



AMELIA ISLAND, FLORIDA

PROJECT LOCATION

BASE MAP USGS, AMELIA NASSAU COUNTY 7.5 MINUTE
QUADRANGLE

CONTACT LIST

OWNER'S REPRESENTATIVE	CIVIL ENGINEERS
NASSAU COUNTY ENGINEERING SERVICES	GAI CONSULTANTS, INC.
96161 NASSAU PLACE	1301 RIVERPLACE BOULEVARD
YULEE, FLORIDA 32097	SUITE 900
(904) 530-6225	JACKSONVILLE, FLORIDA 32801
ATTN: BECKY HIERS-BRAY, P.E.	(561) 465-8001
	ATTN: JULES JAY AMENO, P.E.

== == BID SET == ==

THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION

INDEX OF DRAWINGS

DWG. NO.	TITLE
-	COVER SHEET
G-1	INDEX OF DRAWINGS / GENERAL SITE MAP
G-2	GENERAL NOTES
G-3	STANDARD ABBREVIATIONS AND SYMBOLS
C-1	EXISTING SITE PLAN
C-2	EXISTING PIPING PLAN
M-1	ORIGINAL DESIGN CLARIFIER #1
M-2	ORIGINAL DESIGN CLARIFIER #2
M-3	CLARIFIER #1 EXISTING CONDITIONS/ DEMOLITION
M-4	CLARIFIER #2 EXISTING CONDITIONS/ DEMOLITION
M-5	CLARIFIER #1 COATING REQUIREMENTS
M-6	CLARIFIER #2 COATING REQUIREMENTS
M-7	CLARIFIER #2 PROPOSED CIRCUMFERENTIAL WALKWAY
M-8	CLARIFIER ELEVATION DETAIL
M-9	PROPOSED MECHANICAL, STRUCTURAL AND ELECTRICAL REQUIREMENTS
E-1	EXISTING SINGLE LINE DIAGRAM
E-2	PROPOSED SINGLE LINE DIAGRAM
ED-1	ELECTRICAL DETAILS



INDEX OF DRAWINGS / GENERAL SITE MAP

CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

SEAL

Jules J. Armento Jr., P.E.
Florida Registration #31049

gal consultants
EB 9951
1301 RIVERPLACE BLVD. SUITE 900
JACKSONVILLE, FLORIDA 32207
PHONE: (407) 423-8398

PROJECT NO./DASH NO.
A120925.12

SHEET
G-1

REVISIONS				
NO.	DATE	DWN	CHKD	APPRO

SCALE:	N.T.S
DATE:	JUNE 2018
DRAWN:	SAH
CHECKED:	JJA
APPROVED:	JJA

GENERAL NOTES

GENERAL

- EXISTING UTILITY LOCATIONS AS SHOWN ARE APPROXIMATE AND WERE BASED ON RECORD DRAWINGS AND HAVE NOT BEEN FIELD-VERIFIED. THE EXISTING UTILITIES SHOWN SHALL NOT BE CONSTRUED AS BEING ALL-INCLUSIVE OF UTILITIES IN THE AREA. ANY INTERRUPTION OF SERVICE SHALL BE COORDINATED WITH THE OWNER OF THE UTILITY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY SUPPORT OF UTILITIES POLES AND COORDINATION OF SUCH WITH UTILITIES OWNERS. IF IT IS DETERMINED THAT UTILITY POLES REQUIRE HOLDING OR RELOCATION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXPENSES ASSOCIATED WITH THEIR HOLDING AND/OR RELOCATION.
- PIPE LENGTHS ARE MEASURED CENTER LINE TO CENTER LINE FOR MANHOLES AND INLETS AND FROM THE END OF THE PIPE FOR MITERED END SECTIONS.
- ALL PIPE AND FITTINGS SHALL BE PRESSURE TESTED AS SPECIFIED.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY THRUST RESTRAINT, BRACING, TEST PLUGS AND/OR OTHER DEVICES AS NECESSARY TO SUCCESSFULLY COMPLETE PRESSURE TESTING OF ALL PRESSURE PIPING SYSTEMS.
- PIPE LENGTHS SHOWN REPRESENT SCALED DISTANCES, THE LENGTHS ARE FOR INFORMATIONAL PURPOSES AND THE CONTRACTOR SHALL DETERMINE THE ACTUAL CONSTRUCTION QUANTITIES.
- UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. THE WATER MAIN SHALL BE CONSTRUCTED ABOVE OTHER PIPELINE WHEN POSSIBLE.
- 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. THE WATER MAIN SHALL BE CONSTRUCTED ABOVE OTHER PIPELINE WHEN POSSIBLE.
- WHERE SANITARY SEWERS, FORCE MAINS AND SEWER LATERALS MUST CROSS A WATER MAIN WITH LESS THAN THE REQUIRED VERTICAL DISTANCE, BOTH THE SEWER AND THE WATER MAINS SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) AT THE CROSSING. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT ALL CROSSINGS.
- ALL CROSSINGS SHOULD BE ARRANGED SO THAT THE SEWER MAIN PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUAL DISTANCE FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING).
- WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE WITH LESS THAN THE REQUIRED VERTICAL CLEARANCE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP AND THE NEW PIPE SHALL BE ARRANGED TO MEET THE CROSSING REQUIREMENTS ABOVE.
- A MINIMUM 3 FOOT HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE.
- WHERE IT IS NOT POSSIBLE TO MAINTAIN A 3 FOOT HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR THE FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
- WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).
- VERTICAL TRANSITION FITTINGS MAY NOT BE SHOWN ON YARD PIPING PLANS. ALL SUCH FITTINGS SHALL BE PROVIDED BY THE CONTRACTOR TO AVOID PIPING CONFLICTS AND TO PROVIDE ADEQUATE COVER AT NO ADDITIONAL COST TO OWNER.
- ALL DIP USED IN UTILITY SEPARATION SITUATIONS SHALL BE CLASS 50 OR HIGHER AND DUCTILE IRON FITTINGS SHALL BE CLASS 350. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED.
- ALL PIPING SHALL HAVE 3 FEET MINIMUM COVER UNLESS OTHERWISE NOTED. CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE ELEVATIONS AND ALIGNMENTS.
- ALL AREAS WHERE LANDSCAPE OR SOD HAS BEEN REMOVED BY CONTRACTOR'S OPERATIONS SHALL BE REPLACED TO MEET NASSAU COUNTY STANDARDS.
- FITTINGS MAY BE USED FOR PIPE ALIGNMENT CHANGES RATHER THAN DEFLECTING JOINTS AT THE CONTRACTOR'S EXPENSE.
- DEWATERING MAY BE REQUIRED IN SOME PIPING AREAS TO ACHIEVE THE NECESSARY EXCAVATION AND SUBSEQUENT CONSTRUCTION, BACKFILLING, AND COMPACTING. NO EXTRA COMPENSATION FOR DEWATERING WILL BE AUTHORIZED.
- ALL DEWATERING COSTS ASSOCIATED WITH THE INSTALLATION AND CONSTRUCTION OF THE UNDERGROUND UTILITIES, STORMWATER PIPES, MANHOLES, AND STORMWATER MANAGEMENT SYSTEMS AS WELL AS ALL OTHER STRUCTURES AT THE WTP SHALL BE INCLUDED AS PART OF THE CONSTRUCTION COSTS.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST BE FAMILIAR WITH THE OVERALL SITE CONDITIONS AND PERFORM ADDITIONAL INVESTIGATIONS AS HE DETERMINES NECESSARY TO UNDERSTAND THE LIMIT AND DEPTH OF EXPECTED ORGANIC SILT PEAT AREAS, ADEQUACY OF EXISTING MATERIALS AS FILL, DEWATERING REQUIREMENTS, CLEAN FILL REQUIRED FROM OFF SITE, AND MATERIALS TO BE DISPOSED OF OFF SITE, ALL OF WHICH WILL AFFECT PRICING. ANY DELAY, INCONVENIENCE, OR EXPENSE CAUSED TO THE CONTRACTOR DUE TO INADEQUATE INVESTIGATION OF EXISTING CONDITIONS SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE AUTHORIZED.
- ALL PAVING, STABILIZED EARTH, DRIVEWAYS, CURBS, CULVERTS, SIDEWALKS, FENCES, SOD, LANDSCAPING, ETC. DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED WITH MATERIAL TO MATCH EXISTING. ALL CULVERTS THAT ARE REPLACED AND ARE RELOCATED WITHIN THE RIGHT-OF-WAY SHALL HAVE THE INVERT ELEVATIONS DETERMINED BY THE ENGINEER OF RECORD.
- ALL DRAINAGE AREAS THAT ARE CROSSED BY PIPELINES SHALL BE LEFT OPEN AT ALL TIMES EXCEPT FOR SHORT PERIODS AS MAY BE NECESSARY DURING ACTUAL CONSTRUCTION HOURS.

GENERAL CON'T.

- THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A REGISTERED PROFESSIONAL LAND SURVEYOR FOR RESTORING ALL MONUMENTS AND PROPERTY CORNERS DISTURBED DURING CONSTRUCTION. PROOF OF REGISTRATION SHALL BE SUBMITTED TO THE ENGINEER.
- THE CONTRACTOR SHALL LOCATE ALL WATER, WASTEWATER, AND GRAVITY MAINS AT PROPOSED TIE-IN LOCATIONS TO VERIFY ACTUAL LOCATION, SIZE, ELEVATION, AND MATERIAL PRIOR TO ORDERING NEW MATERIALS.
- ALL POTABLE WATER MAINS EITHER INSTALLED OR DISTURBED DURING CONSTRUCTION SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-651 LATEST EDITION, SUBSECTION 4.8, AND SECTION 9. SUCH WATER MAINS SHALL THEN BE BACTERIOLOGICALLY TESTED IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS. A REPRESENTATIVE FROM THE UTILITY MUST BE PRESENT DURING THE TAKING OF ALL WATER SAMPLES, PRESSURE TESTS, FLUSHING, ETC.
- LABOR, MATERIALS, AND METHODS OF CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS ADOPTED BY NASSAU COUNTY, THE CONSTRUCTION DRAWINGS, AND CONSTRUCTION SPECIFICATIONS. WHERE CONFLICTS OR OMISSIONS EXIST, NASSAU COUNTY'S STANDARDS SHALL DICTATE. SUBSTITUTIONS AND DEVIATION FROM PLANS AND SPECIFICATIONS SHALL BE PERMITTED ONLY WHEN WRITTEN APPROVAL HAS BEEN ISSUED BY THE ENGINEER.
- DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE WORK IN ACCORDANCE WITH O.S.H.A. REQUIREMENTS. THE CONTRACTOR'S SIGNATURE AFFIXED TO THE CONTRACT AGREEMENT WITH THE OWNER IS CONSIDERED CERTIFICATION OF CONFORMANCE TO SUCH REQUIREMENTS.
- SHOP DRAWINGS OF MATERIALS USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AND APPROVAL SHALL BE GIVEN PRIOR TO INSTALLATION.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT REQUIRED PERMITS ARE OBTAINED AND IN HAND BEFORE BEGINNING ANY CONSTRUCTION. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES. ANY PENALTIES, STOP WORK ORDERS ON ADDITIONAL WORK RESULTING FROM THE CONTRACTOR BEING IN VIOLATION OF THE REQUIREMENTS ABOVE SHALL BE FULLY BORNE BY THE CONTRACTOR.
- A PRECONSTRUCTION MEETING IS TO BE HELD BETWEEN THE JURISDICTIONAL ENTITY OF NASSAU COUNTY UTILITIES, ENGINEER OF RECORD, AND CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT UNDERGROUND INSTALLATIONS, INCLUDING SPRINKLERS, SHALL BE PLACED BENEATH THE PAVEMENT AND ITS EDGES PRIOR TO THE CONSTRUCTION OF THE PAVEMENT. THE PAVEMENT SHALL NOT BE CUT WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- CONSTRUCTION INSPECTION WILL BE PROVIDED BY THE CONTRACTOR AND HE SHALL NOTIFY THE ENGINEER AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION AND AT LEAST 48 HOURS BEFORE REQUIRING INSPECTION ON EACH AND EVERY PHASE OF WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS NOTICE PRIOR TO SCHEDULED TESTING. NO BACTERIOLOGICAL TESTING, PRESSURE TESTING, OR FINAL TESTING WILL BE ACCEPTED UNLESS WITNESSED BY THE ENGINEER'S REPRESENTATIVE.
- CONTRACTORS, NASSAU COUNTY REPRESENTATIVES, AND UTILITY COMPANIES ARE RESPONSIBLE FOR THEIR RESPECTIVE SURVEYING AND LAYOUT FROM BENCHMARK PROVIDED ON CONSTRUCTION PLANS. SURVEY MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED UPON COMPLETION OF THE WORK BY A REGISTERED LAND SURVEYOR.
- THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS AND PERMITS ON THE JOB SITE DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE TWO (2) SETS OF RECORD DRAWINGS TO THE ENGINEER OF RECORD WITHIN ONE MONTH AFTER CONSTRUCTION HAS BEEN COMPLETED.
- PLANS AND SPECIFICATIONS REQUIRE THAT COMPACTED BACKFILL BE PLACED ALONG SIDE OF AND OVER ALL UTILITIES. THE ENGINEER MAY REQUIRE THAT COMPACTION TESTS BE TAKEN TO VERIFY BACKFILL COMPACTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY TESTING TO ASSURE THAT THE PROPER COMPACTION HAS BEEN ACHIEVED ON THE SUBGRADE, BASE, AND ALL OTHER PERTINENT AREAS THAT HAVE BEEN COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH TESTING AND RETESTING OF THE AREAS AND SHALL PROVIDE THE OWNER AND THE ENGINEER WITH COPIES OF THE CERTIFICATION OF COMPACTION FROM THE TESTING COMPANIES.
- ALL EXCESS FILL FROM SITE SHALL BE STOCKPILED BY THE CONTRACTOR, IN A LOCATION DETERMINED BY THE OWNER OR THE OWNER'S REPRESENTATIVE AND THE ENGINEER.
- CONCRETE SIDEWALKS SHALL CONFORM TO FDOT INDEX 310.
- BENCHMARK FOR CONSTRUCTION HAS BEEN PROVIDED ON SITE PLAN.
- ALL SITE DATUMS ARE IN NAVD 88, EXCEPT WHERE OTHERWISE NOTED

SITE WORK

- THE CONTRACTOR SHALL CLEAR AND GRUB THE SITE, AS REQUIRED, TO REMOVE ROOTS, BRANCHES, ROCKS, ETC. AT NO TIME SHALL CONSTRUCTION, CLEARING, OR WORK TAKE PLACE OUTSIDE THOSE AREAS SHOWN ON THE PLANS FOR CONSTRUCTION. ALL UNSUITABLE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
- THE CONTRACTOR SHALL GRADE THE SITE TO PROVIDE POSITIVE SURFACE DRAINAGE AS INDICATED ON THE PLANS. ANY AREAS BEING FILLED TO ACHIEVE PROPER DRAINAGE FLOW SHALL BE COMPACTED TO A MINIMUM NINETY-FIVE (95%) MODIFIED PROCTOR MAXIMUM DENSITY (AASHTO T-180).
- ALL GRASSED AREAS WITHIN THE RIGHT OF WAY DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY SODDING. SEEDING AND MULCHING IS NOT ACCEPTABLE.

EROSION AND SEDIMENTATION CONTROL

- THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO INSTALL, OPERATE, AND MAINTAIN EROSION, SEDIMENT, AND TURBIDITY CONTROL DEVICES AND STRUCTURES AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATERBODY EXISTS DUE TO THE PROPOSED WORK. THE EROSION, SEDIMENT, AND TURBIDITY CONTROL DEVICES SHALL BE IN ACCORDANCE WITH FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX #102, LATEST VERSION. AT NO TIME SHALL THERE BE AN OFFSITE DISCHARGE WHICH VIOLATES THE WATER QUALITY STANDARDS IN CHAPTERS 62-302 AND 62-4, FLORIDA ADMINISTRATIVE CODE.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL OPERATE AND MAINTAIN EROSION AND SEDIMENT CONTROL DEVICES IN ACCORDANCE WITH THE REGULATIONS SET FORTH IN THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES), AS SHOWN ON THE STORMWATER POLLUTION PREVENTION PLAN. (SWPPP)
- THE CONTRACTOR SHALL INSTALL SILT FENCES AROUND THE PERIMETER OF THE WORK TO PREVENT TRANSPORTATION OF SEDIMENT TO OFFSITE PROPERTIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROJECT COMPLYING WITH APPLICABLE STATE WATER QUALITY STANDARDS DURING CONSTRUCTION AS SPECIFIED IN THE PERMITS. ALL WATER AND WIND EROSION SHALL BE MINIMIZED AS DEFINED IN THE SPECIFICATIONS AND PERMITS. THE SPECIFICATIONS PROVIDE ONLY A MINIMUM REQUIREMENT FOR EROSION AND SEDIMENTATION CONTROL, IT IS THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT CONTROL MEASURES NOT SHOWN IN SPECIFICATIONS. ALL COSTS ASSOCIATED WITH TURBIDITY CONTROL AND SEDIMENT STABILIZATION SHALL BE BORNE BY THE CONTRACTOR.
- THE REMOVAL OF DEBRIS AND ANY OTHER MATERIAL INCLUDING PIPES, CONCRETE STRUCTURES AND PAVEMENT LAYERS FROM CLEARING AND GRADING OPERATIONS SHALL BE HAULED AWAY BY THE CONTRACTOR IN A LEGAL FASHION TO AN AUTHORIZED DUMPING FACILITY.
- THE CONTRACTOR MUST INSTALL AND MAINTAIN SOD ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETED FINAL GRADES, AND AT ANY OTHER TIME AS NECESSARY TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES TO ANY DOWNSTREAM WATER BODY, WETLAND, OR OFFSITE PROPERTY. SODDING ON SLOPES 3:1 AND STEEPER SHALL BE STAKED.
- THE CONTRACTOR MUST MAINTAIN CONTINUOUS RESTORATION BEHIND THE UTILITY WORK ON A DAILY BASIS.

DEMOLITION

- THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND LICENSES FOR PERFORMING ANY DEMOLITION WORK AND SHALL FURNISH A COPY OF SAME TO THE ENGINEER PRIOR TO COMMENCING THE WORK. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE PERMITS.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES OR LOCAL AUTHORITIES FURNISHING GAS, WATER, ELECTRICAL, TELEPHONE, OR SEWER SERVICE SO THEY CAN REMOVE, RELOCATE, DISCONNECT, CAP OR PLUG THEIR EQUIPMENT IN ORDER TO FACILITATE DEMOLITION.
- THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER IMPROVEMENTS SHOWN ON THESE PLANS AND UTILITIES AND OTHER IMPROVEMENTS NOT SHOWN. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS OF UTILITIES AND OTHER IMPROVEMENTS DAMAGED DURING CONSTRUCTION AND SHALL MAINTAIN SUFFICIENT PROTECTION FOR ALL UTILITIES REQUIRED TO PROTECT THEM FROM DAMAGE AND TO PROTECT THE PUBLIC DURING CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL TREES, STRUCTURES, AND UTILITIES NOT MARKED FOR REMOVAL OR DEMOLITION AND SHALL PROMPTLY REPAIR ANY DAMAGE AS DIRECTED BY THE ENGINEER AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL REMOVE BUILDING STRUCTURES MARKED FOR DEMOLITION WHICH INCLUDES FOOTERS ASSOCIATED WITH THE STRUCTURE, WATER LINES TO THE METER LOCATION, LATERALS TO THE RIGHT-OF-WAY LINE (CAP PRIOR TO BACKFILLING THE TRENCH), AND UNDERGROUND ELECTRICAL WIRING NOT ASSOCIATED WITH THE APPROPRIATE POWER COMPANY.
- THE CONTRACTOR SHALL REMOVE PAVING MARKED FOR DEMOLITION WHICH INCLUDES ALL ASPHALT, CONCRETE, BASE, AND RETAINING WALLS (INCLUDING THE FOOTERS).
- THE CONTRACTOR SHALL REMOVE TREES MARKED FOR REMOVAL WHICH INCLUDES THE ROOTS ASSOCIATED WITH THE TREE. TREES NOT MARKED FOR REMOVAL SHALL BE PROTECTED IN ACCORDANCE WITH NASSAU COUNTY REGULATIONS.
- THE CONTRACTOR SHALL REMOVE UNSALVAGEABLE MATERIALS AND YARD WASTE FROM THE SITE IMMEDIATELY AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
- THE CONTRACTOR SHALL SAW-CUT A SMOOTH STRAIGHT EDGE ON ANY PAVEMENT PROPOSED FOR DEMOLITION PRIOR TO ITS REMOVAL. PRIOR TO CONNECTING PROPOSED PAVEMENT TO EXISTING PAVEMENT, THE CONTRACTOR SHALL ENSURE THAT THE EDGE OF THE EXISTING PAVEMENT IS STRAIGHT AND UNIFORM.

GENERAL NOTES

CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

REVISIONS

NO.	DATE	OWN	CNO	APPRO	DESCRIPTION

SCALE:	N.T.S
DATE:	JUNE 2018
DRAWN:	SAH
CHECKED:	JJA
APPROVED:	JJA

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

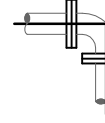
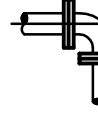
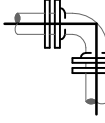
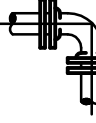


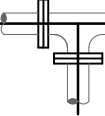
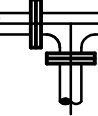
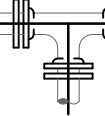
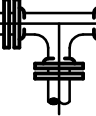
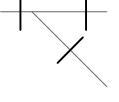
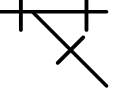
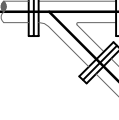
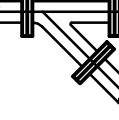
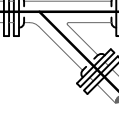
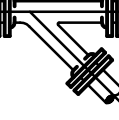

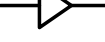
















































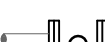









SEAL
Julius J. Ameno Jr., P.E. Florida Registration #31049



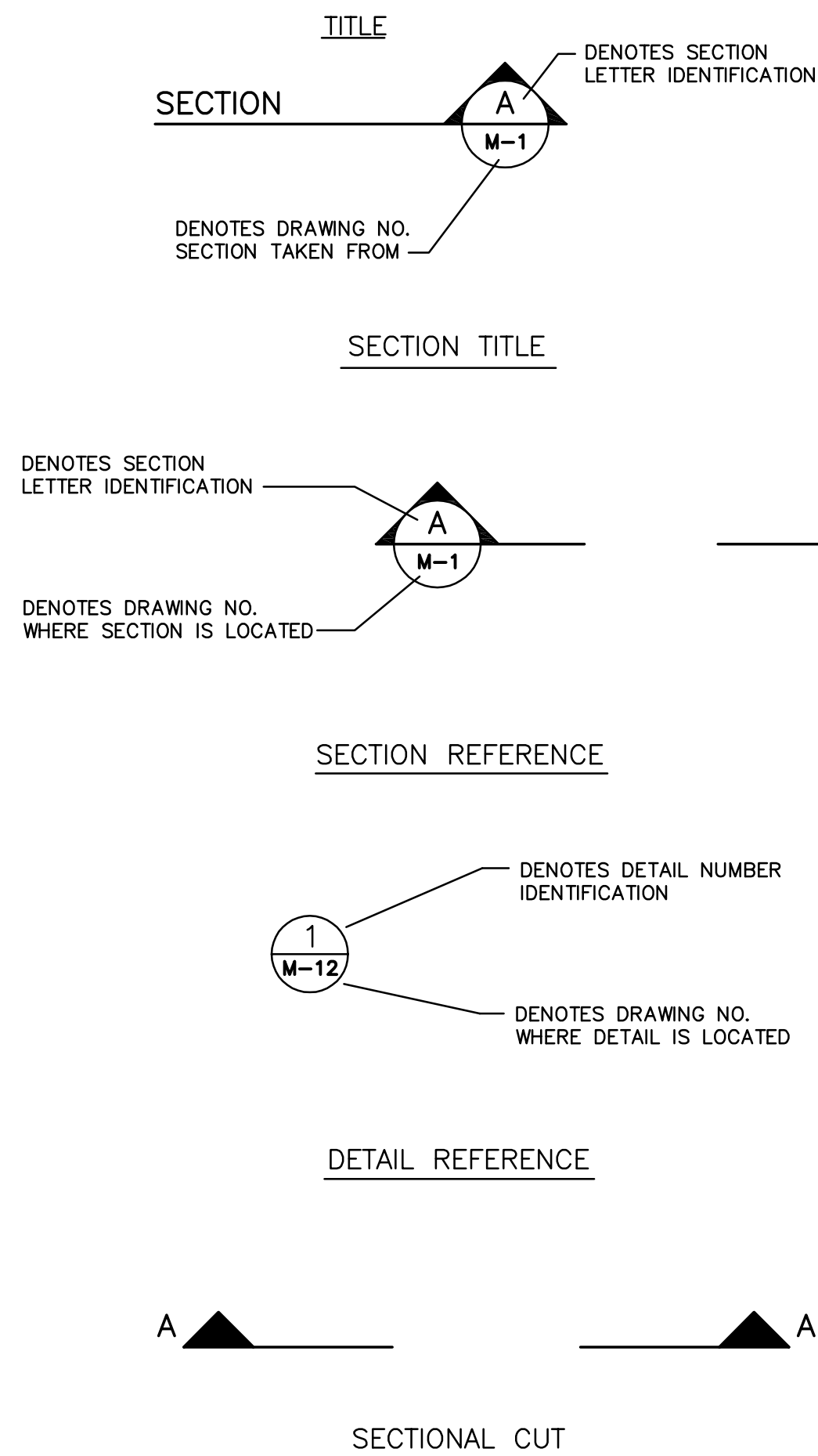
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PROJECT NO./DASH NO. A120925.12
SHEET G-2

PIPING LEGEND

FITTING/ APPURTENANCE	UNIVERSAL		FLANGED		MECHANICAL-JOINT	
	SINGLE-LINE		DOUBLE-LINE		DOUBLE-LINE	
	EXISTING	PROPOSED	EXISTING	PROPOSED	EXISTING	PROPOSED
BEND						
TEE						
WYE						
CONCENTRIC REDUCER						
CAP/BLIND FLANGE						
PLUG (PLUGGED VALVE)						
BUTTERFLY VALVE						
BALL VALVE						
CHECK VALVE						
GATE VALVE						
PLUG VALVE						
MOTORIZED CONTROL VALVE						
PLASTIC BALL VALVE						

REFERENCE SYMBOLS



LIST OF STANDARD ABBREVIATIONS

A

AAP

ALARM ANNUNCIATOR PANEL

ARV

AUTOMATIC AIR RELEASE AIR VALVE

AV

ANCHORED AIR VENT

AB

ABANDONED

ABAN

ABANDONED

ABRSV

ABRADE

ABS

ACRYLONITRILE BUTADIENE STYRENE

ABV

ABOVE

AL

ALTERNATING CURRENT

ACOMP

ASPHALT-CORRUGATED CORRUGATED METAL PIPE

ACP

ASBESTOS CEMENT PIPE

ADDIM

ADDIM

ADH

ADHESIVE

ADJUSTED

ADJUSTED

ADMIN

ADMINISTRATION

AF

ABOVE FINISHED FLOOR

AFG

ABOVE FINISHED FLOOR

AFS

ABOVE FINISHED SLAB

AL

ALUM

AL

ALUM

ALT

ALTERNATE

AMP

AMPERE

AMT

AMOUNT

APRX

APPROXIMATELY

ARCH

ARCHITECTURAL

ARCH

ARCH

ASSY

ASSEMBLY

AVE

AVENUE

AVC

AIR CONDITIONING

AVV

AIR/VACUUM AIR VALVE

B

BAFFLE

BAL

BALANCE

BCV

BALL CHECK VALVE

BE

BURIED ELECTRIC

BF

BURIED FLOOR

BFV

BACK FLOW PREVENTER

BFV

BUTTERFLY VALVE

BG

BLOCKGATE

BRP

BRAKE HORSEPOWER

BI

BLOCK

BITUM

BITUMINOUS OR BITUMASTIC

BLDG

BUILDING

BLK

BLOCK

BLO

BOULEVARD

BM

BENCH MARK

BWD

BLOW OFF

BOC

BOAT OF CURB

BOT

BOTTOM

BPE

BASE PLATE

BRG

BEARING

BSL

BACTERIOLOGICAL SAMPLE LOCATION

BSP

BLACK STEEL PIPE

BT

BURIED TELEPHONE

BV

BALL VALVE

BT

BOTH WAYS

BWV

BACKWASH WATER

C

CAPACITY

CAV

COMBINATION AIR VALVE

CB

CATCH BASIN

CFM

CUBIC FEET PER MINUTE

CFM

CUBIC FEET PER MINUTE

CHKV

CHECK VALVE

CI

CAST IRON

CI

CAST IRON PIPE

CISP

CAST IRON SOIL PIPE

CJ

CONSTRUCTION JOINT

CJT

CIRCUIT

C

CENTER LINE

CL

CHLORINE GAS

CLF

CHAIN LINK FENCE

CLR

CLEAR OR CLEARANCE

CLS

CHLORINE SOLUTION

CLVT

CULVERT

CM

CONCRETE MONUMENT

CMF

CORRUGATED METAL PIPE

CMPA

CORRUGATED METAL PIPE ARCH

CMU

CONCRETE MASONRY UNIT

CND

CAND

CO

CLEAN OUT

CNR

CORNER

COZ

CARBON DIOXIDE

COAG

COAGULANT

COLL

COLLUM

CONC

CONCRETE

CONM

COMMON

CONSTR

CONSTRUCTION

CONT

CONTINUOUS

COORD

COORDINATOR

COORD

COORDINATE

COMPAN

COMPANION

CORP

CORPORATION

CP

CONCRETE PIPE

CPA

CONCRETE PIPE ARCH

CPLG

COUPLING

CPVC

CHLORINATED POLYVINYL CHLORIDE

CPVC

CONCENTRIC REDUCER

CRT

COURT

CR

CHLORINE SOLUTION

CSC

CARBON STEEL

CST

CARBON STEEL

CTV

CABLE TELEVISION

CULV

CULVERT

CV

CHECK VALVE

CY

CUBIC YARD(S)

CYL

CYLINDER

C&G

CURB AND GUTTER

C/C

CENTER TO CENTER

D

DAT

DATUM

DBL

DIRECT CURRENT

DC

DIRECT CURRENT

DEMO

DEMOLITION

DEPT

DEPARTMENT

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CIVIL LEGEND

	EXISTING	PROPOSED	EXISTING	PROPOSED
BASELINE			TREES	TREES
PROPERTY LINE			TYPE	TYPE
RIGHT OF WAY			DECIDUOUS	DECIDUOUS
EASEMENT LINE				
SPOT ELEVATION				
CONTOUR			TYPE	TYPE
JURISDICTIONAL WETLAND			EVERGREEN	EVERGREEN
BOUNDARY LINE				
EMBANKMENT				
SURFACE DRAINAGE			TYPE	TYPE
FENCE			PALM	PALM
TEMPORARY CONSTRUCTION EASEMENT				
TOP OF BANK				
EDGE OF PAVEMENT			TYPE	TYPE
EDGE OF WATER			CITRUS	CITRUS
SILT FENCING				
MISCELLANEOUS UTILITY				
PIPE LINE			TYPE	TYPE

	ELECTRIC BOX		GUY ANCHOR		TELEPHONE MANHOLE
	FIRE HYDRANT		MAIL BOX		MONITOR WELL
	POWER POLE		MANHOLE		WATER METER
	GUY POLE		SIGN/LOCATOR POLE		WATER VALVE
	LIGHT POLE		SPRINKLER HEAD		GAS VALVE
	BENCH MARK		TELEPHONE RISER		WELL
			TRAFFIC SIGNAL CONTROL BOX		MONITORING WELL
			CONTROL ELEVATION		MONUMENT

* SEE LIST OF STANDARD ABBREVIATIONS

STANDARD ABBREVIATIONS AND SYMBOLS

CLARIFIERS #1 AND #2 REHABILITATION NASSAU COUNTY

[illegible]

SCALE:	N.T.S
DATE:	JUNE 2018
DRAWN:	SAH
CHECKED:	JJA
APPROVED:	JJA

AND SYMBOLS	
HABILITATION TY	

STANDARD ABBREVIATIONS,
OFFICERS #1 AND #2 REE,
NASSAU COUNTY

STA	CLARI
	SEAL

Jules J. Ameno Jr., P.E.
Florida Registration #31049



gai consultants
EB 9951

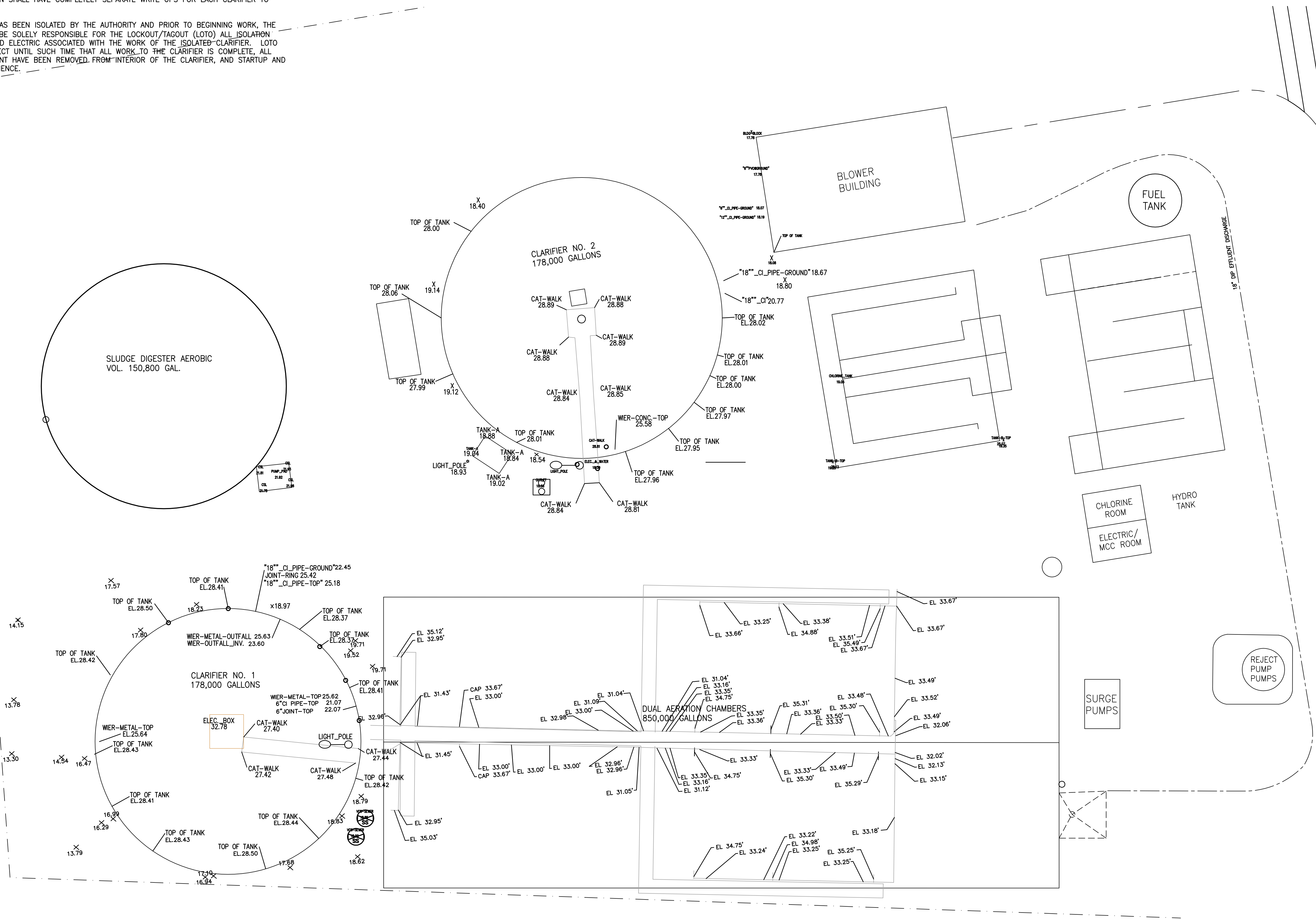
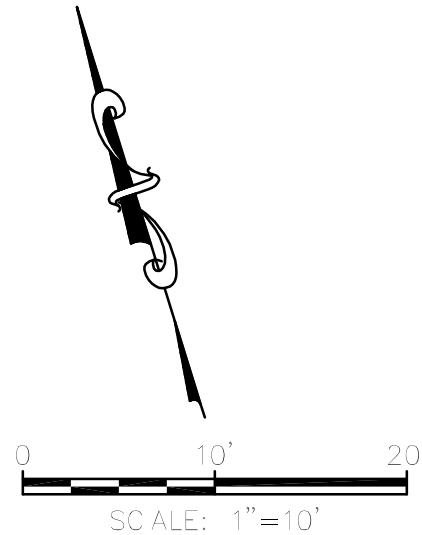
1301 RIVERPLACE BLVD. SUITE 900
JACKSONVILLE, FLORIDA 32207
PHONE: (407) 423-8398

PROJECT NO./DASH NO.
A120925.12

SHEET
G-3

NOTE:

1. THIS SITE LAYOUT IS PROVIDED AS A REFERENCE ONLY. THE STRUCTURES AND PIPING LOCATIONS AND INFORMATION IS BASED ON AS-BUILT DRAWINGS (NOVEMBER 1990 BY ALLEN'S ENVIRONMENTAL EQUIPMENT, INC. AND OCTOBER 1973 BY BESSENT, HAMMACK AND RUCKMAN INC.). THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ANY OR ALL UNDERGROUND PIPING AND UTILITIES PRIOR TO THE START OF WORK.
2. THE CONTRACTOR SHALL COORDINATE WITH THE AUTHORITY TO ISOLATE AND DRAIN THE FIRST CLARIFIER PRIOR TO STARTING WORK, AND THEN COORDINATE WITH THE AUTHORITY TO REFILL, PERFORM START AND TESTING, AND BRING FULLY ONLINE THE INITIAL CLARIFIER; PRIOR TO ISOLATING AND DRAINING THE SECOND CLARIFIER (IF REQUIRED) PRIOR TO THE STARTING OF WORK TO THE SECOND. FOR SCHEDULING PURPOSES, THE CONTRACTOR SHALL INCLUDE A PERIOD OF ONE WEEK FOR EACH CLARIFIER DRAIN OR REFILL.
3. THE CONTRACTOR SHALL DEVELOP A WRITTEN ISOLATION PLAN THAT PROVIDES SCHEMATICS AND IDENTIFIES ALL VALVES, MOTORS, AND ELECTRICAL DISCONNECTS THAT WILL BE EFFECTED FOR EACH CLARIFIER. THE PLAN SHALL HAVE COMPLETELY SEPARATE WRITE UPS FOR EACH CLARIFIER TO AVOID CONFUSION.
4. ONCE A CLARIFIER HAS BEEN ISOLATED BY THE AUTHORITY AND PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE LOCKOUT/TAGOUT (LOTO) ALL ISOLATION VALVES, MOTORS, AND ELECTRIC ASSOCIATED WITH THE WORK OF THE ISOLATED CLARIFIER. LOTO WILL REMAIN IN EFFECT UNTIL SUCH TIME THAT ALL WORK TO THE CLARIFIER IS COMPLETE, ALL TOOLS AND EQUIPMENT HAVE BEEN REMOVED FROM INTERIOR OF THE CLARIFIER, AND STARTUP AND TESTING IS TO COMMENCE.

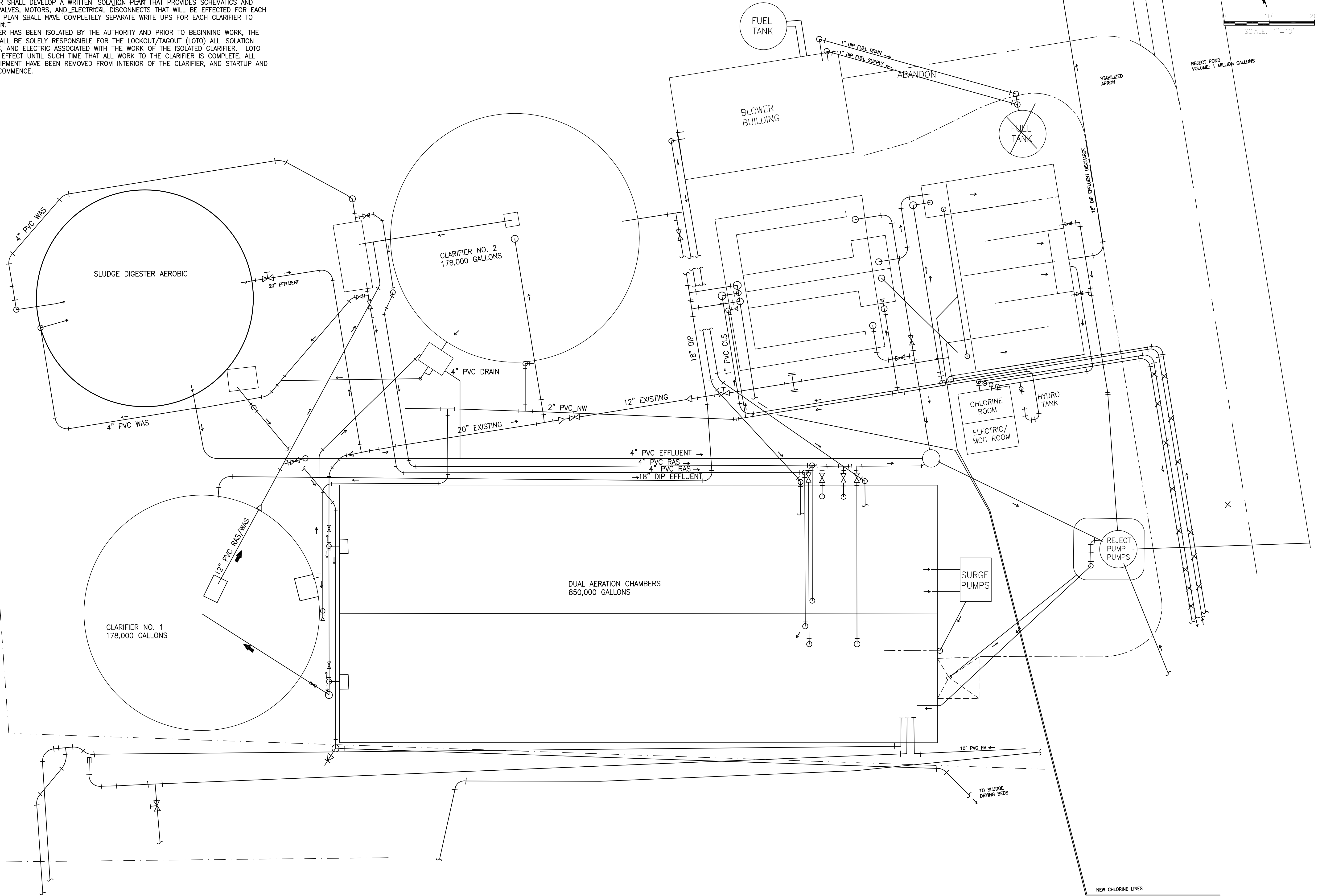


DRAWING ELEVATION IN NAVD 88

REVISIONS		DESCRIPTION
NO.	DATE	DWN
APPRO	CHKD	
SCALE: 1"=5'		
DATE: JUNE 2018		
DRAWN: SAH		
CHECKED: JJA		
APPROVED: JJA		
EXISTING SITE PLAN CLARIFIERS #1 AND #2 REHABILITATION NASSAU COUNTY		
SEAL		
Jules J. Ameno Jr., P.E. Florida Registration #31049		
 gai consultants EB 9951 1301 RIVERPLACE BLVD. SUITE 900 JACKSONVILLE, FLORIDA 32207 PHONE: (407) 423-8398		
PROJECT NO./DASH NO. A120925.12		
SHEET C-1		

NOTE:

1. THIS SITE LAYOUT IS PROVIDED AS A REFERENCE ONLY. THE STRUCTURES AND PIPING LOCATIONS AND INFORMATION IS BASED ON AS-BUILT DRAWING (NOVEMBER 1990) BY ALLEN'S ENVIRONMENTAL EQUIPMENT, INC. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ANY OR ALL UNDERGROUND PIPING AND UTILITIES PRIOR TO THE START OF WORK.
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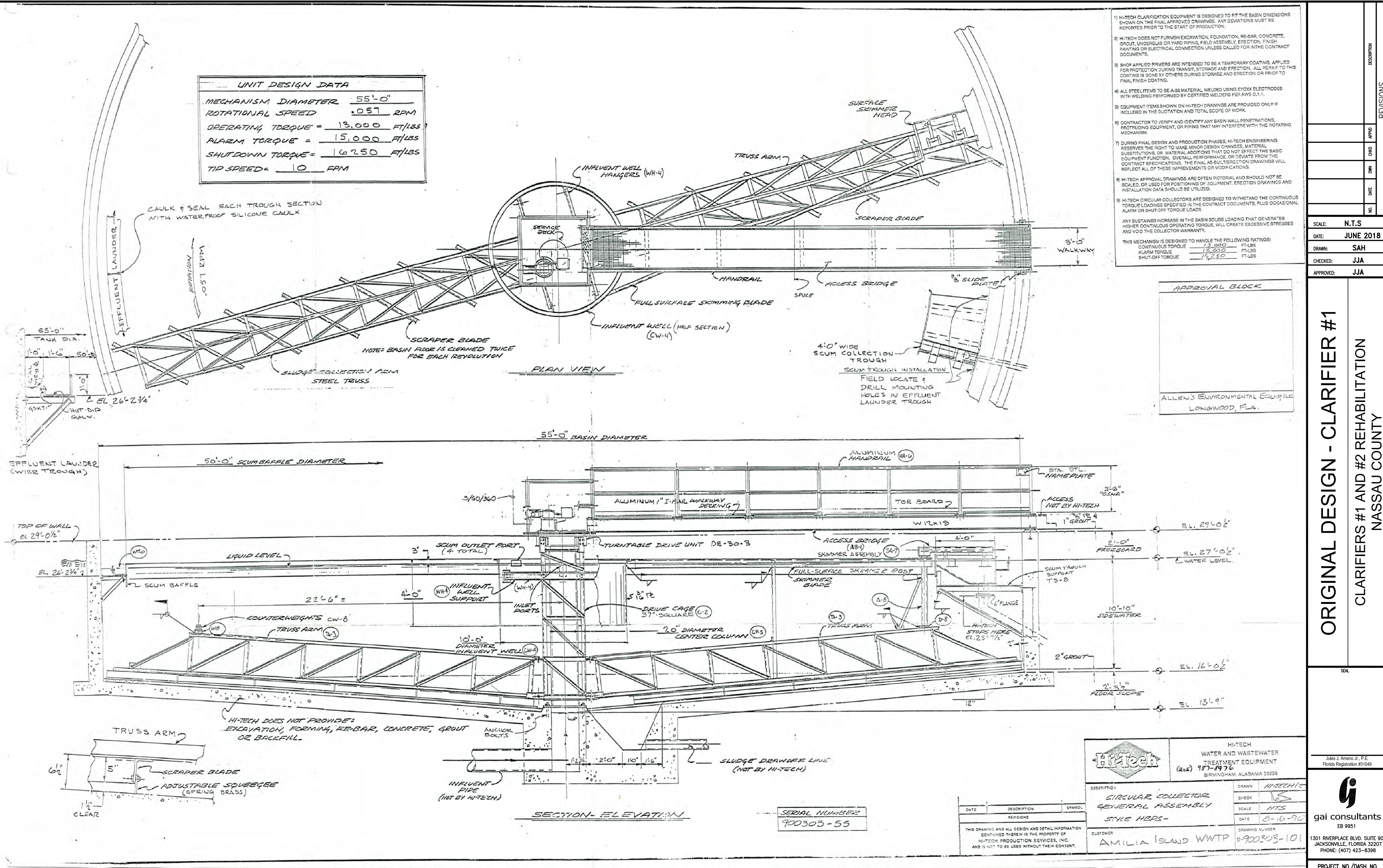
EXISTING SITE PIPING PLAN
CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

SEAL
Jules J. Ameno Jr., P.E.
Florida Registration #31049

gai consultants
EB 9951
1301 RIVERPLACE BLVD. SUITE 900
JACKSONVILLE, FLORIDA 32207
PHONE: (407) 423-8398

PROJECT NO./DASH NO.
A120925.12

SHEET
C-2



UNIT DESIGN DATA	
MECHANISM DIAMETER	55'-0"
ROTATIONAL SPEED	.057 RPM
OPERATING TORQUE	= 13,000 FT-LBS
ALARM TORQUE	= 15,000 FT-LBS
SHUT-DOWN TORQUE	= 16,250 FT-LBS
TIP SPEED	= 10 FPM

- 1) HI-TECH CLARIFICATION EQUIPMENT IS DESIGNED TO FIT THE BASIN DIMENSIONS SHOWN ON THE FINAL APPROVED DRAWINGS. ANY DEVIATIONS MUST BE REPORTED PRIOR TO THE START OF PRODUCTION.
 - 2) HI-TECH DOES NOT FURNISH EXCAVATION, FOUNDATION, RE-BAR, CONCRETE, GROUT, UNDERSLAB OR YARD PIPING, FIELD ASSEMBLY, ERECTION, FINISH PAINTING OR ELECTRICAL CONNECTION UNLESS CALLED FOR IN THE CONTRACT DOCUMENTS.
 - 3) SHOP APPLIED PRIMERS ARE INTENDED TO BE A TEMPORARY COATING, APPLIED FOR PROTECTION DURING TRANSPORT, STORAGE AND ERECTION. ALL REPAIR TO THIS COATING IS DONE BY OTHERS DURING STORAGE AND ERECTION OR PRIOR TO FINAL FINISH COATING.
 - 4) ALL STEEL ITEMS TO BE A-36 MATERIAL, WELDED USING E70XX ELECTRODES WITH WELDING PERFORMED BY CERTIFIED WELDERS PER AWS D.1.1.
 - 5) EQUIPMENT ITEMS SHOWN ON HI-TECH DRAWINGS ARE PROVIDED ONLY IF INCLUDED IN THE QUOTATION AND TOTAL SCOPE OF WORK.
 - 6) CONTRACTOR TO VERIFY AND IDENTIFY ANY BASIN WALL PENETRATIONS, PROTRUDING EQUIPMENT, OR PIPING THAT MAY INTERFERE WITH THE ROTATING MECHANISM.
 - 7) DURING FINAL DESIGN AND PRODUCTION PHASES, HI-TECH ENGINEERING RESERVES THE RIGHT TO MAKE MINOR DESIGN CHANGES, MATERIAL SUBSTITUTIONS, OR MATERIAL ADDITIONS THAT DO NOT EFFECT THE BASIC EQUIPMENT FUNCTION, OVERALL PERFORMANCE, OR DEVIATE FROM THE CONTRACT SPECIFICATIONS. THE FINAL AS-BUILT/ERECTION DRAWINGS WILL REFLECT ALL OF THESE IMPROVEMENTS OR MODIFICATIONS.
 - 8) HI-TECH APPROVAL DRAWINGS ARE OFTEN PICTORIAL AND SHOULD NOT BE SCALED, OR USED FOR POSITIONING OF EQUIPMENT, ERECTION DRAWINGS AND INSTALLATION DATA SHOULD BE UTILIZED.
 - 9) HI-TECH CIRCULAR COLLECTORS ARE DESIGNED TO WITHSTAND THE CONTINUOUS TORQUE LOADINGS SPECIFIED IN THE CONTRACT DOCUMENTS, PLUS OCCASIONAL ALARM OR SHUT-OFF TORQUE LOADS.
- ANY SUSTAINED INCREASE IN THE BASIN SOLIDS LOADING THAT GENERATES HIGHER CONTINUOUS OPERATING TORQUE, WILL CREATE EXCESSIVE STRESSES AND VOID THE COLLECTOR WARRANTY.
- THIS MECHANISM IS DESIGNED TO HANDLE THE FOLLOWING RATINGS:
- | | | |
|-------------------|--------|--------|
| CONTINUOUS TORQUE | 13,000 | FT-LBS |
| ALARM TORQUE | 15,000 | FT-LBS |
| SHUT-OFF TORQUE | 16,250 | FT-LBS |

APPROVAL BLOCK

ALLEN'S ENVIRONMENTAL EQUIPMENT
LONGWOOD, FLA.

ORIGINAL DESIGN - CLARIFIER #1

CLARIFIERS #1 AND #2 REHABILITATION

NASSAU COUNTY

HI-TECH
WATER AND WASTEWATER
TREATMENT EQUIPMENT
(205) 987-8976
BIRMINGHAM, ALABAMA 35206

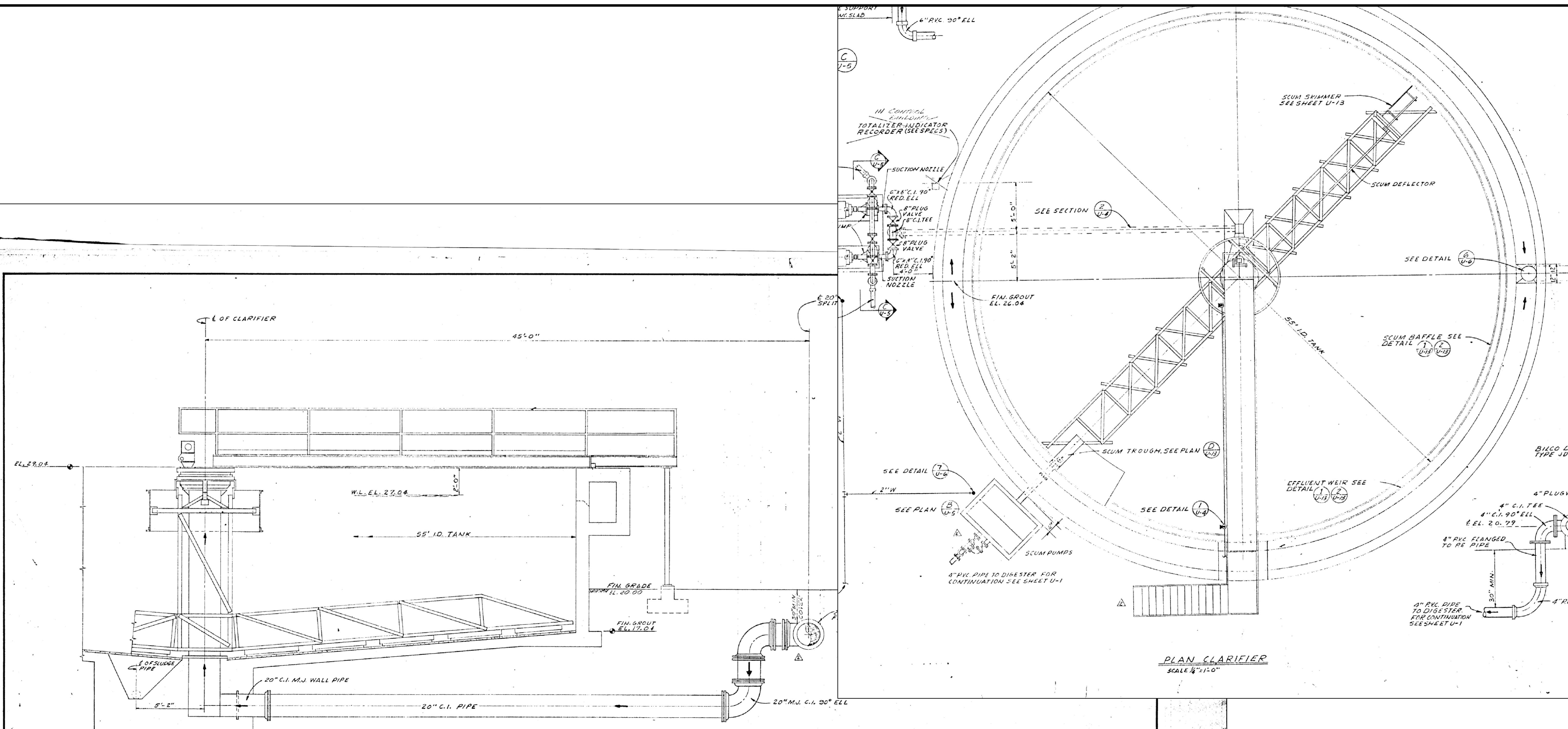
DESCRIPTION: CIRCULAR COLLECTOR GENERAL ASSEMBLY
STYLE: HERS-

CUSTOMER: AMILIA ISLAND WWP

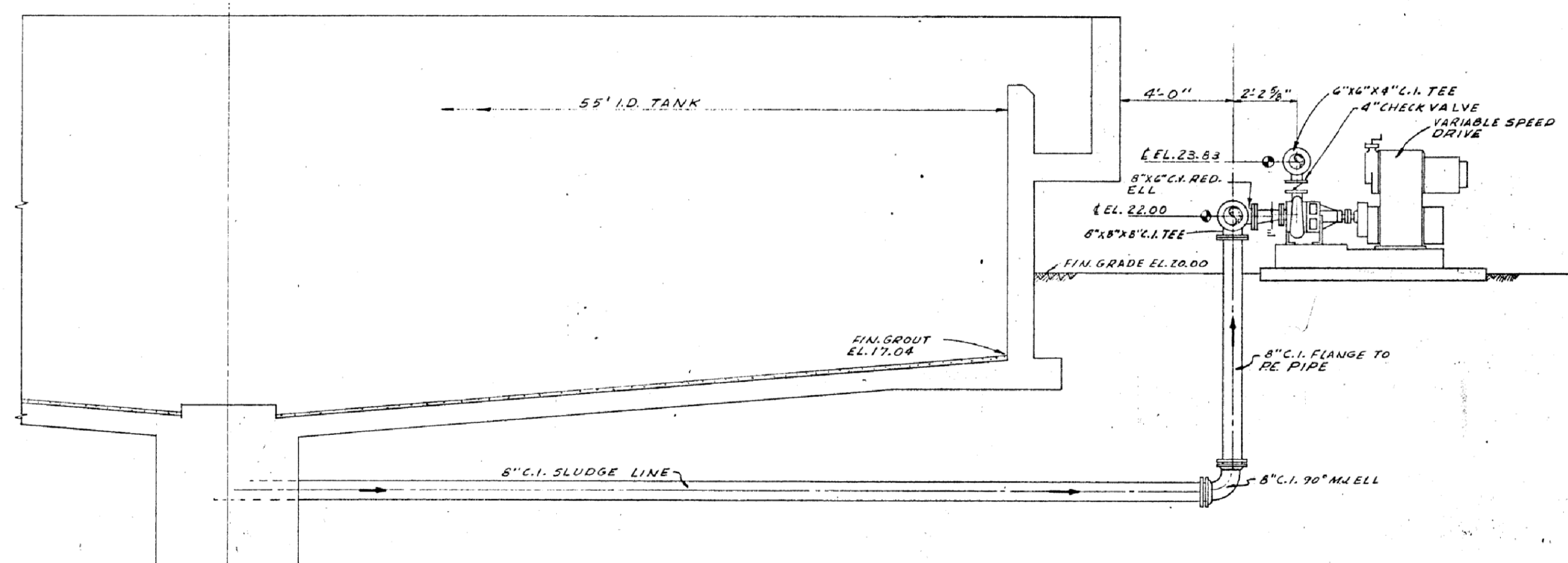
DRAWN: HI-TECH/LS
CHECK: NTS
SCALE: NTS
DATE: 8-16-90

DRAWING NUMBER: 0900503-101

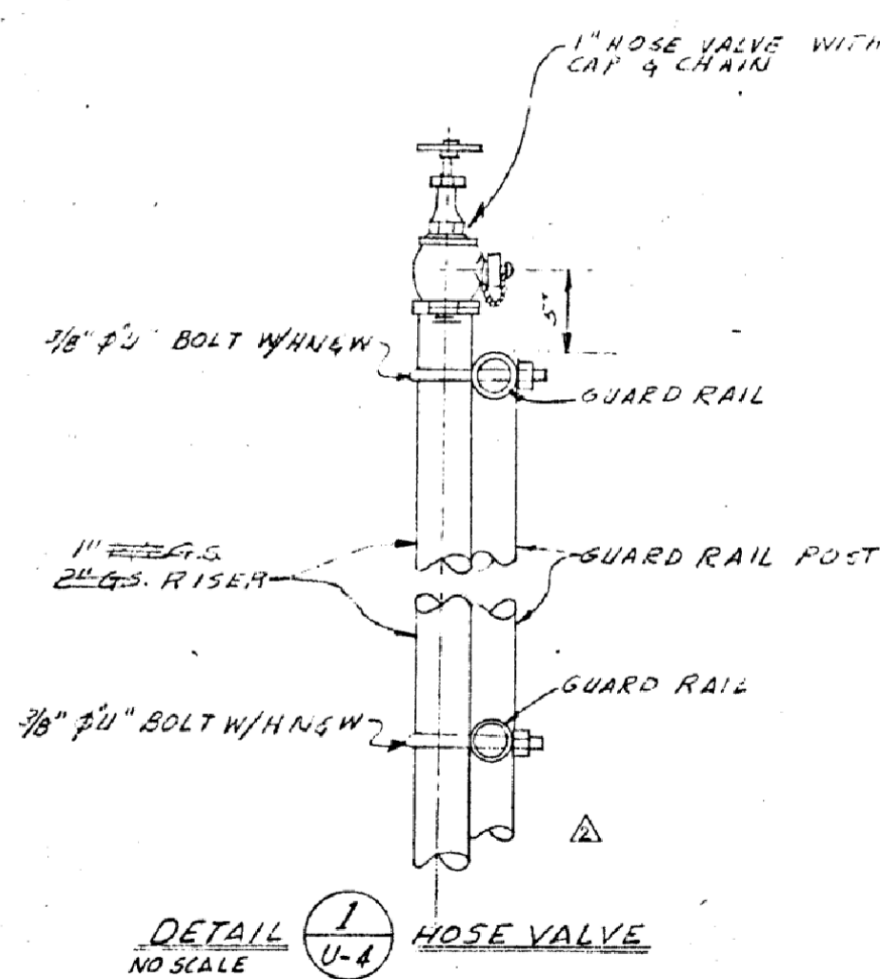
DRAWING ELEVATION BELIEVED TO BE IN NGVD 29
(SEE SURVEY DATA SHEET C-1 FOR REVISED ELEVATIONS)




SECTIONAL ELEVATION - CLARIFIER
SCALE: $\frac{3}{8}" = 1'-0"$



SECTIONAL ELEVATION $\frac{2}{1.4}$ CLARIFIER & SLUDGE PUMPS
SCALE: $\frac{3}{8}$ " = 1'-0"



DETAIL  HOSE VALVE
NO SCALE

SEWAGE
TREATMENT PLANT
FOR

BEHR

U-4

DRAWING ELEVATION IN NGVD 29 (SEE SURVEY DATA SHEET C-1 FOR REVISED ELEVATIONS) NAVD88 IS 13" LOWER

[illegible]

ORIGINAL DESIGN - CLARIFIER #2

CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

SF

Jules J. Ameno Jr., P.E.
Florida Registration #3104

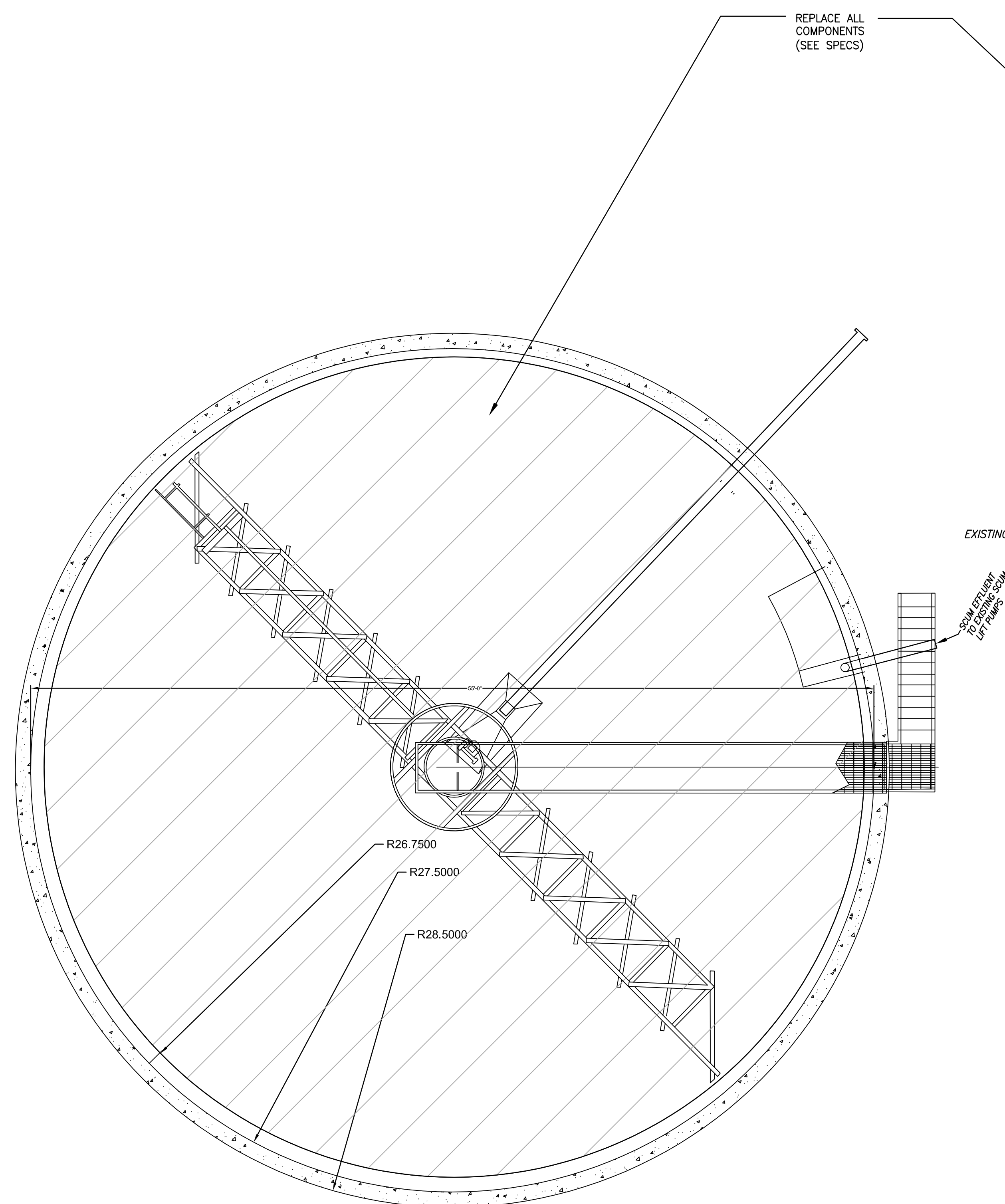


gai consultants
EB 9951
1301 RIVERPLACE BLVD. SUITE 90
JACKSONVILLE, FLORIDA 32207
PHONE: (407) 423-8398

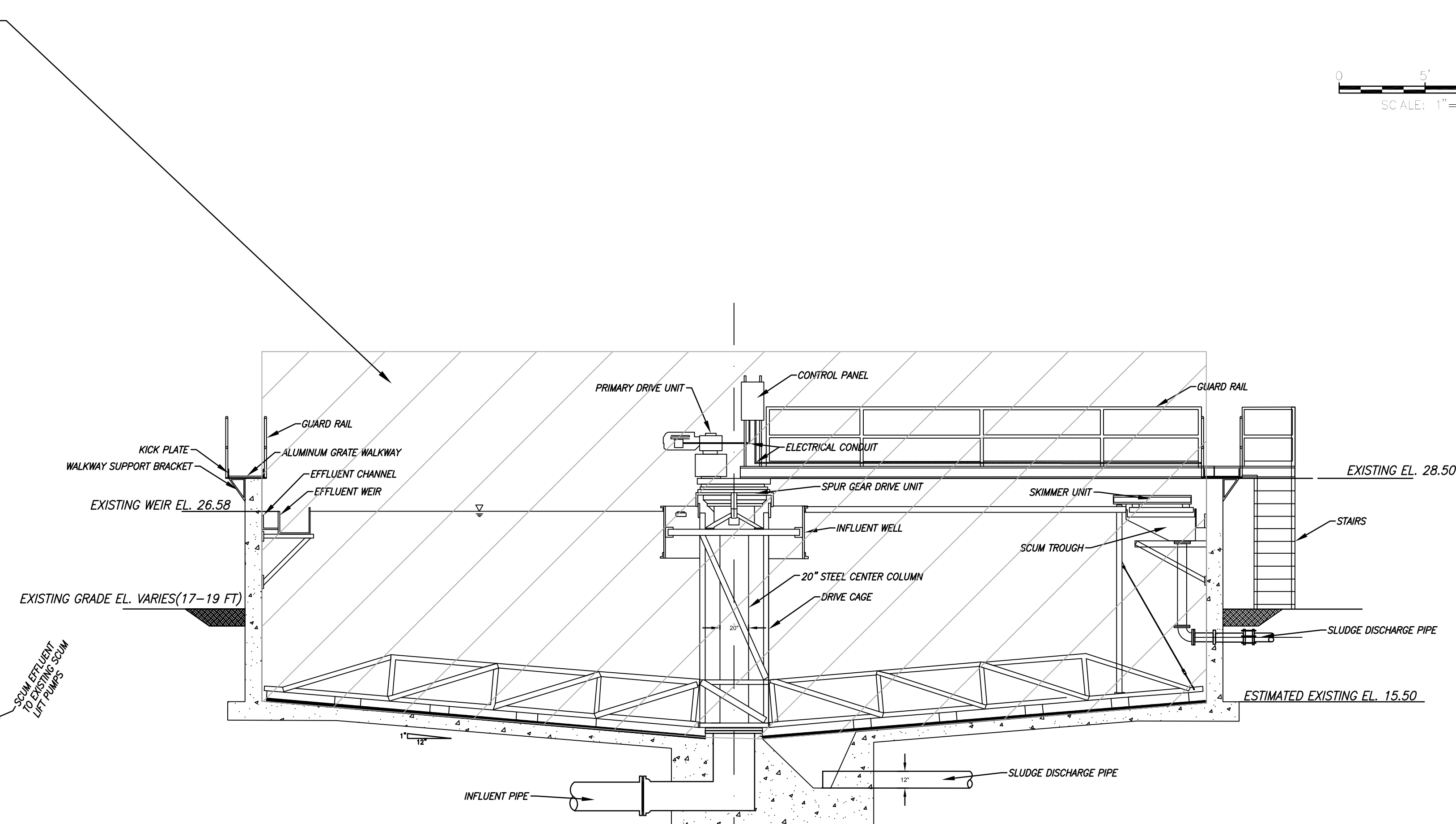
PROJECT NO./DASH NO.
A120925.12

SHEET

M-2



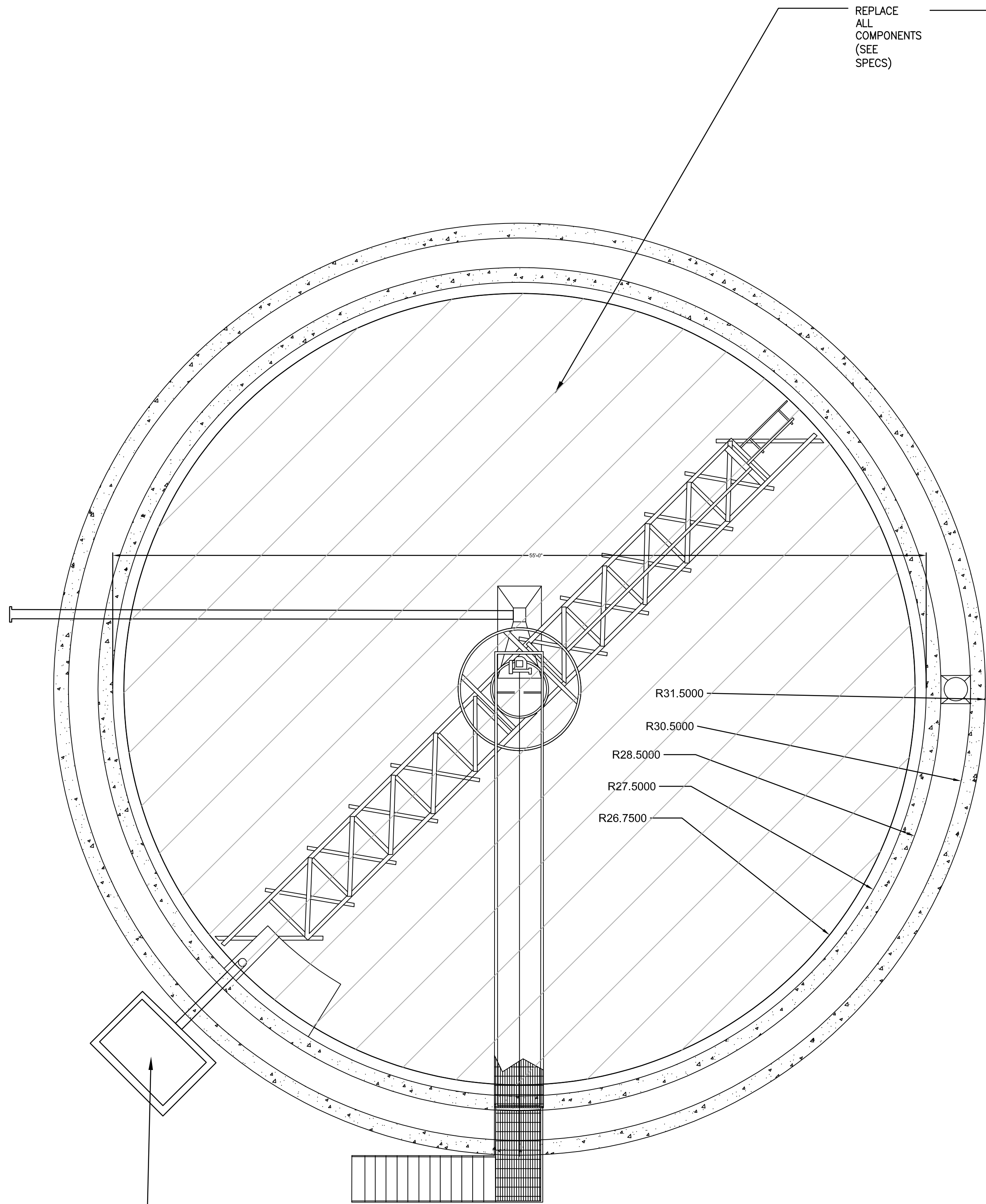
PLANVIEW CLARIFIER #1



PROFILE CLARIFIER #1

- GENERAL NOTES:
1. CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS, EQUIPMENT LAYOUT, SIZES, DIMENSIONS, CONNECTION POINTS, PIPING, AND LOCATIONS PRIOR TO BIDDING AND CONSTRUCTION.
 2. DRAWING DEPICT THE CLARIFIER AND ITS INTERNAL COMPONENTS, BUT WERE DEVELOPED BASED ON AS-BUILT INFORMATION PROVIDED BY THIRD PARTIES IN THE FOLLOWING REFERENCE DRAWING:
 - A. SEWAGE TREATMENT PLANT, AMELIA ISLAND PLANTATION, BESSENT, HAMMACK, & RUCKMAN, INC. OCT. 3, 1973
 - B. 0.25 MGD WASTEWATER TREATMENT PLANT EXPANSION TO EXISTING 0.6 MGD PLANT TO SERVE AMELIA ISLAND, ALLEN'S ENVIRONMENTAL EQUIPMENT, INC. - JUNE 7, 1991
 3. THE CLARIFIER REHABILITATION PROJECT ENTAILS THE REMOVAL/DEMOLITION OF ALL INTERNAL COMPONENTS OF THE CLARIFIER WHICH WILL INCLUDE, BUT NOT BE LIMITED TO:
 - A. EFFLUENT WEIR, CHANNEL, PIPING, AND SUPPORTING STRUCTURES (PIPE WALL PENETRATIONS TO REMAIN, UNLESS OTHERWISE NOTED.)
 - B. SCUM SKIMMER, TROUGH, AND CONNECTION PIPING (WALL PENETRATION PIPING TO REMAIN, UNLESS OTHERWISE NOTED)
 - C. SLUDGE RAKES AND SQUEEGEES, AS WELL AS, SUPPORTING STRUCTURES.
 - D. CATWALK AND RAILING FROM THE CIRCULAR WALKWAY TO THE CENTER SUPPORT STRUCTURES.
 - E. DRIVE UNIT, SPUR GEAR, CENTER SUPPORT STRUCTURE, AND INFLUENT PIPING TO FLANGED INTERFACE WITH INFLUENT PIPING WITHIN THE CLARIFIER CONCRETE BASE.
 - F. CONTROL PANEL, ELECTRICAL AND DATA WIRING, AND CONDUIT.
 4. ITEMS TO REMAIN INCLUDE EXISTING STAIRS, WALKWAY AROUND THE CLARIFIER WALL, AND STRUCTURES REQUIRED TO CONNECT TO THE CIRCUMFERENTIAL WALKWAY.
 5. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE OWNER FOR ISOLATING FLOW AND LOCKOUT/TAGOUT OF THE CLARIFIER PRIOR TO BEGINNING ANY WORK.
 6. PRIOR TO INSTALLING ANY NEW CLARIFIER INTERNAL COMPONENTS, THE CONTRACTOR SHALL PERFORM A HIGH PRESSURE WASHING OF THE INTERIOR OF THE CLARIFIER CONCRETE WALLS, FLOOR, AND SLUDGE SUMP. THE CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSAL OF ALL WATER AND SLUDGE GENERATED DURING THE CLEANING.
 7. ELEVATIONS SHOWN ARE REVISED TO NAVD 88 USING RECENT SURVEY DATA AS A REFERENCE. ASBUILT DRAWING CONVERTED WHERE APPLICABLE (ELEVATION IN NGVD 29 CONVERTED ELEVATION TO NAVD 88 (13" LESS))

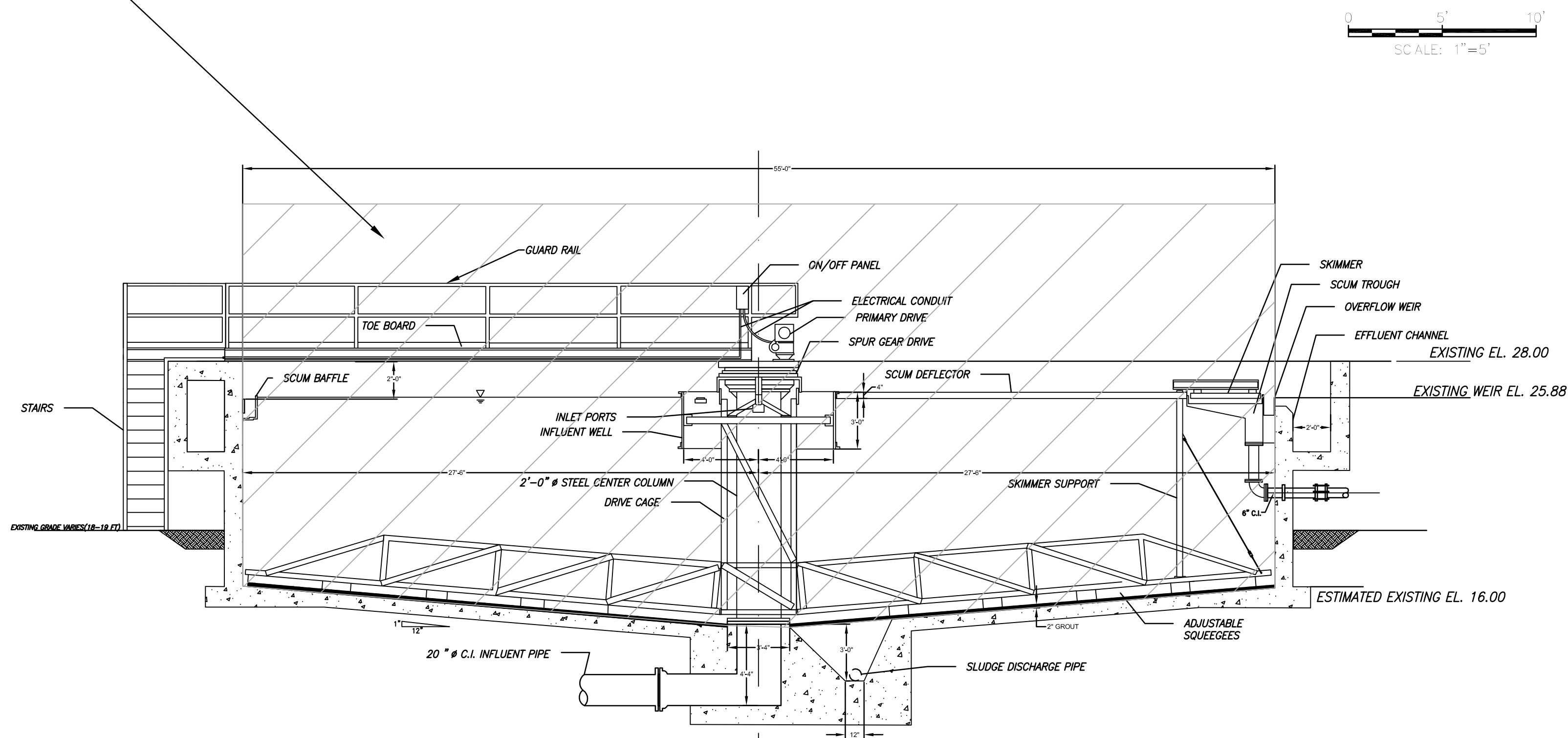
[illegible]



PLANVIEW CLARIFIER #2

REMOVE ALL ELECTRICAL CONDUITS, BOXES, WIRING, ETC.
PROPERLY DISCONNECT, CUT AND CAP BELOW GRADE
REMOVE WIRING TO EXISTING PANEL

REMOVE LIGHTING



PROFILE CLARIFIER #2

GENERAL NOTES:

- CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS, EQUIPMENT LAYOUT, SIZES, DIMENSIONS, CONNECTION POINTS, PIPING, AND LOCATIONS PRIOR TO BIDDING AND CONSTRUCTION.
- DRAWING DEPICT THE CLARIFIER AND ITS INTERNAL COMPONENTS, BUT WERE DEVELOPED BASED ON AS-BUILT INFORMATION PROVIDED BY THIRD PARTIES IN THE FOLLOWING REFERENCE DRAWING:
 - SEWAGE TREATMENT PLANT, AMELIA ISLAND PLANTATION, BESSANT, HAMMACK, & RUCKMAN, INC. – OCT. 3, 1973
 - 0.25 MGD WASTEWATER TREATMENT PLANT EXPANSION TO EXISTING 0.6 MGD PLANT TO SERVE AMELIA ISLAND, ALLEN'S ENVIRONMENTAL EQUIPMENT, INC. – JUNE 7, 1991
- THE CLARIFIER REHABILITATION PROJECT ENTAILS THE REMOVAL/DEMOLITION OF ALL INTERNAL COMPONENTS OF THE CLARIFIER WHICH WILL INCLUDE, BUT NOT BE LIMITED TO:
 - EFFLUENT WEIR, CHANNEL, PIPING, AND SUPPORTING STRUCTURES (PIPE WALL PENETRATIONS TO REMAIN, UNLESS OTHERWISE NOTED.)
 - SCUM SKIMMER, TROUGH, AND CONNECTION PIPING (WALL PENETRATION PIPING TO REMAIN, UNLESS OTHERWISE NOTED)
 - SLUDGE RAKES AND SQUEEGEES, AS WELL AS, SUPPORTING STRUCTURES.
 - CATWALK AND RAILING FROM THE CIRCULAR WALKWAY TO THE CENTER SUPPORT STRUCTURES.
 - DRIVE UNIT, SPUR GEAR, CENTER SUPPORT STRUCTURE, AND INFLUENT PIPING TO FLANGED INTERFACE WITH INFLUENT PIPING WITHIN THE CLARIFIER CONCRETE BASE.
 - CONTROL PANEL, ELECTRICAL AND DATA WIRING, AND CONDUIT.
- ITEMS TO REMAIN INCLUDE EXISTING STAIRS
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH THE OWNER FOR ISOLATING FLOW AND LOCKOUT/TAGOUT OF THE CLARIFIER PRIOR TO BEGINNING ANY WORK.
- PRIOR TO INSTALLING ANY NEW CLARIFIER INTERNAL COMPONENTS, THE CONTRACTOR SHALL PERFORM A HIGH PRESSURE WASHING OF THE INTERIOR OF THE CLARIFIER CONCRETE WALLS, FLOOR, AND SLUDGE SUMP. THE CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSAL OF ALL WATER AND SLUDGE GENERATED DURING THE CLEANING.
- ELEVATIONS SHOWN ARE REVISED TO NAVD 88 USING RECENT SURVEY DATA AS A REFERENCE. ASBUILT DRAWING CONVERTED WHERE APPLICABLE (ELEVATION IN NGVD 29 CONVERTED ELEVATION TO NAVD 88 (13" LESS))

CLARIFIER #2 EXISTING CONDITIONS / DEMOLITION

CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

SEAL

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PROJECT NO./DASH NO.
A120925.12

SHEET
M-4

REVISIONS		DESCRIPTION
NO.	DATE	APPD

SCALE: **AS SHOWN**
DATE: **JUNE 2018**
DRAWN: **SAH**
CHECKED: **JJA**
APPROVED: **JJA**

REVISIONS

DESCRIPTION
APPROVED
DATE
NO.

SCALE: **N.T.S**
DATE: **JUNE 2018**
DRAWN: **SAH**
CHECKED: **JJA**
APPROVED: **JJA**

CLARIFIER#1 COATING REQUIREMENTS
CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

SEAL

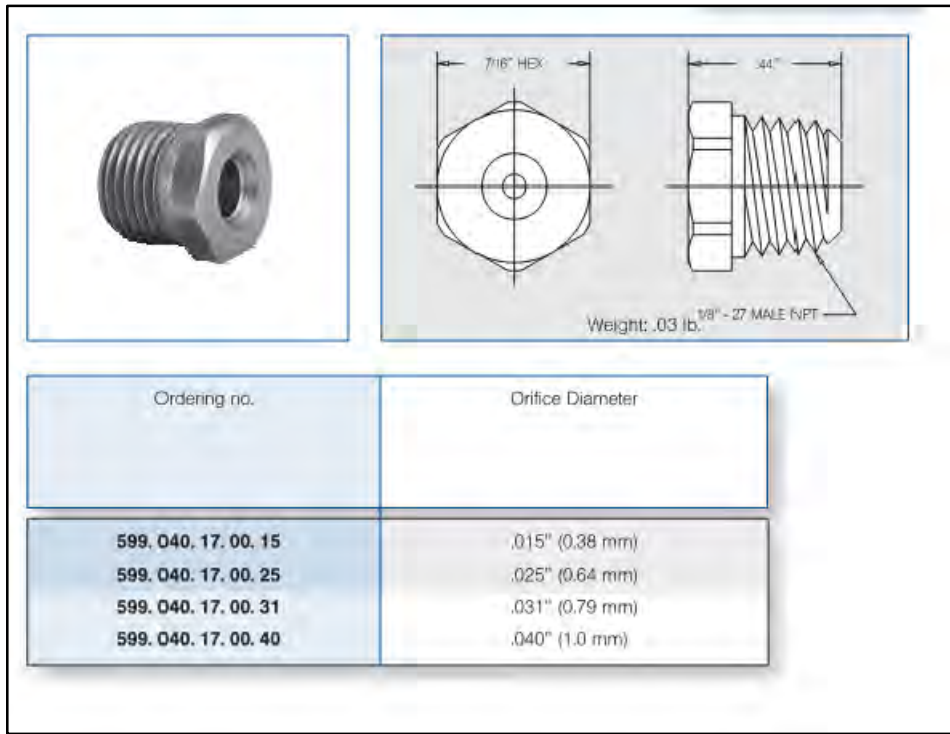
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PROJECT NO./DASH NO.
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SHEET

M-5



PROVIDE 150 HIGH PRESSURE NOZZLES

ITEM: EXTERIOR CLARIFIER SURFACE
MATERIAL: CONCRETE
COATING SCHEDULE:
• 1ST COAT: SURFACE AND CRACK REPAIR AS NEEDED
• 2ND & 3RD COAT: 4-6 MILS PER COAT
SEE NOTES

ITEM: INTERNAL CLARIFIER SURFACE
MATERIAL: CONCRETE
COATING SCHEDULE:
• 1ST COAT: SURFACE AND CRACK REPAIR AS NEEDED
• 1ST & 2ND : 8-10 MILS PER COAT
SEE NOTES

ITEM: STAIRCASE, HANDRAILS, SUPPORTS
MATERIAL: ALUMINUM
NOT TO BE COATED

ITEM: ACCESS BRIDGE DECKING, HANDRAILS, KICKPLATE
MATERIAL: ALUMINUM
TO BE REPLACED (SEE SPECIFICATIONS)

ITEM: ACCESS BRIDGE TRUSSES, BEAMS, GIRDERS, AND
STRUCTURAL SUPPORTS
MATERIAL: SEE SPECIFICATIONS
TO BE REPLACED

NOTES

1. IN ADDITION TO THE REPLACEMENT OF THE CLARIFIER EQUIPMENT, THE EXISTING CONCRETE STRUCTURE SHOULD BE FULLY REHABILITATED AND COATED AS PART OF THIS PROJECT. THE INTERIOR AND EXTERIOR SURFACE SHALL BE CLEANED, REPAIRED AND COATED. THE INTERIOR FLOOR SHALL BE RE-GROUTED (REMOVE EXISTING GROUT AND RE-GROUT). SEE SPECIFICATIONS.
2. PRIOR TO ALL STRUCTURAL REPAIRS AND COATINGS, THE CONTRACTOR SHALL COORDINATE WITH NAU AND THE ENGINEER TO ARRANGE FOR INSPECTIONS UPON DRAINING AND CLEANING OF EACH CLARIFIER. THE CONTRACTOR AND APPLICABLE SUB-CONTRACTORS SHALL WORK WITH THE ENGINEER TO INSPECT, NOTATE AND AGREE UPON THE REQUIRED REPAIRS BASED ON THE UNIT BID PRICING. THE CONTRACTOR SHALL DOCUMENT AND NOTATE DEFICIENCIES, INCLUDING CRACKING OR DETERIORATION THAT IS FOUND, NOTING THE EXPECTED REPAIR TYPE AND QUANTITY REQUIRED. IF AT ANY LOCATION DETERIORATION IS FOUND TO BE TOO SEVERE, THE CONTRACTOR SHALL NOTIFY NAU AND THE ENGINEER, WORKING WITH THE TEAM TO DETERMINE AN APPROPRIATE REPAIR METHOD.
3. IF THE INSPECTION DOES NOT NOTE DAMAGE OR AFTER SAID DAMAGE HAS BEEN MITIGATED, THE CONTRACTOR SHALL APPLY A HIGH PERFORMANCE COATING (AS DEFINED WITHIN THE SPECIFICATIONS) TO THE INTERIOR OF THE CLARIFIER CONCRETE SURFACES AFTER PERFORMING THE COATING MANUFACTURER'S RECOMMENDED PREPARATION OF CONCRETE SURFACES AND PIPE MATERIALS AT EACH PENETRATION. ADHERENCE TO THE MANUFACTURER'S REQUIREMENTS SHALL ALSO APPLY TO ALL APPLICATION CONDITIONS, APPLICATION RATES, WET/DRY FILM THICKNESS, AND USE OF PRIMERS, INTERMEDIATE, AND FINAL COAT SELECTION AND USE.
4. THE EXISTING STAIRS AND CIRCUMFERENTIAL WALKWAY ARE TO REMAIN, BUT THE SUPPORTING STRUCTURES, BOLTS, AND FASTENERS ARE TO BE MECHANICALLY CLEANED TO REMOVE RUST (WIRE BRUSH) AND HIGH PERFORMANCE COATING APPLIED, OR REPLACED IF FOUND TO BE STRUCTURALLY UNSOUND (AS AGREED TO BY THE ENGINEER).
5. THE BID TAB INCLUDES ALTERNATE EQUIPMENT MATERIALS FOR THE CLARIFIER. THIS SHALL BE SELECTED BY NAU AND THE ENGINEER AT THE TIME OF BID. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE SELECTED MATERIALS ARE PROPERLY COATED AND ISOLATED TO PREVENT GALVANIC CONTINUITY/CORROSION. THIS SHALL INCLUDE THE USE OF ISOLATION PADS AND SLEEVES ON FASTENERS WHERE REQUIRED.

ITEM: EFFLUENT PIPE (18")
MATERIAL: DUCTILE IRON
COATING SCHEDULE:
• 1ST COAT: 3-5 MILS
• 2ND COAT: 4-6 MILS
• 3RD COAT: 2-3 MILS

1" PVC LINE
FOR WEIR RINSE/ALGAE CONTROL.
REPLACE IN TANK AND EXTERNAL
SUPPLY PIPE (2 LOCATIONS). MATCH
EXISTING PIPE AND HOLE SPACING.
REPLACE BELOW GRADE PIPING
AROUND TANK WITH 1.5" PVC AROUND
TANK TO MAIN CONNECTION POINT.
PROVIDE VALVES FOR ISOLATION

ITEM: WALKWAY DECKING AND HANDRAILS
MATERIAL: ALUMINUM
NOT TO BE COATED

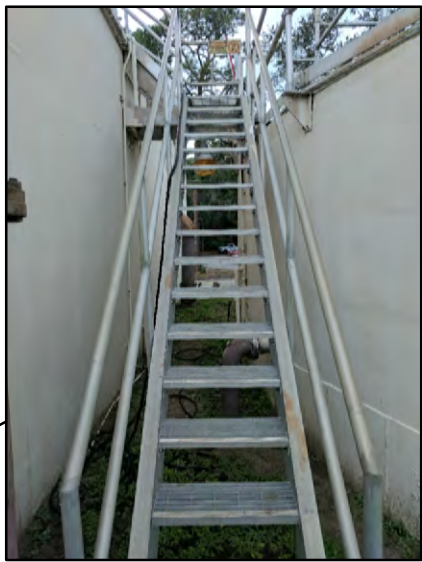
ITEM: WALKWAY SUPPORTS
MATERIAL: ALUMINUM
NOT TO BE COATED
(BOLTS TO BE COATED OR
REPLACED - SEE NOTE #4)

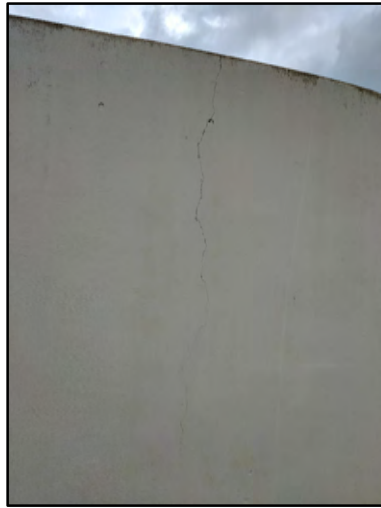
REMOVE AND REPLACE
EXISTING FLOOR GROUT
(SEE NOTES)

ITEM: EFFLUENT TROUGH
MATERIAL: SEE SPECIFICATIONS

SCUM EFFLUENT
COLLECTOR FROM
OFF PUMPS

PLANVIEW CLARIFIER #1





ITEM: EXTERIOR CLARIFIER SURFACE
MATERIAL: CONCRETE

COATING SCHEDULE:
• 1ST COAT: SURFACE AND CRACK REPAIR AS NEEDED
• 2ND & 3RD COAT: 4-6 MILS PER COAT
SEE NOTES

ITEM: INTERNAL CLARIFIER SURFACE
MATERIAL: CONCRETE

COATING SCHEDULE:
• 1ST COAT: SURFACE AND CRACK REPAIR AS NEEDED
• 1ST & 2ND : 8-10 MILS PER COAT
SEE NOTES

PROVIDE 150 HIGH PRESSURE NOZZLES


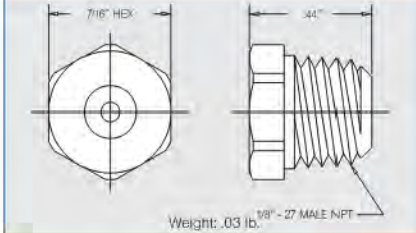
ITEM: INTERNAL CLARIFIER WALL, EFFLUENT TROUGH
MATERIAL: CONCRETE

COATING SCHEDULE:
• 1ST COAT: SURFACE AND CRACK REPAIR AS NEEDED
• 1ST & 2ND : 8-10 MILS PER COAT



ITEM: TURNTABLE DRIVE UNIT AND MOTORS
MATERIAL: VARIES
NOT TO BE COATED; TO BE REPLACED



	
Ordering on:	Orifice Diameter:
599, 040, 17, 00, 15	(1.51" (3.81 mm))
599, 040, 17, 00, 25	(2.07" (5.24 mm))
599, 040, 17, 00, 31	(3.31" (8.39 mm))
599, 040, 17, 00, 40	(4.41" (11.0 mm))

1" PVC LINE FOR WEIR RINSE/ALGAE CONTROL. REPLACE IN TANK AND EXTERNAL SUPPLY PIPE (2 LOCATIONS). PROVIDE AND INSTALL 150 EQUALLY SPACED NOZZLES (SEE FIGURE)

ITEM: ACCESS BRIDGE TRUSSES, BEAMS, GIRDERS, AND STRUCTURAL SUPPORTS
MATERIAL: SEE SPECIFICATIONS TO BE REPLACED



FLOW INTO SCUM PIT

ITEM: INTERNAL SCUM PIT
MATERIAL: CONCRETE

COATING SCHEDULE:
• 1ST COAT: SURFACE AND CRACK REPAIR AS NEEDED
• 1ST & 2ND : 8-10 MILS PER COAT

ITEM: EXTERIOR SCUM PIT
MATERIAL: CONCRETE/STEEL PIPING

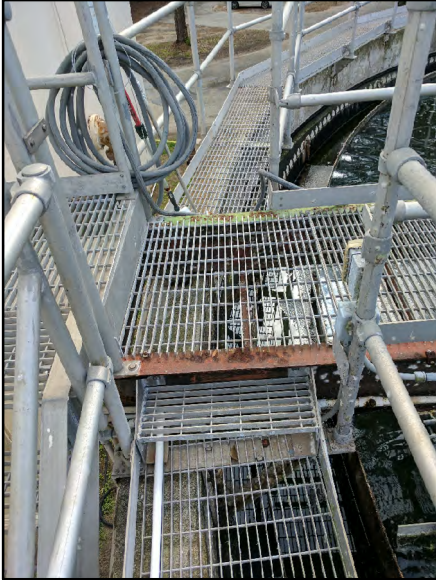
COATING SCHEDULE:
• 1ST COAT: SURFACE AND CRACK REPAIR AS NEEDED
• 2ND & 3RD COAT: 3-5 MILS PER COAT
SEE NOTES

ITEM: EFFLUENT PIPE (18")
MATERIAL: DUCTILE IRON

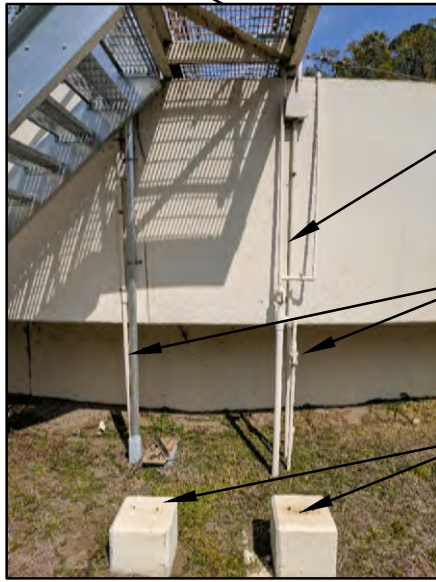
COATING SCHEDULE:
• 1ST COAT: 3-5 MILS
• 2ND COAT: 4-6 MILS
• 3RD COAT: 2-3 MILS



ITEM: STAIRCASE, HAND RAILING, DECKING
MATERIAL: ALUMINUM
NOT TO BE COATED



ITEM: ACCESS BRIDGE DECKING AND HANDRAILS
MATERIAL: ALUMINUM
NOT TO BE COATED; TO BE REPLACED



1" PVC LINE FOR WEIR RINSE/ALGAE CONTROL. REPLACE IN TANK AND EXTERNAL SUPPLY PIPE (2 LOCATIONS). MATCH EXISTING PIPE AND HOLE SPACING. REPLACE BELOW GRADE PIPING AROUND TANK WITH 1.5" PVC AROUND TANK TO MAIN CONNECTION POINT. PROVIDE VALVES FOR ISOLATION.

ALL PIPING TO BE RELACED. REROUTE FLUSH WITH LOWER TANK WALL.

TO BE REMOVED

ITEM: ACCESS BRIDGE, SERVICE DECK, HAND RAILING, DECKING
MATERIAL: ALUMINUM
NOT TO BE COATED; TO BE REPLACED



ITEM: INSTRUMENTATION
MATERIAL: VARIES
NOT TO BE COATED; TO BE REPLACED

NOTES

- IN ADDITION TO THE REPLACEMENT OF THE CLARIFIER EQUIPMENT, THE EXISTING CONCRETE STRUCTURE SHOULD BE FULLY REHABILITATED AND COATED AS PART OF THIS PROJECT. THE INTERIOR AND EXTERIOR SURFACE SHALL BE CLEANED, REPAIRED AND COATED. THE INTERIOR FLOOR SHALL BE RE-GROUTED (REMOVE EXISTING GROUT AND RE-GROUT). SEE SPECIFICATIONS.
- PRIOR TO ALL STRUCTURAL REPAIRS AND COATINGS, THE CONTRACTOR SHALL COORDINATE WITH NAU AND THE ENGINEER TO ARRANGE FOR INSPECTIONS UPON DRAINING AND CLEANING OF EACH CLARIFIER. THE CONTRACTOR AND APPLICABLE SUB-CONTRACTORS SHALL WORK WITH THE ENGINEER TO INSPECT, NOTATE AND AGREE UPON THE REQUIRED REPAIRS BASED ON THE UNIT BID PRICING. THE CONTRACTOR SHALL DOCUMENT AND NOTATE DEFICIENCIES, INCLUDING CRACKING OR DETERIORATION THAT IS FOUND, NOTING THE EXPECTED REPAIR TYPE AND QUANTITY REQUIRED. IF AT ANY LOCATION DETERIORATION IS FOUND TO BE TOO SEVERE, THE CONTRACTOR SHALL NOTIFY NAU AND THE ENGINEER, WORKING WITH THE TEAM TO DETERMINE AN APPROPRIATE REPAIR METHOD.
- IF THE INSPECTION DOES NOT NOTE DAMAGE OR AFTER SAID DAMAGE HAS BEEN MITIGATED, THE CONTRACTOR SHALL APPLY A HIGH PERFORMANCE COATING (AS DEFINED WITHIN THE SPECIFICATIONS) TO THE INTERIOR OF THE CLARIFIER CONCRETE SURFACES AFTER PERFORMING THE COATING MANUFACTURER'S RECOMMENDED PREPARATION OF CONCRETE SURFACES AND PIPE MATERIALS AT EACH PENETRATION. ADHERENCE TO THE MANUFACTURER'S REQUIREMENTS SHALL ALSO APPLY TO ALL APPLICATION CONDITIONS, APPLICATION RATES, WET/DRY FILM THICKNESS, AND USE OF PRIMERS, INTERMEDIATE, AND FINAL COAT SELECTION AND USE.
- THE BID TAB INCLUDES ALTERNATE EQUIPMENT MATERIALS FOR THE CLARIFIER. THIS SHALL BE SELECTED BY NAU AND THE ENGINEER AT THE TIME OF BID. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE SELECTED MATERIALS ARE PROPERLY COATED AND ISOLATED TO PREVENT GALVANIC CONTINUITY/CORROSION. THIS SHALL INCLUDE THE USE OF ISOLATION PADS AND SLEEVES ON FASTENERS WHERE REQUIRED.

PLANVIEW CLARIFIER #2

CLARIFIER #2 COATING REQUIREMENTS
CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

SEAL

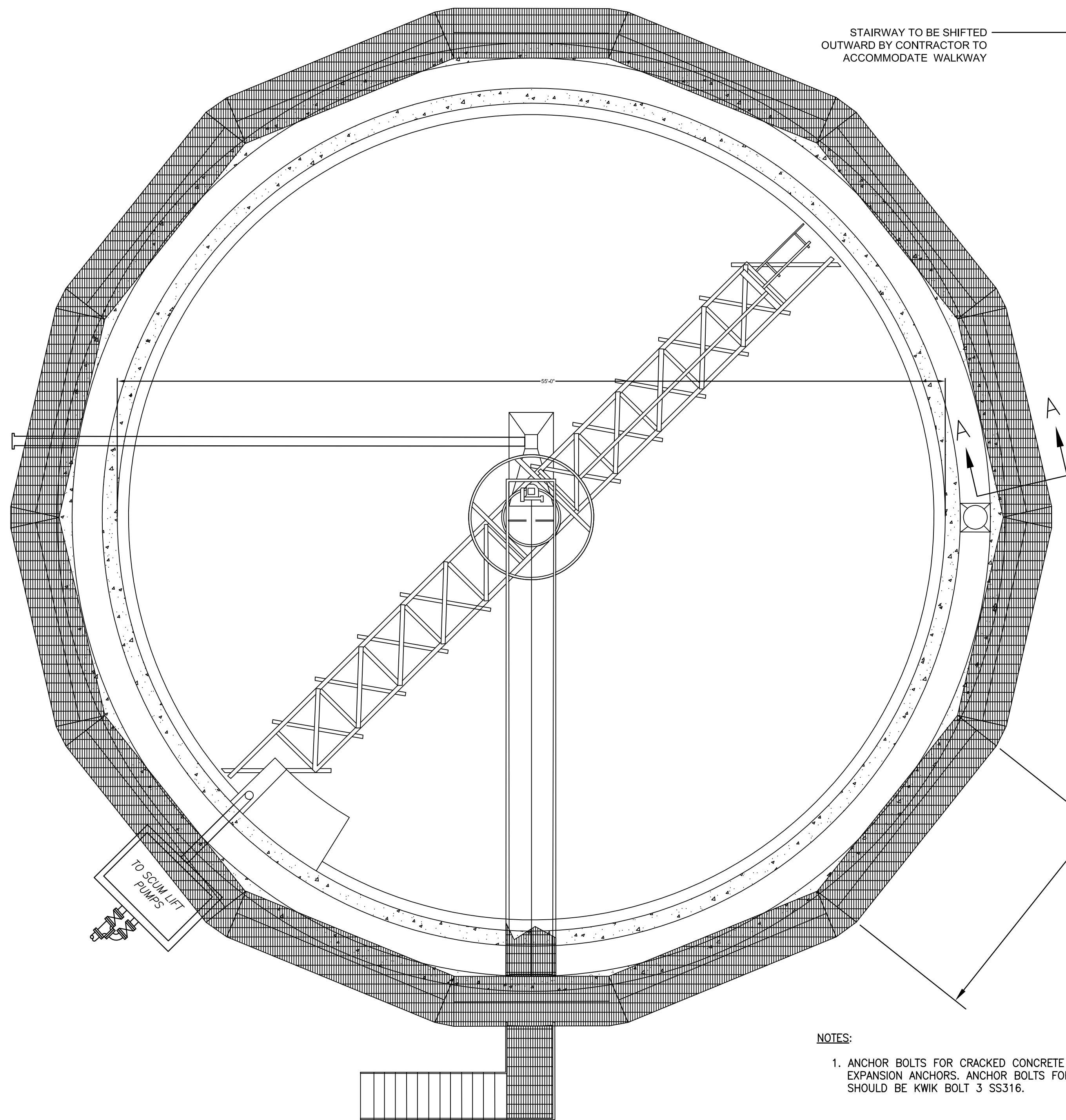
Jules J. Ameno Jr., P.E.
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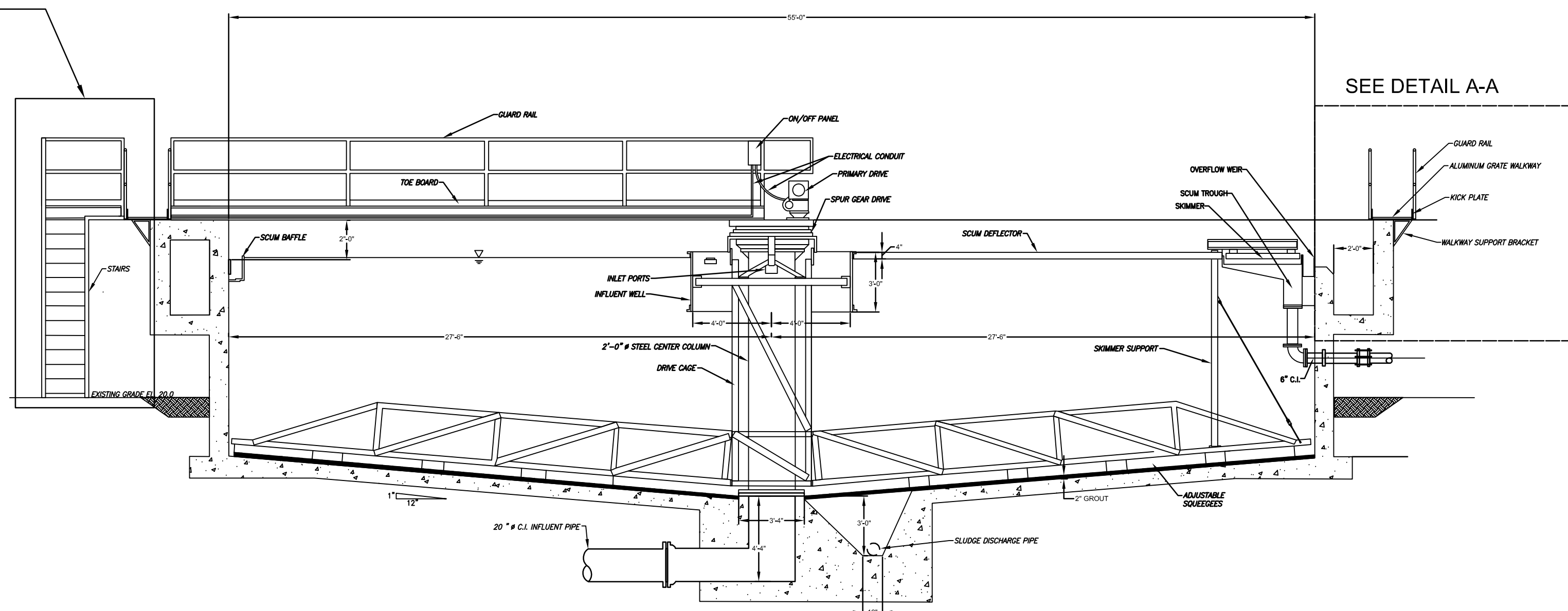
PROJECT NO./DASH NO.
A120925.12

SHEET

M-6



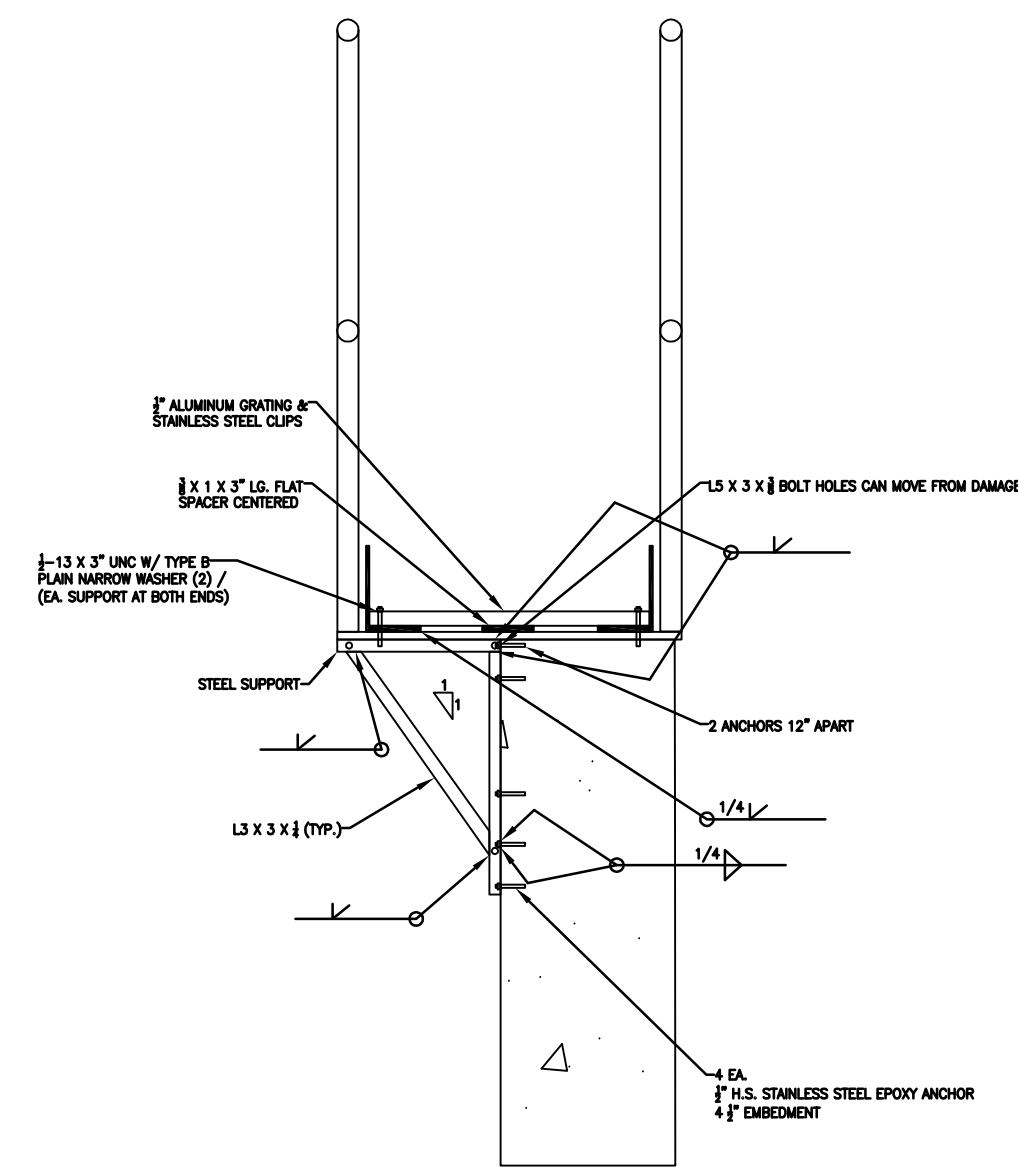
PLANVIEW CLARIFIER #2



PROFILE CLARIFIER #2

- NOTES:
1. ANCHOR BOLTS FOR CRACKED CONCRETE SHOULD BE HILTI KWIK BOLT TZ 316SS EXPANSION ANCHORS. ANCHOR BOLTS FOR CONCRETE THAT IS IN GOOD CONDITION SHOULD BE KWIK BOLT 3 SS316.

SECTION LENGTH IS APPROXIMATELY 15'. FINAL DIMENSIONS TO BE DESIGNED BY CONTRACTOR



DETAIL "A-A"

SCALE: NTS

CLARIFIER #2 PROPOSED CIRCUMFERENTIAL WALKWAY
CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

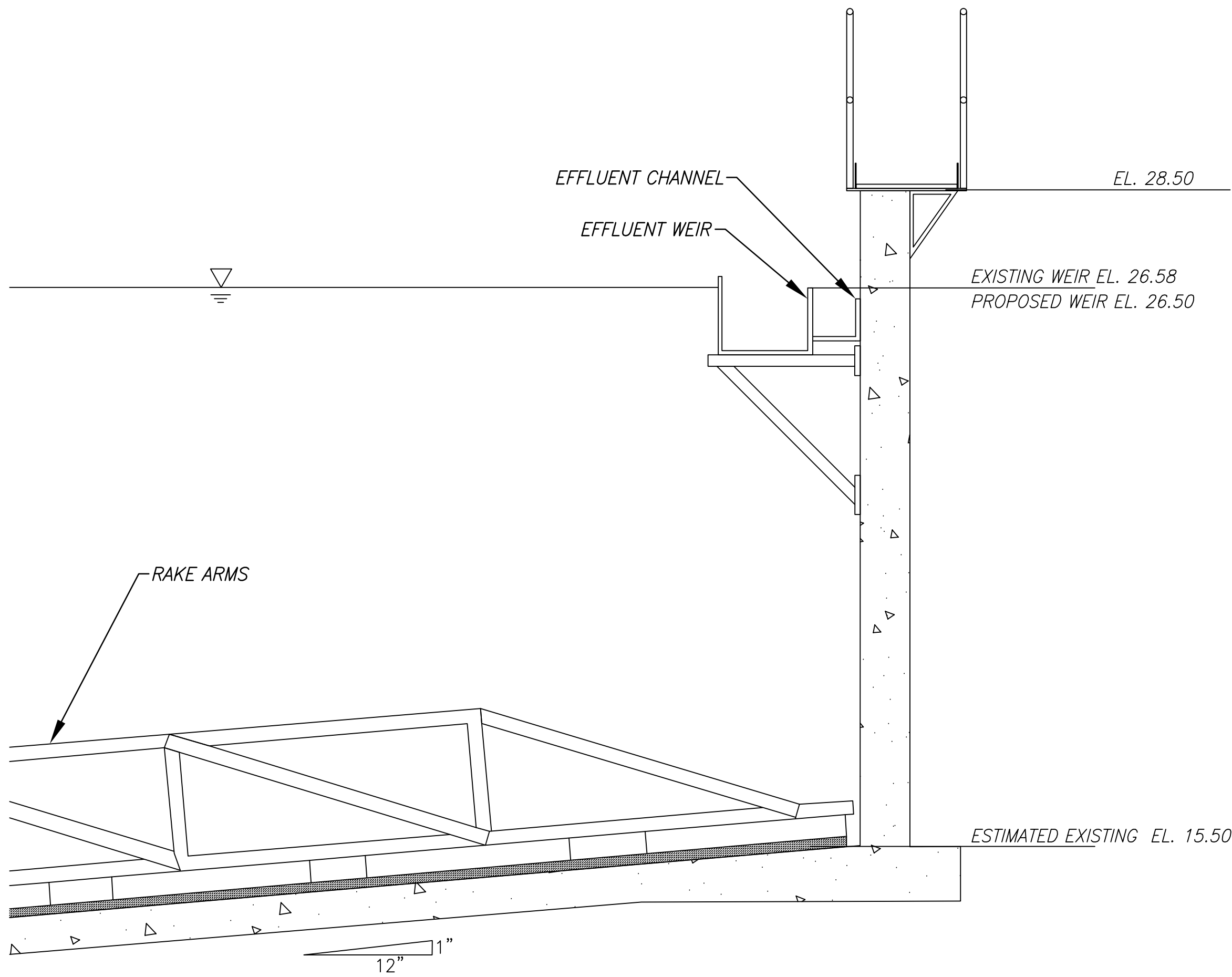
SEAL

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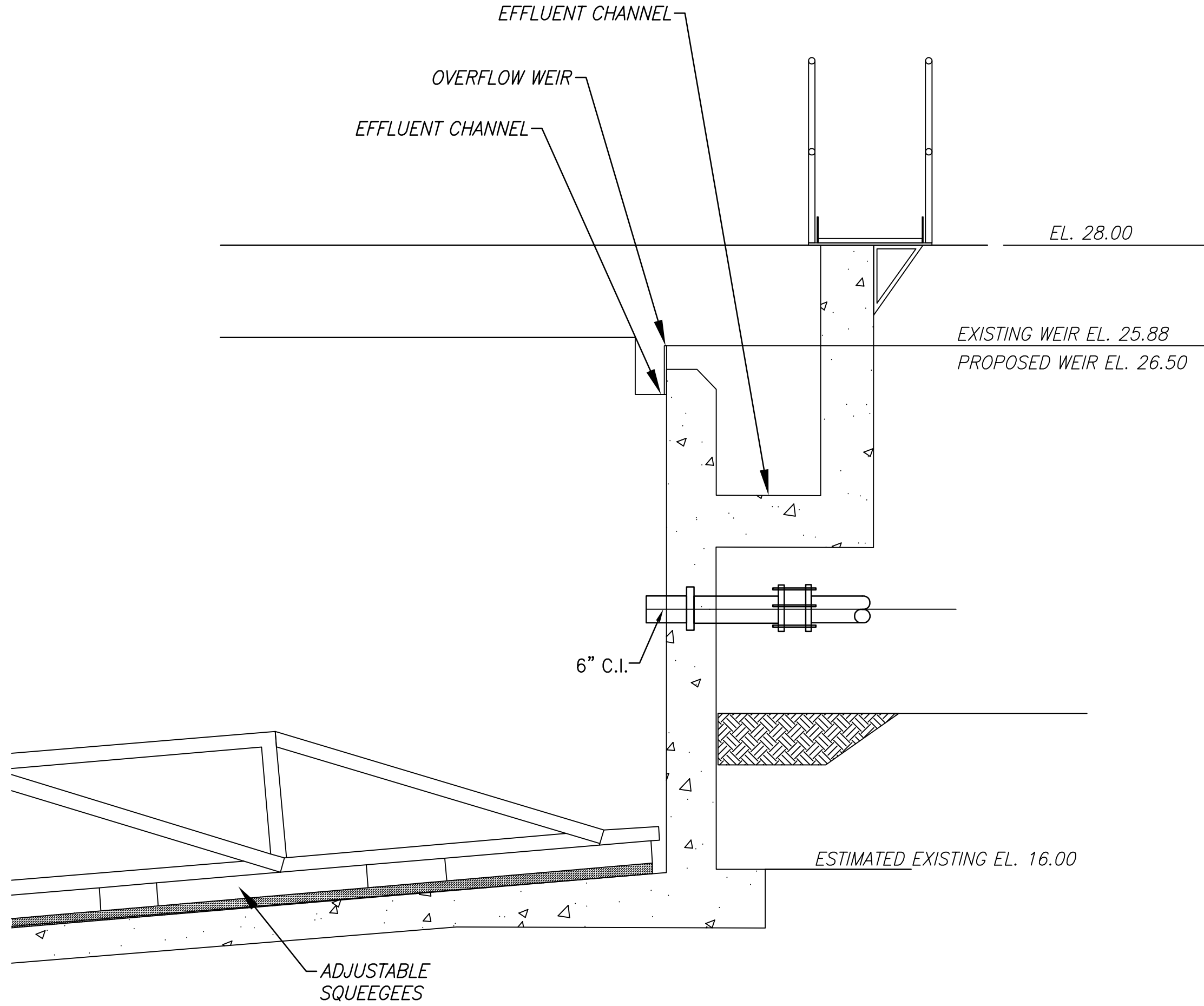
PROJECT NO./DASH NO.
A120925.12

SHEET
M-7



PROFILE CLARIFIER #1

SCALE: NTS



PROFILE CLARIFIER #2

SCALE: NTS

- Note:
1. BASED ON SURVEY DATA, THE EXISTING CLARIFIER ELEVATIONS ARE NOT LEVEL. THESE ARE BELIEVE TO BE INACCURATE DUE TO PREVIOUS NAVD29/NAVD88 SURVEY DATUM CHANGES WHEN ORIGINALLY CONSTRUCTED. IT IS THE INTENT TO REVISE/ADJUST THE ELEVATIONS OF THE EXISTING WEIR ELEVATIONS TO SET THE TANKS AT AN EQUAL HYDRAULIC GRADE. THE CONTRACTOR SHALL UTILIZE A FLORIDA LAND SURVEYOR TO SET AND CONFIRM THE ELEVATIONS.
 2. THE DESIGN INTENT IS ADJUST THE ELEVATIONS OF THE WEIRS TO EQUALIZE THE HYDRAULIC ELEVATIONS IN THE CLARIFIERS (LOWER CLARIFIER #1 AND RAISE CLARIFIER #2). THIS MAY REQUIRE ADDITIONAL MODIFICATIONS, SUCH AS REINFORCING THE RAISED WEIR ON CLARIFIER #2. THE CONTRACTOR SHALL WORK WITH THE MANUFACTURER TO PROVIDE A WEIR WHICH IS RELIABLE AND STRUCTURALLY SOUND, INCLUDING ADDITIONAL SUPPORTS/BRAKETS.
 3. THE CLARIFIER BOTTOM FLOOR ELEVATIONS AND SLOPES ARE BASED ON AS-BUILT DATA. THE CONTRACTOR SHALL CONFIRM THE ELEVATIONS AND ADVISE NAU / ENGINEER OF ANY DEVIATIONS FROM THE PLANS.

CLARIFIER ELEVATION DETAILS

CLARIFIERS #1 AND #2 REHABILITATION NASSAU COUNTY

SEAL

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Florida Registration #31049



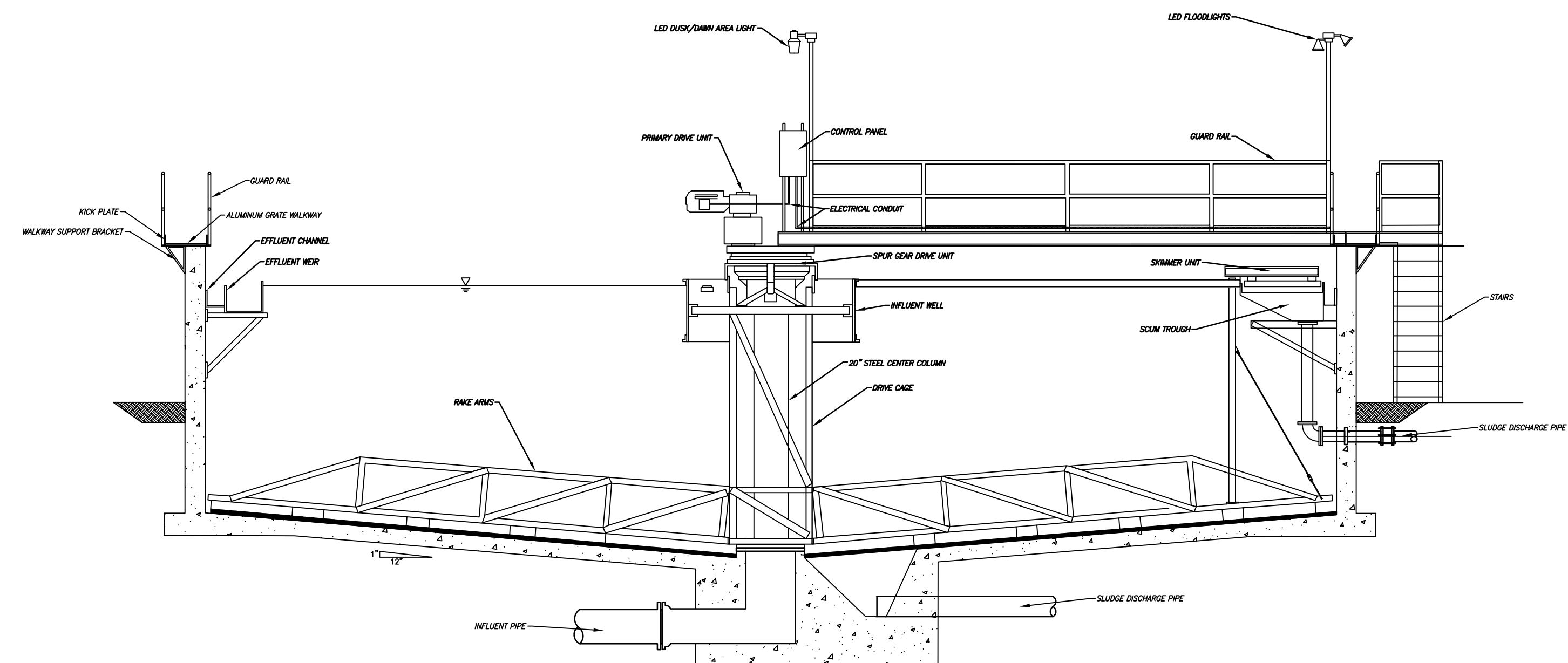
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PROJECT NO./DASH NO.
A120925.12

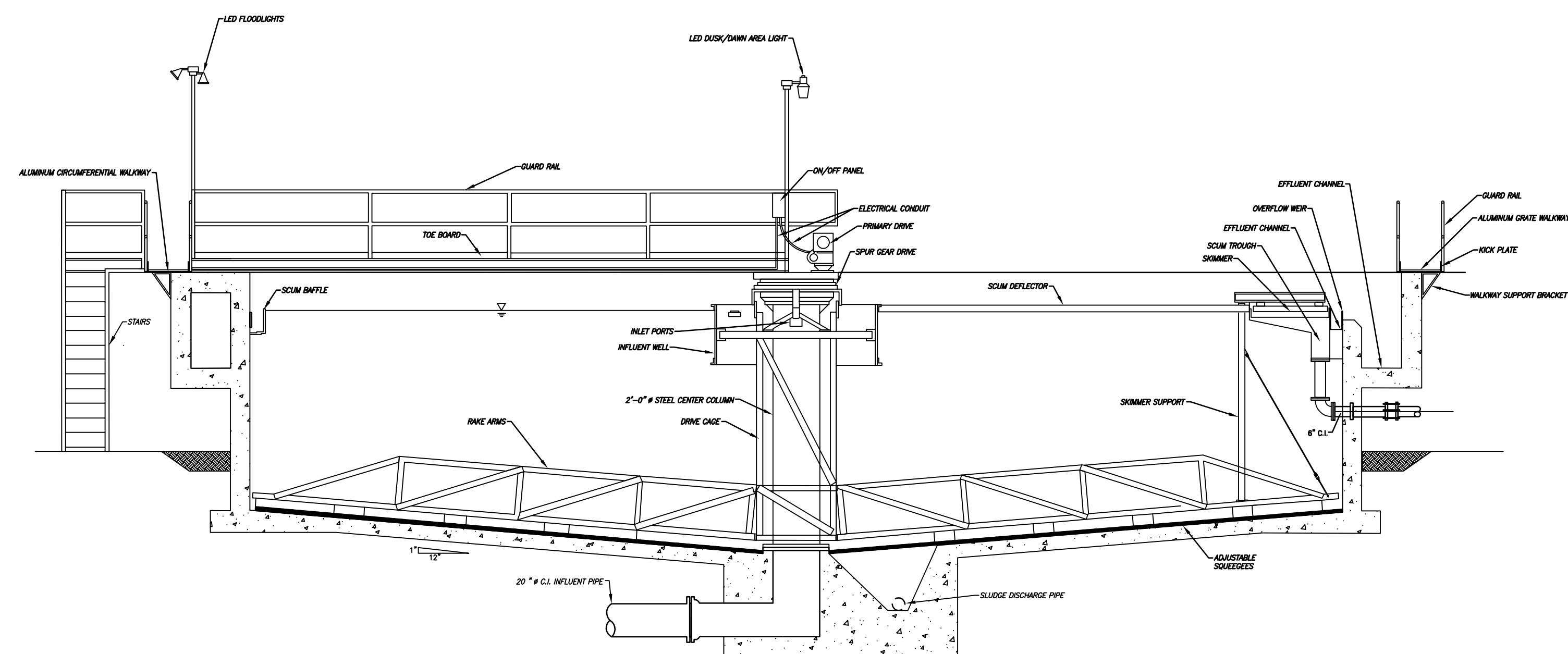
SHEET

M-8



PROFILE CLARIFIER #1

SCALE: NTS



PROFILE CLARIFIER #2

SCALE: NTS

CLARIFIER #1 GENERAL NOTES:

1. LIGHTING ON THE CLARIFIER SHALL INCLUDE AN DUSK TO DAWN LIGHTING CONSISTING OF AN AREA LIGHT AT THE CENTER OF THE CLARIFIER OPPOSITE THE CONTROL BOX, AND A FLOOD LIGHT AT THE TOP OF THE STAIRS POINTING DOWN THE STEPS. THE LIGHTS SHALL BE LOCATED NINE FEET ABOVE THE GRATED WALKWAY (DETAIL SHEET ED-1.)
2. THE CONTRACTOR SHALL INSTALL FOUR (4) GROUNDING STRAPS/WIRE TO THE EXISTING CIRCULAR WALKWAY. THE CONNECTIONS SHALL BE LOCATED 90 DEGREES INTERVALS AROUND THE CLARIFIER.
3. INSTALL NEW WASHDOWN WATER PIPING, HOSE AND RACK.
4. ALL ELECTRICAL CONDUIT AND WIRE AT THE CLARIFIER SHALL BE REPLACED

CLARIFIER #2 GENERAL NOTES:

1. LIGHTING ON THE CLARIFIER SHALL INCLUDE AN DUSK TO DAWN LIGHTING CONSISTING OF AN AREA LIGHT AT THE CENTER OF THE CLARIFIER OPPOSITE THE CONTROL BOX, AND A FLOOD LIGHT AT THE TOP OF THE STAIRS POINTING DOWN THE STEPS. THE LIGHTS SHALL BE LOCATED NINE FEET ABOVE THE GRATED WALKWAY (DETAIL SHEET ED-1.)
2. THE CONTRACT SHALL INSTALL NEW ALUMINUM WALKWAY AND SUPPORT STRUCTURES AND APPURTENANCES AROUND THE CIRCUMFERENCE OF THE CLARIFIER. THE GROUNDING WIRE/STRAND SHALL BE 4/0 MINIMUM OR EQUIVALENT, AND CONNECTED TO 5/8" ϕ X 8' LONG CONDUIT ANCHOR ROD. THIS ROD SHALL BE INSERTED A MINIMUM OF 7.5' INTO THE SOIL. (DETAIL SHEET ED-1)
3. INSTALL NEW WASHDOWN WATER PIPING, HOSE AND RACK.
4. ALL ELECTRICAL CONDUIT AND WIRE AT THE CLARIFIER SHALL BE REPLACED

[illegible]

[illegible]

SCALE:	N.T.S
DATE:	JUNE 2018
DRAWN:	
CHECKED:	JB
APPROVED:	

EXISTING ELECTRICAL SINGLE LINE DIAGRAM

CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

SE

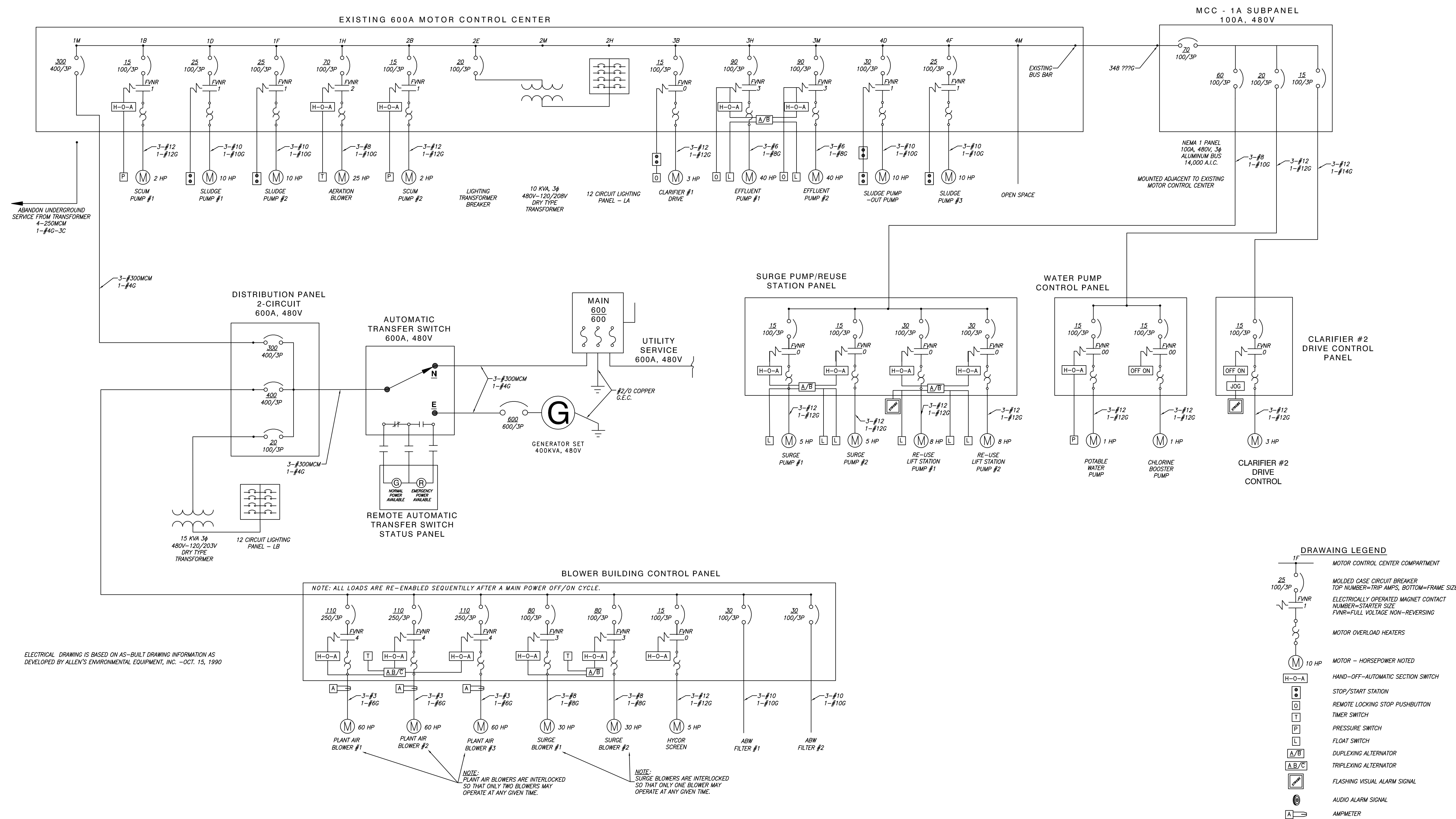


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PROJECT NO./DASH NO.
A120925.12

SHEET

E-1





SCALE:	N.T.S
DATE:	JUNE 2018
DRAWN:	
CHECKED:	JB
APPROVED:	

PROPOSED ELECTRICAL SINGLE LINE DIAGRAM

CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

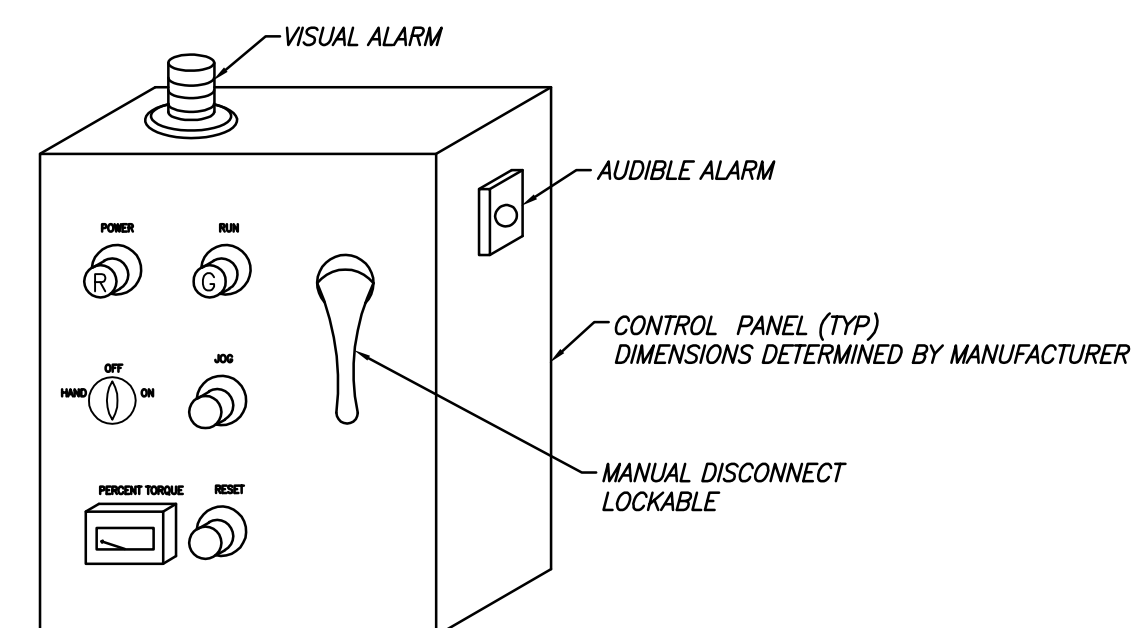
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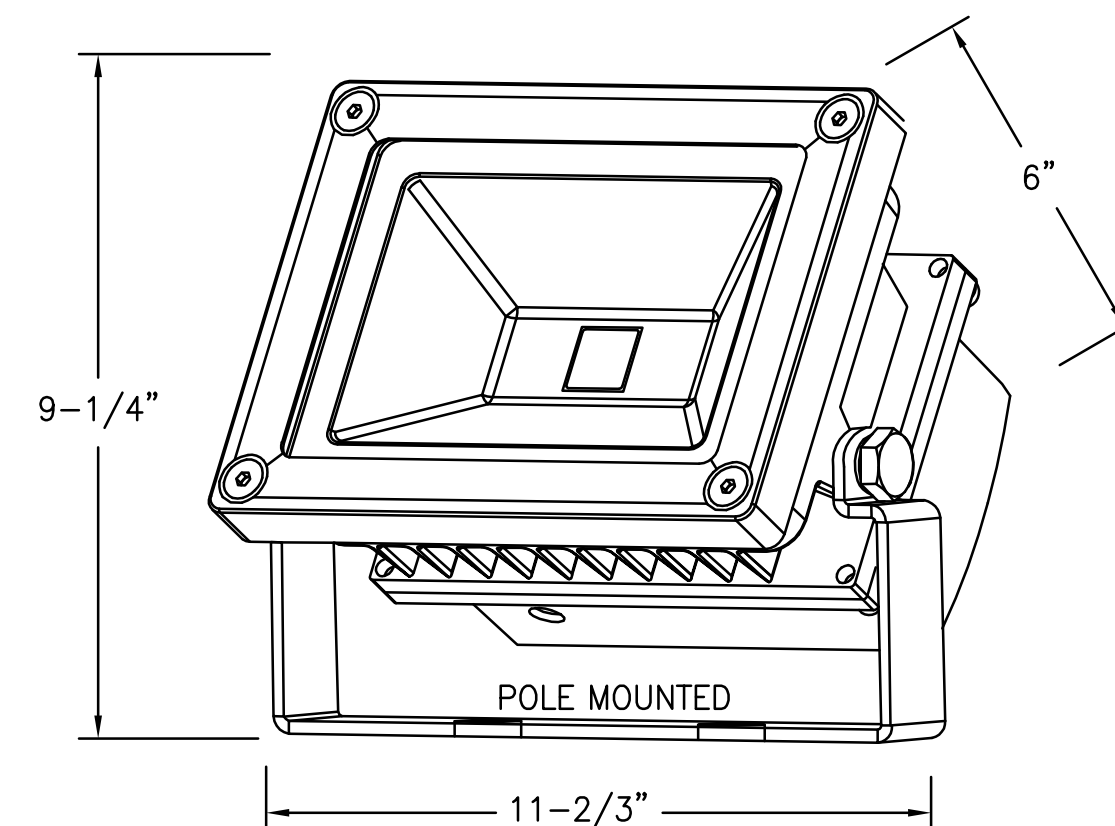
PROJECT NO./DASH NO.
A120925.12

SHEET

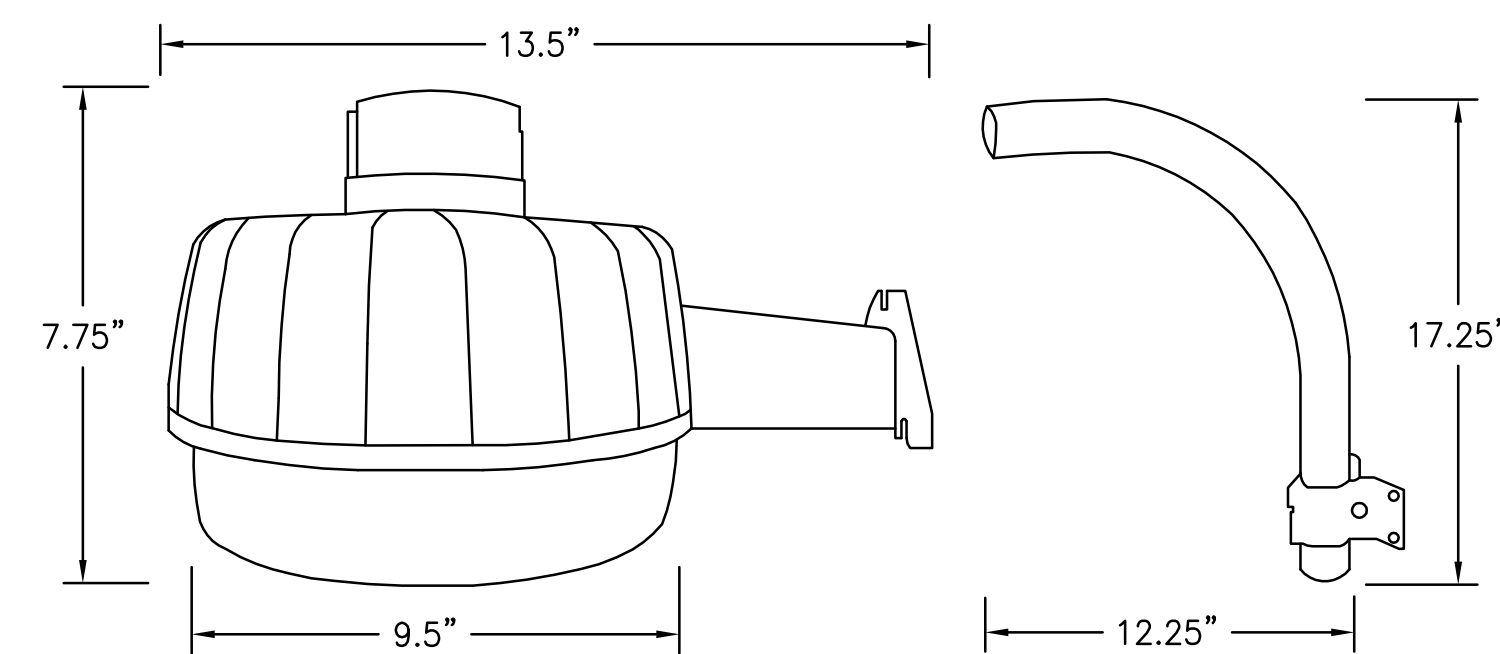
E-2



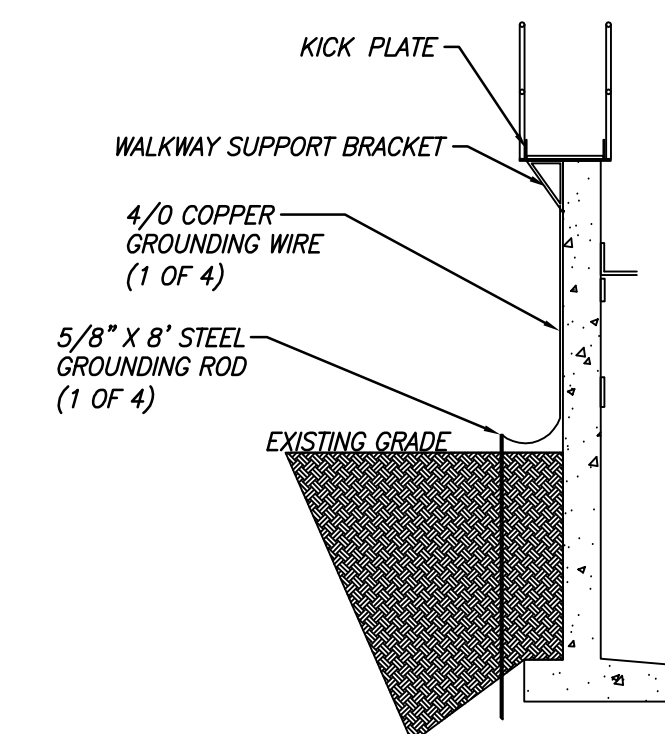
CLARIFIER CONTROL PANEL (TYP)
NTS



TAMLITE 50W LED FLOOD LIGHT
NTS



TAMLITE 50W LED DUSK/DAWN AREA LIGHT
NTS



GROUNDING DETAIL
NTS

[illegible]



NASSAU COUNTY
BOARD OF COUNTY COMMISSIONERS
Contract Management Department
96135 Nassau Place, Suite 2
Yulee, Florida 32097
904-530-6040 Fax: 904-321-5917

Grayson Hagins
Procurement Manager
ghagins@nassaucountyfl.com

TO: All Proposers
FROM: Grayson Hagins, Procurement Manager
SUBJECT: Addendum #1
Invitation to Bid, Bid Number NC18-010
NAU WWTF Clarifier Rehabilitation Project
July 31, 2018

REMINDER: This addendum must be acknowledged, signed and returned with your proposal. Failure to comply may result in disqualification of your submittal.

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents.

A non-mandatory pre-bid conference was held Friday, July 27, 2018 at 10:00 AM in the County Manager's Conference Room (County Manager's Office), located at 96135 Nassau Place, Yulee, Florida 32097 for the Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project, Bid Number NC18-010. Copies of the sign-in sheets as well as the meeting agenda are attached to this addendum.

Grayson Hagins, Procurement Manager opened the meeting with introductions and discussion on the bid submittal requirements. **Bids are due by August 8, 2018 at 4:00 p.m.** Caution was given to the bidders, if they plan on delivering their bid on the deadline date, to allow sufficient time for security clearance at the Judicial Annex which is located 76347 Veterans Way in Yulee, Florida. Bids received after 4:00 p.m. on August 8, 2018 will not be accepted.

Jay Ameno, GAI, Engineer of record for this project provided an overview of the project. Discussion items and responses to questions during the pre-bid conference as follows:

Question & answers during the pre-bid conference are shown as a clarification below.

Part 1 – Questions & Answers

- Q1. REF: 00 41 15 – What price will determine who is the low bidder on this project? Will it be the price for Base Bid Clarifier 1 or will it be the price for Base Bid Clarifier 1 plus the price for Alternate Clarifier 2 added together? Will Alternate 2 Material Upgrades come into play to determine who is the low bidder?
- A1. *Either can be used to determine who is the low bidder based on the most beneficial bid for NAU.*
- Q2. REF: 00 41 15 – The bid form says the Total Bid Lump Sum is Items 1 thru 12. Should this be Items 1 thru 13?
- A2. *Yes, it should be Items 1 thru 13.*

- Q3. REF: 00 52 15 – Is the 180 days for substantial completion for Clarifier 1 work or both Clarifier 1 & 2? According the clarifier manufacturers the lead time for submittals is 4 to 6 weeks and the material delivery 24 to 30 weeks after submittal approval. The 180 days is not enough time to complete clarifier 1.
- A3. *Contract time for a single clarifier is extended to 270 days for substantial and 300 days for final. If two clarifiers are selected, 330 days to substantial and 360 days to final.*
- Q4. REF: 01 41 23 - Will the contractor be required to pay for a county demolition permit or building permit? If so, furnish the cost specific for this job in accordance with Florida State Statute 218.80, Public Bid Disclosure Act, or furnish an allowance.
- A4. *No, clarifiers are treatment units for the wastewater treatment facility and are not considered as buildings. This project is considered as maintenance work. Therefore, no demolition permit or building permit is required.*
- Q5. REF: 01 22 50, par 3.01.C – The repairs to the concrete tanks are designated as Type I thru Type IV in section 03 93 00, which all have different costs associated with them. Which Types are we to use for Bid Items 3a, 3b, 8a and 8b? Bid Items 3c and 8c only refer to crack repair with no mention of concrete spalling or rebar repair. Normally crack repair is measured in lineal feet, rebar in lineal feet and concrete spalling repair in cubic feet. We recommend establishing a unit price and quantity on the bid form so that all contractors are bidding on identical quantities. Actual cost will be adjusted up or down based on the amount discovered and agreed upon after tanks are drained and inspected.
- A5. *Please see revised 01 41 15 Bid Form and 01 22 50 Measurement and Payment.*
- Q6. REF: 01 22 50 – How are we measuring the exterior wall area with regards to repair and coating? Is it only the area exposed to view, or will we need to excavate and expose the entire wall in order to find exterior cracks below grade?
- A6. *No, we only repair the area above grade.*
- Q7. REF: 02 41 13 – Will the clarifiers require ground water dewatering before they are emptied so as to prevent any uplift?
- A7. *No. The clarifiers are primarily on the ridge and above grade.*
- Q8. REF: 03 93 00 – Do we know if the existing anchor bolts associated with existing weirs, baffles, and clarifier mechanism are stainless steel? If so, will they still need to be repaired and patched?
- A8. *If they are stainless steel, yes, they can be cut off to the surface. If they are regular steel, they need to be drilled out and patched.*
- Q9. REF: 46 43 01 – Paragraph 2.02.A.1 indicates the base bid clarifier components and walkways are hot dipped galvanized. Paragraph 2.02.D.7 calls for the drive mechanism to have 2 factory coats of epoxy paint. Will any of the other clarifier components or walkway components require field coating?

- A9. *Field coatings are not required for clarifier components because they will be factory pre-coated. The grating for the walkway is aluminum.*
- Q10. REF: Sheet M-7 – The detail shows the grating as aluminum. Are handrails also aluminum? The same detail says the supports and spacers are steel. Will the supports and spacers be galvanized or will they need to be field painted?
- A10. *Yes, handrails are also aluminum. Yes, they are galvanized and coated.*
- Q11. REF: Sheet M-5 & M-6 – Shows 150 spray nozzles. Which model number and who is the manufacturer?
- A11. *The manufacturer is Lechler Inc. The model number is solid stream nozzles High pressure Series 599. Or approved equal.*
- Q12. REF: Sheet M-5 & M-6 – Would the owner consider deleting the requirement to remove the existing grout from the clarifier bottoms? Any amount of repair or replacement discovered can be handled after a site inspection of the floors.
- A12. *Upon inspection, if the grout is in excellent condition based on the Engineer's determination, removing the existing grout will not be required.*
- Q13. Will the existing MCC's require modifications to the existing Clarifier Buckets located within the MCC?
- A13. *The existing bucket should be sufficient to power the new system. If this is verified to be different, then it will need to be re-evaluated.*
- Q14. Will new conduit and wire be required from the existing MCC to the new Clarifiers for 480 volt service?
- A14. *The existing wiring can be reused up to a reasonable junction point for connection where new wiring can then be pulled to the new equipment.*
- Q15. Will new conduit and wire be required for controls and instrumentation at each Clarifier?
- A15. *No since the system is replaced in-kind.*
- Q16. Will new conduit and wire be required for lighting circuits?
- A16. *Yes.*
- Q17. Is lightning protection required at each Clarifier?
- A17. *Yes.*
- Q18. Sheets E-1 and E-2 – Clarifiers No.1 and No.2 are labeled wrong.
- A18. *It has been corrected.*
- Q19. REF: 46 43 01 - Section 2.0.2 A 1. a. – The base bid calls for all the fabricated steel to be hot dip galvanized (HDG) including the walkway/platform. Section 2.0.5 calls all fabricated steel components shall be field prepared and coated in accordance with

- Section 09 90 00. If the intention is to HDG all the steel per Section 2.0.2 A. 1.a then we recommend to modify the text in Section 2.0.5 to exclude HDG sections.
- A19. *Section 2.05 is revised to “Stainless steel and aluminum surfaces shall not be painted. Gearboxes, Motors, and other manufactured components will receive the manufacturer’s standard weather- and corrosion-resistant coating. All fabricated steel components which are not factory pre-coated shall be field prepared and coated in accordance with Section 09 90 00.”*
- Q20. REF: 46 43 01 - Section 2.0.2 D. 3 (Feedwell with EDI) – This section calls out an Energy Dissipating Inlet (EDI) and a feedwell, but no sizing is specified for either the EDI or the feedwell. However, the drawings only show a 12’ diameter feedwell and no EDI. Is the intention to have just a feedwell as shown on the drawings (similar to the existing units) or is the intention to have an EDI and a feedwell? If the intention is to have an EDI, what design is required? We recommend the EquaFlo 360 attached.
- A20. *See revised Section 2.02 D.3 in 46 43 01 Clarifier Rehabilitation.*
- Q21. Is the Circumferential walkway included in some other part of the documents or is the intention to include it with the clarifier equipment? Typically these kind of walkways are better (and more cost effective) sourced direct by the General Contractor from a walkway/handrail supplier. If a new walkway is required, we recommend requiring the contractor to supply this item rather than the clarifier manufacturer.
- A21. *The walkway will be provided by the Contractor not the clarifier manufacturer. Please see revised 46 43 01 Clarifier Rehabilitation.*
- Q22. The specification does not call out any torque requirements. We recommend using a continuous torque rating of 18,000 ft-lbs for these units.
- A22. *The continuous torque rating of 15,000 ft-lbs is required. See revised 46 43 01 Clarifier Rehabilitation.*
- Q23. The existing Clarifier No. 1 has a steel effluent launder which is shown to be replaced. No information on material or size is called out for this replacement launder. The existing launder has a design which is not recommended because of the undesirable design with the inner end of the launder serving as the scum baffle and the weir being located at the outer side of the launder. Testing has shown this design will exhibit higher TSS levels due to solids reaching the outer clarifier wall and riding straight up along the wall. We recommend installing the launder against the tank wall with the weirs and scum baffles on the inner side of the launder.
- A23. *See added section 2.02 D. 7 in revised 46 43 01 Clarifier Rehabilitation.*
- Q24. 46 43 01, Item 2.0.2 B Design Criteria, ADD “Continuous Operating Torque of 10,000 ft-lbs”.
- A24. *The continuous torque rating of 15,000 ft-lbs is required. See revised 46 43 01 Clarifier Rehabilitation.*

Q25. 46 43 01, Item 2.0.2 D.3. Feedwell with EDI, DELETE & Replace with, since no EDI well is required:

A25. *No, EDI design is required.*

Q26. 46 43 01, Item 2.0.2 D.6.f. Scum Baffle, REPLACE AND ADD “An effluent launder, with supports shall be provided. The launder with weir plates, baffle and hardware shall be 304 stainless steel. Supports to be hot dip galvanized steel. The launder and weir plates shall be designed to handle the maximum flow rate.”

A26. *See added section 2.02 D. 7 in revised 46 43 01 Clarifier Rehabilitation.*

Q27. 46 43 01, Item 2.0.2 D.7. Center Drive Mechanism, ADD “Item j. A fabricated steel drive assembly with hydraulic overload protection is also acceptable”

A27. *No, hydraulic overload protection is not acceptable.*

Q28. REF: Section 00 41 15, par 7.01 – The list of documents to be handed in with the bid includes Bidders Qualification Statement (Section 00 45 13). This statement requires at least 3 projects completed in the last 3 years. However, Section 11 21 15, Article 3 asks for 5 projects within the last 5 years. Which one do you want submitted with the bid?

A28. *Use Section 00 45 13 requirement of 3 year. See revised Section 00 21 15.*

Q29. Can you provide any additional information on the composition of the influent waste stream. i.e. pH, percent solids, or any known commercial or industrial chemicals that are either in the initial stream or added prior to it being introduced to the clarifier.

A29. *The NAU WWTF influent has the typical domestic wastewater characteristics and no known chemical contributions from major commercial and industrial users. Currently chlorine is added at the effluent launders.*

Q30. As discussed in the prebid meeting, the scope of work regarding the items to be removed and replaced appears to have some ambiguous wording. Please confirm that ALL internal components in each clarifier is to be removed and replaced. This would include all clarifier equipment, catwalk, weirs, baffles, troughs, brackets, small diameter PVC piping, and electrical components.

A30. *Yes, all internal components.*

Q31. Notes on the drawings require us to remove and replace the grout. After talking with one of the clarifier manufacturer’s reps (Ovivo) and per our own experience, it is far more common to use the existing grouted floor surface rather than replace it. Since the current condition of the floor is unknown, we would like to request consideration that the removal and replacement of the grout be removed from the current scope. Note that the condition of the grout can inspected during each clarifier’s initial shutdown and draining for measurement purposes. If it is determined at that time that grout needs to be replaced, it can be added into the contract without affecting the schedule.

A31. *See answer A12.*

- Q32. The coating specifications require that galvanized metals are to receive coatings. This would include the clarifier mechanism, walkway and related components (unless Stainless Steel alternate is selected). The surface prep is shown as a SSPC-6. This prep method will likely remove much (or most) of the galvanizing, therefore negating the entire galvanizing process. However, without this type of surface prep, it will be difficult to achieve the adhesion required for the coating products. To further coat galvanized surfaces such as these will add more cost the project without adding more value. We would like to request that the requirement to coat galvanized surfaces be removed from the specifications.
- A32. *The coating specification 09 90 00 requires that steel - new steel components which are not factory pre-coated are to receive coatings.*
- Q33. Please indicate if the Clarifier 2 circular walkway shop drawings are required to be signed and sealed by a FL PE.
- A33. *Yes.*
- Q34. Confirm that all base bid metal components for the clarifiers are hot dipped galvanized per 46 43 01, 2.02 A. This includes all clarifier components, walkways, handrails, grating, weirs, baffles, effluent channels & scum troughs.
- A34. *All clarifier components including scum troughs are hot dipped galvanized for the base bid. Walkways, handrails, and grating are aluminum. Weirs and scum baffles are FRP.*
- Q35. Comments regarding coatings
- A35. *See revised Section 09 90 00 Painting and Coating*

Part 2 – Drawing Revisions and Additions

1. Sheet M-7, Clarifier #2 Proposed Circumferential Walkway, replace
2. Sheet M-9, Proposed Mechanical, Structural and electrical requirements, replace
3. Sheet E-1, Existing Electrical Single Line Diagram, replace
4. Sheet E-2, Proposed Electrical Single Line Diagram, replace

Part 3 – Specification Revisions and Additions

1. SECTION 00 21 15 INSTRUCTIONS TO BIDDERS
 - a. ARTICLE 3 QUALIFICATIONS OF BIDDERS, 3.02.A.1, delete “5” after the word “past” in the first sentence and replace with “3”.

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

2. SECTION 00 41 15 BID FORM

- a. Section 5.01, delete “LS 1 \$” in row 3.a, add three rows after 3.a in the table as follow:

3.a	Internal	LS	+	-	\$
3.a.1	Crack Repairs	LF	10		\$
3.a.2	Structural Repairs	CF	10		S
3.a.3	Surface Repairs	LS	1		\$

In the same table, delete “LS 1 \$” in row 8.a, add three rows after 8.a in the table as follow:

8.a	Internal	LS	+	-	\$
8.a.1	Crack Repairs	LF	10		\$
8.a.2	Structural Repairs	CF	10		S
8.a.3	Surface Repairs	LS	1		\$

In the same table, delete “12” in “TOTAL BID LUMP SUM (ITEMS 1 to 12)” and replace with “13”.

In the first paragraph below the table, add “.3” after the word “3a” , add “.3” after the word “8a”, and add “surface” after the word “concrete”.

- b. Section 6.01, delete it in its entirety and replace with the following paragraph:

“6.01 Bidder agrees that the Work (Base Bid/Base Bid + Alternate 1) will be substantially complete within 270/330 calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 30 calendar days from the date of substantial completion. Total contract time shall be 300/360 calendar days; for everyday the work goes beyond substantial completion, a day will be removed from final completion so the total days equal 300/360 calendar days.”

3. SECTION 00 52 15 AGREEMENT

- a. ARTICLE 4 - CONTRACT TIMES, 4.02 Days to Achieve Substantial Completion and Final Payment, delete it in its entirety and replace with the following paragraph:

“The Work (Base Bid/Base Bid + Alternate 1) will be substantially completed within 270/330 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 30 calendar days from the date of substantial completion. Total contract time shall be 300/360 calendar days; for everyday the work goes beyond substantial completion, a day will be removed from final completion so the total days equal 300/360 calendar days.”

4. SECTION 01 22 50 MEASURE AND PAYMENT

- a. Section 3.01 C Bid Item No. 3a – Internal, delete it in its entirety and replace with the following paragraphs:

“Bid Item No. 3a – Internal.

1. Bid Item No. 3a.1 – Crack Repairs. Payment for this item will be made at the unit price bid per linear foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal concrete crack repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for leak repairs. Estimated quantity: 10 LF.
2. Bid Item No. 3a.2 – Structural Repairs. Payment for this item will be made at the unit price bid per cubic foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal structural repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for this type of repairs. Estimated quantity: 10 CF.
3. Bid Item No. 3a.3 – Surface Repairs. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal concrete surface repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.”

- b. Section 3.01 H Bid Item No. 8a – Internal, delete it in its entirety and replace with the following paragraphs:

“Bid Item No. 8a – Internal.

1. Bid Item No. 8a.1 – Crack Repairs. Payment for this item will be made at the unit price bid per linear foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal concrete crack repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for leak repairs. Estimated quantity: 10 LF.
2. Bid Item No. 8a.2 – Structural Repairs. Payment for this item will be made at the unit price bid per cubic foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal structural repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for this type of repairs. Estimated quantity: 10 CF.
3. Bid Item No. 8a.3 – Surface Repairs. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal concrete surface repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.”

5. SECTION 09 90 00 PAINTING AND COATING

- a. Section 3.08A.1, delete it in its entirety and replace with the following paragraphs:

“1. Steel – New Steel Components, which are not factory pre-coated

Exterior Exposure (Non-Immersion)

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

		<u>DFT-Mils</u>
Primer:	90-97 Tneme-Zinc	2.5 – 3.5
Intermediate Coat:	66HS Hi-Build Epoxoline	2.0 – 3.0
Finish Coat:	1074-Endura-Shield UVX	<u>2.0 – 5.0</u>
		6.5 – 11.5
		Minimum 6.5 Mils DFT

Invitation to Bid

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

Interior Exposure (Non-Immersion)

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

		<u>DFT Mils</u>
Primer:	66HS Hi-Build Epoxoline	3.0 – 5.0
Finish Coat:	66HS Hi-Build Epoxoline	<u>3.0 – 5.0</u>
		6.0 – 10.0
		Minimum 6.0 Mils

Immersion

Surface Preparation: SSPC-SP10 Near White Blast Cleaning, a minimum blast profile of 1.5 mils.

		<u>DFT-Mils</u>
Primer:	66HS Hi-Build Epoxoline	5.0 – 6.0
Finish Coat:	66HS Hi-Build Epoxoline	<u>5.0 – 6.0</u>
		10.0 – 12.0
		Minimum 10.0 Mils”

- b. Section 3.08A.2, delete it in its entirety and replace with the following paragraph:

“2. Ductile Iron – Exposed (Outside Diameter)

Surface Preparation: Clean factory primer per SSPC-SP7 for removal of rust scale, loose mill scale, loose rust, and loose coatings.

		<u>DFT-Mils</u>
Primer:	66HS Hi-Build Epoxoline	3.0 - 5.0
Intermediate Coat:	66HS Hi-Build Epoxoline	4.0 -
6.0		
Finish Coat:	1074-Endura-Shield UVX	<u>2.0 – 3.0</u>
		9.0-14.0
		Minimum 9.0 Mils”

- c. Section 3.08A.3, delete it in its entirety and replace with the following paragraph:

“3. Concrete - Submerged Structural Fabrications (Influent Well, Effluent Trough, Scum Outlet Port, and Interior Clarifier Wall)

Surface Preparation: Abrasive blast clean per SSPC-SP13 with a CSP 5 or better finish. Repair mortar shall be as required for cracks and surface repairs.

Invitation to Bid

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

		<u>DFT-Mils</u>
Resurfacer:	Series 218 MortarClad	1/16"-1/2"
Finish Coat:	Series 262 Elasto-Shield,	50
		Minimum 54"

- d. Section 3.08A.4, delete it in its entirety and replace with the following paragraph:

“4. Concrete – Exteriors of Existing Concrete

Surface Preparation: Remove all dirt, oil, grease, chalk, and loose paint per High Pressure Water Blast (Min 3500 PSI).

		<u>DFT-Mils</u>
Primer:	151 Elasto-Grip	300-350 sq ft per gallon
Intermediate Coat:	156 Enviro-Crete	5.0 – 8.0
Finish coat:	156 Enviro-Crete	<u>5.0 – 8.0</u>
		11.0 – 16.0"

6. SECTION 46 43 01 CLARIFIER REHABILITATION

- a. Section 2.0.2 A.1. a, delete “walkway/” in the second sentence and add “for the walkway” at the end of the sentence.
- b. Section 2.0.2 A.1. b, delete “walkway/” in the second sentence and add “for the walkway” after the word “members”.
- c. Section 2.0.2 B, add “AGMA Rated Continuous Torque (ft-lbs): 15,000”, add “(ft-lbs)” behind “Momentary Peak Torque”, delete “2xContinuous” and replace with “30,000”.
- d. Section 2.02 D3, delete it in its entirety and replace with the following paragraphs:

“3. Feedwell with Energy Dissipating Inlet (EDI)

- a. The influent feedwell shall be constructed of minimum 3/16-inch thick steel plate with stiffening angles. The top of the feedwell shall extend 3-inches above the maximum clarifier water level and shall be provided with a least four (4) baffled slots at water level to permit escape of floating material.
- b. Feedwell plate sections shall be designed to bolt together.

- c. Mounted concentric with center column, supported by center cage; top edge approximately 4 inches above water surface; designed to diffuse influent into tank to greatest extent possible by use of energy-dissipating nozzles. Closed and sealed bottom within 1 inch of center column.
 - d. The EDI well shall be equipped with multiple curved outlet ports located on the side of the well. The ports shall be arranged evenly around the EDI and shall discharge the liquid into the direction of rotation to further dissipate energy and enhance flocculation.
 - e. Grit drains shall be provided on the EDI.
 - f. EquaFlo 360 or equal for EDI design: The manufacturer of this product shall be solely responsible for the design of this configuration based upon the Contract Documents.”
- e. Add a complete section 2.02 D7 after 2.02 D6 as follows:
- “7 Effluent Weir
- a. The effluent weir and scum baffle to be furnished and installed under this section shall be as shown on the Contract Drawings and as specified herein.
 - b. The effluent weir shall consist of FRP sections, fastened to the tank wall with Type 304 stainless steel anchor bolts and hex nuts and FRP washers to allow for vertical adjustment. The Contractor shall seal all joints between walls and weirs with a suitable waste resistant and chlorine resistant mastic. Effluent weir shall be a v-notch weir as shown on the Drawings. Effluent weir shall be adjustable once installed as shown on the standard details on the Drawings.”
- f. Section 2.02 D8 Center Drive Mechanism (previously 2.02 D7), subsection i, add “, if applicable,” after the word “coating” in the first sentence.
- g. Section 2.05 Shop Painting, in the first sentence, delete “other corrosion-resistant” and replace with “aluminum”. In the last sentence, add “which are not factory pre-coated” after the work “components”.

ATTACHMENTS:

Sign-in Sheets for Non-Mandatory Pre-Bid Conference, July 27, 2018

Agenda for Non-Mandatory Pre-bid Conference, July 27, 2018

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

SECTION 00 21 15 INSTRUCTIONS TO BIDDERS
SECTION 00 41 15 BID FORM
SECTION 00 52 15 AGREEMENT
SECTION 01 22 50 MEASUREMENT AND PAYMENT
SECTION 09 90 00 PAINTING AND COATING
SECTION 46 43 01 CLARIFIER REHABILITATION

**ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM
NO. 1, ISSUED DURING THE SOLICITATION PERIOD:**

Vendor Signature: _____ **Date:** _____

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (**signature page only**). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

End of Addendum #1

NAU WWTF CLARIFIER REHAB PROJECT
 NASSAU COUNTY, FLORIDA
 BID NO. NC18-010

NON-MANDATORY PRE-BID MEETING

Friday, July 27, 2018 @ 10:00 A.M.

96135 Nassau Place, County Manager's Conference Room, Yulee, Florida 32097

CONTRACTOR SIGN IN SHEET [PLEASE PRINT]

SIGN IN	COMPANY NAME	COMPANY ADDRESS	PHONE/FAX	EMAIL ADDRESS
SETH SIMMONS	SGS CONTRACTING	23425 W. US Hwy 27 High Springs FL	Ph.: 352-745-6950 Fax: N/A	seth@sgsncsi.com
JOE FISHER	PETTICOAT-SCHMITT	6386 PHILIPS HWY JACKSONVILLE, FL	Ph.: 904-854-7423 Fax:	jfisher@petticoatschmitt.com
Josh Williams	Cogburn Bros.	3300 FAYE RD JACKSONVILLE, FL 32226	Ph.: (904) - 358-7344 Fax:	Jwilliams@Cogburnbros.com
TAMARA DORSEY	Performance Painting Contractor	11403 SIGHTS 22 JACKSONVILLE FL 32246	Ph.: 904 641 4821 Fax:	Tamara@Performance-Painting.com
			Ph.: Fax:	
			Ph.: Fax:	
			Ph.: Fax:	
			Ph.: Fax:	
			Ph.: Fax:	

Initials

AGENDA

NAU WWTF CLARIFIER REHAB PROJECT BID NUMBER NC18-010

NON-MANDATORY PRE-BID CONFERENCE

Friday, July 27, 2018 @ 10:00 A.M.
James S. Page Governmental Complex
County Manager's Conference Room
96135 Nassau Place, Yulee, FL 32097

1. INTRODUCTIONS

- a. Owner -Nassau County Board of County Commissioners
- b. Contract Management:
Grayson Hagins, Contract/Purchasing Manager
- c. NAU/Public Works:
Michael Wiltshire, Nassau Amelia Utilities
Becky Bray, Public Works
Shelley Caldwell, Public Works
- d. Engineer of Record:
GAI Consultants

2. BIDDING REQUIREMENTS & BID PROPOSAL

- a. General
 - (1) Bid Due Date/Time: Wednesday, August 8, 2018 @ 4:00 p.m.
 - (2) Bid Opening Date: Thursday, August 9, 2018 @ 10:00 a.m., or soon thereafter
 - (3) Must be received at the office of John Crawford, Ex-Officio Clerk, 76347 Veterans Way, Suite 456, Yulee, Florida 32097, by the date and time referenced above. The Judicial Annex is a secured facility; if delivering your bid on the bid due date, please allow sufficient time for security check point. Office is located on the 2nd floor of the building.
 - (4) Bid must be sealed and marked "Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project, Bid Number NC18-010".

- (1) Sign-In Sheets: Be sure that at least one representative from each firm that is present signs in and provide the requested contact information. Please print legibly; business cards will be accepted for additional backup for point of contact. **Copies of the sign-in sheets will be provided as part of the next addendum issued.**

3. PROJECT OVERVIEW (Provided by GAI Consultants/Public Works)

A. Demolition: Contractors work includes the demolition and removal of all internal components of one (1) or two (2) 55-ft diameter clarifiers, further identified as Clarifier #1 and Clarifier #2 as shown on contract drawings. Demolition includes, but not limited to:

1. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)
00 11 10 – 2
2. Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)
3. Sludge rakes and squeegees, as well as, supporting structures.
4. Catwalk and railings from the stairs to the center support structures.
5. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.
6. Control panel, electrical and data wiring, and conduit.

Items to remain include:

1. Existing access stairs for Clarifier #1 and Clarifier #2.
2. Existing walkway around Clarifier #1 wall.
3. Structures required to connect and support the stairs and existing circumferential walkway around Clarifier #1.

B. Contractor shall furnish all labor, equipment, materials, tools, and incidental items required to install and place into proper operation of two (2) circular scraper clarifiers (Clarifier No. 1 is base bid, Clarifier No. 2 is bid alternate) including walkway and railings from the stairs to the center support structure. Design and calculations to be performed by equipment vendor. All equipment shall be installed as shown on the plans, as recommended by the supplier, and in compliance with all OSHA, local, state, and federal codes and regulations.

C. Clarifiers - Contractor shall furnish complete with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation.

D. Additional Clarifier #1 work shall include:

1. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
2. Major or additional crack repairs shall be included in Bid Items 3c. This may include crack injection and additional surface repairs.
3. Regrouting of the entire floor/base
4. External concrete pressure wash, cleaning, crack repairs and repainting.
5. Blasting and coatings of existing structural support bolts for the existing circumferential walkway and access stair mounts. Where required, bolts for the existing circumferential walkway and access stair mounts shall be replaced per Bid Item 5.

E. Additional Clarifier #2 work shall include:

1. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
2. Major or additional crack repairs shall be included in Bid Items 8c. This may include crack injection and additional surface repairs.
3. Regrouting of the entire floor/base
4. External concrete pressure wash, crack repairs and repainting.
5. Installation of a new circumferential walkway

All work shall be in accordance with the construction specifications, and contract documents.

4. PROJECT SCHEDULE

- a. Bidder agrees that the work will be substantially completed within 180 days from the Notice to Proceed.
- b. Bidder agrees that the work will be completed and ready for final payment within thirty (30) days from substantial completion.
- c. Total contract time shall be two hundred ten (210) calendar days; for everyday the work goes beyond substantial completion, a day will be removed from final completion so that total days equal two hundred ten (210) calendar days.

5. QUESTIONS/REQUEST FOR CLARIFICATIONS

a. Interpretations and Addenda

Q1: What is the estimated budget for the subject project?

A: Engineering cost estimate for the project (base bid + Alternate 1) is about \$920,000.

Q2: Does the project require the contracting company to have any FL licenses (state, city, occupational)?

A: Yes, it is stated in the specification SECTION 00 21 15 INSTRUCTIONS TO BIDDERS, Section 13.11.

b. Open for Discussion





NAU WWTF CLARIFIER REHAB PROJECT
 NASSAU COUNTY, FLORIDA
 BID NO. NC18-010

NON-MANDATORY PRE-BID MEETING

Friday, July 27, 2018 @ 10:00 A.M.

96135 Nassau Place, County Manager's Conference Room, Yulee, Florida 32097

STAFF SIGN IN SHEET (initial or sign-in)

SIGN IN	COMPANY NAME	COMPANY ADDRESS	PHONE/FAX	EMAIL ADDRESS
Michael Wiltshire 	NAU	5390 First Coast Highway Fernandina Beach, FL 32034	Ph.: Fax:	mwiltshire@nassaucountyfl.com
M Chen (OR-Designee) Jay Ameron 	GAI Consultants	618 E South Street, Suite 700 Orlando, FL 32801	Ph.: Fax:	j.ameron m.chen@gaiconsultants.com
Grayson Hagins 	Contract Management	96135 Nassau Place Yulee, FL 32097	Ph.: Fax:	ghagins@nassaucountyfl.com
Becky Bray 	Public Works	96135 Nassau Place Yulee, FL 32097	Ph.: Fax:	bbray@nassaucountyfl.com
Shelley Caldwell	Public Works	96135 Nassau Place Yulee, FL 32097	Ph.: Fax:	scaldwell@nassaucountyfl.com
			Ph.: Fax:	
			Ph.: Fax:	
			Ph.: Fax:	
Initials			Ph.: Fax:	
			Ph.: Fax:	

SECTION 00 21 15

INSTRUCTIONS TO BIDDERS

ARTICLE 1 DEFINED TERMS

- 1.01** Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:
- A. Bidder - The individual or entity who submits a Bid directly to the County.
 - B. Issuing Office - The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
 - C. Successful Bidder - The lowest responsible Bidder submitting a responsive Bid to whom County (on basis of County's evaluation as herein provided) makes an award.

ARTICLE 2 COPIES OF BIDDING DOCUMENTS

- 2.01** Complete sets of Bidding Documents in the number and for the payment sum, if any, stated in the Advertisement or Invitation to Bid may be obtained from the Issuing Office.
- 2.02** Complete sets of Bidding Documents must be used in preparing Bids; neither the County nor Engineer of Record assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03** The County and Engineer of Record in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 QUALIFICATIONS OF BIDDERS

- 3.01** The County may make such investigations as necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the County all such information and data for this purpose as the County may request. The County reserves the right to reject any bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the County that such Bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.
- 3.02** To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for in Bidder's Qualification Statement.

- A. The Bidder's Qualification Statement shall include, but not limited, the following information:
1. List a minimum of five contracts of similar work description, for the past 3 years with Company or Entity name, address, contact name, contact title and telephone number.
 2. List original contracted dollar amount and actual completed project dollar amount.
 3. List as required by contract completion date and actual completion date. Detail any incentive payments your firm has received for early completion or penalties your firm has had to pay for late fees.

ARTICLE 4 EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

- A. The Supplementary Conditions identify:
1. Those reports or explorations and tests of subsurface conditions at or contiguous to the Site that Engineer of Record has used in preparing the Bidding Documents.
 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer of Record has used in preparing the Bidding Documents.
- B. Copies of the reports and drawings referenced in paragraph 4.01.A will be made available by the County to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.02 Underground Facilities

Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to the County and Engineer of Record by the Utility Owner of such Underground Facilities, including the County, or others.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

4.03 Hazardous Environmental Conditions

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that Engineer of Record has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by the County to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions other physical conditions and Underground Facilities, and possible changes to Bidding Documents due to offering or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings and Specifications or identified in the Contract Documents to be within the scope of Work appear in paragraph 4.06 of the General Conditions.

4.05 On request, the County will provide Bidder access to the Site to conduct such examinations, investigations, explorations, tests, and studies Bidder deems necessary for submission of a Bid. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.06 Reference is made to Article 7 of the General Conditions for the identification of the general nature of other work that is to be performed at the Site by the County or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On request, the County will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

- A. Examine and carefully study the Bidding Documents, including any Addenda and other related data identified in the Bidding Documents;
- B. Visit the site to become familiar with and satisfy Bidder as to the general, local and Site conditions that may affect cost, progress, and performance of the Work;

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- C. Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. Carefully study all reports of explorations and tests or subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and drawings or a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
- E. Obtain and carefully study (or assume responsibility for doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. Become aware of the general nature of the work to be performed by the County and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Correlate the information known to Bidder, information and observations obtained from visit to Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. Promptly give Engineer of Record written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer of Record is acceptable to Bidder and;
- J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of Work.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- 4.08** Each bidder must inform himself fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of this contract. Insofar as possible the contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of or interference with the work of any other contractor.
- 4.09** The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder had given Engineer of Record written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Bidding Documents and written resolutions thereof by Engineer of Record are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 PRE-BID CONFERENCE

- 5.01** A non-mandatory pre-bid conference and site visit will be held for this project. See the Advertisement for Bids for details of date, time and location.

ARTICLE 6 SITE AND OTHER AREAS

- 6.01** The Site is identified in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by the County unless otherwise provided in the Bidding Documents.

ARTICLE 7 INTERPRETATIONS AND ADDENDA

- 7.01** No interpretation of the meaning of the plans, specification or other pre-bid documents will be made to any bidder orally. Every request for such interpretation shall be in writing, addressed to Contract Management and, to be given consideration, must be received at least seven calendar days prior to the date fixed for the opening of bids. Requests for additional information or clarifications will be received by letter, facsimile, or email. The request must contain the submitter's name, address, phone number, facsimile number, and email address and addressed to:

Grayson Hagins, Procurement Manager
Contract Management

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

96135 Nassau Place, Suite 6
Yulee, Florida 32097
(904) 530-6040
(904) 321 -2658 FAX
Email: ghagins@nassaucountyfl.com

- 7.02** Any and all such interpretations and any supplemental instructions will be in the form of written addenda not later than 72 hours prior to the date fixed for the opening of bids.
- 7.03** Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by the County or Engineer of Record.
- 7.04** It is the Bidder's responsibility to ensure that all addenda were received. The bidder should verify with the designated contact person prior to submitting a bid that all addenda have been received. Bidders are required to acknowledge the number of addenda received on the Bid Form, section 3.01 .A. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under the bid as submitted. All addenda so issued shall become part of the contract documents.

ARTICLE 8 BID SECURITY

- 8.01** A Bid must be accompanied by cash, certified check of the Bidder, or a bid bond prepared on the form of bid bond attached hereto, duly executed by the Bidder as principal and having as surety thereon a surety company approved by the County, in the amount of 5% of the Bid. Cash, checks and bid bonds will be returned to all except the three lowest bidders. After award by the Board, the remaining cash checks or bid bonds will be returned promptly after the County and the accepted bidder have executed the contract, or, if no award has been made within 30 days after the date of the opening of Bids, upon demand of the Bidder at any time thereafter, so long as notification of the acceptance of the Bid has not taken place.
- 8.02** Bid security of other Bidders whom the County believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 CONTRACT TIMES

- 9.01** The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Bid Form.

ARTICLE 10 LIQUIDATED DAMAGES

- 10.01** The successful bidder, upon failure or refusal to execute and deliver the contract and bonds required within 10 days after receipt of notice of the acceptance of the bid, shall forfeit to the County, as liquidated damages for such failure or refusal, the security deposited with the bid.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

ARTICLE 11 SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01** The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by if acceptable to Engineer of Record, application for such acceptance will not be considered by Engineer of Record until after the Effective Date of the Agreement. The procedure for submission of any such application by and consideration by Engineer of Record is set forth in the General Conditions and may be supplemented in the General Requirements.

ARTICLE 12 SUBCONTRACTORS, SUPPLIERS AND OTHERS

- 12.01** If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to the County in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to the County a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each Subcontractor, Suppliers, individuals, or entity if requested by the County. If the County or Engineer of Record, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual or entity, the County may, before the Notice of Award is given request apparent Successful Bidder to submit a substitute, without an increase in the Bid.
- 12.02** If apparent Successful Bidder declines to make any such substitution, the County may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which the County or Engineer of Record makes no written objection prior to giving of the Notice of Award will be deemed acceptable to the County and Engineer of Record subject to revocation of such acceptance after Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.
- 12.03** Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 13 PREPARATION OF BID

- 13.01** The Bid Form is included in the Bidding Documents.
- 13.02** Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his/her address, and the name of the project for which the bid is submitted. If

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified in the bid form.

- 13.03** A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown on the form.
- 13.04** A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 13.05** A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 13.06** A Bid by an individual shall show the Bidder's name and official address.
- 13.07** A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid Form. The official address of the joint venture must be shown below the signature.
- 13.08** All names shall be typed or printed in ink below the signatures.
- 13.09** The Bid shall contain an acknowledgement of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.10** The address and telephone number for communications regarding the Bid shall be shown
- 13.11** The Bid shall contain evidence of Bidder's authority and qualification to do business in the State of Florida. The Bidder shall also be a state-certified Contractor in good standing and hold current registration with the Florida Construction Industry Licensing Board of the State Department of Professional Regulation. The type of license must be in a class that is related to the general nature of the construction to be performed on this project. The Bidder's State Contractor's license number for the State of the project shall be shown on the Bid Form.

ARTICLE 14 BASIS OF BID; EVALUATION OF BIDS

- 14.01** This project is a combination of unit price and lump sum price bid.

14.02 Unit Price

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Base Bid schedule. Bidders shall also submit lump sum prices for each of the items comprising the mandatory Bid Additives (or Alternates), if any.
- B. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item, including any combination of the Additive Bid Alternates as selected by the County. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Terms and Conditions.
- C. Discrepancies between the multiplication or units or Work and the unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.
- D. The County reserves the right to evaluate the bids on any base bid-alternate/add on combination that is in the best interest of the County.

14.03 Lump Sum Price

- A. Bidders shall submit a Bid on a lump sum basis and are to include all labor, materials, equipment and incidentals necessary to perform the work as indicated in the contract documents.
- B. The County reserves the right to evaluate the bids on any base bid-alternate/add on combination that is in the best interest of the County.

14.04 The Bid price shall include such amounts as the Bidder deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

ARTICLE 15 SUBMITTAL OF BID

15.01 Each prospective Bidder is furnished one copy of the Bidding Documents.

15.02 A bid shall be submitted (one original and two copies) no later than the date and time prescribed and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED".

ARTICLE 16 MODIFICATION AND WITHDRAWAL OF BID

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- 16.01** A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time from the opening of Bids.
- 16.02** Any Bid may be withdrawn prior to the scheduled time for the opening of bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be considered. No Bidder may withdraw a bid within 90 days after the actual date of the opening thereof.

ARTICLE 17 OPENING OF BIDS

- 17.01** Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid. An abstract of the amounts of the base Bids and major alternatives, if any, will be made available to Bidders pursuant to s. 119.071 and s. 255.0518 (effective July 1, 2012), Florida Statutes.
- 17.02** The County may consider informal any Bid not prepared and submitted in accordance with the provisions thereof and may waive any informalities or reject any and all Bids.

ARTICLE 18 BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 AWARD OF CONTRACT

- 19.01** The County reserves the right to reject any and/or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced or conditional Bids. The County further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. The County may also reject the Bid of any Bidder if the County believes that it would not be in the best interest of the Project to make an award to that Bidder. The County also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02** More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.
- 19.03** In evaluating Bids, the County will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04** In evaluating Bidders, the County will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

- 19.05** The County may conduct such investigations as it deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents.
- 19.06** If the contract is awarded, the County will award the Contract to Bidder whose Bid is in the best interests of the Project.
- 19.07** If the contract is awarded, the County will award the Contract to Bidder whose Bid is in the best interest of the Project.

ARTICLE 20 CONTRACT SECURITY AND INSURANCE

- 20.01** Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth the County's requirements as to performance and payment Bonds and insurance. When the Successful Bidder delivers the executed Agreement to the County, such Bonds must accompany it.
- 20.02** Provisions for indemnification by Contractor are set forth in the Agreement, at Paragraph 6.20 of the General Conditions, as amended by the Supplementary Conditions, and are incorporated here by reference.
- 20.03** Simultaneously, with delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of this contract and for the payment of all persons performing labor on the project under this contract and furnishing materials in connection with this contract, as specified in the General Conditions included herein. The surety on such bond and bonds shall be a duly authorized surety company satisfactory to the County.
- 20.04** Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

ARTICLE 21 SIGNING OF AGREEMENT

- 21.01** When the County gives Notice of Intent to Award to the Successful Bidder, it shall be accompanied by the Agreement. Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to the County prior to the date set for Board approval and execution. The County shall deliver one fully signed counterpart to Successful Bidder.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

21.02 The Board of County Commissioners has the right to approve or reject the recommendation of award. The Agreement is not valid unless fully executed by the Contractor and the Nassau County Board of County Commissioners.

END OF SECTION

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

SECTION 00 41 15

BID FORM

PROJECT IDENTIFICATION: Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project
Bid Number NC 18-010
Nassau County, Florida

BID DEADLINE: August 8, 2018
THIS BID IS SUBMITTED TO: Board of County Commissioners, Nassau County
Judicial Annex
Office of the Ex-Officio Clerk
76347 Veterans Way, Suite 456
Yulee, Florida 32097

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

Company Name (typed or printed): _____
Business address: _____
Phone No.: _____ Fax No.: _____
Contact Name: _____
Contact Title: _____
Contact email address: _____

- 2.01** Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of the County.

- 3.01** In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged:

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

Addendum No.

Addendum Date

_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect costs, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the work to be performed by the County and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

- I. Bidder has given Engineer of Record written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer of Record is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over the County.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

BID					
Item No	Pay Item Description	Units	Quantity	Cost Per Unit	Total Cost
Base Bid: Clarifier 1					
1	General Requirements	LS	1		\$
2	Demolition of Existing Internal Component	LS	1		\$
3	Concrete Repairs with Coatings				
3.a	Internal				
3.a.1	Crack Repairs	LF	10		\$
3.a.2	Structural Repairs	CF	10		\$
3.a.3	Surface Repairs	LS	1		\$
3.b	External	LS	1		\$
3.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 3a and 3b	SF	50		\$
4	Clarifier Equipment - Installed and Grouted	LS	1		\$
5	Walkway Bolts Replacement	EA	50		\$

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

6	Electrical and Instrumentation	LS	1		\$
<i>Total For Base Bid: Clarifier 1</i>					\$
Alternate 1: Clarifier 2					
7	Demolition of Existing Internal Component	LS	1		\$
8	Concrete Repairs with Coatings				
8.a	Internal				
8.a.1	Crack Repairs	LF	10		\$
8.a.2	Structural Repairs	CF	10		\$
8.a.3	Surface Repairs	LS	1		\$
8.b	External	LS	1		\$
8.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 8a and 8b	SF	50		\$
9	Clarifier Equipment - Installed and Grouted	LS	1		\$
10	New Circumferential Walkway	LS	1		\$
11	Electrical and Instrumentation	LS	1		\$
					\$
<i>Total For Clarifier 2</i>					\$
Alternate 2: Materials Upgrade (Stainless Steel)					
12	Clarifier 1	LS	1		\$
13	Clarifier 2	LS	1		\$
TOTAL BID LUMP SUM (ITEMS 1 to 13)					\$

(Total – Use Words)

Items 3a.3, 3b, 8a.3, and 8b assume concrete surface repairs are up to 10% of the total surface area with 100% coatings. Please see Section 01 11 10 Advertisement for Bids for details.

Lump sum price has been computed in accordance with Paragraph 11.01 of the General Conditions.

All specific cash allowances are included in the price(s) set forth above and have been computed in accordance with paragraph 11.02 of the General Conditions.

Unit prices have been computed in accordance with Paragraph 11.03B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

of comparison of Bids. Final payment of all Unit Price Bid Items will be based on actual quantities as determined in the Contract Documents.

6.01 Bidder agrees that the Work (Base Bid/Base Bid + Alternate 1) will be substantially complete within 270/330 calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 30 calendar days from the date of substantial completion. Total contract time shall be 300/360 calendar days; for everyday the work goes beyond substantial completion, a day will be removed from final completion so the total days equal 300/360 calendar days.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

7.01 The following documents are attached to and made a condition of this Bid:

- A. Bid Security in the form of a certified check of Bid Bond (Section 00 43 15)
- B. Tabulation of Subcontractors & Suppliers (Section 00 43 35)
- C. Florida Trench Safety Act Certification (Section 00 44 55)
- D. Bidder's Qualification Statement (Section 00 45 13)
- E. Non-collusion Affidavit (Section 00 45 19)
- F. Drug-Free Workplace Certificate (Section 00 45 20)
- G. Public Entity Crimes Statement
- H. Statement of Disputes, Litigation & Surety Completion
- I. E-Verify Affidavit of Compliance (Section 00 45 40)

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

SUBMITTED on _____, 20_____.

State Contractor License No. _____.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____

(Individual's Signature)

Doing business as: _____

Business address: _____

Phone No.: _____ Fax No.: _____

A Partnership

Partnership Name: _____

By: _____

(Signature of general partner - attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ Fax No.: _____

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____ (CORPORATE SEAL)

Attest _____

(Signature of Corporate Secretary)

Business address: _____

Phone No.: _____ Fax No.: _____

Date of Qualification to do business is _____

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

A Joint Venture

Joint Venturer Name: _____

By: _____

(Signature of joint venture partner - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

Joint Venturer Name: _____

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in a manner indicated above.)

END OF SECTION

SECTION 00 52 15

AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____ in the year _____ by and between _____ (Owner) and _____ (Contractor).

Owner and Contractor, in consideration of the mutual covenants hereinafter set forth, agree as follows:

ARTICLE 1 - WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows but not limited to:

- A. Demolition: Contractors work includes the demolition and removal of all internal components of one (1) or two (2) 55-ft diameter clarifiers, further identified as Clarifier #1 and Clarifier #2 as shown on contract drawings. Demolition includes, but not limited to:
1. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)
 2. Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)
 3. Sludge rakes and squeegees, as well as, supporting structures.
 4. Catwalk and railings from the stairs to the center support structures.
 5. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.
 6. Control panel, electrical and data wiring, and conduit.

Items to remain include:

1. Existing access stairs for Clarifier #1 and Clarifier #2.
2. Existing walkway around Clarifier #1 wall.
3. Structures required to connect and support the stairs and existing circumferential walkway around Clarifier #1.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- B. Contractor shall furnish all labor, equipment, materials, tools, and incidental items required to install and place into proper operation of two (2) circular scraper clarifiers (Clarifier No. 1 is base bid, Clarifier No. 2 is bid alternate) including walkway and railings from the stairs to the center support structure. Design and calculations to be performed by equipment vendor. All equipment shall be installed as shown on the plans, as recommended by the supplier, and in compliance with all OSHA, local, state, and federal codes and regulations.
- C. Clarifiers - Contractor shall furnish complete with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation.
- D. Additional Clarifier #1 work shall include:
1. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
 2. Major or additional crack repairs shall be included in Bid Items 3c. This may include crack injection and additional surface repairs.
 3. Regrouting of the entire floor/base
 4. External concrete pressure wash, cleaning, crack repairs and repainting.
 5. Blasting and coatings of existing structural support bolts for the existing circumferential walk walkway and access stair mounts. Where required, bolts for the existing circumferential walkway and access stair mounts shall be replaced per Bid Item 5.
- E. Additional Clarifier #2 work shall include:
1. Internal blast, concrete repairs (assuming 10% of the total surface) and 100% coatings.
 2. Major or additional crack repairs shall be included in Bid Items 8c. This may include crack injection and additional surface repairs.
 3. Regrouting of the entire floor/base
 4. External concrete pressure wash, crack repairs and repainting.
 5. Installation of a new circumferential walkway

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

All work shall be in accordance with the construction drawings, specifications, and contract documents.

ARTICLE 2 - THE PROJECT

- 2.01** The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

**Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF)
Clarifier Rehabilitation Project
Bid Number NC 18-010
Nassau County, Florida**

ARTICLE 3 - ENGINEER OF RECORD

- 3.01** The Project has been designed by GAI Consultants, Inc., who is to act as the County's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer of Record in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

ARTICLE 4 - CONTRACT TIMES

4.01 Time of the Essence

- A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.
- B. The Contractor hereby agrees to commence work under this contract on a date to be specified in written "Notice to Proceed" of the County and to fully complete the project as specified in Section 4.02 of this Agreement.

4.02 Days to Achieve Substantial Completion and Final Payment

The Work (Base Bid/Base Bid + Alternate 1) will be substantially completed within 270/330 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions within 30 calendar days from the date of substantial completion. Total contract time shall be 300/360 calendar days; for everyday the work goes beyond substantial completion, a day will be removed from final completion so the total days equal 300/360 calendar days.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

4.03 Liquidated Damages

- A. Contractor and the County recognize that time is of the essence of this Agreement and that the County will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in legal or arbitration proceeding the actual loss suffered by the County if the Work is not completed on time. Accordingly, instead of requiring any such proof, the County and Contractor agree that as liquidated damages for delay (but not as a penalty) Contractor shall pay the County \$1,000.00 for each day that expires after the time specified in Paragraph 4.02 for Substantial Completion and until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by the County, Contractor shall pay the County \$500.00 for each day that expires after the time specified in Paragraph 4.02 for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 - CONTRACT PRICE

- 5.01** The County shall pay Contractor for completion of the Work in accordance with the Contract Documents in current funds as follows: See Section 00 41 15, Bid Form equal to the sum of the amounts determined pursuant to Paragraph 14 "Payments to Contractor and Completion" of the General Conditions.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by the County as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. The County shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment once each month during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but, in each case, less the aggregate of payments previously made and less such amounts as Engineer of Record may determine or the County may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions:
 - a. 90% percent of the Work completed (with the balance being retainage)
 - b. 90% percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
2. Upon Substantial Completion, the County shall pay an amount sufficient to increase total payments to Contractor to 95% percent of the Contract Price (with the balance being retainage), less such amounts as Engineer of Record shall determine or the County may withhold, for incomplete work and for other items in accordance with Paragraph 14.02 of the General Conditions.

6.03 Final Payment

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, the County shall pay the remainder of the Contract Price as recommended by Engineer of Record as provided in said Paragraph 14.07.
- B. Final Release of Retainage and acceptance of the project must be approved by the Board of County Commissioners.

ARTICLE 7 - INTEREST

- 7.01** All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 0 percent per annum.

ARTICLE 8 - CONTRACTOR'S REPRESENTATIONS

- 8.01** In order to induce the County to enter into this Agreement Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

- B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which has been identified in the Supplementary Conditions as provided in Paragraph 4.06 of the General Conditions.
- E. Contractor has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Bidding Documents, and safety precautions and programs incident thereto.
- F. Contractor does not consider that any additional examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. Contractor is aware of the general nature of work to be performed by the County and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has correlated the information known to Contractor, information and observations obtained from visits to the Site, reports, drawings and exhibits identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.

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

ARTICLE 9 - CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement
 - 2. Addenda, if any
 - 3. General Conditions
 - 4. Supplementary Conditions
 - 5. Technical Specifications
 - 6. Construction Drawings
 - 7. Exhibits to this Agreement incorporated by reference as if set forth herein (enumerated as follows):
 - a. Contractor's Bid
 - b. Documentation submitted by Contractor prior to Notice of Award
 - c. Project Manual table of contents
 - d. Construction Drawing index
 - e. Performance Bond
 - f. Payment Bond
 - 8. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed
 - b. Work Change Directives
 - c. Change Orders
 - d. Certificate of Substantial Completion
 - e. Certificate of Final Inspection
 - f. Certificate of Engineer
 - g. Certificate of Final Completion
 - h. Contractor's release
 - i. Drawings and plans
 - j. Supplemental Agreements
 - k. Contractor's Waiver of Lien (Partial)

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- l. Contractor's Waiver of Lien (Final and Complete)
 - m. Subcontractor/Vendor's Waiver of Lien (Final and Complete)
 - n. Consent of Surety to Final Payment
 - o. Instructions to Bidders
 - p. Contractor's Insurance Requirements, as set forth in the Bid Documents
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.04 of the General Conditions.

ARTICLE 10 - MISCELLANEOUS

10.01 Terms

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

10.02 Assignment of Contract

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

10.03 Successors and Assigns

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

10.04 Severability

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon the County and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 Other Provisions

A. Public Records Requirement:

The County is a public agency subject to Chapter 119, Florida Statutes. IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT (904) 530-6250, DMOODY@NASSAUCOUNTYFL.COM, 96161 NASSAU PLACE, YULEE, FLORIDA 32097. Under this agreement, to the extent that the contractor is providing services to the County, and pursuant to Section 119.0701, Florida Statutes, the contractor shall;

- a. Keep and maintain public records required by the public agency to perform the service.
- b. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor does not transfer the records to the public agency.
- d. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor or keep and maintain public records required by the public agency to perform the service. If the contractor transfers all public records to the public agency upon completion of the contract, 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 the contract, the contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the public agency's

custodian of public records, in a format that is compatible with the
information technology systems of the public agency.

[Remainder of page intentionally left blank]

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

IN WITNESS WHEREOF, the County and Contractor have signed this Agreement in triplicate. One counterpart each has been delivered to the County, Contractor, and Engineer of Record. All portions of the Contract Documents have been signed or identified by the County and Contractor or identified by Engineer of Record on their behalf.

This Agreement will be effective on the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver (which is the Effective Date of the Agreement).

OWNER

CONTRACTOR

Nassau County Board of County Commissioners

Signed: _____

Signed: _____

Title: _____

Title: _____

Date: _____

Date: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

Phone: _____ FAX: _____

Phone: _____ FAX: _____

License _____

(Where applicable)

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

Approved as to form by County Attorney
Agent for service of process:

Signature

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

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

SECTION 01 22 50

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 SUMMARY

- A. Work under this Contract shall be paid as designated below under the appropriate items associated with the Bid Schedule. Payment shall be in accordance with Lump Sum or Unit Price bid by the Contractor in his proposal.
- B. When Lump Sum prices are contained in the Bid Schedule, the Contractor shall provide a detailed schedule of values for Lump Sum cost acceptable to the Engineer of Record and the County, which will be used for estimating partial payment requests.
- C. Contractual costs for work not specifically mentioned under a payment item and which are incidental to the overall conduct of the work shall be included in the individual items at the Contractor's option. No additional charges shall be made to the County for items not specifically mentioned under individual payment items. Examples of these types of costs include, but are not limited to, the following: bonds, insurance, permits, licenses, traffic control, dust control, clean-up, temporary access, temporary facilities, soil erosion control, temporary drainage, temporary offices, restoration of disturbed areas, temporary utilities, test pits locating existing utilities, temporary water and sewer, surveying, layout, and other items similar to above.

1.02 TYPICAL PAYMENT ITEM COSTS

- A. No separate payment will be made for the following items. The cost of such work shall be included in the unit price of applicable pay items listed in the Bid Schedule unless otherwise noted in the construction plans:
 - 1. Clearing and grubbing including removal and disposal of all above and below ground improvements such as but not limited to trees, brush, residential commercial and bridge structures, septic tanks and drain-fields, roadway pavement and concrete, drainage and utilities systems, etc. unless otherwise specified.
 - 2. Trench and roadway excavation, including rock and cemented coquina excavation and disposal, excavation and removal of unsuitable soils and unsuitable materials of any nature unless otherwise specified.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

3. Structure excavation including rock and cemented coquina excavation and disposal, excavation and disposal of unsuitable materials of any nature except as otherwise specified.
4. Dewatering and disposal of surplus water, prevention of sediment and erosion pollution and prevention of flooding
5. Structural fill, backfill, including furnishing, placement, compaction and final grading of suitable fill material, pipe bedding and compacted granular material.
6. The temporary removal and replacement of fences and walls.
7. Foundation and borrow materials, except as otherwise specified.
8. Paved and unpaved roadway restoration or replacement including but not limited to all disturbed improvements within the right of way, adjacent traffic signal system components included within the limits of lump sum work, unless otherwise specified.
9. Shoring, sheeting and worksite safety.

B. Methods of Measurement - Generally:

1. Units of measurement shall be defined in general terms as follows:

Linear Feet (LF)

Square Feet (SF)

Square Yards (SY)

Cubic Yards (CY)

Each (EA)

Sacks (SK)

Lump Sum (LS)

2. Unit Price Contracts/Items:

Linear Feet (LF) shall be measured along the horizontal length of the centerline of the installed material, unless otherwise specified.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

Pipe shall be measured along the length of the completed pipeline, regardless of the type of joint required, without deduction for the length of valves or fittings. Pipe included within the limits of lump sum items will not be measured.

Square Feet (SF), Square Yards (SY), Cubic Yards (CY), Each (EA) and Sacks (SK) shall be measured as the amount of the unit of measure installed and compacted within the limits specified and shown in the Specifications and Drawings. Slope angles and elevations shall be measured using land-surveying equipment. CONTRACTOR shall provide supporting documentation (i.e. drawings, delivery tickets, invoices, survey calculations, etc.) to verify actual installed quantities.

C. Lump Sum Contracts/Items - Generally:

1. Quantities provided in the Schedule of Values are for the purpose of estimating the completion status for progress payments. Payment will be made for each individual item on a percentage of completion basis as estimated by the Contractor and approved by the County
2. Adjustments to costs provided in the accepted Schedule of Values may be made only by Change Order.
3. The County reserves the right to delete any item included in the Schedule of Values and decrease the Contract Price by the scheduled amount for the item deleted.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 BID ITEMS

Base Bid: Clarifier 1

A. Bid Item No. 1 – General Requirements.

Measurement: Measurement of various items for Mobilization and Demobilization shall not be made for payment and all items shall be included in the lump sum price. This lump sum price shall not exceed 5% of the Bid Price.

Payment: Payment of 50 percent of the applicable lump sum price for the item shall be full compensation for the Work consisting of the preparatory Work and operations in mobilizing for beginning Work on the Contract, including, but not

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

limited to, movement of those personnel, equipment, supplies and incidentals to the project site, preparation of submittals, and for the establishment of temporary offices and buildings, safety equipment and first aid supplies, project signs, field surveys, sanitary and other facilities required by these specifications, and State and local laws and regulations.

The costs of General Requirements (Section 01 00 00), bonds, permits, and any required insurance, project signs, and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included. This Work also consist of the general project management of the Work including, but not limited to, field supervision and office management, as well as other incidental cost for management of the Work during the duration of the Contract. This Work also includes maintenance of the field offices for the duration of the Contract.

Payment of the remaining 50 percent of the applicable lump sum price for this item also consists of demobilization or the operations normally involved in ending Work on the project including, but not limited to, termination and removal of temporary utility service and field offices; demolition and removal of temporary structures and facilities; restoration of Contractor storage areas; disposal of trash and rubbish, and any other post-construction work necessary for the proper conclusion of the Work.

B. Bid Item No. 2 – Demolition of Existing Internal Component.

1. A single lump sum payment shall be made for the demolition and removal of all exiting internal components. Demolition includes, but not limited to:
 - a. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)
 - b. Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)
 - c. Sludge rakes and squeegees, as well as, supporting structures.
 - d. Catwalk and railings from the stairs to the center support structures.
 - e. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- f. Control panel, electrical and data wiring, and conduit.
 - 2. Items to remain include:
 - a. Existing access stairs for Clarifier #1.
 - b. Existing walkway around Clarifier #1 wall.
 - c. Structures required to connect and support the stairs and existing circumferential walkway.
 - 3. Any items not listed in this section of the bid that the contractor deems necessary to demo to complete the work shall be included in this lump sum payment. No additional payment will be made for demolition unless previously approved by the County.
- C. Bid Item No. 3 - Concrete Repairs with Coatings.

Bid Item No. 3a – Internal.

- 1. Bid Item No. 3a.1 – Crack Repairs. Payment for this item will be made at the unit price bid per linear foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal concrete crack repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for leak repairs. Estimated quantity: 10 LF.
- 2. Bid Item No. 3a.2 – Structural Repairs. Payment for this item will be made at the unit price bid per cubic foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal structural repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for this type of repairs. Estimated quantity: 10 CF.
- 3. Bid Item No. 3a.3 – Surface Repairs. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 internal concrete surface repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

Bid Item No. 3b – External. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.1 external concrete repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

Bid Item No. 3c – Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 3a and 3b. The unit price bid for this item is the payment, on per square foot basis, for all labor, equipment and material for all work necessary and required for additional crack repairs for Clarifier No. 1 described in Section 03 93 00 for which payment is not provided under other bid items. This item includes, but is not limited to, mobilization of all required equipment for the repairs. Measurements for additional crack repairs shall be approved by the Engineer. Estimated quantity is 50 square feet.

- D. Bid Item No. 4 - Clarifier Equipment - Installed and Grouted. Payment of the applicable lump sum price shall be full compensation for furnishing a circular scraper clarifier completely with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation. Unit of measurement is lump sum.
- E. Bid Item No. 5 – Walkway Bolts Replacement. Payment for walkway bolts will be made at the unit price bid per item. This price shall constitute full compensation for providing all labor, equipment and material to perform the required work when ordered by the Engineer. The Engineer will determine which items, if any, in this section will be performed based on future inspections of the existing clarifiers. Work on each item in this section is not to begin until specifically authorized by the County. Estimated quantity: 50 each.
- F. Bid Item No. 6 – Electrical and Instrumentation. The Work included in this item consists of providing and installing the equipment, materials, supplies, labor, etc. necessary to supply adequate electrical power to all electrical devices and facilities as shown on the Drawings. Unit of measurement is lump sum.

Alternate 1: Clarifier 2

- G. Bid Item No. 7 – Demolition of Existing Internal Component.
1. A single lump sum payment shall be made for the demolition and removal of all exiting internal components. Demolition includes, but not limited to:

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- a. Effluent weir, channel, piping and supporting structures (pipe wall penetrations to remain, unless otherwise noted.)
 - b. Scum skimmer, trough, and connection piping (wall penetration piping to remain, unless otherwise noted.)
 - c. Sludge rakes and squeegees, as well as, supporting structures.
 - d. Catwalk and railings from the stairs to the center support structures.
 - e. Drive unit, spur gear, center support structure, and influent piping to flanged interface with influent piping within the clarifier's concrete base.
 - f. Control panel, electrical and data wiring, and conduit.
2. Items to remain include:
 - a. Existing access stairs for Clarifier #2.
 3. Any items not listed in this section of the bid that the contractor deems necessary to demo to complete the work shall be included in this lump sum payment. No additional payment will be made for demolition unless previously approved by the County.

H. Bid Item No. 8 - Concrete Repairs with Coatings.

Bid Item No. 8a – Internal.

1. Bid Item No. 8a.1 – Crack Repairs. Payment for this item will be made at the unit price bid per linear foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal concrete crack repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for leak repairs. Estimated quantity: 10 LF.
2. Bid Item No. 8a.2 – Structural Repairs. Payment for this item will be made at the unit price bid per cubic foot. The price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal structural repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for this type of repairs. Estimated quantity: 10 CF.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

3. Bid Item No. 8a.3 – Surface Repairs. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 internal concrete surface repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

Bid Item No. 8b – External. Payment of the applicable lump sum price shall be full compensation for all labor, equipment and material for all work necessary and required for Clarifier No.2 external concrete repairs described in Section 03 93 00. This item includes, but is not limited to, mobilization of all required equipment, the provision of all labor, materials and equipment for the repairs and assumes concrete repairs are 10% of the total surface area with 100% coatings.

Bid Item No. 8c – Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 8a and 8b. The unit price bid for this item is the payment, on per square foot basis, for all labor, equipment and material for all work necessary and required for additional crack repairs for Clarifier No. 2 described in Section 03 93 00 for which payment is not provided under other bid items. This item includes, but is not limited to, mobilization of all required equipment for the repairs. Measurements for additional crack repairs shall be approved by the Engineer. Estimated quantity is 50 square feet.

- I. Bid Item No. 9 - Clarifier Equipment - Installed and Grouted. Payment of the applicable lump sum price shall be full compensation for furnishing a circular scraper clarifier completely with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation. Unit of measurement is lump sum.
- J. Bid Item No. 10 – New Circumferential Walkway. Payment for this item shall be full compensation for furnishing all labor, equipment, materials, tools and incidental item required to install new circumferential walkway around Clarifier No. 2 as shown on contract drawings. Unit of measurement is lump sum.
- K. Bid Item No. 11 – Electrical and Instrumentation. The Work included in this item consists of providing and installing the equipment, materials, supplies, labor, etc. necessary to supply adequate electrical power to all electrical devices and facilities as shown on the Drawings. Unit of measurement is lump sum.

Alternate 2: Materials Upgrade (Stainless Steel)

- L. Bid Item No. 12 – Clarifier No. 1. Based on Bid Item No. 4, payment for this

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

item shall include the added cost to upgrade the Manufacturer's System Warranty, covering Labor, Workmanship and Materials for Clarifier No. 1. This shall include material upgrade using stainless steel, all in accordance with the Plans and Specifications. Unit of measurement is lump sum.

- M. Bid Item No. 13 – Clarifier No. 2. Based on Bid Item No. 9, payment for this item shall include the added cost to upgrade the Manufacturer's System Warranty, covering Labor, Workmanship and Materials for Clarifier No. 2. This shall include material upgrade using stainless steel, all in accordance with the Plans and Specifications. Unit of measurement is lump sum.

END OF SECTION

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

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NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

SECTION 09 90 00

PAINTING AND COATINGS

PART 1 - GENERAL

1.0.1 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.0.2 SUMMARY

- A. This specification defines the methods of surface preparation, coating systems, and methods of application for painting as outlined herein.
- B. The work includes painting/coating and finishing of the following items:
 1. Turntable Drive Unit and Motors
 2. Walkway/Access Bridge Supports, Trusses, Beams, Girders, and Other Structural Components
 3. Influent Well, Effluent Trough, Scum Outlet Port, and Interior Clarifier Wall
- C. The omission of minor items in the schedule of work shall not relieve the Contractor of his obligation to include such items where they come within the general intent of the specification as stated herein.
- D. The Contractor shall furnish all supervision, labor, tools, materials, equipment, scaffolding or other structures, and supervision required for the transportation, unloading, storage, and application of the paint/coating and associated products covered by this specification.
- E. The Contractor or subcontractor shall be certified and licensed for painting/coating and shall have a minimum of five (5) years of experience performing similar projects in the State of Florida.
- F. The Contractor shall perform surface preparation and application of the painting/coating strictly as specified herein, or if not specified herein, as

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

recommended by the Painting/Coating Manufacturer or the Manufacturer's Representative for each item as specified herein or elsewhere.

- G. The following items will not be painted/coated:
1. Any code requiring labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.
 2. Any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts, unless otherwise indicated.
 3. Aluminum handrails, walkways, windows, louvers, and grating unless otherwise specified herein or elsewhere.
 4. Signs and nameplates.
 5. Finish hardware.
 6. Products with polished chrome, or nickel finish.
 7. Plastic switch plates and receptacle plates.
 8. Flexible couplings, lubricated bearing surfaces, insulation and metal and plastic pipe interior.
 9. Sprinkler heads.
- H. All work shall be done in strict accordance with this specification, Contract Documents, and the painting package, including manufacturer's printed instructions.
- I. The Contractor will obtain, at its own expense, all permits, licenses and inspections and shall comply with all laws, codes, ordinances, rules, and regulations promulgated by authorities having jurisdiction, which may bear on the work. This compliance will include Federal Public Law 91-596 more commonly known as the "Occupational Safety and Health Act of 1970."
- J. Surfaces to be painted: (Refer to Section 3.8 Coating Systems Schedule for description of surfaces to be painted/coated, preparation, and their specified coating systems).

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

1.0.3 DEFINITIONS

A. Abbreviations and Terms:

1. SSPC - Society for Protective Coatings
2. ASTM - American Society of Testing Materials
3. NACE - National Association of Corrosion Engineers
4. NSF - National Sanitation Foundation (Standard 61)
5. AWWA - American Water Works Associates (AWWA D102-97)
6. ICRI - International Concrete Repair Institute
7. CSP - Concrete Surface Profile (1-9)
8. PSDS - Product Safety Data Sheet
9. MPI - Master Painters Institute

B. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

C. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

D. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

E. Field Painting: is the painting of new or rebuilt items at the job site. Field painting shall be the responsibility of the Contractor.

F. Shop Painting: is the painting of new or rebuilt items in the shop prior to delivery to the jobsite.

G. Exterior: outside, exposed to weather

H. Interior Dry: inside, not subject to immersion service

I. Interior Wet: inside, subject to immersion service

J. Exterior Wet; outside, subject to immersion service

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

1.0.4 RESOLUTION OF CONFLICTS

- A. It shall be the responsibility of the General Contractor to arrange a meeting prior to the start of painting/coating between the contractors, the painting/coating manufacturer, whose products are to be used, Owner, and Owner's Representative. All aspects of surface preparation, application and coating systems as specified herein will be reviewed at this meeting.
- B. Clarification shall be requested promptly from the Owner's Representative when instructions are lacking, conflicts occur in the specification, or the procedure seems improper or inappropriate for any reason.
- C. It shall be the responsibility of the Painting/Coating Manufacturer to have their factory representative meet in person with the Contractor and Owner's Representative a minimum of three (3) times during the job as a consultant on surface preparation, mil thickness of coating and proper application of coating unless meeting is determined to be unnecessary by the Owner's Representative.

1.0.5 SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. See "Writing Guide" Article in the Evaluations for discussion of first subparagraph below.
- C. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
- D. Indicate VOC content.
- E. Data Sheets:
 - 1. For each paint system, furnish a PSDS, the manufacturer's Technical Data Sheets, and paint colors available (where applicable) for each product used in the paint system. The PSDS form is appended to the end of this section.
 - 2. Submit required information on a system-by-system basis.
 - 3. Furnish copies of paint system submittals to the coating applicator.
 - 4. Indiscriminate submittal of manufacturer's literature only is not acceptable. Samples for Initial Selection: For each type of topcoat product indicated.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

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- F. Delete "Samples for Initial Selection" Paragraph above if colors and other characteristics are preselected and specified or scheduled. Retain "Samples for Verification" Paragraph below with or without above.
- G. Samples for Verification: For each type of coating system and each color and gloss of topcoat indicated.
1. Submit Samples on rigid backing, 8 inches square.
 2. Apply coats on Samples in steps to show each coat required for system.
 3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- H. Product List: Cross-reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.
- I. Quality Control Submittals:
1. Applicator's Experience: List of references substantiating experience.
 2. Factory Applied Coatings: Manufacturer's certification stating factory applied coating system meets or exceeds requirements specified.
 3. If the manufacturer of finish coating differs from that of shop primer, provide both manufacturers written confirmation that materials are compatible.
 4. Manufacturer's written instructions and special details for applying each type of paint.
 5. Manufacturers' Certificate of Proper Installation.

1.0.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.0.7 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be delivered to the job site in the original packages with seals unbroken and with legible unmutated labels attached. Packages shall not be opened until they are inspected by the Owner's Representative and required for use. All painting materials shall be stored in a clean, dry, well-ventilated place, protected

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

from sparks, flame, and direct rays of the sun or from excessive heat. Paint susceptible to damage from low temperatures shall be kept in a heated storage space when necessary. The Contractor shall be solely responsible for the protection of the materials stored by him at the job site. Empty coating cans shall be required to be neatly stacked in an areas designated by the Owner or Owner's Representative and removed from the job site on a schedule determined by the Owner or Owner's Representative. Owner and/or Owner's Representative may request a notarized statement from the Contractor detailing all materials used on the project.

- B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.0.8 INSPECTION OF SURFACES

- A. Before application of the prime coat and each succeeding coat, all surfaces to be coated shall be subject to inspection by the Owner's Representative or the coating manufacturer. Any defects or deficiencies shall be corrected by the Contractor before application of any subsequent coating.
- B. Samples of surface preparation and of painting systems shall be furnished by the Contractor to be used as a standard throughout the job, unless omitted by the Owner's Representative.
- C. When any appreciable time has elapsed between coatings, previously coated areas shall be carefully inspected by the Painting/Coating Manufacture or their factory representative, and where, in his opinion, surfaces are damaged or contaminated, they shall be cleaned and recoated at the Contractor's expense. Recoating times of manufacturer's printed instructions shall be followed.
- D. Coating thickness shall be determined by the use of a properly calibrated "Nordson-Mikrotest" "Positest" Coating Thickness Gauge (or equal) for ferrous metal or an OG232 "Tooke" Paint Inspection gauge (or equal) for non-ferrous and cementitious surfaces. Please note that use of the "tooke" gauge is classified as a destructive test and repairs due to testing shall be performed by the Contractor. Thickness testing shall be performed in the presence of the Owner's representative.
- E. Prior to coating and if more than two days has elapsed between coats, the surface shall be testing for chloride contamination.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

1.0.9 EQUIPMENT & PREPARATION OF MATERIALS

- A. Effective oil and water separators shall be used in all compressed air lines serving spray painting and sandblasting operations to remove oil or moisture from the air before it is used. Separators shall be placed as far as practical from the compressor.
- B. All equipment for application of the paint and the completion of the work shall be furnished by the Contractor in first-class condition and shall comply with recommendations of the painting/coating manufacturer.
- C. Mechanical mixers, capable of thoroughly mixing the pigment and vehicle together, shall mix the paint/coating prior to use where required by manufacturer's instructions; thorough hand mixing will be allowed for small amounts up to one (1) gallon. Pressure pots shall be equipped with mechanical mixers to keep the pigment in suspension, when required by manufacturer's instructions. Otherwise, intermittent hand mixing shall be done to assure that no separation occurs. All mixing shall be done in accordance with SSPC Vol. 1, Chapter 4, "Practical Aspects, Use and Application of Paints" and/or with manufacturer's recommendations.
- D. Catalysts or thinners shall be as recommended by the manufacturer and shall be added or discarded strictly in accordance with the manufacturer's instruction.

1.10 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior coatings in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.0.1 MANUFACTURERS

- A. Tnemec Coatings, Kansas City, MO
- B. Carboline Coatings Co., St. Louis, MO.
- C. Corrocoat - 6525 Greenland Road, Jacksonville, FL.
- D. PPG Industrial Coatings - One PPG Place, Pittsburgh, PA.
- E. Sherwin-Williams, 601 Canal Rd; Cleveland, OH.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

2.0.2 HIGH-PERFORMANCE COATINGS, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
 - 3. If retaining subparagraph below, coordinate products retained, if any, in other Part 2 articles, to ensure that one manufacturer can provide products for an entire system.
 - 4. Products shall be of same manufacturer for each coat in a coating system.
 - 5. Material Quality: Manufacturer's highest quality products and suitable for intended service.
 - 6. Materials Including Primer and Finish Coats: Produced by same manufacturer.
 - 7. Thinners, Cleaners, Driers, and Other Additives: As recommended by manufacturer of the particular coating.
- C. Retain second option in "VOC Content" Paragraph below if required for LEED-NC, LEED-CI, or LEED-CS Credit IEQ 4.2; coordinate with products selected. For names of products that comply, see products listed as complying with LEED VOC limits on "MPI Approved Products Lists."
- D. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.
- E. Retain "Low-Emitting Materials" Paragraph below if required for LEED for Schools.
- F. Low-Emitting Materials: Interior coatings shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- G. All new piping, appurtenances and equipment shall be purchased shop lined and/or coated with touch up kits provided for damage caused during installation.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

- H. Colors, where not specified, shall match as close as possible to the existing color of the existing facilities or as selected by the Owner or Owner's Representative.
- I. All coatings in contact with potable water need to be NSF Tested and Certified in accordance with ANSI/NSF Standard 61.
- J. Paint used in successive field coats shall be produced by the same manufacturer. Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to underlying paint. Shop paint shall be of the same type and manufacturer as used for field painting by the Contractor.
- K. Emulsion and alkyd paints shall contain a mildewcide and both the paint and mildewcide shall conform to OSHA and Federal requirements, including Federal specification TT-P-19.
- L. Finish coats containing lead shall not be allowed. Oil shall be pure boiled linseed oil.
- M. Rags shall be clean painters rags, completely sterilized.

2.0.3 SOURCE QUALITY CONTROL

- A. Testing of Coating Materials: Owner reserves the right to invoke the following procedure:
 - 1. Owner will engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
 - 2. Testing agency will perform tests for compliance with product requirements.
 - 3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

PART 3 - EXECUTION

3.0.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.0.2 SURFACE PREPARATION

- A. The surface shall be cleaned as specified for the paint system being used. All cleaning shall be as outlined in the Steel Structures Painting Council's Surface Preparation Specification, unless otherwise noted. If surfaces are subject to contamination, other than mill scale or normal atmospheric rusting, the surfaces shall be pressure washed, and acid or caustic pH residues neutralized, in addition to the specified surface preparation. Surfaces close to the coast shall be checked for chloride contamination.
- B. Standards for Surface Preparation:
 - 1. SSPC-SP1 Chemical and/or Solvent Cleaning: Remove all grease, oil, salt, acid, alkali, dirt, dust, wax, fat, foreign matter, and contaminants, etc. by one of the following methods: steam cleaning, alkaline cleaning, or volatile solvent cleaning.
 - 2. SSPC-SP2 Hand Tool Cleaning: Removal of loose rust, loose mill scale, and loose paint to a clean sound substrate by hand chipping, scraping, sanding, and wire brushing.
 - 3. SSPC-SP3 Power Tool Cleaning: Removal of loose rust, loose mill scale, and loose paint to a clean sound substrate by power tool chipping, descaling, sanding, wire brushing, and grinding.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

4. SSPC-SP5 (NACE-1) White Metal Blast Cleaning: Complete removal of all mill scale, rust, rust scale, previous coating, etc., leaving the surface a uniform gray-white color.
5. SSPC-SP6 (NACE-3) Commercial Grade Blast Cleaning: Complete removal of all dirt, rust scale, mill scale, foreign matter, and previous coatings, etc., leaving only shadows and/or streaks caused by rust stain and mill scale oxides. At least 66% of each square inch of surface area is to be free of all visible residues, except slight discoloration.
6. SSPC-SP7 (NACE-4) Brush-Off Blast Cleaning: Removal of rust scale, loose mill scale, loose rust, and loose coatings, leaving tightly bonded mill scale, rust and previous coatings. On concrete surfaces, brush-off blast cleaning shall remove all laitance, form oils, and solid contaminants. Blasting should be performed sufficiently close to the surface so as to open up surface voids, bug holes, air pockets, and other subsurface irregularities, but so as not to expose underlying aggregate.
7. SSPC-SP10 (NACE-2) Near-White Blast Cleaning: Removal of all rust scale, mill scale, previous coating, etc., leaving only light stains from rust, mill scale, and small specks of previous coating. At least 95% of each square inch of surface area is to be free of all visible residues and the remainder shall be limited to slight discoloration.
8. SSPC-SP11 Power Tool Cleaning to Bare Metal: Complete removal of rust, rust scale, mill scale, foreign matter, and previous coatings, etc., to a standard as specified on a Commercial Grade Blast Cleaning (SSPC-SP6, NACE-3) by means of power tools that will provide the proper degree of cleaning and surface profile.
9. SSPC-SP12 (NACE-2) Surface Preparation by Water Jetting: Surface preparation of steel and other substrates by ultra-high pressure water jetting.
10. SSPC-SP13 (NACE-6) Surface Preparation of Concrete: Surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems.
11. SSPC-SP14 (NACE-8) Industrial Blast Cleaning: Surface preparation standards for industrial blast cleaning allowing for traces of tightly adherent mill scale, rust, & coating residues on 10% of the surface.
12. SSPC-SP15 Commercial Grade Power Tool Cleaning: Commercial grade power tool cleaning a steel surface to produce a 1.0-mil surface profile. This method of cleaning falls between SP3 & SP11.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

13. SSPC-SP16 Brush-Off Blast Cleaning of Non-Ferrous Metals: Brush-off blast cleaning of coated or uncoated metal surfaces other than carbon steel prior to the application of a protective coating system. Roughen and clean coated and uncoated non-ferrous metal substrates, including, but not limited to, galvanized surfaces, stainless steel, copper, aluminum, and brass.
- C. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- D. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 1. Coordination of shop-applied prime coats with high-performance coatings is critical.
 2. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.
- E. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
 1. Clean surfaces with pressurized water. The pressure range used for cleaning is to be selected by the Contractor based on the surface condition and coating manufacturer's specifications.
 2. Abrasive blast clean surfaces to comply with SSPC-SP 7/NACE No. 4.
- F. Retain "Steel Substrates" Paragraph below if steel is not shop primed or if shop primer is removed in the field.
- G. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.
 1. SSPC-SP 7/NACE No. 4.
 2. SSPC-SP 11.
 3. SSPC-SP 6/NACE No. 3.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

- 4. SSPC-SP 10/NACE No. 2.
- 5. SSPC-SP 5/NACE No. 1.
- H. Retain "Shop-Primed Steel Substrates" Paragraph below if primers are shop applied and are not removed in the field.
- I. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- J. Galvanized-metal substrates should not be chromate passivated if primers are field applied. If galvanized metal is chromate passivated, consult manufacturers for appropriate surface preparation and primers.
- K. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.
- L. If necessary, insert requirements for acid etching aluminum.
- M. Aluminum Substrates: Remove loose surface oxidation.
- N. Ductile Iron Surface Preparation shall conform to NAPF Section 500 "Coatings and Linings".
- O. Visual standards – SSPC-VIS-1(Swedish SIS OS 5900), "Pictorial Surface Preparation Standards for Painting Steel Surfaces," and the National Association of Corrosion Engineers, "Blasting Cleaning Visual Standards" TM-01-70 and TM-01-75 shall be considered as standards for proper surface preparation.
- P. Visual standards from International Concrete Repair Institute CSP1-9 for degree of roughness and surface profile of concrete.
- Q. Oil, grease, soil, dust, etc., deposited on the surface preparation that has been completed shall be removed prior to painting according to SSPC-SP1 Solvent Cleaning.
- R. Weld flux, weld spatter and excessive rust scale shall be removed by Power Tool Cleaning as per SSPC-SP11-87T.
- S. All weld seams, sharp protrusions, and edges shall be ground smooth prior to surface preparation or application of any coatings.
- T. All areas requiring field welding shall be masked off prior to shop coating, unless waived by the Owner's Representative.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

- U. All areas which require field touch-up after erection, such as welds, burnbacks, and mechanically damaged areas, shall be cleaned by thorough Power Tool as specified in SSPC-SP11-87T.
- V. Touch-up systems will be same as original specification except that approved manufacturer's organic zinc-rich shall be used in lieu of inorganic zinc where this system was originally used. Also strict adherence to manufacturer's complete touch-up recommendations shall be followed. Any questions relative to compatibility of products shall be brought to the Owner's Representative's attention; otherwise, Contractor assumes full responsibility.

3.0.3 PRETREATMENTS

- A. When specified, the surface shall be pretreated in accordance with the specified pretreatment prior to application of the prime coat of paint.

3.0.4 APPLICATION

- A. Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
 - 1. Use applicators and techniques suited for coating and substrate indicated.
 - 2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Coat backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. If tinting is not required, delete first paragraph below. Different tints will show through as topcoat erodes.
- C. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- D. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 1

- E. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.
- F. Paint shall be applied only on thoroughly dry surfaces and during periods of favorable weather, unless otherwise allowed by the paint/coating manufacturer. Except as provided below, painting shall not be permitted when the atmospheric temperature is below 50° F, or when freshly painted surfaces may be damaged by rain, fog, dust, or condensation, and/or when it can be anticipated that these conditions will prevail during the drying period. Note some materials may have a lower minimum atmospheric temperature and manufacturer's recommendation shall be followed.
- G. No coatings shall be applied unless surface temperature is a minimum of 5° above dew point; temperature must be maintained during curing.
- H. Dew Point: temperature at which moisture will condense on surface. No coatings should be applied unless surface temperature is a minimum of 5° above this point. Temperature must be maintained during curing.
 - 1. Example: If air temperature is 70°F and relative humidity is 65%, the dew point is 57°F. No coating should be applied unless surface temperature is 62°F minimum.
- I. No coatings shall be applied unless the relative humidity is below 85%.
- J. Suitable enclosures to permit painting during inclement weather may be used if provisions are made to control atmospheric conditions artificially inside the enclosure, within limits suitable for painting throughout the painting operations.
- K. Field Painting in the immediate vicinity of, or on, energized electrical and rotating equipment, and equipment and/or pipes in service shall not be performed without the approval of the Owner's Representative.
- L. The Contractor's scaffolding shall be erected, maintained, and dismantled without damage to structures, machinery, equipment or pipe. Drop cloths shall be used where required to protect buildings and equipment. All surfaces required to be clear for visual observations shall be cleaned immediately after paint application.
- M. The prime coat shall be applied immediately following surface preparation and in no case later than the same working day. All paint shall be applied by brushing, paint mitt and roller, conventional spraying, or airless spraying, using equipment approved by the paint/coating manufacturer.
- N. Each coat of paint shall be recoated as per manufacturer's instructions. Paint/coating shall be considered re-coatable when an additional coat can be applied

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

without any detrimental film irregularities such as lifting or loss of adhesion. Follow the manufactures printed recoat times.

- O. Surfaces that will be inaccessible after assembly shall receive either the full specified paint system or three shop coats of the specified primer before assembly.
- P. Finish colors shall be in accordance with the Owner's Direction or match existing colors and shall be factory mixed (i.e., there shall be no tinting by the Contractor).
- Q. All edges and weld seams in immersion service shall receive a "stripe coat" (applied by brush) after the 1st coat.
- R. All hairline cracks or patches shall receive "stripe coat" of the 1st coat prior to application of the full 1st coat.

3.0.5 APPLICATION OF PAINT

A. By Brush and/or Rollers:

- 1. Top quality, properly styled brushes and rollers shall be used. Rollers with a baked phenol core shall be utilized.
- 2. The brushing or rolling shall be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Brush or roller strokes shall be made to smooth the film without leaving deep or detrimental marks.
- 3. Surfaces not accessible to brushes or rollers may be painted by spray, by dauber or sheepskins, and paint mitt.
- 4. It may require two (2) coats to achieve the specified dry film thickness if application is by brush and roller.

B. Air, Airless, or Hot Spray:

- 1. The equipment used shall be suitable for the intended purpose, shall be capable of properly atomizing the paint to be applied and shall be equipped with suitable pressure regulators and gauges.
- 2. Paint shall be applied in a uniform layer, with a 50% overlap pattern. All runs and sags should be brushed out immediately or the paint shall be removed and the surface resprayed.
- 3. High build coatings should be applied by a crosshatch method of spray application to ensure proper film thickness of the coating.
- 4. Areas inaccessible to spray shall be brushed; if also inaccessible to brush, daubs or sheepskins shall be used, as authorized by the manufacturer.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

5. Special care shall be taken with thinners and paint temperatures so that paint of the correct formula reaches the receiving surface.
6. Nozzles, tips, etc., shall be of sizes and designs as recommended by the manufacturer of the paint being sprayed.
7. The first coat on concrete surfaces in immersion service should be thinned, then sprayed and backrolled or roller applied.

3.0.6 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.
 1. Contractor shall touch up and restore coated surfaces damaged by testing.
 2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

3.0.7 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.
- E. It shall be the responsibility of the Contractor to protect at all times, in areas where painting is being done, floors, materials of other crafts, equipment, vehicles, fixtures, and finished surfaces adjacent to paint/coating work. Cover all electric plates, surface hardware, nameplates, gauge glasses, etc., before start of painting/coating work.
- F. At the option of the Owner's Representative during the course of this project, the Contractor will contain all spent abrasives, old paint chips, paint overspray and

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

debris by means suitable to the Owner's Representative, including but not limited to, full shrouding of the area.

- G. If shrouding is required, the Contractor must provide a complete design of the intended shroud or cover. Care must be taken not to modify or damage the structure during the use of the shroud. If damage should occur, the Contractor is held responsible for all repairs.
- H. At completion of the work, remove all paint/coating where spilled, splashed, splattered, sprayed or smeared on all surfaces, including glass, light fixtures, hardware, equipment, painted, and unpainted surfaces.
- I. After completion of all painting, the Contractor shall remove from job site all painting/coating equipment, surplus materials, and debris resulting from the Work.
- J. The Contractor is responsible for the removal and proper disposal of all hazardous materials from the jobsite in accordance with Local, State, and Federal requirements as outlined by the United States Environmental Protection Agency (USEPA).
- K. A notarized statement shall be presented to the Owner and Owner's Representative that all hazardous materials have been disposed of properly including but not limited to: name of disposal company, disposal site, listing of hazardous materials, weights of all materials, cost per pound and USEPA registration number.

3.0.8 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

- A. Painting/coating all items specified here in shall be in accordance with the manufacturer's recommendations for surface preparation, painting/coating system and application methods. If the painting/coating surface preparation, painting/coating system, dry film thicknesses, and application methods specified herein are in conflict the manufacturer's recommendations, the manufacturer's recommendations shall supersede what is specified herein:

- 1. Steel – New Steel Components, which are not factory pre-coated

Exterior Exposure (Non-Immersion)

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

		<u>DFT-Mils</u>
Primer:	90-97 Tneme-Zinc	2.5 – 3.5
Intermediate Coat:	66HS Hi-Build Epoxoline	2.0 – 3.0
Finish Coat:	1074-Endura-Shield UVX	<u>2.0 – 5.0</u>
		6.5 – 11.5
		Minimum 6.5 Mils DFT

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

Interior Exposure (Non-Immersion)

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning

		<u>DFT Mils</u>
Primer:	66HS Hi-Build Epoxoline	3.0 – 5.0
Finish Coat:	66HS Hi-Build Epoxoline	<u>3.0 – 5.0</u> 6.0 – 10.0
		Minimum 6.0 Mils

Immersion

Surface Preparation: SSPC-SP10 Near White Blast Cleaning, a minimum blast profile of 1.5 mils.

		<u>DFT-Mils</u>
Primer:	66HS Hi-Build Epoxoline	5.0 – 6.0
Finish Coat:	66HS Hi-Build Epoxoline	<u>5.0 – 6.0</u> 10.0 – 12.0
		Minimum 10.0 Mils

2. Ductile Iron – Exposed (Outside Diameter)

Surface Preparation: Clean factory primer per SSPC-SP7 for removal of rust scale, loose mill scale, loose rust, and loose coatings.

		<u>DFT-Mils</u>
Primer:	66HS Hi-Build Epoxoline	3.0 - 5.0
Intermediate Coat:	66HS Hi-Build Epoxoline	4.0 - 6.0
Finish Coat:	1074-Endura-Shield UVX	<u>2.0 – 3.0</u> 9.0-14.0
		Minimum 9.0 Mils

3. Concrete - Submerged Structural Fabrications (Influent Well, Effluent Trough, Scum Outlet Port, and Interior Clarifier Wall)

Surface Preparation: Abrasive blast clean per SSPC-SP13 with a CSP 5 or better finish. Repair mortar shall be as required for cracks and surface repairs.

		<u>DFT-Mils</u>
Resurfacer:	Series 218 MortarClad	1/16”-1/2”
Finish Coat:	Series 262 Elasto-Shield,	50
		Minimum 54

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

4. Concrete – Exteriors of Existing Concrete

Surface Preparation: Remove all dirt, oil, grease, chalk, and loose paint per High Pressure Water Blast (Min 3500 PSI).

		<u>DFT-Mils</u>
Primer:	151 Elasto-Grip	300-350 sq ft per gallon
Intermediate Coat:	156 Enviro-Crete	5.0 – 8.0
Finish coat:	156 Enviro-Crete	<u>5.0 – 8.0</u>
		11.0 –16.0

END OF SECTION

SECTION 46 43 01

CLARIFIER REHABILITATION

PART 1 – GENERAL

1.0.1 SCOPE OF WORK

- A. Demolition: Contractors work includes the demolition and removal of all internal components of one (1) or two (2) 55-ft diameter clarifiers, further identified as Clarifier #1 and Clarifier #2 as shown on contract drawings and specified in Section 01 11 00 Summary of Work.
- B. Contractor shall furnish all labor, equipment, materials, tools, and incidental items required to install and place into proper operation of one (1) or two (2) circular scraper clarifiers including walkway and railings from the stairs to the center support structure. Design and calculations to be performed by equipment vendor. All materials and equipment shall be installed as shown on the plans, as recommended by the supplier, and in compliance with all OSHA, local, state, and federal codes and regulations. All materials and equipment shall be the materials specified in Section 2.02 unless otherwise noted.
- C. Clarifier mechanisms shall be installed within one (1) or two (2) existing 55 feet diameter concrete basins as shown on contract drawings.
- D. Clarifiers 1 and 2 - Contractor shall furnish complete with center drive, collector mechanism, skimmer and scum box, assembly hardware, anchor bolts and controls for operation of the clarifiers, and all accessories and appurtenances specified or otherwise required for a complete and properly operating installation.
- E. Any additional work for Clarifier #1 or/and Clarifier #2 is specified in Section 01 11 00 Summary of Work.
- F. Contractor shall be responsible for coordination of all related parts of work. Contractor shall verify all structures, piping, wiring, and components are compatible. Contractor shall be responsible for all structural and other alterations required to accommodate equipment differing in dimensions or other characteristics from these specifications and drawings.

1.0.2 SUBMITTALS

- A. Provide shop drawings and product data in accordance with section 01 33 23 for the equipment being furnished, to include at minimum the following:
 - 1. Certified shop drawings showing the details of construction, dimensions and anchor bolt requirements.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

2. Complete wiring diagrams detailing all required field connections.
3. Descriptive literature, brochures, and/or catalogs of submitted equipment.
4. Calculations showing the structural capability of the clarifier mechanism to withstand the momentary peak torque.
5. Structural calculations for walkways and platforms
6. Complete bill of materials for the equipment.
7. List of Manufacturer's recommended spare parts.
8. Calculations substantiating the continuous torque rating of the main gear set in accordance with standard ANSI / AGMA 2001.
9. Operation and maintenance manuals in accordance with the requirements of Section 01 78 23.
10. Manufacturer's valid ISO 9001:2008 certificate of registration
11. Equipment weights and lifting points.
12. Short and long term storage requirements.
13. Manufacturer's installation instructions.
14. Installation Reference Lists
15. Valid Welder Certifications
16. A copy of Manufacturer's factory warranty.

1.0.3 REFERENCE STANDARDS

- A. American Iron and Steel Institute (AISI).
- B. American National Standards Institute (ANSI).
- C. American Society for Testing Materials (ASTM).
- D. American Bearing Manufacturers Association (ABMA).
- E. American Gear Manufacturers Association (AGMA).
- F. National Electrical Manufacturers Association (NEMA).

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

- G. Underwriters Laboratory (UL).
- H. Anti-friction Bearing Manufacturers' Association (AFBMA), Bearing Life Specifications

1.0.4 QUALITY ASSURANCE

- A. Qualifications: Qualified Manufacturers shall have a minimum 15 years' experience manufacturing clarifiers, with no fewer than 20 operating installations of the type specified herein located in the USA. Manufacturer shall provide a list of 5 names and dates of installations for verification by the Engineer or Owner's Representative.
- B. A single manufacturer shall provide all components including but not limited to the clarifier, motors, gear reducers, controls, and control panels as a complete integrated package to ensure proper coordination, compatibility, and operation of the system.
- C. Clarifier shall be Manufacturer's standard product and only modified as necessary to comply with the drawings, specifications, and specified service conditions.
- D. All welding is performed in accordance with American Welding Society (AWS) Structural Welding Code.
- E. All stainless steel components shall undergo a passivation process to ensure maximum resistance to corrosion. All stainless steel surfaces shall be thoroughly cleaned and blasted according to ASTM A380. The use of nitric and hydrofluoric acid passivation is not acceptable due to the negative impact these chemicals have on the environment.
- F. Contractor shall guarantee all equipment against faulty or inadequate design, improper assembly or installation, defective workmanship or materials, and breakage or other failure. Materials shall be suitable for service conditions.
- G. All equipment shall be designed, fabricated, and assembled in accordance with recognized and acceptable engineering and shop practices. The fabrication shall be performed by the equipment manufacturer at the manufacturer's facility located within the continental USA; all welding shall be performed by direct employees of the manufacturer, each welder shall be certified in accordance with AWS or ASME. Welder certificates shall be provided to the Engineer upon request.
- H. Each clarifier shall have the Manufacturer's name, address, and product identification information on a corrosion resistant nameplate securely affixed to the equipment.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

- I. Clarifier manufacturer shall be ISO 9001:2008 certified and provide the Engineer with a copy of a valid certificate of registration.

1.0.5 WARRANTY

- A. The equipment shall be warranted by the manufacturer for a period of one (1) year after the date of final acceptance of the project by the Owner.

1.0.6 DELIVERY, STORAGE, AND HANDLING

- A. Shipping
 - 1. Ship equipment, material, and spare parts complete except where partial disassembly is required by transportation regulations or for protection of components.
 - 2. Pack spare parts in containers bearing labels clearly designating contents and equipment for which they are intended.
- B. Receiving and Storage:
 - 1. Store and safeguard equipment, material, and spare parts. All spare parts must be stored in accordance with manufacturer's recommendations.

1.0.7 OPERATION AND MAINTENANCE MANUALS

- A. The manufacturer shall furnish operation and maintenance manuals in accordance with the requirements of Section 01 78 23 – Operating and Maintenance Manuals.

PART 2 - PRODUCTS

2.0.1 ACCEPTABLE MANUFACTURERS

- A. Clarifier(s) shall be in compliance with these specifications and plans and shall be supplied by the following manufacturer:
 - 1. Ovivo USA LLC, Salt Lake City, Utah
 - 2. Westech Engineering, Inc., Salt Lake City, Utah
 - 3. Kusters Water, Spartanburg, SC
 - 4. Evoqua Water Technologies, Pittsburgh, PA

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

2.0.2 CLARIFICATION EQUIPMENT

A. GENERAL DESIGN REQUIREMENTS

1. Per Section 00 41 15 Bid Form, there are Base Bid and Alternate Bid 2 for clarifier materials.
 - a. Base Bid: All fabricated metal components shall be hot dip galvanized (HDG) steel. This shall include the platform base/members for the walkway.
 - b. Alternate Bid 2: All fabricated metal components shall be AISI Type 304 stainless steel. The platform base/members for the walkway shall be 304 stainless steel or aluminum.
2. Except where otherwise indicated, all plates and structural members designed for submerged service shall have a minimum thickness of ¼ inch.
3. Welding: All non-submerged steel shall be continuously seal welded. Stitch or skip welding is not permitted.
4. The clarifier components shall be designed for all bolted connections, field welding will not be permitted.
5. The Contractor shall be required to make any necessary modifications to the new or existing concrete to accommodate the equipment furnished. The manufacturer shall ensure the manufacturer furnished anchor bolt templates are properly designed for the application.
6. Edge Grinding: Sharp projections of cut or sheared edges of ferrous metal shall be ground to a radius by a power grinder as required to ensure satisfactory coating adhesion.
7. All bolts, nuts, anchor bolts and washers shall be Type 304 Stainless Steel, intended for submerged service.

B. DESIGN CRITERIA

AGMA Rated Continuous Torque (ft-lbs):	15,000
Momentary Peak Torque (ft-lbs):	30,000
Existing Tank Diameter (ft):	55
Sidewater Depth (ft):	Clarifier #1 - 11'; Clarifier #2 -10.5'
Tank Freeboard	Clarifier #1 - 24"; Clarifier #2 -18"
Floor Slope (in/in):	1:12
Minimum Drive Motor Horsepower:	0.75
Operational Environment:	Non Hazardous

NAU WWTF Clarifier Rehabilitation Project
 Addendum No. 1

NC18-010

Stainless Steel Hardware Grade:	304 / 316
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C. PERFORMANCE AND DESIGN REQUIREMENTS

1. Each clarifier shall be capable of processing the specified maximum flow of municipal wastewater and shall be capable of efficiently separating solids from the treated liquid.
2. All components shall be designed and manufactured so the clarifiers can withstand the structural force exerted by momentary peak torque. All structural and functional parts shall be adequately sized to prevent deflection and vibration which could impair operation.

D. CLARIFIER COMPONENTS

1. Center Column
 - a. The center column shall Support entire sludge collector mechanism including inboard end of the access bridge; sized and designed by collector manufacturer. Minimum wall thickness of 1/4 inch; mounted at center of basin. Shall be provided and designed to support all required static and dynamic loads. The column shall be designed for 2 times the continuous operating torque.
 - b. The bottom of the column shall have a bolting flange for anchorage to the concrete tank using stainless steel anchor bolts. The Manufacturer shall provide a steel template/grout shield to accurately locate anchors and allow for grouting beneath the pier after final plumbing.
 - c. The column shall have gusset plates located at the top and bottom flanges for added strength.
2. Center Drive Cage
 - a. The drive cage shall be capable of carrying dead load of rake arms plus its own dead load, as well as design total torque assuming entire design torque is distributed uniformly along each rake arm: bolted to spur gear assembly that rotates center cage; bolted to rake arms and influent well hangers (if used).
 - b. Structural calculations shall be provided verifying the structural ability of the drive cage. The cage shall be designed for 2 times the continuous operating torque.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

3. Feedwell with Energy Dissipating Inlet (EDI)
 - a. The influent feedwell shall be constructed of minimum 3/16-inch thick steel plate with stiffening angles. The top of the feedwell shall extend 3-inches above the maximum clarifier water level and shall be provided with a least four (4) baffled slots at water level to permit escape of floating material.
 - b. Feedwell plate sections shall be designed to bolt together.
 - c. Mounted concentric with center column, supported by center cage; top edge approximately 4 inches above water surface; designed to diffuse influent into tank to greatest extent possible by use of energy-dissipating nozzles. Closed and sealed bottom within 1 inch of center column.
 - d. The EDI well shall be equipped with multiple curved outlet ports located on the side of the well. The ports shall be arranged evenly around the EDI and shall discharge the liquid into the direction of rotation to further dissipate energy and enhance flocculation.
 - e. Grit drains shall be provided on the EDI.
 - f. EquaFlo 360 or equal for EDI design: The manufacturer of this product shall be solely responsible for the design of this configuration based upon the Contract Documents.
4. Rotating Rake Arms
 - a. Each designed for 2 times the continuous torque. Total torque shall be assumed to be distributed uniformly along each rake arm.
 - b. Rake arm design shall conform to slope of tank floor; consisting of structural triangular or box trusses attached rigidly to the center cage. Shall not incorporate use of any tie rods; self-supporting and without tie rods. Flights shall be a minimum 6" deep.
 - c. Squeegees shall be provided on each blade, and shall allow for 2-inches of vertical adjustment. Squeegees shall be attached with stainless steel hardware. The rake blades shall be properly spaced to insure complete raking of the basin floor twice per revolution.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

5. Walkways and Service Platform

- a. Welded truss or beam bridge construction and composed of two main members laterally braced together. UHMW-PE slide plates and stainless steel anchor bolts for wall support shall be provided.
- b. Bridge shall be capable of supporting dead loads plus minimum walkway live load of 50 pounds per square foot with deflection of maximum $L/360$ of span for dead load plus live loads; cambered for $1/3$ live load plus dead load.
- c. Walkway shall be supported at the drive service platform and the concrete wall. The service platform shall be located around the center drive and provide a minimum clearance of 2 feet 0 inches around all sides of the drive mechanism for maintenance and service.
- d. Circumferential walkway shall be supported by the concrete wall with support brackets as required.
- e. Handrail: The walkways and platform shall be provided with mechanical handrail 42" high, double row 1.5" diameter aluminum pipe, and 0.25" x 4" kickplates or 4" tall extruded toeboards on both sides. Walkway trusses may serve as the handrail if the top chord is 3'-6" above the walking surface.
- f. Decking: The entire walkway shall be covered with aluminum I-bar grating, 1.25" thick, attached with aluminum grating clips and stainless steel hardware. The service platform shall be covered with 0.25" aluminum checkered plate.

6. Skimmer and Scum Removal

- a. General
 - 1) The clarifier manufacturer shall furnish two (2) skimming devices as part of each clarifier mechanism. Each skimming mechanism shall be arranged to sweep the surface of the sedimentation compartment, automatically removing scum and floating material to a scum box at the periphery of the tank.
- b. Skimmer Construction
 - 1) The rotating scum skimmer shall include a horizontal plate skimmer blade supported by vertical members extending up from the rake arms. The blade shall extend from the influent

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

feedwell to the hinged scum skimmer assembly at the tank periphery.

c. Scum Skimmer Assembly

- 1) A hinged scum skimmer assembly shall be mounted on the outer end of the skimmer blade. The hinged scum skimmer assembly shall be designed to form a pocket for trapping the scum. The hinged arrangement shall insure continual contact and proper alignment between wiper blade, scum baffle, and ramp as the blade travels up the scum box ramp. The wiper blade shall have a wearing strip on its outer end which contacts the scum baffle and a neoprene strip on its lower and inner edge. The neoprene wipers shall be a minimum 1/4 inch thickness. The scum is trapped as the wiper blade meets the ramp and is raised up the ramp to be deposited into the scum trough for disposal.

d. Scum Box

- 1) The scum box shall be supported from the tank wall and connected to the scum withdrawal piping. It shall be made of 1/4 inch thick welded plate. The box shall have a scum trough, vertical sides, and a sloping approach ramp that extends from 1-1/2 inches above water level to 5-1/2 inches below. A similar ramp shall be provided at the opposite end to allow the skimmer blade to lower back to the operating position. A flexible connector shall be provided for connection to the Contractor supplied scum withdrawal piping in the tank wall.

e. Scum Flushing Valve

- 1) A valve shall be attached to the scum box which automatically opens and allows clarified liquid into the scum box to flush out solids. The valve shall actuate at every pass of the scum skimmer over the scum box, allowing sufficient delay after deposit of the solids before flushing begins. Delay and flush duration shall be adjustable. The opening and closing of the scum flushing valve shall be one smooth continuous movement. The valve shall provide 2 to 5 gallons of flush water per each pass of the skimmer assembly.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

f. Scum Baffle

- 1) The baffle shall consist of 1/4 inch thick x 12 inches deep fiberglass sections. In the area of the scum box the scum baffle shall extend to 24 inches starting approximately 6 feet before and ending 2 feet after the scum box. The baffle sections shall be curved and fastened to the launder wall with adjustable FRP support brackets, stainless steel fasteners, and anchor bolts.

7. Effluent Weir

- a. The effluent weir and scum baffle to be furnished and installed under this section shall be as shown on the Contract Drawings and as specified herein.
- b. The effluent weir shall consist of FRP sections, fastened to the tank wall with Type 304 stainless steel anchor bolts and hex nuts and FRP washers to allow for vertical adjustment. The Contractor shall seal all joints between walls and weirs with a suitable waste resistant and chlorine resistant mastic. Effluent weir shall be a v-notch weir as shown on the Drawings. Effluent weir shall be adjustable once installed as shown on the standard details on the Drawings.

8. Center Drive Mechanism

- a. General: The center clarifier drive mechanism shall consist of an electrical motor, primary reducer, intermediate gear reducer and a main gear set consisting of a spur pinion and internal tooth spur gear.
- b. Motor: The clarifier drive shall be driven by an electric motor. The motor shall be minimum 3/4 horsepower and shall be totally enclosed, fan cooled, with a 1.15 service factor, and have bearings with a minimum B10 rating of 50,000 hours. Operating electric current will be 230/460 volt, 3 phase, and 60 hertz. Each motor will be NEMA Design B employing Class F insulation designed for an ambient temperature of 40 °C.

Primary Reducer Design: A mechanical primary reducer shall be provided to transmit torque to the intermediate reducer. The reducer shall consist of a helical style gearbox, chain and sprocket set. The helical reducer shall have an AGMA Class II rating, 1.4 service factor. The chain and sprocket shall be 3/4" pitch, No. 60 steel roller chain, designed in accordance with ANSI B 29.1. A shear pin and

hub shall be provided on the driven sprocket. The shear pin shall be sized for 150% of the continuous design torque. All chains and sprockets shall be fully enclosed in an OSHA compliant, 304 stainless steel guard.

- c. Intermediate Reducer Design: The intermediate reducer shall be a worm and worm gear type, providing no less than 45% gear efficiency. Lubrication of the worm gearing shall be oil or grease. The worm gear reducer shall be designed for a 200,000 hr. service life at the designed rpm and torque. The output shaft of the intermediate reducer shall be keyed to a heat treated spur pinion. The worm gear shall be centrifugally cast bronze driven by a heat treated worm pinion. The worm and worm gear shall be designed and rated in accordance with ANSI/AGMA standard 6034.
- d. Final Reducer Design: The main gear shall include an internal tooth spur gear and spur pinion. The main gear material shall be forged alloy steel, induction hardened to a minimum 53Rc. The pinion shall be constructed from AISI 4150 steel, hardened to a minimum 340 Bhn.
- e. Turntable Base: Cast iron, ASTM A48 Class 40 minimum 40,000 psi tensile strength; able to be bolted to center column and to provide support for internal spur gear, the entire rotating collector mechanism and one end of the access bridge. Fabricated steel housing are not permitted.
- f. Main Bearing: The main bearing shall consist of a full complement of hardened steel chrome ball bearings (1" minimum), each riding on four replaceable hardened steel strip liners. Each liner shall be 3/8" x 3/8" square, heat treated to a minimum 48-50 Rc. The bearing liners shall be independently replaceable without the need to remove the clarifier drive, Access Bridge or platform.
- g. Torque Overload Protection Design: The clarifier drive shall include a mechanical lateral displacement torque overload protection system. Rotational style overload devices are not permitted due to their inherent inaccuracy. Two overload switches shall be provide, one for "alarm" set at 100% of the continuous design torque, and one for "motor cut-off" set at 130% of the continuous design torque. Additionally a shear pin shall be provided set at 150% of the continuous design torque. All switches shall be current rated for 120 VAC. Each switch shall be NEMA rated for the specified environment identified Drawings. The torque indication gage shall include a needle and scale from 0-150% of the load.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

- h. Condensate Removal: A condensate removal system shall be included to automatically remove condensate from the main gear housing. The condensate removal system shall be designed to provide constant removal of condensate from the main gear housing. A minimum of 6" clearance shall be provided below the low point drain to allow for easy access by plant personnel.
- i. Coatings if applicable: Each clarifier drive mechanism shall be factory coated with 2 coats (2-3 mils per coat, minimum DFT) of Tnemec epoxy prior to shipment.

2.0.3 CONTROLS AND INSTRUMENTATION

A. GENERAL

- 1. The clarifier control panel shall be the supplier's standard UL listed enclosure and wired for 230/460 volts, 3-phase, 60 Hz electrical service. The enclosure shall be furnished completely pre-wired and tested, requiring only mounting and connection to field mounted electrical devices. The control panel shall include all equipment required to control the clarifier specified herein.
- 2. The control panel enclosure shall be NEMA 4X. The enclosure shall house the control devices, relays, terminal blocks, and motor starter. All hinges and latches shall be corrosion-resistant.

B. OPERATION

- 1. The control system shall be equipped with one (1) ON / OFF position selector switch. In the Off mode the clarifier drive will not run. In the ON mode the clarifier drive shall run continuously. The following items shall be included in each control panel.
 - a. Clarifier run light (green)
 - b. Torque "alarm" light (amber)
 - c. Torque "motor cut out" light (red)
 - d. UL 508 Listed industrial controls label
 - e. "Alarm" horn
 - f. Reset push button
 - g. On/Off selector switch

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

- h. Relays and transformers as required
- i. Main power disconnect

C. COMPONENTS

1. Enclosure

- a. Enclosures shall be NEMA 4X.
- b. Enclosure shall house the circuit breaker, motor starter, control devices, relays, and terminal blocks.

2. Control Devices

- a. Pilot devices shall be mounted on the enclosure front panel door.
- b. Indicator lights shall be LED type. Selector switches shall be heavy duty NEMA 4X. type.
- c. Control transformer shall be protected by two (2) primary fuses and one (1) secondary fuse. The 120 volt secondary shall have one leg grounded.
- d. Auxiliary relay contacts shall be included for clarifier drive, Run, Off, alarm, and motor cut out overload signal outputs. The contacts shall be rated 10 amp, 240 VAC, resistive load.

2.0.4 SOURCE QUALITY CONTROL

- A. Clarifier components and control panel shall be factory assembled and tested to ensure proper fit and satisfactory operation. Equipment shall be shipped in the minimal practical number of pieces for minimal field assembly by the Contractor.

2.0.5 SHOP PAINTING

- A. Stainless steel and aluminum surfaces shall not be painted. Gearboxes, Motors, and other manufactured components will receive the manufacturer's standard weather- and corrosion-resistant coating. All fabricated steel components which are not factory pre-coated shall be field prepared and coated in accordance with Section 09 90 00.

2.0.6 SPARE PARTS

- A. The intent of this specification is to provide uninterrupted operation for a minimum period of two (2) years. To meet this objective the clarifier manufacturer shall

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

supply any spare parts, excluding lubricants that are required to meet this time frame. As a minimum, provide the following spare parts, per clarifier::

1. Two (2) Hydraulic Oil Filters (if required)
2. One (1) Sight glass for each main drive housing containing oil
3. One (1) Set of Skimmer Neoprene

PART 3 – EXECUTION

3.01 INSTALLATION AND TESTING

- A. Contractor shall notify Owner seven (7) days prior to taking clarifier out of service.
- B. Contractor shall coordinated project schedule and work to ensure uninterrupted clarifier operation during holiday weekends (e.g. 4th of July, Memorial and Labor Day).
- C. Contractor shall verify all dimensions in the field to ensure compliance of equipment dimensions with the drawings. Contractor shall notify Engineer of any significant deviations.
- D. Installation of the equipment shall be in strict accordance with the contract documents and the Manufacturer's instructions and shop drawings. Manufacturer shall supply anchor bolts for the equipment. Contractors shall install the anchor bolts in accordance with the Manufacturer's recommendations.
- E. Supplier shall furnish the services of a factory-trained Service Engineer for One (1) trip and one (1) day for installation inspection services and One (1) trip and two (2) days for start-up, commissioning, and operator training for each unit.
 1. Equipment shall not be energized, or "bumped", to check the electrical connection for motor rotation without installation inspection and the Service Engineer present.
 2. The Service Engineer shall test rotate each clarifier for 2 complete revolutions, inspect the installation, and make recommendations for any necessary mechanical adjustments by the Contractor.
 3. The Service Engineer shall conduct a torque test during the start-up and commissioning to demonstrate proper operation of the overload system.
 4. If additional field service beyond the days and trips specified is required due to the mechanisms not being fully operational, at the time of service

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

requested by the Contractor, the additional service days will be at the Contractor's expense.

END OF SECTION



NASSAU COUNTY
BOARD OF COUNTY COMMISSIONERS
Contract Management Department
96135 Nassau Place, Suite 2
Yulee, Florida 32097
904-530-6040 Fax: 904-321-5917

Grayson Hagins
Procurement Manager
ghagins@nassaucountyfl.com

TO: All Proposers
FROM: Grayson Hagins, Procurement Manager
SUBJECT: Addendum #2
Invitation to Bid, Bid Number NC18-010
NAU WWTF Clarifier Rehabilitation Project
August 3, 2018

REMINDER: This addendum must be acknowledged, signed and returned with your proposal. Failure to comply may result in disqualification of your submittal.

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents.

A non-mandatory pre-bid conference was held Friday, July 27, 2018 at 10:00 AM in the County Managers Conference Room (County Manager's Office), located at 96135 Nassau Place, Yulee, Florida 32097 for the Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project, Bid Number NC18-010. Copies of the sign-in sheets as well as the meeting agenda are attached to this addendum.

Grayson Hagins, Procurement Manager opened the meeting with introductions and discussion on the bid submittal requirements. **Bids are due by August 8, 2018 at 4:00 p.m.** Caution was given to the bidders, if they plan on delivering their bid on the deadline date, to allow sufficient time for security clearance at the Judicial Annex which is located 76347 Veterans Way in Yulee, Florida. Bids received after 4:00 p.m. on August 8, 2018 will not be accepted.

Question & answers are shown as a clarification below.

Part 1 – Questions & Answers

- Q1. Bid Item 3.a.3 is 1 lump sum of surface repairs of what? Is this for paint only?
A1. *Bid Item 3.a.3 Surface Repairs including surface spalling and cementitious finish.*
- Q2. Bid Item 3.b is for 1 lump sum on the external. One lump sum of what? Is this for paint only?
A2. *Bid Item 3.b External Surface Repairs including surface spalling and cementitious finish.*
- Q3. Bid Item 3.c is for additional surface repairs in excess of 10% of what?
A3. *Items 3a.3, 3b, 8a.3, and 8b assume concrete surface repairs are up to 10% of the total surface area with 100% coatings.*

Invitation to Bid

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

- Q4. 09 90 00 par 3.08.A.3 - What, if any new steel materials require field coating other than ductile iron pipe. It appears all new clarifier and walkway components are either galvanized or aluminum and do not require field coatings.
46 43 01 par 2.02.D.8 – What is meant by “if applicable” after the word “coating”?
2.05 – By adding “which are not factory pre-coated” it leads them to believe there may be some items that will require field coating. What new items are to be field?
- A4. *For an example, if a motor comes with bare metal or only prime that needs to be field coated. We do not require coating on fabricated hot dip galvanized steel (with factory coating), stainless steel and aluminum. Anything is not factory coated will need field coating.*

Part 2 – Specification Revisions and Additions

1. SECTION 00 41 15 BID FORM

- a. Section 5.01, delete “3a” in row 3.c, add “3.a.3” after the word “in”
- b. Section 5.01, add “Surface Repairs” after the word “External” in row 3.b
- c. Section 5.01, delete “8a” in row 8.c, add “8.a.3” after the word “in”
- d. Section 5.01, add “Surface Repairs” after the word “External” in row 8.b

3.b	External Surface Repairs	LS	1		\$
3.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 3a 3.a.3 and 3b	SF	50		\$
8.b	External Surface Repairs	LS	1		\$
8.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 8a 8.a.3and 8b	SF	50		\$

ATTACHMENTS:

SECTION 00 41 15 BID FORM

ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM NO. 2, ISSUED DURING THE SOLICITATION PERIOD:

Vendor Signature: _____ **Date:** _____

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (signature page only). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project
Addendum No. 2

NC18-010

End of Addendum #2

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

SECTION 00 41 15

BID FORM

PROJECT IDENTIFICATION: Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project
Bid Number NC 18-010
Nassau County, Florida

BID DEADLINE: August 8, 2018
THIS BID IS SUBMITTED TO: Board of County Commissioners, Nassau County
Judicial Annex
Office of the Ex-Officio Clerk
76347 Veterans Way, Suite 456
Yulee, Florida 32097

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

Company Name (typed or printed): _____
Business address: _____
Phone No.: _____ Fax No.: _____
Contact Name: _____
Contact Title: _____
Contact email address: _____

- 2.01** Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of the County.

- 3.01** In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged:

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

Addendum No.

Addendum Date

_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect costs, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the work to be performed by the County and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

- I. Bidder has given Engineer of Record written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer of Record is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over the County.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

BID					
Item No	Pay Item Description	Units	Quantity	Cost Per Unit	Total Cost
Base Bid: Clarifier 1					
1	General Requirements	LS	1		\$
2	Demolition of Existing Internal Component	LS	1		\$
3	Concrete Repairs with Coatings				
3.a	Internal				
3.a.1	Crack Repairs	LF	10		\$
3.a.2	Structural Repairs	CF	10		\$
3.a.3	Surface Repairs	LS	1		\$
3.b	External Surface Repairs	LS	1		\$
3.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 3.a.3 and 3b	SF	50		\$
4	Clarifier Equipment - Installed and Grouted	LS	1		\$
5	Walkway Bolts Replacement	EA	50		\$

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

6	Electrical and Instrumentation	LS	1		\$
<i>Total For Base Bid: Clarifier 1</i>					\$
Alternate 1: Clarifier 2					
7	Demolition of Existing Internal Component	LS	1		\$
8	Concrete Repairs with Coatings				
8.a	Internal				
8.a.1	Crack Repairs	LF	10		\$
8.a.2	Structural Repairs	CF	10		\$
8.a.3	Surface Repairs	LS	1		\$
8.b	External Surface Repairs	LS	1		\$
8.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 8.a.3 and 8b	SF	50		\$
9	Clarifier Equipment - Installed and Grouted	LS	1		\$
10	New Circumferential Walkway	LS	1		\$
11	Electrical and Instrumentation	LS	1		\$
					\$
<i>Total For Clarifier 2</i>					\$
Alternate 2: Materials Upgrade (Stainless Steel)					
12	Clarifier 1	LS	1		\$
13	Clarifier 2	LS	1		\$
TOTAL BID LUMP SUM (ITEMS 1 to 13)					\$

(Total – Use Words)

Items 3a.3, 3b, 8a.3, and 8b assume concrete surface repairs are up to 10% of the total surface area with 100% coatings. Please see Section 01 11 10 Advertisement for Bids for details.

Lump sum price has been computed in accordance with Paragraph 11.01 of the General Conditions.

All specific cash allowances are included in the price(s) set forth above and have been computed in accordance with paragraph 11.02 of the General Conditions.

Unit prices have been computed in accordance with Paragraph 11.03B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

of comparison of Bids. Final payment of all Unit Price Bid Items will be based on actual quantities as determined in the Contract Documents.

6.01 Bidder agrees that the Work (Base Bid/Base Bid + Alternate 1) will be substantially complete within 270/330 calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 30 calendar days from the date of substantial completion. Total contract time shall be 300/360 calendar days; for everyday the work goes beyond substantial completion, a day will be removed from final completion so the total days equal 300/360 calendar days.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

7.01 The following documents are attached to and made a condition of this Bid:

- A. Bid Security in the form of a certified check of Bid Bond (Section 00 43 15)
- B. Tabulation of Subcontractors & Suppliers (Section 00 43 35)
- C. Florida Trench Safety Act Certification (Section 00 44 55)
- D. Bidder's Qualification Statement (Section 00 45 13)
- E. Non-collusion Affidavit (Section 00 45 19)
- F. Drug-Free Workplace Certificate (Section 00 45 20)
- G. Public Entity Crimes Statement
- H. Statement of Disputes, Litigation & Surety Completion
- I. E-Verify Affidavit of Compliance (Section 00 45 40)

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

SUBMITTED on _____, 20_____.

State Contractor License No. _____.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____

(Individual's Signature)

Doing business as: _____

Business address: _____

Phone No.: _____ Fax No.: _____

A Partnership

Partnership Name: _____

By: _____

(Signature of general partner - attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ Fax No.: _____

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____ (CORPORATE SEAL)

Attest _____

(Signature of Corporate Secretary)

Business address: _____

Phone No.: _____ Fax No.: _____

Date of Qualification to do business is _____

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

A Joint Venture

Joint Venturer Name: _____

By: _____

(Signature of joint venture partner - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

Joint Venturer Name: _____

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in a manner indicated above.)

END OF SECTION



NASSAU COUNTY
BOARD OF COUNTY COMMISSIONERS
Contract Management Department
96135 Nassau Place, Suite 2
Yulee, Florida 32097
904-530-6040 Fax: 904-321-5917

CM2619
Bid No. NC18-010
Grayson Hagins
Procurement Manager
ghagins@nassaucountyfl.com

TO: All Proposers
FROM: Grayson Hagins, Procurement Manager
SUBJECT: Addendum #3
Invitation to Bid, Bid Number NC18-010
NAU WWTF Clarifier Rehabilitation Project
August 7, 2018

REMINDER: This addendum must be acknowledged, signed and returned with your proposal. Failure to comply may result in disqualification of your submittal.

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents.

A non-mandatory pre-bid conference was held Friday, July 27, 2018 at 10:00 AM in the County Managers Conference Room (County Manager's Office), located at 96135 Nassau Place, Yulee, Florida 32097 for the Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project, Bid Number NC18-010. Copies of the sign-in sheets as well as the meeting agenda are attached to this addendum.

Grayson Hagins, Procurement Manager opened the meeting with introductions and discussion on the bid submittal requirements. **Bids are due by August 21, 2018 at 4:00 p.m.** Caution was given to the bidders, if they plan on delivering their bid on the deadline date, to allow sufficient time for security clearance at the Judicial Annex which is located 76347 Veterans Way in Yulee, Florida. Bids received after 4:00 p.m. on August 21, 2018 will not be accepted.

Question & answers are shown as a clarification below (if any). See Part 2 for update

Part 1 – Questions & Answers

N/A

Part 2 – Specification Revisions and Additions

*****Due Date Changed to 8/21/18*** Bids still must be received by 4:00 PM*****

*****Questions are encouraged and will be allowed until 8/14/18*****

ATTACHMENTS:

N/A

**ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM
NO. 3, ISSUED DURING THE SOLICITATION PERIOD:**

Vendor Signature: _____ **Date:** _____

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (**signature page only**). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

End of Addendum #3



NASSAU COUNTY
BOARD OF COUNTY COMMISSIONERS
Contract Management Department
96135 Nassau Place, Suite 2
Yulee, Florida 32097
904-530-6040 Fax: 904-321-5917

Grayson Hagins
Procurement Manager
ghagins@nassaucountyfl.com

TO: All Proposers
FROM: Grayson Hagins, Procurement Manager
SUBJECT: Addendum #4
Invitation to Bid, Bid Number NC18-010
NAU WWTF Clarifier Rehabilitation Project
August 16, 2018

REMINDER: This addendum must be acknowledged, signed and returned with your proposal. Failure to comply may result in disqualification of your submittal.

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents.

A non-mandatory pre-bid conference was held Friday, July 27, 2018 at 10:00 AM in the Commissioners Chambers, located at 96135 Nassau Place, Yulee, Florida 32097 for the Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project, Bid Number NC18-010. Copies of the sign-in sheets as well as the meeting agenda are attached to this addendum.

Grayson Hagins, Procurement Manager opened the meeting with introductions and discussion on the bid submittal requirements. **Bids are due by August 21, 2018 at 4:00 p.m.** Caution was given to the bidders, if they plan on delivering their bid on the deadline date, to allow sufficient time for security clearance at the Judicial Annex which is located 76347 Veterans Way in Yulee, Florida. Bids received after 4:00 p.m. on August 21, 2018 will not be accepted.

Question & answers are shown as a clarification below.

Part 1 – Questions & Answers

- Q1. The coating schedule in Section 09-90-00 states that submerged concrete (namely the interior of the clarifier walls) is to receive a finish coat of Tnemec Series 262 Elasto-Shield at 50 mils DFT. The drawings state the same surface shall receive 2 coats at 8-10 mils DFT. The drawings do not state the product for the interior, however it would be assumed that this should be a standard coal-tar epoxy style product, similar to the work recently performed on the aeration basins at this facility and on other clarifier rehabs throughout the state. The cost difference between these 2 applications is very significant, perhaps 5-10 times as much cost.
- A1. *Please see the revised Section 09 90 00 Painting and Coating, revised drawings M-5 and M-6.*

Invitation to Bid

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

- Q2. Confirm that no galvanized materials will require field painting. Answer to Q10 from Addendum 1 says to galvanize and coat.
- A2. *All galvanized surfaces shall not require field coating. However if the surface is damaged during the installation, the surface shall be cleaned per SSPC SP1, then coated with Tnemec Series 1 Omnithane applied at 2.5 – 3.5 mils DFT.*
- Q3. New specification section mentions steel components requiring field painting. What items in the project will be steel and require field painting?
- A3. *Such as steel piping and support steel. We do not require coating on fabricated hot dip galvanized steel (with factory coating), stainless steel and aluminum. Please see Section 09 90 00 Painting and Coating for details.*
- Q4. Is the 18” ductile iron pipe shown on M-5 the only ductile iron that will require painting?
- A4. *No. There is another 18” DI pipe for Clarifier No. 2.*
- Q5. Confirm on Q11 for Addendum 1 that each clarifier gets 150 spray nozzles.
- A5. *Yes.*
- Q6. With regards to Q12 from Addendum 1, it would be better for the owner if the grout removal requirement is deleted from the bid and negotiated later if needed. The way it is set up now the bids will carry the cost for the grout removal even if it is not needed.
- A6. *We believe this requirement stated in A12 from Addendum No.1 is most beneficial for NAU.*
- Q7. Confirm that all weirs, baffles and troughs in both clarifiers will be removed and replaced with all new FRP components including the trough support braces.
- A7. *Yes, all weirs, baffles and troughs in both clarifiers will be removed and replaced if the Base Bid + Alternate 1 is selected.*
Scum troughs are hot dipped galvanized for the Base Bid +Alternate 1 or stainless steel for Alternate 2. Weirs and scum baffles are FRP.
As stated in Section 46 43 01 Clarifier Rehabilitation, “The baffle sections shall be curved and fastened to the launder wall with adjustable FRP support brackets, stainless steel fasteners, and anchor bolts.” And “The effluent weir shall consist of FRP sections, fastened to the tank wall with Type 304 stainless steel anchor bolts and hex nuts and FRP washers to allow for vertical adjustment.”
- Q8. On the bid form Bid Item 3.a.3 and 8.a.3 should be changed to 1 linear feet of rebar repair. Bid Items 3a, 3c, 8a, and 8c should be removed. New painting for the clarifiers walls should be carried in bid items 3b and 8b as 1 lump sum.
- A8. *Thank you for the suggestions and please estimate based on the best knowledge of the existing facilities.*

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

Part 2 – Drawing Revisions and Additions

1. Sheet M-5, Clarifier #1 Coating Requirements, replace
2. Sheet M-6, Clarifier #2 Coating Requirements, replace

Part 3 – Specification Revisions and Additions

1. SECTION 09 90 00 Painting and Coating
 - a. Delete it in its entirety and replace with the new Section.

ATTACHMENTS:

SECTION 09 90 00 PAINTING AND COATING
SHEET M-5 CLARIFIER #1 COATING REQUIREMENTS
SHEET M-6 CLARIFIER #2 COATING REQUIREMENTS

**ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM
NO. 4, ISSUED DURING THE SOLICITATION PERIOD:**

Vendor Signature: _____ **Date:** _____

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (**signature page only**). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

End of Addendum #4

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

SECTION 09 90 00

PAINTING AND COATINGS

PART 1 - GENERAL

1.0.1 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.0.2 SUMMARY

- A. This specification defines the methods of surface preparation, coating systems, and methods of application for painting as outlined herein.
- B. The work includes painting/coating and finishing of the following items:
 1. Turntable Drive Unit and Motors
 2. Walkway/Access Bridge Supports, Trusses, Beams, Girders, and Other Structural Components
 3. Influent Well, Effluent Trough, Scum Outlet Port, and Interior Clarifier Wall
- C. The omission of minor items in the schedule of work shall not relieve the Contractor of his obligation to include such items where they come within the general intent of the specification as stated herein.
- D. The Contractor shall furnish all supervision, labor, tools, materials, equipment, scaffolding or other structures, and supervision required for the transportation, unloading, storage, and application of the paint/coating and associated products covered by this specification.
- E. The Contractor or subcontractor shall be certified and licensed for painting/coating and shall have a minimum of five (5) years of experience performing similar projects in the State of Florida.
- F. The Contractor shall perform surface preparation and application of the painting/coating strictly as specified herein, or if not specified herein, as recommended by the Painting/Coating Manufacturer or the Manufacturer's Representative for each item as specified herein or elsewhere.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

- G. The following items will not be painted/coated:
1. Any code requiring labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.
 2. Any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts, unless otherwise indicated.
 3. Aluminum handrails, walkways, windows, louvers, and grating unless otherwise specified herein or elsewhere.
 4. Signs and nameplates.
 5. Finish hardware.
 6. Products with polished chrome, or nickel finish.
 7. Plastic switch plates and receptacle plates.
 8. Flexible couplings, lubricated bearing surfaces, insulation and metal and plastic pipe interior.
 9. Sprinkler heads.
- H. All work shall be done in strict accordance with this specification, Contract Documents, and the painting package, including manufacturer's printed instructions.
- I. The Contractor will obtain, at its own expense, all permits, licenses and inspections and shall comply with all laws, codes, ordinances, rules, and regulations promulgated by authorities having jurisdiction, which may bear on the work. This compliance will include Federal Public Law 91-596 more commonly known as the "Occupational Safety and Health Act of 1970."
- J. Surfaces to be painted: (Refer to Section 3.8 Coating Systems Schedule for description of surfaces to be painted/coated, preparation, and their specified coating systems).

1.0.3 DEFINITIONS

- A. Abbreviations and Terms:
1. SSPC - Society for Protective Coatings

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

2. ASTM - American Society of Testing Materials
 3. NACE - National Association of Corrosion Engineers
 4. NSF - National Sanitation Foundation (Standard 61)
 5. AWWA - American Water Works Associates (AWWA D102-97)
 6. ICRI - International Concrete Repair Institute
 7. CSP - Concrete Surface Profile (1-10)
 8. PSDS - Product Safety Data Sheet
 9. MPI - Master Painters Institute
- B. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- C. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- D. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.
- E. Field Painting: is the painting of new or rebuilt items at the job site. Field painting shall be the responsibility of the Contractor.
- F. Shop Painting: is the painting of new or rebuilt items in the shop prior to delivery to the jobsite.
- G. Exterior: outside, exposed to weather
- H. Interior Dry: inside, not subject to immersion service
- I. Interior Wet: inside, subject to immersion service
- J. Exterior Wet; outside, subject to immersion service

1.0.4 RESOLUTION OF CONFLICTS

- A. It shall be the responsibility of the General Contractor to arrange a meeting prior to the start of painting/coating between the contractors, the painting/coating manufacturer, whose products are to be used, Owner, and Owner's Representative. All aspects of surface preparation, application and coating systems as specified herein will be reviewed at the Pre-Construction meeting.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

- B. Clarification shall be requested promptly from the Owner's Representative when instructions are lacking, conflicts occur in the specification, or the procedure seems improper or inappropriate for any reason.
- C. It shall be the responsibility of the Painting/Coating Manufacturer to have their factory representative meet in person with the Contractor and Owner's Representative a minimum of three (3) times during the job as a consultant on surface preparation, mil thickness of coating and proper application of coating unless meeting is determined to be unnecessary by the Owner's Representative. The coating supplier shall have access to the jobsite at all times.

1.0.5 SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. See "Writing Guide" Article in the Evaluations for discussion of first subparagraph below.
- C. Indicate VOC content & Performance criteria.
- D. Data Sheets:
 - 1. For each paint system, furnish a PSDS, the manufacturer's Technical Data Sheets, and paint colors available (where applicable) for each product used in the paint system. The PSDS form is appended to the end of this section.
 - 2. Submit required information on a system-by-system basis.
 - 3. Furnish copies of paint system submittals to the coating applicator.
 - 4. Indiscriminate submittal of manufacturer's literature only is not acceptable. Samples for Initial Selection: For each type of topcoat product indicated.
- E. Delete "Samples for Initial Selection" Paragraph above if colors and other characteristics are preselected and specified or scheduled. Retain "Samples for Verification" Paragraph below with or without above.
- F. Samples for Verification: For each type of coating system and each color and gloss of topcoat indicated.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Apply coats on Samples in steps to show each coat required for system.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- G. Product List: Cross-reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.
- H. Quality Control Submittals:
1. Applicator's Experience: List of references substantiating experience.
 2. Factory Applied Coatings: Manufacturer's certification stating factory applied coating system meets or exceeds requirements specified.
 3. If the manufacturer of finish coating differs from that of shop primer, provide both manufacturers written confirmation that materials are compatible.
 4. Manufacturer's written instructions and special details for applying each type of paint.
 5. Manufacturers' Certificate of Proper Application.

1.0.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1.0.7 DELIVERY, STORAGE, AND HANDLING

- A. Materials shall be delivered to the job site in the original packages with seals unbroken and with legible unmutated labels attached. Packages shall not be opened until they are inspected by the Owner's Representative and required for use. All painting materials shall be stored in a clean, dry, well-ventilated place, protected from sparks, flame, and direct rays of the sun or from excessive heat. Paint susceptible to damage from low temperatures shall be kept in a heated storage space when necessary. The Contractor shall be solely responsible for the protection of the materials stored by him at the job site. Empty coating cans shall be required to be neatly stacked in an areas designated by the Owner or Owner's Representative and removed from the job site on a schedule determined by the Owner or Owner's Representative. Owner and/or Owner's Representative may request a notarized statement from the Contractor detailing all materials used on the project.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

- B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F. Coating materials should be conditioned at 70⁰F– 80⁰F for at least 24 hours prior to use.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.0.8 INSPECTION OF SURFACES

- A. Before application of the prime coat and each succeeding coat, all surfaces to be coated shall be subject to inspection by the Owner's Representative or the coating manufacturer. Any defects or deficiencies shall be corrected by the Contractor before application of any subsequent coating.
- B. Samples of surface preparation and of painting systems shall be furnished by the Contractor to be used as a standard throughout the job, unless omitted by the Owner's Representative.
- C. When any appreciable time has elapsed between coatings, previously coated areas shall be carefully inspected by the Painting/Coating Manufacture or their factory representative, and where, in his opinion, surfaces are damaged or contaminated, they shall be cleaned and recoated at the Contractor's expense. Recoating times of manufacturer's printed instructions shall be followed.
- D. Coating thickness shall be determined by the use of a properly calibrated "Nordson-Mikrotest" "Positest" Coating Thickness Gauge (or equal) for ferrous metal or an OG232 "Tooke" Paint Inspection gauge (or equal) for non-ferrous and cementitious surfaces. Please note that use of the "tooke" gauge is classified as a destructive test and repairs due to testing shall be performed by the Contractor. Thickness testing shall be performed in the presence of the Owner's and coating representative.
- E. Prior to coating and if more than two days has elapsed between coats, the surface shall be testing for chloride contamination.

1.0.9 EQUIPMENT & PREPARATION OF MATERIALS

- A. Effective oil and water separators shall be used in all compressed air lines serving spray painting and sandblasting operations to remove oil or moisture from the air before it is used. Separators shall be placed as far as practical from the compressor.
- B. All equipment for application of the paint and the completion of the work shall be furnished by the Contractor in first-class condition and shall comply with recommendations of the painting/coating manufacturer.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

- C. Mechanical mixers, capable of thoroughly mixing the pigment and vehicle together, shall mix the paint/coating prior to use where required by manufacturer's instructions; thorough hand mixing will be allowed for small amounts up to one (1) gallon. Pressure pots shall be equipped with mechanical mixers to keep the pigment in suspension, when required by manufacturer's instructions. Otherwise, intermittent hand mixing shall be done to assure that no separation occurs. All mixing shall be done in accordance with SSPC Vol. 1, Chapter 4, "Practical Aspects, Use and Application of Paints" and/or with manufacturer's recommendations.
- D. Catalysts or thinners shall be as recommended by the manufacturer and shall be added or discarded strictly in accordance with the manufacturer's instruction.

1.10 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50°F and 95°F.
- B. Do not apply coatings when the surface temperatures is less than 5°F below the dew point; or to damp or wet surfaces.
- C. Do not apply exterior coatings in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.0.1 MANUFACTURERS

- A. Tnemec Coatings, Kansas City, MO
- B. Carboline Coatings Co., St. Louis, MO.
- C. Corrocoat - 6525 Greenland Road, Jacksonville, FL.
- D. PPG Industrial Coatings - One PPG Place, Pittsburgh, PA.
- E. Sherwin-Williams, 601 Canal Rd; Cleveland, OH.
- F. This specification is written with Tnemec as the Basis of Design. Other acceptable manufactures may include, the above providing they supply comparative performance data on the products proposed. Performance data should include, Adhesion, Abrasion resistance, ASTM G210 Testing, Salt Gog testing per ASTM B-117, immersion testing per ASTM D-870 and others.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

2.0.2 HIGH-PERFORMANCE COATINGS, GENERAL

A. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated. Compatibility for coatings shall be listed on the coating manufactures literature.
3. If retaining subparagraph below, coordinate products retained, if any, in other Part 2 articles, to ensure that one manufacturer can provide products for an entire system.
4. Products shall be of same manufacturer for each coat in a coating system.
5. Material Quality: Manufacturer's highest quality products and suitable for intended service. Use only those products specified.
6. Materials Including Primer and Finish Coats: Produced by same manufacturer.
7. Thinners, Cleaners, Driers, and Other Additives: As recommended by manufacturer of the particular coating.

B. Retain second option in "VOC Content" Paragraph below if required for LEED-NC, LEED-CI, or LEED-CS Credit IEQ 4.2; coordinate with products selected. For names of products that comply, see products listed as complying with LEED VOC limits on "MPI Approved Products Lists."

C. VOC Content: Products shall comply with VOC limits of 250 gm/l for the State of Florida.

D. Retain "Low-Emitting Materials" Paragraph below if required for LEED for Schools.

E. Low-Emitting Materials: Interior coatings shall comply with the testing and product requirements of the California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

F. All new piping, appurtenances and equipment shall be purchased shop lined and/or coated with touch up kits provided for damage caused during installation.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

- G. Colors, where not specified, shall match as close as possible to the existing color of the existing facilities or as selected by the Owner or Owner's Representative.
- H. All coatings in contact with potable water need to be NSF Tested and Listed Certified in accordance with ANSI/NSF Standard 61.
- I. Paint used in successive field coats shall be produced by the same manufacturer. Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to underlying paint. Shop paint shall be of the same type and manufacturer as used for field painting by the Contractor.
- J. Emulsion and alkyd paints shall contain a mildewcide and both the paint and mildewcide shall conform to OSHA and Federal requirements, including Federal specification TT-P-19.
- K. Rags shall be clean painters rags, completely sterilized.

2.0.3 SOURCE QUALITY CONTROL

- A. Testing of Coating Materials: Owner reserves the right to invoke the following procedure:
 - 1. Owner will engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
 - 2. Testing agency will perform tests for compliance with product requirements.
 - 3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

PART 3 - EXECUTION

3.0.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent. (Consult the manufactures current literature for moisture limits.)
- C. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.0.2 SURFACE PREPARATION

- A. The surface shall be cleaned as specified for the paint system being used. All cleaning shall be as outlined in the Steel Structures Painting Council's Surface Preparation Specification, unless otherwise noted. If surfaces are subject to contamination, other than mill scale or normal atmospheric rusting, the surfaces shall be pressure washed, and acid or caustic pH residues neutralized, in addition to the specified surface preparation. Surfaces close to the coast shall be checked for chloride contamination and may require daily washing.
- B. Standards for Surface Preparation:
 - 1. SSPC-SP1 Chemical and/or Solvent Cleaning: Remove all grease, oil, salt, acid, alkali, dirt, dust, wax, fat, foreign matter, and contaminants, etc. by one of the following methods: steam cleaning, alkaline cleaning, or volatile solvent cleaning.
 - 2. SSPC-SP2 Hand Tool Cleaning: Removal of loose rust, loose mill scale, and loose paint to a clean sound substrate by hand chipping, scraping, sanding, and wire brushing.
 - 3. SSPC-SP3 Power Tool Cleaning: Removal of loose rust, loose mill scale, and loose paint to a clean sound substrate by power tool chipping, descaling, sanding, wire brushing, and grinding.
 - 4. SSPC-SP5 (NACE-1) White Metal Blast Cleaning: Complete removal of all mill scale, rust, rust scale, previous coating, etc., leaving the surface a uniform gray-white color.
 - 5. SSPC-SP6 (NACE-3) Commercial Grade Blast Cleaning: Complete removal of all dirt, rust scale, mill scale, foreign matter, and previous coatings, etc., leaving only shadows and/or streaks caused by rust stain and

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 4

mill scale oxides. At least 66% of each square inch of surface area is to be free of all visible residues, except slight discoloration.

6. SSPC-SP7 (NACE-4) Brush-Off Blast Cleaning: Removal of rust scale, loose mill scale, loose rust, and loose coatings, leaving tightly bonded mill scale, rust and previous coatings. On concrete surfaces, brush-off blast cleaning shall remove all laitance, form oils, and solid contaminants. Blasting should be performed sufficiently close to the surface so as to open up surface voids, bug holes, air pockets, and other subsurface irregularities, but so as not to expose underlying aggregate.
 7. SSPC-SP10 (NACE-2) Near-White Blast Cleaning: Removal of all rust scale, mill scale, previous coating, etc., leaving only light stains from rust, mill scale, and small specks of previous coating. At least 95% of each square inch of surface area is to be free of all visible residues and the remainder shall be limited to slight discoloration.
 8. SSPC-SP11 Power Tool Cleaning to Bare Metal: Complete removal of rust, rust scale, mill scale, foreign matter, and previous coatings, etc., to a standard as specified on a Commercial Grade Blast Cleaning (SSPC-SP6, NACE-3) by means of power tools that will provide the proper degree of cleaning and surface profile.
 9. SSPC-SP12 (NACE-2) Surface Preparation by Water Jetting: Surface preparation of steel and other substrates by ultra-high pressure water jetting.
 10. SSPC-SP13 (NACE-6) Surface Preparation of Concrete: Surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems.
 11. SSPC-SP14 (NACE-8) Industrial Blast Cleaning: Surface preparation standards for industrial blast cleaning allowing for traces of tightly adherent mill scale, rust, & coating residues on 10% of the surface.
 12. SSPC-SP15 Commercial Grade Power Tool Cleaning: Commercial grade power tool cleaning a steel surface to produce a 1.0-mil surface profile. This method of cleaning falls between SP3 & SP11.
 13. SSPC-SP16 Brush-Off Blast Cleaning of Non-Ferrous Metals: Brush-off blast cleaning of coated or uncoated metal surfaces other than carbon steel prior to the application of a protective coating system. Roughen and clean coated and uncoated non-ferrous metal substrates, including, but not limited to, galvanized surfaces, stainless steel, copper, aluminum, and brass.
- C. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- D. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
1. Coordination of shop-applied prime coats with high-performance coatings is critical.
 2. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.
- E. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
1. Clean surfaces with pressurized water. The pressure range used for cleaning is to be selected by the Contractor based on the surface condition and coating manufacturer's specifications.
 2. Abrasive blast clean surfaces to comply with SSPC-SP 7/NACE No. 4.
- F. Retain "Steel Substrates" Paragraph below if steel is not shop primed or if shop primer is removed in the field.
- G. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.
1. SSPC-SP 7/NACE No. 4.
 2. SSPC-SP 11.
 3. SSPC-SP 6/NACE No. 3.
 4. SSPC-SP 10/NACE No. 2.
 5. SSPC-SP 5/NACE No. 1.
- H. Retain "Shop-Primed Steel Substrates" Paragraph below if primers are shop applied and are not removed in the field.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 4

- I. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- J. Galvanized-metal substrates should not be chromate passivated if primers are field applied. If galvanized metal is chromate passivated, consult manufacturers for appropriate surface preparation and primers.

Galvanized-Metal Substrates: All galvanized surfaces shall not require field coating. However, if the surface is damaged during the installation, the surface shall be cleaned per SSPC SP1, then coated with Tnemec Series 1 Omnithane applied at 2.5 – 3.5 mils DFT.
- K. If necessary, insert requirements for acid etching aluminum.
- L. Aluminum Substrates: Remove loose surface oxidation. For aluminum in contact with concrete (alkaline) a barrier coating shall be used to insulate the aluminum. Use Tnemec Series 45-465Tnemecol at 20 mils DFT.
- M. Ductile Iron Pipe Surface Preparation shall conform to NAPF Section 500 “Coatings and Linings” latest edition.
- N. Visual standards – SSPC-VIS-1(Swedish SIS OS 5900), “Pictorial Surface Preparation Standards for Painting Steel Surfaces,” and the National Association of Corrosion Engineers, “Blasting Cleaning Visual Standards” TM-01-70 and TM-01-75 shall be considered as standards for proper surface preparation.
- O. Visual standards from International Concrete Repair Institute CSP1-10 for degree of roughness and surface profile of concrete.
- P. Oil, grease, soil, dust, etc., deposited on the surface preparation that has been completed shall be removed prior to painting according to SSPC-SP1 Solvent Cleaning.
- Q. Weld flux, weld spatter and excessive rust scale shall be removed by Power Tool Cleaning as per SSPC-SP11-87T.
- R. All weld seams, sharp protrusions, and edges shall be ground smooth prior to surface preparation or application of any coatings. All steel coating applications require all welds, connections, seams, edges, etc. be stripe coated.
- S. All areas requiring field welding shall be masked off prior to shop coating, unless waived by the Owner's Representative.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 4

- T. All areas which require field touch-up after erection, such as welds, burnbacks, and mechanically damaged areas, shall be cleaned by thorough Power Tool as specified in SSPC-SP11-87T.
- U. Touch-up systems will be same as original specification except that approved manufacturer's organic zinc-rich shall be used in lieu of inorganic zinc where this system was originally used. Also strict adherence to manufacturer's complete touch-up recommendations shall be followed. Any questions relative to compatibility of products shall be brought to the Owner's Representative's attention; otherwise, Contractor assumes full responsibility.

3.0.3 PRETREATMENTS

- A. When specified, the surface shall be pretreated in accordance with the specified pretreatment prior to application of the prime coat of paint.

3.0.4 APPLICATION

- A. Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
 - 1. Use applicators and techniques suited for coating and substrate indicated.
 - 2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Coat backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 5. All steel in immersion or exposed to the elements shall be seal welded if necessary.
- B. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.
- C. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.
- D. Paint shall be applied only on thoroughly dry surfaces and during periods of favorable weather, unless otherwise allowed by the paint/coating manufacturer. Except as provided below, painting shall not be permitted when the atmospheric

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 4

temperature is below 50° F, or when freshly painted surfaces may be damaged by rain, fog, dust, or condensation, and/or when it can be anticipated that these conditions will prevail during the drying period. Note some materials may have a lower minimum atmospheric temperature and manufacturer's recommendation shall be followed.

- E. No coatings shall be applied unless surface temperature is a minimum of 5° above dew point; temperature must be maintained during curing.
- F. Dew Point: temperature at which moisture will condense on surface. No coatings should be applied unless surface temperature is a minimum of 5° above this point. Temperature must be maintained during curing.
 - 1. Example: If air temperature is 70°F and relative humidity is 65%, the dew point is 57°F. No coating should be applied unless surface temperature is 62°F minimum.
- G. Suitable enclosures to permit painting during inclement weather may be used if provisions are made to control atmospheric conditions artificially inside the enclosure, within limits suitable for painting throughout the painting operations.
- H. Field Painting in the immediate vicinity of, or on, energized electrical and rotating equipment, and equipment and/or pipes in service shall not be performed without the approval of the Owner's Representative.
- I. The Contractor's scaffolding shall be erected, maintained, and dismantled without damage to structures, machinery, equipment or pipe. Drop cloths shall be used where required to protect buildings and equipment. All surfaces required to be clear for visual observations shall be cleaned immediately after paint application.
- J. The prime coat shall be applied immediately following surface preparation and in no case later than the same working day. All paint shall be applied by brushing, paint mitt and roller, conventional spraying, or airless spraying, using equipment approved by the paint/coating manufacturer. Apply all coatings before any rust bloom forms.
- K. Each coat of paint shall be recoated as per manufacturer's instructions. Paint/coating shall be considered re-coatable when an additional coat can be applied without any detrimental film irregularities such as lifting or loss of adhesion. Follow the manufactures printed recoat times.
- L. Surfaces that will be inaccessible after assembly shall receive either the full specified paint system or three shop coats of the specified primer before assembly.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 4

- M. Finish colors shall be in accordance with the Owner's Direction or match existing colors and shall be factory mixed (i.e., there shall be no tinting by the Contractor).
- N. All edges and weld seams in immersion service shall receive a "stripe coat" (applied by brush) after the 1st coat.
- O. All hairline cracks or patches shall receive "stripe coat" of the 1st coat prior to application of the full 1st coat.

3.0.5 APPLICATION OF PAINT

A. By Brush and/or Rollers:

- 1. Top quality, properly styled brushes and rollers shall be used. Rollers with a baked phenol core shall be utilized.
- 2. The brushing or rolling shall be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Brush or roller strokes shall be made to smooth the film without leaving deep or detrimental marks.
- 3. Surfaces not accessible to brushes or rollers may be painted by spray, by dauber or sheepskins, and paint mitt.
- 4. It may require two (2) coats to achieve the specified dry film thickness if application is by brush and roller.

B. Air, Airless, or Hot Spray:

- 1. The equipment used shall be suitable for the intended purpose, shall be capable of properly atomizing the paint to be applied and shall be equipped with suitable pressure regulators and gauges.
- 2. Paint shall be applied in a uniform layer, with a 50% overlap pattern. All runs and sags should be brushed out immediately or the paint shall be removed and the surface resprayed.
- 3. High build coatings should be applied by a crosshatch method of spray application to ensure proper film thickness of the coating.
- 4. Areas inaccessible to spray shall be brushed; if also inaccessible to brush, daubs or sheepskins shall be used, as authorized by the manufacturer.
- 5. Special care shall be taken with thinners and paint temperatures so that paint of the correct formula reaches the receiving surface.
- 6. Nozzles, tips, etc., shall be of sizes and designs as recommended by the manufacturer of the paint being sprayed.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

7. The first coat on concrete surfaces in immersion service should be thinned, then sprayed and backrolled or roller applied.

3.0.6 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.
 1. Contractor shall touch up and restore coated surfaces damaged by testing.
 2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

3.0.7 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.
- E. It shall be the responsibility of the Contractor to protect at all times, in areas where painting is being done, floors, materials of other crafts, equipment, vehicles, fixtures, and finished surfaces adjacent to paint/coating work. Cover all electric plates, surface hardware, nameplates, gauge glasses, etc., before start of painting/coating work.
- F. At the option of the Owner's Representative during the course of this project, the Contractor will contain all spent abrasives, old paint chips, paint overspray and debris by means suitable to the Owner's Representative, including but not limited to, full shrouding of the area.
- G. If shrouding is required, the Contractor must provide a complete design of the intended shroud or cover. Care must be taken not to modify or damage the structure

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 4

during the use of the shroud. If damage should occur, the Contractor is held responsible for all repairs.

- H. At completion of the work, remove all paint/coating where spilled, splashed, splattered, sprayed or smeared on all surfaces, including glass, light fixtures, hardware, equipment, painted, and unpainted surfaces.
- I. After completion of all painting, the Contractor shall remove from job site all painting/coating equipment, surplus materials, and debris resulting from the Work.
- J. The Contractor is responsible for the removal and proper disposal of all hazardous materials from the jobsite in accordance with Local, State, and Federal requirements as outlined by the United States Environmental Protection Agency (USEPA).
- K. A notarized statement shall be presented to the Owner and Owner's Representative that all hazardous materials have been disposed of properly including but not limited to: name of disposal company, disposal site, listing of hazardous materials, weights of all materials, cost per pound and USEPA registration number.

3.0.8 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

- A. Painting/coating all items specified here in shall be in accordance with the manufacturer's recommendations for surface preparation, painting/coating system and application methods. If the painting/coating surface preparation, painting/coating system, dry film thicknesses, and application methods specified herein are in conflict the manufacturer's recommendations, the manufacturer's recommendations shall supersede what is specified herein:

- 1. Steel – New Steel Components, Factory Primed excluding DIP, i.e.: steel piping, support steel,

Exterior Exposure (Non-Immersion)

At the Shop:

Surface Preparation: SSPC-SP6 Commercial Blast Cleaning, min 1.5 mil blast profile.

Primer: 90-97 Tneme-Zinc

DFT-Mils
2.5 – 3.5

Note: At the shops option, Tnemec Series 90G-1K97 Tneme-Zinc may be applied at the same thickness.

NAU WWTF Clarifier Rehabilitation Project
 Addendum No. 4

NC18-010

In the Field:

Surface Preparation: SSPC SP 3 Power Tool cleaning and Spot Prime with 66HS

		<u>DFT-Mils</u>
Intermediate Coat:	66HS Hi-Build Epoxoline	3.0 – 5.0
Finish Coat:	750 UVX	<u>2.5 – 5.0</u>
		5.5 – 10.0
		Minimum 5.5 Mils DFT

2. Ductile Iron – Exposed (Outside Diameter) ; above grade

Surface Preparation: Clean factory primed pipe by pressure washing before surface preparation. Preferred: Use SSPC-SP7 for removal of rust scale, loose mill scale, loose rust, and loose coatings. Acceptable: Clean rusted or damaged areas by SSPC SP 3 Power Tool cleaning.

		<u>DFT-Mils</u>
Spot Primer:	66HS Hi-Build Epoxoline	3.0 - 5.0
Intermediate Coat:	66HS Hi-Build Epoxoline	4.0 - 6.0
Finish Coat:	750 UVX	<u>2.5 - 5.0</u>
		9.5-16.0
		Minimum 9.5 Mils

3. Concrete - Submerged Structural Fabrications (Influent Well, Effluent Trough, Scum Outlet Port, and Interior Clarifier Wall)

Surface Preparation: Pressure wash first at 3500 psi before beginning the surface preparation, sweep abrasive blast per SSPC-SP7 with min 1.5 mil blast profile. Feather to well adhered existing coating.

		<u>DFT-Mils</u>
Primer:	Series 66HS	4.0-8.0
	(Preferred color 1211 red)	
Finish Coat:	Series 46 H-413	Total: <u>15.0 - 20.0</u>
		19.0 – 28.0
		Minimum 19.0 Mils

Note:

- a. After primer, optionally use Tnemec Series 215 Surfacing Epoxy for selective concrete repairs;
- b. Apply Finish coat in one or two-coats to total DFT specified.

NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

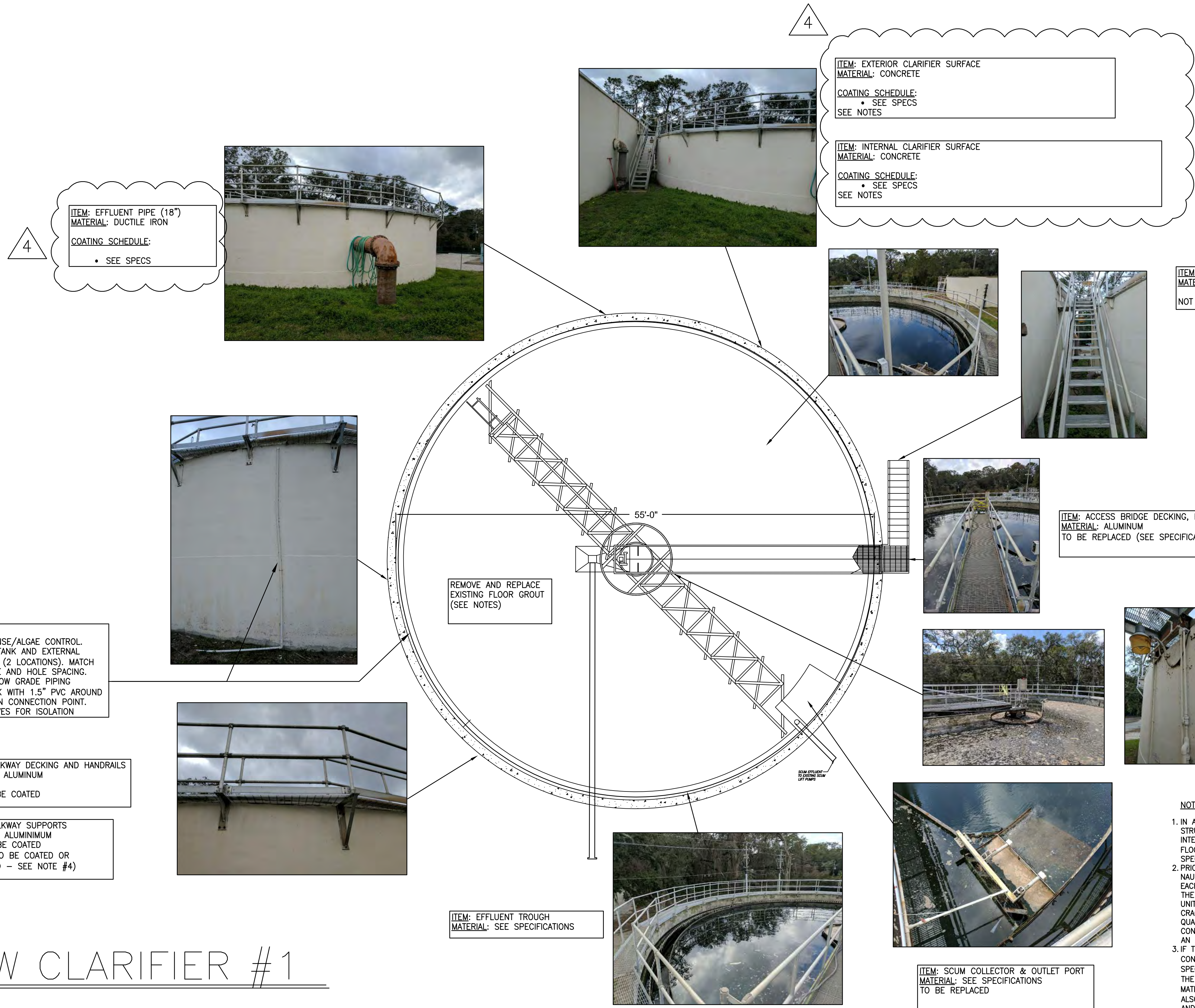
- c. Performance criteria for Series 46H-413: Salt fog testing per ASTM B-117; No blistering, cracking, rusting or delamination at 9,000 hours of exposure.


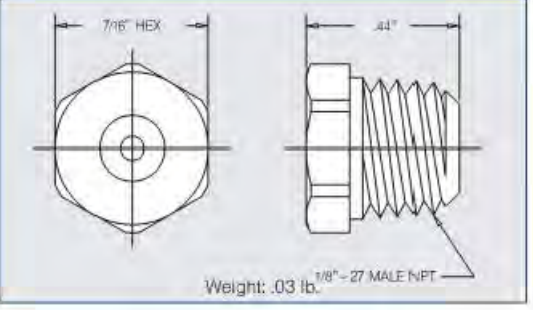
4. Concrete – Exteriors of Existing Concrete- above grade

Surface Preparation: Remove all dirt, oil, grease, chalk, and loose paint per High Pressure Water Blast (Min 3500 PSI). Repair any spalled concrete as required.

		<u>DFT-Mils</u>
Primer:	151 Elasto-Grip	300-350 sq ft per gallon
Intermediate Coat:	Series 1026	2.0 - 3.0
Finish coat:	Series 1026	<u>2.0 - 3.0</u>
		4.0 – 6.0

END OF SECTION



	
Ordering no.	Orifice Diameter
599, 040, 17, 00, 15	.015" (0.38 mm)
599, 040, 17, 00, 25	.025" (0.64 mm)
599, 040, 17, 00, 31	.031" (0.79 mm)
599, 040, 17, 00, 40	.040" (1.0 mm)

Weight: .03 LB. 1/8" - 27 MALE TPI

PROVIDE 150 HIGH PRESSURE NOZZLES

ITEM: STAIRCASE, HANDRAILS, SUPPORTS
MATERIAL: ALUMINUM
NOT TO BE COATED

ITEM: ACCESS BRIDGE DECKING, HANDRAILS, KICKPLATE
MATERIAL: ALUMINUM
TO BE REPLACED (SEE SPECIFICATIONS)

ITEM: ACCESS BRIDGE TRUSSES, BEAMS, GIRDERS, AND STRUCTURAL SUPPORTS
MATERIAL: SEE SPECIFICATIONS
TO BE REPLACED

NOTES

- IN ADDITION TO THE REPLACEMENT OF THE CLARIFIER EQUIPMENT, THE EXISTING CONCRETE STRUCTURE SHOULD BE FULLY REHABILITATED AND COATED AS PART OF THIS PROJECT. THE INTERIOR AND EXTERIOR SURFACE SHALL BE CLEANED, REPAIRED AND COATED. THE INTERIOR FLOOR SHALL BE RE-GROUTED (REMOVE EXISTING GROUT AND RE-GROUT). SEE SPECIFICATIONS.
- PRIOR TO ALL STRUCTURAL REPAIRS AND COATINGS, THE CONTRACTOR SHALL COORDINATE WITH NAU AND THE ENGINEER TO ARRANGE FOR INSPECTIONS UPON DRAINING AND CLEANING OF EACH CLARIFIER. THE CONTRACTOR AND APPLICABLE SUB-CONTRACTORS SHALL WORK WITH THE ENGINEER TO INSPECT, NOTATE AND AGREE UPON THE REQUIRED REPAIRS BASED ON THE UNIT BID PRICING. THE CONTRACTOR SHALL DOCUMENT AND NOTATE DEFICIENCIES, INCLUDING CRACKING OR DETERIORATION THAT IS FOUND, NOTING THE EXPECTED REPAIR TYPE AND QUANTITY REQUIRED. IF AT ANY LOCATION DETERIORATION IS FOUND TO BE TOO SEVERE, THE CONTRACTOR SHALL NOTIFY NAU AND THE ENGINEER, WORKING WITH THE TEAM TO DETERMINE AN APPROPRIATE REPAIR METHOD.
- IF THE INSPECTION DOES NOT NOTE DAMAGE OR AFTER SAID DAMAGE HAS BEEN MITIGATED, THE CONTRACTOR SHALL APPLY A HIGH PERFORMANCE COATING (AS DEFINED WITHIN THE SPECIFICATIONS) TO THE INTERIOR OF THE CLARIFIER CONCRETE SURFACES AFTER PERFORMING THE COATING MANUFACTURER'S RECOMMENDED PREPARATION OF CONCRETE SURFACES AND PIPE MATERIALS AT EACH PENETRATION. ADHERENCE TO THE MANUFACTURER'S REQUIREMENTS SHALL ALSO APPLY TO ALL APPLICATION CONDITIONS, APPLICATION RATES, WET/DRY FILM THICKNESS, AND USE OF PRIMERS, INTERMEDIATE, AND FINAL COAT SELECTION AND USE.
- THE EXISTING STAIRS AND CIRCUMFERENTIAL WALKWAY ARE TO REMAIN, BUT THE SUPPORTING STRUCTURES, BOLTS, AND FASTENERS ARE TO BE MECHANICALLY CLEANED TO REMOVE RUST (WIRE BRUSH) AND HIGH PERFORMANCE COATING APPLIED, OR REPLACED IF FOUND TO BE STRUCTURALLY UNSOUND (AS AGREED TO BY THE ENGINEER).
- THE BID TAB INCLUDES ALTERNATE EQUIPMENT MATERIALS FOR THE CLARIFIER. THIS SHALL BE SELECTED BY NAU AND THE ENGINEER AT THE TIME OF BID. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE SELECTED MATERIALS ARE PROPERLY COATED AND ISOLATED TO PREVENT GALVANIC CONTINUITY/CORROSION. THIS SHALL INCLUDE THE USE OF ISOLATION PADS AND SLEEVES ON FASTENERS WHERE REQUIRED.

PLANVIEW CLARIFIER #1

CLARIFIER#1 COATING REQUIREMENTS
CLARIFIERS #1 AND #2 REHABILITATION
NASSAU COUNTY

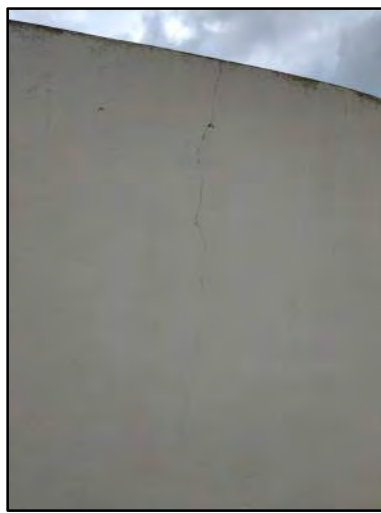
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PROJECT NO./DASH NO.
A120925.12

SHEET
M-5



ITEM: EXTERIOR CLARIFIER SURFACE
MATERIAL: CONCRETE
COATING SCHEDULE:
• SEE SPECS
SEE NOTES

ITEM: INTERNAL CLARIFIER SURFACE
MATERIAL: CONCRETE
COATING SCHEDULE:
• SEE SPECS
SEE NOTES

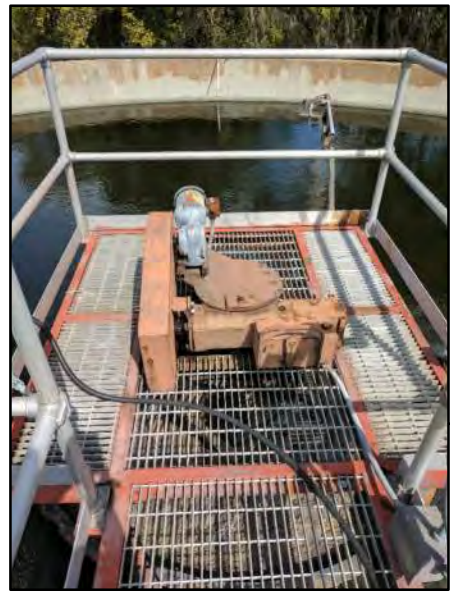
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PROVIDE 150 HIGH PRESSURE NOZZLES

ITEM: INTERNAL CLARIFIER WALL, EFFLUENT TROUGH
MATERIAL: CONCRETE
COATING SCHEDULE:
• SEE SPECS

4

ITEM: TURNTABLE DRIVE UNIT AND MOTORS
MATERIAL: VARIES
NOT TO BE COATED; TO BE REPLACED



	Ordering no.	Orifice Diameter
599, 040, 17, 00, 15		(1/16" (0.38 mm))
599, 040, 17, 00, 15		(3/32" (0.94 mm))
599, 040, 17, 00, 31		(1/8" (3.18 mm))
599, 040, 17, 00, 40		(5/32" (1.59 mm))

1" PVC LINE
FOR WEIR RINSE/ALGAE
CONTROL. REPLACE IN TANK
AND EXTERNAL SUPPLY PIPE (2
LOCATIONS). PROVIDE AND
INSTALL 150 EQUALLY SPACED
NOZZLES (SEE FIGURE)

ITEM: ACCESS BRIDGE TRUSSES, BEAMS, GIRDERS, AND
STRUCTURAL SUPPORTS
MATERIAL: SEE SPECIFICATIONS
TO BE REPLACED



REMOVE AND REPLACE
EXISTING FLOOR GROUT
(SEE NOTES)

ITEM: INSTRUMENTATION
MATERIAL: VARIES
NOT TO BE COATED; TO BE REPLACED



1" PVC LINE
FOR WEIR RINSE/ALGAE
CONTROL. REPLACE IN TANK
AND EXTERNAL SUPPLY PIPE (2
LOCATIONS). MATCH EXISTING
PIPE AND HOLE SPACING.
REPLACE BELOW GRADE PIPING
AROUND TANK WITH 1.5" PVC
AROUND TANK TO MAIN
CONNECTION POINT. PROVIDE
VALVES FOR ISOLATION

ALL PIPING TO BE RELACED.
REROUTE FLUSH WITH
LOWER TANK WALL.

TO BE
REMOVED

ITEM: ACCESS BRIDGE, SERVICE DECK,
HAND RAILING, DECKING
MATERIAL: ALUMINUM
NOT TO BE COATED; TO BE REPLACED



ITEM: STAIRCASE, HAND RAILING, DECKING
MATERIAL: ALUMINUM
NOT TO BE COATED



ITEM: ACCESS BRIDGE DECKING AND HANDRAILS
MATERIAL: ALUMINUM
NOT TO BE COATED; TO BE REPLACED



ITEM: INTERNAL SCUM PIT
MATERIAL: CONCRETE
COATING SCHEDULE:
• SEE SPECS

ITEM: EXTERIOR SCUM PIT
MATERIAL: CONCRETE/STEEL PIPING
COATING SCHEDULE:
• SEE SPECS
SEE NOTES

ITEM: EFFLUENT PIPE (18")
MATERIAL: DUCTILE IRON
COATING SCHEDULE:
• SEE SPECS

4

4

PLANVIEW CLARIFIER #2

CLARIFIER #2 COATING REQUIREMENTS CLARIFIERS #1 AND #2 REHABILITATION NASSAU COUNTY

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JACKSONVILLE, FLORIDA 32207
PHONE: (407) 423-8398

PROJECT NO./DASH NO.
A120925.12

SHEET
M-6

SEAL

Jules J. Amato Jr., P.E.
Florida Registration #31049

gai consultants
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PROJECT NO./DASH NO.

EXHIBIT 1

GENERAL INFORMATION AND INSURANCE REQUIREMENTS

GENERAL INFORMATION AND MINIMUM INSURANCE REQUIREMENTS

COMMERCIAL GENERAL LIABILITY INSURANCE

The Contractor shall purchase and maintain at the Contractor's expense Commercial General Liability insurance coverage (ISO or comparable Occurrence Form) for the life of this Contract. Modified Occurrence or Claims Made forms are not acceptable.

The Limits of this insurance shall not be less than the following limits:

Each	Occurrence Limit	\$1,000,000
Personal & Advertising Injury Limit		\$1,000,000
Fire Damage Limit (any one fire)		\$ 300,000
Medical Expense Limit (any one person)		\$ 10,000
Products & Completed Operations Aggregate Limit		\$2,000,000
General Aggregate Limit (other than Products & Completed Operations) Applies Per Project		\$2,000,000

General liability coverage shall continue to apply to "bodily injury" and to "property damage" occurring after all work on the Site of the covered operations to be performed by or on behalf of the additional insureds has been completed and shall continue after that portion of "your work" out of which the injury or damage arises has been put to its intended use.

WORKERS' COMPENSATION AND EMPLOYER'S LIABILITY INSURANCE

The Contractor shall purchase and maintain at the Contractor's expense Workers' Compensation and Employer's Liability insurance coverage for the life of this Contract.

The Limits of this insurance shall not be less than the following limits:

Part One – Workers' Compensation Insurance – Unlimited
 Statutory Benefits as provided in the Florida Statutes and

Part Two – Employer's Liability Insurance

Bodily Injury By Accident	\$500,000 Each Accident
Bodily Injury By Disease	\$500,000 Policy Limit
Bodily Injury By Disease	\$500,000 Each Employee

*If leased employees are used, policy must include an Alternate Employer's Endorsement

AUTOMOBILE LIABILITY INSURANCE

The Contractor shall purchase and maintain at the Contractor's expense Automobile Liability insurance coverage for the life of this Contract.

The Limits of this insurance shall not be less than the following limits:

Combined Single Limit – Each Accident	\$1,000,000
---------------------------------------	-------------

Covered Automobiles shall include any auto owned or operated by the insured Contractor, insured Sub-subcontractor including autos which are leased, hired, rented or borrowed, including autos owned by their employees which are used in connection with the business of the respective Contractor or Sub-subcontractor.

UMBRELLA INSURANCE

The Contractor shall purchase and maintain at the Contractor's expense Umbrella Liability (Umbrella Form) insurance coverage for the life of this Contract.

The Limits of this insurance shall not be less than the following limits:

Each	Occurrence Limit	\$1,000,000
	Aggregate Limit	\$1,000,000

ENVIRONMENTAL LIABILITY INSURANCE

This additional coverage will be required by any Contractor performing environmental and/or other investigations involving excavation, drilling, or other site disturbance activities.

The Contractor shall purchase and maintain at the Contractor's expense Environmental Liability insurance (Contractors Pollution Liability) coverage for the life of this Contract.

The Limits of insurance shall not be less than the following limits: \$1,000,000 Each Loss/Aggregate

Such Coverage will include bodily injury, sickness, and disease, mental anguish or shock sustained by any person, including death; property damage including physical injury to destruction of tangible property including resulting loss of use thereof, cleanup costs, and the loss of use of tangible property that has not been physically injured or destroyed; defense including costs charges and expenses incurred in the investigation, adjustment or defense of claims for such compensatory damages; coverage for losses caused by pollution conditions that arises from the operations of the contractor including transportation.

Contractor shall require each of his Subcontractors to likewise purchase and maintain at their expense Commercial General Liability insurance, Workers' Compensation and Employer's Liability coverage, Automobile Liability insurance, Umbrella Liability, Environmental Liability insurance coverage meeting the same limit and requirements as the Contractors insurance.

Certificates of Insurance acceptable to Nassau County Board of County Commissioners for the Contractor/Vendor's insurance must be received within ten (10) days of Notification of Selection and at time of signing Agreement.

Certificates of Insurance and the insurance policies required for this Agreement shall contain an endorsement that coverage afforded under the policies will not be cancelled or allowed to expire until at least thirty (30) days prior written notice has been given to Nassau County Board of County Commissioners.

Certificates of Insurance and the insurance policies required for this Agreement will include a provision that policies, except Workers' Compensation are primary and noncontributory to any insurance maintained by the Contractor.

Nassau County Board of County Commissioners must be named as an Additional Insured and endorsed onto the Commercial General Liability (CGL), Auto Liability and Umbrella Liability policy (ies). A copy of the endorsement(s) must be supplied to Nassau County Board of County Commissioners ten (10) days following the execution of the agreement or prior to the first date of services, whichever comes first.

CGL policy Additional Insured Endorsement must include Ongoing and Completed Operations (Form CG2010 11 84 **OR** Form CG2010 04 13 and GC2037 04 13 edition or equivalent). Other Additional Insured forms might be acceptable but only if modified to delete the word "ongoing" and insert the sentence "Operations include ongoing and completed operations".

CGL policy shall not be endorsed with Exclusion - Damage to Work performed by Subcontractors on Your Behalf (CG2294 or CG2295)

CGL policy shall not be endorsed with Contractual Liability Limitation Endorsement (CG2139) or Amendment of Insured Contract Definition (CG 2426)

CGL policy shall not be endorsed with Exclusion - Damage to Premises Rented to you (CG 2145)

CGL policy shall include broad form contractual liability coverage for the Contractors covenants to and indemnification of the Authority under this Contract

Certificates of Insurance and the insurance policies required for this Agreement shall contain a provision under General Liability, Auto Liability and Workers' Compensation to include a Waiver of Subrogation clause in favor of Nassau County Board of County Commissioners.

All Certificates of Insurance shall be dated and shall show the name of the insured Contractor, the specific job by name and job number, the name of the insurer, the policy number assigned its effective date and its termination date and a list of any exclusionary endorsements.

All Insurers must be authorized to transact insurance business in the State of Florida as provided by Florida Statute 624.09(1) and the most recent Rating Classification/Financial Category of the insurer as published in the latest edition of "Best's Key Rating Guide" (Property-Casualty) must be at least A- or above.

All of the above referenced Insurance coverage is required to remain in force for the duration of this Agreement and for the duration of the warranty period. Accordingly, at the time of submission of final application for payment, Contractor shall submit an additional Certificate of Insurance evidencing continuation of such coverage.

If the Contractor fails to procure, maintain or pay for the required insurance, Nassau County Board of County Commissioners shall have the right (but not the obligation) to secure same in the name of and for the account of Contractor, in which event, Contractor shall pay the cost thereof and shall furnish upon demand, all information that may be required to procure such insurance. Nassau County Board of County Commissioners shall have the right to back-charge contractor for the cost of procuring such insurance. The failure of Nassau County Board of County Commissioners to demand certificates of insurance and endorsements evidencing the required insurance or to identify any deficiency in contractors coverage based on the evidence of insurance provided by the contractor shall not be construed as a waiver by Nassau County Board of County Commissioners of contractor's obligation to procure, maintain and pay for required insurance.

The insurance requirements set forth herein shall in no way limit Contractors liability arising out of the work performed under the Agreement or related activities. The inclusions, coverage and limits set forth herein are minimum inclusion, coverage and limits. The required minimum policy limits set forth shall not be construed as a limitation of Contractor's right under any policy with higher limits, and no policy maintained by the Contractor shall be construed as limiting the type, quality or quantity of insurance coverage that Contractor should maintain. Contractor shall be responsible for determining appropriate inclusions, coverage and limits, which may be in excess of the minimum requirements set forth herein.

If the insurance of any Contractor or any subcontractor contains deductible(s), penalty(ies) or self-insured retention(s), the Contractor or Subcontractor whose insurance contains such provision(s) shall be solely responsible for payment of such deductible(s), penalty(ies) or self-insured retention(s).

The failure of Contractor to fully and strictly comply at all times with the insurance requirements set forth herein shall be deemed a material breach of the Agreement.

Initials_____

EXHIBIT 2

CONTRACTOR'S BID

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

SECTION 00 41 15**BID FORM**

PROJECT IDENTIFICATION: Nassau Amelia Utilities (NAU) Wastewater Treatment Facility (WWTF) Clarifier Rehabilitation Project
Bid Number NC 18-010
Nassau County, Florida

BID DEADLINE: August 8, 2018
THIS BID IS SUBMITTED TO: Board of County Commissioners, Nassau County
Judicial Annex
Office of the Ex-Officio Clerk
76347 Veterans Way, Suite 456
Yulee, Florida 32097

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

Company Name (typed or printed): SGS Contracting Services, Inc.
Business address: 23625 W. US Hwy 27, High Springs, FL 32643
Phone No.: 352-745-6950 Fax No.: N/A
Contact Name: Seth Simmons
Contact Title: President
Contact email address: seth@sgscsi.com

- 2.01** Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of the County.

- 3.01** In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged:

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

- | Addendum No. | Addendum Date |
|--------------|----------------|
| <u>1</u> | <u>7-31-18</u> |
| <u>2</u> | <u>8-3-18</u> |
| <u>3</u> | <u>8-7-18</u> |
| <u>4</u> | <u>8-16-18</u> |
- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Condition, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.
- E. Bidder has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect costs, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.
- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the work to be performed by the County and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

- I. Bidder has given Engineer of Record written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer of Record is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4.01 Bidder further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid; Bidder has not solicited or induced any individual or entity to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over the County.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

BID					
Item No	Pay Item Description	Units	Quantity	Cost Per Unit	Total Cost
Base Bid: Clarifier 1					
1	General Requirements	LS	1	35,000	\$ 35,000
2	Demolition of Existing Internal Component	LS	1	60,000	\$ 60,000
3	Concrete Repairs with Coatings				
3.a	Internal				
3.a.1	Crack Repairs	LF	10	100. ⁰⁰	\$ 1,000. ⁰⁰
3.a.2	Structural Repairs	CF	10	250. ⁰⁰	\$ 2,500. ⁰⁰
3.a.3	Surface Repairs	LS	1	25,000	\$ 25,000
3.b	External Surface Repairs	LS	1	15,000	\$ 15,000
3.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 3.a.3 and 3b	SF	50	30. ⁰⁰	\$ 1,500. ⁰⁰
4	Clarifier Equipment - Installed and Grouted	LS	1	203,200	\$ 203,200
5	Walkway Bolts Replacement	EA	50	30. ⁰⁰	\$ 1,500. ⁰⁰

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

6	Electrical and Instrumentation	LS	1	15,000	\$ 15,000
<i>Total For Base Bid: Clarifier 1</i>					\$ 359,700.00
Alternate 1: Clarifier 2					
7	Demolition of Existing Internal Component	LS	1	55,000 60,000	\$ 55,000 60,000
8	Concrete Repairs with Coatings				
8.a	Internal				
8.a.1	Crack Repairs	LF	10	100.00	\$ 1,000.00
8.a.2	Structural Repairs	CF	10	250.00	\$ 2,500.00
8.a.3	Surface Repairs	LS	1	30,000	\$ 30,000
8.b	External Surface Repairs	LS	1	18,000	\$ 18,000
8.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 8.a.3 and 8b	SF	50	30.00	\$ 1,500.00
9	Clarifier Equipment - Installed and Grouted	LS	1	170,000	\$ 170,000
10	New Circumferential Walkway	LS	1	75,000	\$ 75,000
11	Electrical and Instrumentation	LS	1	15,000	\$ 15,000
					\$
<i>Total For Clarifier 2</i>					\$ 368,000.00
Alternate 2: Materials Upgrade (Stainless Steel)					
12	Clarifier 1	LS	1	35,000	\$ 35,000
13	Clarifier 2	LS	1	35,000	\$ 35,000
TOTAL BID LUMP SUM (ITEMS 1 to 13)					\$ 792,700

(Total - Use Words)

Seven hundred ninety seven thousand, seven hundred dollars

Items 3a.3, 3b, 8a.3, and 8b assume concrete surface repairs are up to 10% of the total surface area with 100% coatings. Please see Section 01 11 10 Advertisement for Bids for details.

Lump sum price has been computed in accordance with Paragraph 11.01 of the General Conditions.

All specific cash allowances are included in the price(s) set forth above and have been computed in accordance with paragraph 11.02 of the General Conditions.

Unit prices have been computed in accordance with Paragraph 11.03B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

of comparison of Bids. Final payment of all Unit Price Bid Items will be based on actual quantities as determined in the Contract Documents.

6.01 Bidder agrees that the Work (Base Bid/Base Bid + Alternate 1) will be substantially complete within 270/330 calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 30 calendar days from the date of substantial completion. Total contract time shall be 300/360 calendar days; for everyday the work goes beyond substantial completion, a day will be removed from final completion so the total days equal 300/360 calendar days.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

7.01 The following documents are attached to and made a condition of this Bid:

- A. Bid Security in the form of a certified check of Bid Bond (Section 00 43 15)
- B. Tabulation of Subcontractors & Suppliers (Section 00 43 35)
- C. Florida Trench Safety Act Certification (Section 00 44 55)
- D. Bidder's Qualification Statement (Section 00 45 13)
- E. Non-collusion Affidavit (Section 00 45 19)
- F. Drug-Free Workplace Certificate (Section 00 45 20)
- G. Public Entity Crimes Statement
- H. Statement of Disputes, Litigation & Surety Completion
- I. E-Verify Affidavit of Compliance (Section 00 45 40)

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

SUBMITTED on August 21, 2018.

State Contractor License No. CGC 1514772 / CUC 1225090.

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____

(Individual's Signature)

Doing business as: _____

Business address: _____

Phone No.: _____ Fax No.: _____

A Partnership

Partnership Name: _____

By: _____

(Signature of general partner - attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

Phone No.: _____ Fax No.: _____

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

A Corporation

Corporation Name: SGS Contracting Services, Inc. (SEAL)

State of Incorporation: FL

Type (~~General Business~~, Professional, Service, Limited Liability): General Business

By:  _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): Seth Simmons

Title: President (CORPORATE SEAL)

Attest  _____

(Signature of Corporate Secretary)

Business address: 23625 W. US Hwy 27, High Springs, FL 32643

Phone No.: 352-745-6950 Fax No.: N/A

Date of Qualification to do business is July 25, 2007

NAU WWTF Clarifier Rehabilitation Project

NC18-010

Addendum No. 2

A Joint Venture

Joint Venturer Name: _____

By: _____

(Signature of joint venture partner - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

Joint Venturer Name: _____

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

Phone No.: _____ Fax No.: _____

Phone and FAX Number, and Address for receipt of official communications:

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in a manner indicated above.)

END OF SECTION

SECTION 00 43 15

BID BOND

Any singular reference to Bidder, Surety, Owner, or other party shall be considered plural where applicable.

BIDDER (Name and Address):

SGS Contracting Services, Inc.
23625 W. US Hwy 27, High Springs, FL 32643

SURETY (Name and Address of Principal Place of Business):

Western Surety Company
101 South Reid Street, Sioux Falls, SD 57103

OWNER (Name and Address):

Nassau County BOCC
96135 Nassau Place, Suite 1, Yulee, FL 32097

BID

Bid Due Date: August 8, 2018

Project (Brief Description Including Location): Nassau Amelia Utilities WWTF Clarifier Rehabilitation
Project, Bid Number NC 18-010

BOND

Bond Number: 080818NAU

Date (Not later than Bid due date): August 8, 2018

Penal Sum: Five Percent of the Amount Bid ---5%---
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SGS Contracting Services, Inc. (Seal)

Bidder's Name and Corporate Seal

By: [Signature]
Signature and Title Seth G. Simmons, President

Attest: [Signature] P-1
Signature and Title

SURETY

Western Surety Company (Seal)

Surety's Name and Corporate Seal

By: [Signature]
Signature and Title Allyson Foss, Attorney-In-Fact &
(Attach Power of Attorney) Florida Licensed Resident Agent

Attest: [Signature]
Signature and Title Robert A. Wing, Jr., Witness

Note: Above addresses are to be used for giving required notice. Inquiries: (321) 800-6594

DAMAGES FORM

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to the County upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder who submitted a responsive Bid as determined by the County for the work required by the Contract Documents, provided that:
 - 1.1. If there is no such next Bidder, and the County does not abandon the Project, then Bidder and Surety shall pay to the County the penal sum set forth on the face of this Bond, and
 - 1.2. In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by the County) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1. The County accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by the County) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2. All Bids are rejected by the County, or
 - 3.3. The County fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from the County, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by the County and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective

addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

END OF SECTION

Western Surety Company

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That WESTERN SURETY COMPANY, a South Dakota corporation, is a duly organized and existing corporation having its principal office in the City of Sioux Falls, and State of South Dakota, and that it does by virtue of the signature and seal herein affixed hereby make, constitute and appoint

Allyson Foss, Jorge L Bracamonte, Individually

of Winter Park, FL, its true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on its behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

and to bind it thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of the corporation and all the acts of said Attorney, pursuant to the authority hereby given, are hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law printed on the reverse hereof, duly adopted, as indicated, by the shareholders of the corporation.

In Witness Whereof, WESTERN SURETY COMPANY has caused these presents to be signed by its Vice President and its corporate seal to be hereto affixed on this 5th day of July, 2018.



WESTERN SURETY COMPANY

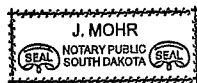
Paul T. Bruflat
Paul T. Bruflat, Vice President

State of South Dakota }
County of Minnehaha } ss

On this 5th day of July, 2018, before me personally came Paul T. Bruflat, to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is the Vice President of WESTERN SURETY COMPANY described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to the said instrument is such corporate seal; that it was so affixed pursuant to authority given by the Board of Directors of said corporation and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said corporation.

My commission expires

June 23, 2021



J. Mohr
J. Mohr, Notary Public

CERTIFICATE

I, L. Nelson, Assistant Secretary of WESTERN SURETY COMPANY do hereby certify that the Power of Attorney hereinabove set forth is still in force, and further certify that the By-Law of the corporation printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said corporation this 5th day of August, 2018.



WESTERN SURETY COMPANY

L. Nelson
L. Nelson, Assistant Secretary
Initials

Authorizing By-Law

ADOPTED BY THE SHAREHOLDERS OF WESTERN SURETY COMPANY

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the shareholders of the Company.

Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, and Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys in Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

Initials_____

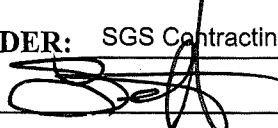
SECTION 00 43 35

TABULATION OF SUBCONTRACTORS & SUPPLIERS

The undersigned states that the following is a full and complete list of the proposed subcontractors and suppliers on this Project and the class of work to be performed by each, and that such list will not be added to nor altered without written consent to the Owner through the Engineer.

<u>SUBCONTRACTOR OR SUPPLIER AND ADDRESS</u>	<u>CLASS OF WORK OR MATERIAL</u>
1. <u>Shine & Company</u> <u>High Springs, FL</u>	<u>Electrical</u>
2. <u>Crystal Coatings</u> <u>Ocala, FL</u>	<u>Coatings</u>
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____

BIDDER: SGS Contracting Services, Inc.

By: 

Name: Seth Simmons

Title: President

Date: 08-21-2018

END OF SECTION

SECTION 00 44 55

FLORIDA TRENCH SAFETY ACT CERTIFICATION

Bidder 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) as modified October 1, 2008. The Bidder further identifies the costs to be summarized below:

	<u>Cost</u>
1. Trench Safety Act Compliance	\$ 100.00
2. Special Shoring	\$ N/A

Identify method of compliance for Item #1: Side sloping

Identify or attach a copy of Special Shoring requirements for Item #2: N/A

The undersigned certifies that he/she is the Contractor who will perform the trench excavation for this project, and hereby gives written assurance that Contractor will comply with the applicable trench safety standards specifically set forth in Florida's Trench Safety Act, Laws of Florida, 90-96.

BIDDER: SGS Contracting Services, Inc.

By: [Signature]

Name: Seth Simmons

Title: President

Sworn to and subscribed before me this 21 day of August, 2018.

[Signature]
Notary Public

My Commission Expires: 6/28/2022

END OF SECTION



SECTION 00 45 13

STATEMENT OF BIDDER'S QUALIFICATIONS

To: Nassau County Project: NAU WWTF Clarifier Rehabilitation Project
Date: 8-21-2018 NC18-010

The following experience record, as of date shown, shall be submitted to the County with the Bid Form. All questions shall be answered fully. Bidders who have qualified to bid on other projects for this County within the last 12 months need not resubmit this form unless specifically requested by the County. The contents of this form will be considered confidential to the extent allowed by applicable laws and regulations.

Name of Bidder: SGS Contracting Services, Inc.
Business Address: 23625 W. US Hwy 27, High Springs, FL 32643
Street
City State Zip Code

1. Number of years in business as a Contractor under the present:
Business Name SGS Contracting Services, Inc.
As Principal Contractor 11 years As a Sub-Contractor N/A
2. Class of work you are equipped to perform: All work at municipal treatment facilities and utilities
3. Class of work you usually sublet: electrical, coatings, instrumentation, specialty trades
4. Have any members of your concern ever operated under any other business name? YES .
If so, give details: Seth Simmons - Former principal partner at Beach Construction Company, Inc.
5. Have you ever failed to qualify as a responsible bidder? NO . If so, give details.
6. Have you ever refused to enter into a contract after the award is made to you? NO .
If so, give details.
7. Have you ever failed to complete any work? NO . If so, give details:

8. Has any surety or financial institution ever experienced loss on your concern? NO.
 If so, give details: _____

9. Give name and address of the County, type of work, and the contract amount of at least three projects completed in the last three years:

	(1)	(2)	(3)
Project Owner:	_____	_____	_____
Owner Project Manager:	_____	_____	_____
Email:	_____	_____	_____
Phone No:	_____	_____	_____
Address:	_____	_____	_____
City, State, Zip:	_____	_____	_____
Type of Work:	_____	_____	_____
Contract Amt: \$	_____	\$ _____	\$ _____

10. Give name and address of the County, type of work, and contract amount of projects now in process of construction:

	Name	Address	Type of Work	Contract Amount
A.	_____	_____	_____	\$ _____
B.	_____	_____	_____	\$ _____
C.	_____	_____	_____	\$ _____
D.	_____	_____	_____	\$ _____
E.	_____	_____	_____	\$ _____

11. Indicate your experience in the construction of work similar to this project (if not demonstrated by Questions 9 and 10, above):

Demonstrated above

12. Give construction experience of principal individuals of your organization:

Name	Position	Years of Experience	Size and Type of Work
------	----------	---------------------	-----------------------

A.	<u>Seth Simmons</u>	<u>President</u>	<u>17 years</u>	<u>up to \$10,000,000 single project</u> <u>@ municipal treatment facilities</u>
B.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
C.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
D.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
E.	<u> </u>	<u> </u>	<u> </u>	<u> </u>

13. Are there any judgments, suits, or claims pending against you? NO. If so, give details:

14. Does your organization operate as a corporation, partnership, or individual? Corporation

A. If a corporation, when incorporated: 7-25-2007

In which state incorporated: FL

List name, title, and address of all officers:

	<u>Name</u>	<u>Title</u>	<u>Address</u>
(1)	<u>Seth Simmons</u>	<u>President</u>	<u>High Springs, FL</u>
(2)	<u> </u>	<u> </u>	<u> </u>
(3)	<u> </u>	<u> </u>	<u> </u>
(4)	<u> </u>	<u> </u>	<u> </u>
(5)	<u> </u>	<u> </u>	<u> </u>

B. If a partnership, date of organization: N/A

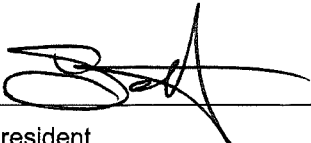
General, Limited, or Associated? N/A

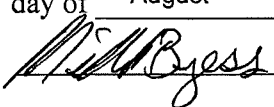
List name, address, and proportional interest of parties:

	<u>Name</u>	<u>Address</u>	<u>Proportional Interest</u>
(1)	<u>N/A</u>	<u> </u>	<u> </u>
(2)	<u> </u>	<u> </u>	<u> </u>
(3)	<u> </u>	<u> </u>	<u> </u>
(4)	<u> </u>	<u> </u>	<u> </u>
(5)	<u> </u>	<u> </u>	<u> </u>

15. If requested prior to award of contract, provide to the County an accurate, up-to-date, condensed financial statement on a separate sheet attached to these qualifications of the individual, co-partnership, or corporation.

The undersigned hereby declares and certifies that the foregoing is a true statement of the experience and condition of the organization, therein first given and that any agency or individual herein named authorized to supply any information as may be deemed necessary to verify this statement.

Signed 
Title President

Subscribed and sworn to before me this 21st
day of August, 20 18
 Notary Public
County, Alachua
My Commission expires 6/28/2022

END OF SECTION



SECTION 00 45 19

NONCOLLUSION AFFIDAVIT

TO: The Owner (Nassau County BOCC), herein called the "County."

Pursuant to bidding requirements for the work titled "NAU WWTF Clarifier Rehabilitation Project
_____,

the enclosed contract documents shall be provided to the County.

State of FL

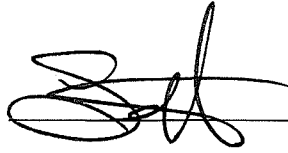
County of Alachua

Seth Simmons, being first duly
sworn, deposes, and says that:

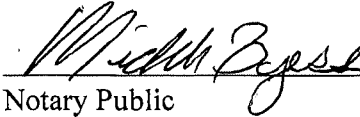
- A. He is President (officer's title)
of SGS Contracting Services, Inc. (company name),
the Bidder that has submitted the attached bid;
- B. He is fully informed respecting the preparation and contents of the attached bid
and of all pertinent circumstances respecting such bid;
- C. Such bid is genuine and is not a collusive or sham bid;
- D. Neither the said Bidder nor any of its officers, partners, owners, agents,
representatives, employees, or parties in interest, including this affiant, has in any
way colluded, conspired, connived, or agreed, directly or indirectly with any other
Bidder, firm, or person to submit a collusive or sham bid in connection with the
contract for which the attached bid has been submitted or to refrain from bidding
in connection with such contract, or has in any manner, directly or indirectly,
sought by agreement or collusion or communication or conference with any other
Bidder, firm, or person to fix the price or prices in the attached bid or of any other
Bidder, or to fix any overhead, profit, or cost element of the bid price or the bid
price of any other Bidder, or to secure through any collusion, conspiracy,
connivance, or unlawful agreement any advantage against the County
or any person interested in the proposed contract; and
- E. The price or prices quoted in the attached bid are fair and proper and are not
tainted by any collusion, conspiracy, connivance, or unlawful agreement on the

part of the Bidder or any of its agents, representatives, owners: employees, or
parties in interest, including this affiant.

(Signed) _____



Subscribed and sworn to before me
this 21st day of August, 2018.



Notary Public

06/28/2022

My commission expires



END OF SECTION

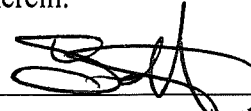
SECTION 00 45 20

DRUG FREE WORKPLACE CERTIFICATE

I, the undersigned, in accordance with Florida Statute 287.087, hereby certify that _____
SGS Contracting Services, Inc. _____ (print or type name of firm)

- Publishes a written statement notifying that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in the workplace named above, and specifying actions that will be taken against violations of such prohibition.
- Informs employees about the dangers of drug abuse in the workplace, the firm's policy of maintaining a drug free working environment, and available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug use violations.
- Gives each employee engaged in providing commodities or contractual services that are under bid or proposal, a copy of the statement specified above.
- Notifies the employees that as a condition of working on the commodities or contractual services that are under bid or proposal, the employee will abide by the terms of the statement and will notify the employer of any conviction of, plea of guilty or nolo contendere to, any violation of Chapter 1893, or any controlled substance law of the State of Florida or the United States, for a violation occurring in the work place, no later than five (5) days after such conviction, and requires employees to sign copies of such written statement to acknowledge their receipt.
- Imposes a sanction on, or requires the satisfactory participation in, a drug abuse assistance or rehabilitation program, if such is available in the employee's community, by any employee who is so convicted.
- Makes a good faith effort to continue to maintain a drug free work place through the implementation of a drug free work place program.

"As a person authorized to sign a statement, I certify that the above named business, firm, or corporation complies fully with the requirements set forth herein."



Authorized Signature

8-21-2018

Date Signed

State of: FL

County of: Alachua

Sworn to and subscribed before me this 21st day of August, 20 18

Personally known X or Produced Identification _____

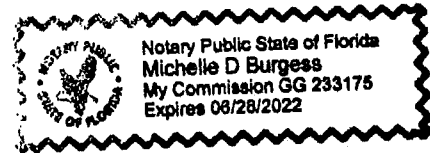
(Specify type of Identification)



Notary Public

06/28/2022

My commission expires



END OF SECTION

SECTION 00 45 30

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

(To be signed in the presence of a notary public or other
officer authorized to administer oaths.)

STATE OF FL
COUNTY OF Alachua

Before me, the undersigned authority, personally appeared Seth Simmons, who
being by me first duly sworn, made the following statement:

1. The business address of SGS Contracting Services, Inc.
(firm name of Bidder/Contractor)
is 23625 W. US Hwy 27, High Springs, FL 32643

2. My relationship to SGS Contracting Services, Inc.
(firm name of Bidder/Contractor)
is President
(relationship such as sole proprietor, partner, president, vice president)

3. I understand that a public entity crime as defined in Section 287.133 of the
Florida Statutes includes a violation of any state or federal law by a person with respect to and
directly related to the transaction of business with any public entity in Florida or with an agency
or political subdivision of any other state or with the United States, including, but not limited to,
any bid or contract for goods or services to be provided to any public entity or such an agency or
political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering,
conspiracy, or material misrepresentation.

4. I understand that "convicted" or "conviction" is defined by the statute to mean a
finding of guilt or a conviction of a public entity crime, with or without adjudication or guilt, in
any federal or state trial of record relating to charges brought by indictment or information after
July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo
contendere.

5. I understand that "affiliate" is defined by the statute to mean (1) a predecessor or
successor of a person or a corporation convicted of a public entity crime; or (2) an entity under
control of any natural person with is active in management of the entity and who has been

convicted of a public entity crime; (3) those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate; or (4) a person or corporation who knowingly entered into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months.

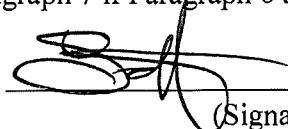
6. Neither the Bidder/Contractor nor any officer, director, executive, partner, shareholder, employee, member or agent who is active in the management of the Bidder/Contractor, nor any affiliate of the Bidder/Contractor, has been convicted of a public entity crime subsequent to July 1, 1989.

(Draw a line through Paragraph 6 if Paragraph 7 below applies.)


~~7. There has been a conviction of a public entity crime by Bidder/Contractor, or an officer, director, executive, partner, shareholder, employee, member or agent of the Bidder/Contractor who is active in the management of the Bidder/Contractor or an affiliate of the Bidder/Contractor. A determination has been made pursuant to 287.133(3) by order of the Division of Administrative Hearings that it is not in the public interest of the name of the convicted person or affiliate to appear on the convicted vendor list.
The name of the convicted person or affiliate is _____.~~

A copy of the order of the Division of Administrative Hearings is attached to this statement.

(Draw a line through Paragraph 7 if Paragraph 6 above applies.)


(Signature)

Sworn to and subscribed before me in the State and County first mentioned above on the 21st
day of August, 2018.


Notary Public

08/28/2022
My commission expires

(affix seal)

END OF SECTION



SECTION 00 45 35

BIDDER'S STATEMENT OF DISPUTES, LITIGATION, ARBITRATION,
AND SURETY COMPLETION, LAST THREE (3) YEARS

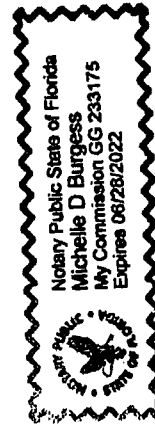
<u>Project</u>	<u>Name and Address of Owner or Engineer</u>	<u>Name and Phone of Owner or Engineer Representative</u>	<u>Date of Contract</u>	<u>Amount</u>	<u>Status</u>
----------------	--	---	-----------------------------	---------------	---------------


N/A

(Signed) 

Print Name Seth Simmons

Subscribed and sworn to before me
this 21st day of August, 20 18



Notary Public
 06/28/2022
My commission expires:

END OF SECTION

00 45 35-1

Initials _____

SECTION 00 45 40

E-VERIFY COMPLIANCE FORM

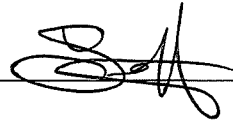
State of FL)

AFFIDAVIT OF COMPLIANCE

County of Alachua)

The undersigned, being first duly sworn, deposes and states as follows:

This is to certify that SGS Contracting Services, Inc. (Company Name)
is a party to a Memorandum of Understanding with the Department of Homeland Security to use
the E-Verify system for all new hires. Our Company's E-Verify participation number is
857744. In keeping with our Memorandum of Understanding, all new
hires are verified through the E-Verify system.

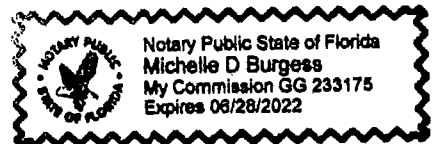


Print Name: Seth Simmons

8-21-2018

Date

Sworn to and subscribed before me
This 21 day of August, 2018.




Notary Public

My Commission Expires: 06/28/2022

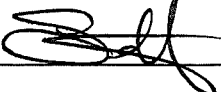
Initials _____

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project
Addendum No. 1

NC18-010

SECTION 00 21 15 INSTRUCTIONS TO BIDDERS
SECTION 00 41 15 BID FORM
SECTION 00 52 15 AGREEMENT
SECTION 01 22 50 MEASUREMENT AND PAYMENT
SECTION 09 90 00 PAINTING AND COATING
SECTION 46 43 01 CLARIFIER REHABILITATION

ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM NO. 1, ISSUED DURING THE SOLICITATION PERIOD:

Vendor Signature:  Date: 8/21/18

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (signature page only). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

End of Addendum #1

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project NC18-010
Addendum No. 2

- Q4. 09 90 00 par 3.08.A.3 - What, if any new steel materials require field coating other than ductile iron pipe. It appears all new clarifier and walkway components are either galvanized or aluminum and do not require field coatings.
46 43 01 par 2.02.D.8 – What is meant by “if applicable” after the word “coating”?
2.05 – By adding “which are not factory pre-coated” it leads them to believe there may be some items that will require field coating. What new items are to be field?
- A4. *For an example, if a motor comes with bare metal or only prime that needs to be field coated. We do not require coating on fabricated hot dip galvanized steel (with factory coating), stainless steel and aluminum. Anything is not factory coated will need field coating.*

Part 2 – Specification Revisions and Additions

1. SECTION 00 41 15 BID FORM
- a. Section 5.01, delete “3a” in row 3.c, add “3.a.3” after the word “in”
 - b. Section 5.01, add “Surface Repairs” after the word “External” in row 3.b
 - c. Section 5.01, delete “8a” in row 8.c, add “8.a.3” after the word “in”
 - d. Section 5.01, add “Surface Repairs” after the word “External” in row 8.b

3.b	External Surface Repairs	LS	1		\$
3.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 3a3.a.3 and 3b	SF	50		\$
8.b	External Surface Repairs	LS	1		\$
8.c	Additional Surface Repairs in Excess of 10-Percent of Surface Areas Included in 8a8.a.3and 8b	SF	50		\$

ATTACHMENTS:
SECTION 00 41 15 BID FORM


ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM NO. 2, ISSUED DURING THE SOLICITATION PERIOD:

Vendor Signature:  Date: 8/21/18

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (signature page only). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project NC18-010
Addendum No. 3

**ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM
NO. 3, ISSUED DURING THE SOLICITATION PERIOD:**

Vendor Signature:  Date: 8/21/18

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (signature page only). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

End of Addendum #3

Invitation to Bid NAU WWTF Clarifier Rehabilitation Project
Addendum No. 4

NC18-010

Part 2 – Drawing Revisions and Additions

1. Sheet M-5, Clarifier #1 Coating Requirements, replace
2. Sheet M-6, Clarifier #2 Coating Requirements, replace

Part 3 – Specification Revisions and Additions

1. SECTION 09 90 00 Painting and Coating
 - a. Delete it in its entirety and replace with the new Section.

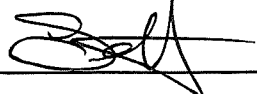
ATTACHMENTS:

SECTION 09 90 00 PAINTING AND COATING

SHEET M-5 CLARIFIER #1 COATING REQUIREMENTS

SHEET M-6 CLARIFIER #2 COATING REQUIREMENTS

ACKNOWLEDGMENT IS HEREBY MADE OF RECEIPT OF THIS ADDENDUM NO. 4, ISSUED DURING THE SOLICITATION PERIOD:

Vendor Signature:  Date: 2/21/18

NOTE: You are required to acknowledge receipt of this addendum by signing and submitting it with your bid/proposal (signature page only). In addition you are required to acknowledge receipt on the Bid Form, Section 00 41 15-2, Article 3.01.

End of Addendum #4

PROJECT HISTORY – SGS Contracting Services, Inc.

CURRENT PROJECTS

GRU GENERAL SERVICE AGREEMENT FOR WATER & WASTEWATER OPERATIONS

Value: Indefinite Value

Engineer: N/A

General Contr: SGS Contracting Services, Inc.

Owner: Gainesville Regional Utilities (GRU) (Rachel Haeseler; Gainesville, FL; 352-393-1618)

Service: Water & Wastewater

Completion: March 1, 2014 through February 28, 2019

Term contract service agreement for repair, rehab, and new construction of water and wastewater treatment facilities and systems throughout the Utility. Scope of allowable work is unlimited within the facilities. Includes new process piping, installation of process mechanical equipment, sitework, etc.

(Process equipment typically provided by the Owner for installation by SGS)

FGUA GENERAL SERVICE CONTRACT FOR UTILITY CONTRACTORS

Value: Indefinite Value

Engineer: N/A

General Contr: SGS Contracting Services, Inc.

Owner: FGUA

Service: Water & Wastewater

Completion: TBD

Term contract service agreement for repair, rehab, and new construction of water and wastewater treatment facilities and utility systems throughout the Utility

IRISH ACRES WTP (MARION COUNTY)

Value: \$1,874,970

Engineer: Tillman & Associates

General Contr: SGS Contracting Services, Inc.

Owner: Marion County Utilities (Alejandro Rad; 352-307-6012)

Service: Water

Completion: August 2018 (expected)

Expansion of existing WTP, including prestressed storage tank, high services pumps, electrical and pump buildings, generator, yard piping, instrumentation and electrical.

ST. JOHNS COUNTY A1A BOOSTER PUMP STATION & GST

Value: \$1,613,500
Engineer: Mott-McDonald
General Contr: SGS Contracting Services, Inc.
Owner: St. Johns County Utilities (Teri Pinson; 904-209-2604)
Service: Water
Completion: September 2018 (expected)
Construction of new booster pump station, including clearing/grubbing, cast-in-place GST, pump station building, high service pumps, piping, electrical and I & C.

MWTP LIME SLUDGE PUMP STATION REHAB

Value: \$159,000
Engineer: CH2M
General Contr: SGS Contracting Services, Inc.
Owner: Gainesville Regional Utilities
Service: Water
Completion: June 2018 (expected, extended due to other projects ongoing at site)
Rehab of existing lime sludge pump station with new pumps, piping and concrete structures. Pumps provided by Owner.

TOWN OF BRANFORD WWTP EFFLUENT STORAGE TANK

Value: \$688,676
Engineer: Florida Rural Water Association
General Contr: SGS Contracting Services, Inc.
Owner: Town of Branford (Robbie Lee; 386-854-5133)
Service: Wastewater
Completion: September 2018 (expected, extended due to additional work authorizations)
Installation of new glass-fused-to-steel ground storage tank, effluent pump station, misc. pumps and piping, and electrical. Includes structural grouting beneath tank foundation.

WINTER HAVEN WWTP #3 SLUDGE LOADING CONVEYOR REPLACEMENT

Value: \$174,537
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: City of Winter Haven (Charles Nichols; 863-514-8623)
Service: Wastewater
Completion: August 2018 (expected, extended due to additional work authorizations)
Demolition and replacement of belt press sludge loading system. Includes installation of conveyors for two (2) existing belt presses, electrical, and instrumentation.

UNIVERSITY OF FLORIDA WWTP BIOSOLIDS IMPROVEMENTS

Value: \$1,006,585
Engineer: Hazen & Sawyer
General Contr: The Brentwood Company (Tom Fillmer; 352-339-5453)
Owner: University of Florida
Service: Wastewater
Completion: November 2018 (expected)

Demolition and removal of existing belt press sludge dewatering equipment and replacement with one (1) new centrifuge for biosolids thickening. Includes structural concrete, aluminum structures and heavy process mechanical piping.

LEESBURG TURNPIKE WWTF DEWATERING IMPROVEMENTS

Value: \$1,487,000
Engineer: Jones Edmunds & Associates
General Contr: SGS Contracting Services, Inc.
Owner: City of Leesburg (contact TBD)
Service: Wastewater
Completion: December 2018 (expected)

Installation of new belt press dewatering facility, including new process equipment, piping, aluminum structures, metal building, structural concrete and electrical.

WILDWOOD CR-501 WTP IMPROVEMENTS

Value: \$382,000
Engineer: Kimley-Horn (Trey Clayton; 352-438-3000)
General Contr: SGS Contracting Services, Inc.
Owner: City of Wildwood
Service: Water
Completion: September 2018 (expected)

Misc. improvements, including installation of new well pumps/motors, underground piping, concrete structures, electrical and controls improvements.

HALIFAX PLANTATION WWTP REHAB

Value: \$906,000
Engineer: Mead-Hunt (Quentin L. Hampton & Assoc.)
General Contr: SGS Contracting Services, Inc.
Owner: Volusia County
Service: Wastewater
Completion: December 2018 (expected)

Rehabilitation of two (2) existing package wastewater treatment plants to include significant structural repairs, piping replacements, handrail and grating replacement, gear drive replacement, new RAS pump station, electrical and controls.

CITY OF MACCLENNY WWTF SLUDGE DEWATERING BOXES

Value: \$124,000
Engineer: Mittauer & Associates (Tim Norman; 904-278-0030)
General Contr: SGS Contracting Services, Inc.
Owner: City of Macclenny (FL)
Service: Wastewater
Completion: October 2018 (expected)
Installation of two (2) city-provided sludge dewatering boxes, misc. piping and concrete installations, new polymer feed system, electrical and controls.

CITY OF DUNEDIN AWTP DENITRIFICATION FILTER REHAB

Value: \$697,400
Engineer: King Engineering (Loc Truong; 813-880-8881)
General Contr: SGS Contracting Services, Inc.
Owner: City of Dunedin (FL)
Service: Wastewater
Completion: March 2019 (expected)
Replacement of all pneumatically-operated filter control valves, including the installation of eight (8) linestops in lower-building level upper piping.

CITY OF WILDWOOD WWTF PLC UPGRADES & ATS ADDITION

Value: \$938,700
Engineer: Kimley-Horn (Trey Clayton; 352-438-3000)
General Contr: SGS Contracting Services, Inc.
Owner: City of Wildwood
Service: Wastewater
Completion: December 2018 (expected)
Installation of new plant controls, electrical building and generator ATS.

CITY OF CASSELBERRY NORTH WTP HIGH SERVICE PUMP REPLACEMENT

Value: \$482,000
Engineer: Kimley-Horn (Tara Lamoureux; 407-262-7725)
General Contr: SGS Contracting Services, Inc.
Owner: City of Casselberry
Service: Water
Completion: April 2019 (expected)
Replacement of existing high-service pumps, electrical, and controls.

ZELLWOOD RD WATER SYSTEM IMPROVEMENTS PART A WTP NO. 1 & NO. 2

Value: \$2,740,000

Engineer: Mittauer & Associates (Kellen Lindsey; 904-278-0030)

General Contr: SGS Contracting Services, Inc.

Owner: Zellwood Water Users, Inc.

Service: Water

Completion: TBD (NTP pending)

Upgrades and expansion to existing water treatment plants for the Zellwood Water Users, including construction of new administration building.

COMPLETED PROJECTS
(October 2012 through CURRENT)

NEWBERRY WRF EXPANSION (2012 – 2013)*

Value: \$2,427,000

Engineer: Jones, Edmunds, & Associates

General Contr: Brandes Design-Build, Inc.

Owner: City of Newberry (Blaine Suggs; Newberry, FL; 352-213-0070)

Service: Wastewater

Expansion of existing plant by adding new packaged WWTP, sprayfield, sitework, electrical, I & C

*Primary Subcontractor; contracted to provide/responsible for all contract management, supervision, labor, and other project elements.

POLK COUNTY NWRWRF EXPANSION PROJECT (2013)*

Value: \$2,945,000

Engineer: Reiss Engineering (Kathleen Gierok; Winter Haven, FL; 407-679-5358)

General Contr: Brandes Design-Build, Inc.

Owner: Polk County Utilities

Service: Wastewater

Misc. structural, mechanical, SCADA and electrical improvements throughout plant for expansion purposes.

*Primary Subcontractor; contracted to provide/responsible for all contract management, supervision, labor, and other project elements.

ADENA SPRINGS WWTP (2013)*

Value: \$220,000

Engineer: Nijhuis Water Technology

General Contr: Brandes Design-Build, Inc.

Owner: Adena Springs Ranch

Service: Wastewater

Installation of WWTP equipment, vaults, tanks; provided complete wastewater system for cattle processing facility. All equipment furnished by Owner.

*Primary Subcontractor; contracted to provide/responsible for all contract management, supervision, labor, and other project elements.

BONITA SPRINGS UTILITIES CLARIFIER & HEADWORKS TROUGH REHAB (2013)

Value: \$136,600

Engineer: N/A

General Contr: SGS Contracting Services, Inc.

Owner: Bonita Springs Utilities (Keith Helsper; Bonita Springs, FL; 352-390-4832)

Service: Wastewater

Concrete and coatings rehabilitation of existing headworks and clarifier troughs.

SANDHILL WRF GST HANDRAIL REPLACEMENT (2014)

Value: \$34,350
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: Toho Water Authority (Ed Scott; Kissimmee, FL; 407-644-5078)
Service: Wastewater
Completion: March 2014
Demolition of old handrail system and installation of new handrails on existing GST's

KANAPAH WRF SEQUENTIAL CHLORINATION PROJECT (2014)*

Value: \$1,153,100
Engineer: Jones Edmunds & Associates
General Contr: Brandes Design-Build, Inc.
Owner: GRU (Rachel Haeseler; Gainesville, FL; 352-393-1618)
Service: Wastewater
Completion: May 2014
Installation of ammonium sulfate feed system, electrical, metal building, I & C, process piping
*Primary Subcontractor; contracted to provide/responsible for all contract management, supervision, labor, and other project elements.

FGUA GSA – INTERIOR COATING OF 4 HYDRO TANKS (2014-2015)

Value: \$25,200
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: FGUA (Pradeep Sethi; Longwood, FL; 407-629-6900)
Service: Water
Completion: December 2014
Interior sandblasting, misc. surface prep, and recoating of 4 hydro tanks within the FGUA service system.

TOWN OF BRANFORD WWTP IMPROVEMENTS (2014-2015)*

Value: \$880,113
Engineer: Mittauer & Associates (Tim Norman; 904-278-0030)
General Contr: Brandes Design Build, Inc.
Owner: Town of Branford
Service: Wastewater
Completion: May 2015
Construct new clarifier and equipment, new chlorine contact basin, pump stations, & electrical. Rehab of existing package wastewater treatment plant.
*Primary Subcontractor; contracted to provide/responsible for all contract management, supervision, labor, and other project elements.

NE FL STATE HOSPITAL PIPE & STRUCTURE COATING & REHAB

Value: \$162,498

Engineer: N/A

General Contr: SGS Contracting Services, Inc.

Owner: State of Florida Department of Children & Families

Service: Water

Completion: June 2015

Cleaning, surface prep, and recoating of approximately 10,000 LF of elevated piping and structures throughout the facility.

HIGH SPRINGS WWTP – SLUDGE BOX

Value: \$39,496

Engineer: Mittauer & Associates (Tim Norman; 904-278-0030)

General Contr: SGS Contracting Services, Inc.

Owner: City of High Springs

Service: Wastewater

Completion: June 2015

Installation of Owner-furnished Sludgemate Sludge Box unit and chemical feed equipment. Includes furnishing and installing process piping, electrical, pumps and instrumentation.

THE VILLAGES – VCSA & LSSA WWTP'S RAS PUMP REPLACEMENTS

Value: \$191,748

Engineer: Arnett Environmental

General Contr: SGS Contracting Services, Inc.

Owner: The Villages CDD (Amy Strickland; 352-751-6700)

Service: Wastewater

Completion: July 2015

Removal of and replacement of 10 each RAS Pumps, associated piping, and electrical.

OCALA WRF #2 PROCESS & FILTER IMPROVEMENTS*

Value: \$10,599,900

Engineer: City of Ocala

General Contr: Brandes Design Build, Inc.

Owner: City of Ocala (Ed Earnest; 352-351-6688)

Service: Wastewater

Completion: November 2015

Construct new aeration basin, reconstruct existing aeration basins, large piping (underground & above-ground), new tertiary filter, aeration and filter equipment, aluminum walkways and handrail, electrical & I & C.

*Primary Subcontractor; contracted to provide/responsible for all contract management, supervision, labor, and other project elements.

BETHUNE POINT WWTP EUTEK GRIT SYSTEM

Value: \$68,923
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: City of Daytona Beach (Bill Banks; Daytona Beach, FL; 386-671-5701)
Service: Wastewater
Completion: August 2015 through September 2015
Remove 4 teacup grit collection units and install new Eutek Grit System (teacups provided by Owner).

DAYSPRING HEALTH WTP

Value: \$344,000 (plus additional contract modifications)
Engineer: Mittauer & Associates
General Contr: SGS Contracting Services, Inc.
Owner: Dayspring Health LLC (Doug Adkins; 904-583-0134)
Service: Water
Completion: January 2016
Construction of new water plant for the Dayspring Health Village facility. Includes installation of Owner-furnished equipment, steel GST's, hydro tank, pumps, process piping, electrical, instrumentation, and other misc. components.

GRU LS 6 ODOR CONTROL PROJECT

Value: \$179,559
Engineer: Webster Environmental
General Contr: SGS Contracting Services, Inc.
Owner: Gainesville Regional Utilities (Rachel Haeseler; Gainesville, FL; 352-393-1618)
Service: Wastewater
Completion: January 2016
Install new Odor Control system, ductwork, process piping, and electrical for GRU Lift Station #6.

LAKE JOVITA HYDRO TANK INSTALLATION

Value: \$93,107
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: Pasco County (Michael Marquis; 813-235-6189)
Service: Water
Completion: March 2016
Remove and replace one (1) 20,000 gallon hydro tank and related accessories

LAND O LAKES WWTP AERATION BASIN REPAIRS AND VALVE REPLACEMENTS

Value: \$129,907
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: Pasco County, FL (Chuck Flowers, 813-235-6189)
Service: Wastewater
Completion: May 2016
Replacement of valves and piping on existing aeration basin pump stations.

TOWN OF DUNDEE CLARIFIER RECOATING

Value: \$59,900
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: Town of Dundee (Ryan Taylor, 863-438-8330)
Service: Wastewater
Completion: May 2016
Sandblasting and recoating of existing steel clarifier and all interior equipment and piping.

RIVERSIDE LIFT STATION REHAB & ODOR CONTROL PROJECT

Value: \$520,033
Engineer: Constantine Engineering
General Contr: SGS Contracting Services, Inc.
Owner: St. Johns County (James Overton; 904-209-2614)
Service: Wastewater
Completion: July 2016
Install new odor control system, ductwork, generator rehab, lift station rehab, site concrete and misc. electrical and I & C improvements.

WINTER GARDEN WOODLARK WTP 1.0MG TANK PROJECT

Value: \$543,546
Engineer: CDM-Smith
General Contr: Crom Corp (James Wornick, 352-372-3436)
Owner: City of Winter Garden
Service: Water
Completion: July 2016
Provide all sitework and pipe installations for the new 1.0MG tank being constructed by the Crom Corp. Includes installation of new chemical feed systems along with misc. improvements to the electrical and I & C systems at the facility. Also includes new asphalt and stormwater structure modifications.

CITY OF BARTOW CENTRIFUGE INSTALLATION PROJECT

Value: \$802,411
Engineer: Chastain-Skillman
General Contr: SGS Contracting Services, Inc.
Owner: City of Bartow (Connie Adcock, 863-534-0147)
Service: Wastewater
Completion: August 2016

Install new centrifuge, polymer feed pumps, sludge grinder, sludge pumps, lift station pumps, structural improvements and misc. plant piping. Includes upgrades to the existing electrical and SCADA systems.

SANDHILL WRF AERATION BASIN HANDRAIL REPLACEMENT

Value: \$170,500
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: Toho Water Authority
Service: Water
Completion: November 2016

Complete replacement of handrail and related components on existing aeration basin structure.

ST. PETE NEWRF CLARIFIER #4 REHAB

Value: \$432,231
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: City of St. Pete (Craig Osmanski, 727-892-5641)
Service: Wastewater
Completion: January 2017

Complete rehab of existing clarifier, including all new equipment and misc. piping and electrical improvements.

CITY OF FLAGLER BEACH DEGASIFIER ODOR CONTROL REPAIRS

Value: \$100,300
Engineer: Quentin L. Hampton & Associates (Kevin Lee, 386-761-6810)
General Contr: SGS Contracting Services, Inc.
Owner: City of Flagler Beach
Service: Water
Completion: February 2017

Rehabilitation of existing degasifier air plenum and neutralization basin with high performance liner coating system. Included sandblasting and coatings in confined spaces, along with temporary odor control equipment.

AUBURNDALE/POLYTECHNIC RW GST & PUMP STATION

Value: \$535,000
Engineer: Chastain-Skillman
General Contr: Crom Corp (James Wornick, 352-372-3436)
Owner: City of Auburndale
Service: Reclaimed Water
Completion: July 2017

Provide all sitework and pipe installations for the new 2.0MG tank being constructed by the Crom Corp. Includes installation of new high service pump station along with misc. improvements to the electrical and I & C systems. (Project dates extended due to specialty coating requirements)

DADE CITY ORANGE VALLEY WATER FACILITY IMPROVEMENTS

Value: \$559,000
Engineer: Stephen Burwinkel, Infrastructure Solutions (321-622-4646)
General Contr: SGS Contracting Services, Inc.
Owner: City of Dade City (contract issued)
Service: Water
Completion: November 2017

Misc. modifications and improvements to existing water supply facility, including new pumps, tank modifications, chemical feed system, structural concrete, electrical and I & C modifications.

NASSAU-AMELIA WWTF HEADWORKS & AERATION PIPING REHABILITATION

Value: \$891,049
Engineer: Scott Richards, GAI Consultants (904-363-1110)
General Contr: SGS Contracting Services, Inc.
Owner: Nassau County (FL) (Becky Hiers-Bray; 904-530-6225)
Service: Wastewater
Completion: November 2017

Replace existing rotary drum screen, associated support structure, and complete replacement of above-grade aeration piping and valves.

ORANGE CITY WTP TRANSFER PUMP REPLACEMENT

Value: \$48,000
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: City of Orange City (contact TBD)
Service: Water
Completion: November 2017

Replacement of two (2) existing high service pumps along with valves (provided by Owner).

ORANGE COUNTY NWWRF ODOR CONTROL REPLACEMENT

Value: \$606,500
Engineer: Black & Veatch
General Contr: SGS Contracting Services, Inc.
Owner: Orange County (Terra Reffit; 407-947-9802)
Service: Wastewater
Completion: December 2017

Demolition of existing odor control facilities and installation of new bio-trickling odor control system, including piping, pipe supports, ductwork, structural concrete, electrical and instrumentation improvements.

OCALA WTP #1 LIME CLARIFIER REHAB

Value: \$240,800
Engineer: N/A
General Contr: Tri-State Painting LLC (Tilton, NH)
Owner: City of Ocala
Service: Water
Completion: December 2017

Complete rehabilitation of existing lime reactor clarifier coatings system and spray ring piping.

HERNANDO515 VENTURA VILLAGE HYDRO TANK REPLACEMENT

Value: \$121,000
Engineer: N/A
General Contr: SGS Contracting Services, Inc.
Owner: Hernando515 LTD (contact TBD)
Service: Water
Completion: January 2018

Replacement of existing 15,000 gallon hydropneumatic tank (used as water storage tank) and aerator.

FLAGLER BEACH WWTP PHASE II IMPROVEMENTS

Value: \$794,347
Engineer: Quentin L Hampton & Associates (Kevin Lee; 386-761-6810)
General Contr: SGS Contracting Services, Inc.
Owner: City of Flagler Beach
Service: Wastewater
Completion: May 2018

Misc. improvements throughout WWTP facility, including chlorine contact chamber expansion, partial clarifier rehab, installation of pumps and piping, misc. metals and electrical.

CITY OF NEWBERRY WRF PLANT 2 EMERGENCY REHAB

Value: \$150,000

Engineer: N/A

General Contr: SGS Contracting Services, Inc.

Owner: City of Newberry (Jamie Jones; 352-258-4486)

Service: Wastewater

Completion: July 2018 (expected)

Emergency rehab of existing package wastewater treatment plant, to include structural repair, diffuser replacement, and installation of a new gear drive.

State of Florida

Department of State

I certify from the records of this office that SGS CONTRACTING SERVICES, INC. is a corporation organized under the laws of the State of Florida, filed on October 8, 2012, effective July 25, 2007.

The document number of this corporation is P12000085304.

I further certify that said corporation has paid all fees due this office through December 31, 2018 and that its status is active.

I further certify that said corporation has not filed Articles of Dissolution.

*Given under my hand and the
Great Seal of the State of Florida
at Tallahassee, the Capital, this
the Thirteenth day of January,
2018*



Ken Diefen
Secretary of State

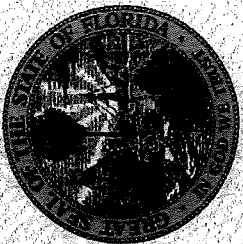
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RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY



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

THE GENERAL CONTRACTOR HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

SIMMONS, SETH GARRETT

SGS CONTRACTING SERVICES INC
14207 NW STATE ROAD 45
HIGH SPRINGS FL 32643

LICENSE NUMBER: CGC1514772

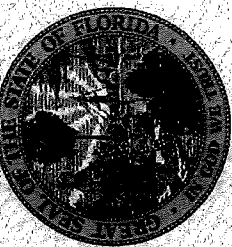
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RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY



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

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

SIMMONS, SETH GARRETT

SGS CONTRACTING SERVICES, INC.
14207 NW STATE ROAD 45
HIGH SPRINGS FL 32643

LICENSE NUMBER: CUC1225090

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