



***CONTRACT DOCUMENTS
AND
SPECIFICATIONS***

MWA PROJECT ID: 40WASH-REPL-25

**AWTP-Thickener and Washwater Tank Pumps
Replacement**

MACON WATER AUTHORITY

May 15, 2025

PROPRIETARY NOTICE

This document is prepared by the Macon Water Authority for the sole purpose of communicating to our vendors. The proprietary information contained herein is based on the requirements of the project. None of the information in this document is to be shared with any third parties without the expressed written consent of the Macon Water Authority.

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INVITATION TO BID

THE MACON WATER AUTHORITY
MACON, GEORGIA

Sealed Bids for furnishing all materials, labor, tools, equipment and appurtenances necessary for the AWTP-Thickener and Washwater Tank Pumps Replacement (the “Project”) will be received by the Macon Water Authority (the “Owner”), at the Macon Water Authority, 537 Hemlock Street, Human Resources Training Room, Macon, Georgia 31201 until 2:00 P.M., local time, September 9, 2025, and then at said office publicly opened and read aloud. All bidders must attend a mandatory pre-bid meeting at 703 River Bend Road, Amerson Water Treatment Plant, Administration Building Lobby, Macon, GA at 10:00 A.M. on August 12, 2025. All bid questions must be submitted to the Owner by 10:00 A.M. on August 19, 2025. The Bidder should attend the pre-bid meeting in its entirety.

The Project includes all labor, materials, equipment, tools and incidentals required for the installation (replacement) of four (4) Progressive Cavity Pumps (direct drive) and Motors.

The contract time will be one hundred and eighty (180) consecutive days beginning from the effective date shown in the Agreement for Services-Section 00500, contained in the contract documents.

The Project will be awarded in one Contract. Fifty-one percent (51%) of the Work under the Contract Documents must be self-performed by the General Contractor. The Project will be awarded by base bid on a lump sum basis for the performance and completion of all Work required by the Contract Documents.

The Contract Documents include, but may not be limited to, the Instructions to Bidders, the Agreement for Services, the Specifications, and the forms of Bid Bond, Performance Bond, and Payment Bond. These and any other Contract Documents may be examined at the following location:

Engineering Department
Macon Water Authority
537 Hemlock Street
Macon, GA 31201

Copies of Contract Documents may be obtained at the Engineering Department, Macon Water Authority, 537 Hemlock Street, Macon, Georgia 31201, by contacting Jay Payne, Engineering Technician II, Telephone: 478-738-6521 upon a non-refundable payment of **\$150.00** for each set. A street address must be provided to ensure prompt delivery. No partial sets of bidding documents shall be issued. **Bidders must purchase the Contract Documents in order to be eligible to submit a bid.** Bid documents on the MWA website are for informational purposes only.

Each Bid must be accompanied by a Bid Bond in the amount of 10% of the Bid, prepared on the form of Bid Bond that is part of the Contract Documents, duly executed by the Bidder as principal and having as surety thereon a surety company licensed to do business in the State of Georgia and listed in the latest issue of U.S. Treasury Circular 570.

Bidders must comply with the Disadvantaged Business Enterprise Participation Requirements specified in the Instructions to Bidders.

The Bidder shall affix to the outside of its Bid envelope their Business License Number. The license number of a subcontractor is insufficient, and any Bid that fails to affix it to the outside of its Bid envelope the Bidder's Business License Number may be rejected.

The successful Bidder for this Project shall be required to furnish a Performance Bond and Payment Bond, satisfactory to the Owner, each in the amount of 100 % of the Contract Price.

Employment of Local Businesses and Contractors: It is the desire of the Owner that local businesses--including disadvantaged, minority, and women enterprise subcontractors-- be given the opportunity to participate on the various parts of the Work.

The Owner's encouragement of participation of disadvantaged, minority, and women enterprises and of locally owned businesses and contractors is not intended to restrict or limit competitive bidding or to increase the cost of the Work. The Owner supports a healthy, free market system that seeks to include responsible local businesses and provide ample opportunities for local business growth and development.

In an effort to assist minority-owned businesses, Georgia law permits an income tax adjustment on the state tax return of any company that subcontracts with a certified minority-owned firm to furnish goods, property or services to the State of Georgia pursuant to O.C.G.A. §48-7-38. Suppliers should consult with their tax advisors to find out how to take advantage of these tax credits.

The Owner reserves the right to reject any or all Bids. The Owner reserves the right to waive informalities and technicalities.

The Macon Water Authority
Ron Shipman
Executive Director & President

END OF SECTION

INSTRUCTIONS TO BIDDERS

1.01 CONTRACT DOCUMENTS

- A. The Bidder's attention is directed to the General Conditions and other Contract Documents, all of which should be reviewed and studied by the Bidders before submitting a Bid.
- B. The Contract Documents shall define and describe the complete Work to which they relate.

1.02 DEFINITIONS

The Bidder's attention is called to the definitions set forth in Article 41 of the General Conditions.

1.03 PREPARATION AND EXECUTION OF BID

- A. Each Bid must be prepared to represent that it is based solely upon the materials and equipment specified in the Contract Documents.
 - 1. *Trade Names.*— When reference is made in the Contract Documents to trade names, brand names, or to the names of manufacturers, such references are made solely to indicate that products of that description may be furnished and are not intended to restrict competitive bidding. Unless requests for approvals of other products have been received and approvals have been published by addendum in accordance with the procedure described below in this Section, the successful Bidder may furnish no products of any trade names, brand names, or manufacturers' names except those designated in the Contract Documents.
 - 2. *Use of other products.*—If a Bidder desires to use products of trade or brand names or of manufacturers' names which are different from those specified in the Contract Documents, application for the approval of the use of such products must be received by the Engineer at least ten (10) days prior to the date set for the opening of Bids. The application to the Engineer for approval of a proposed product must be accompanied by:
 - a. a schedule setting forth in which respects the materials or equipment submitted for consideration differ from the materials or equipment designated in the Contract Documents; and
 - b. a copy of the published recommendations of the manufacturer for the installation of the product together with a complete schedule of changes in the drawings and specifications, if any, which must be made in other work in order to permit the use and installation of the proposed product in accordance with the recommendations of the manufacturer of the product.

In addition, the Engineer will give consideration to reports from reputable independent testing laboratories, verified experience records showing the reputation of the proposed product with previous users, evidence of reputation of the

- manufacturer for prompt delivery, evidence of reputation of the manufacturer for efficiency in servicing its products, or any other written information that is helpful in the circumstances. To be approved, a proposed product must also meet or exceed all express requirements of the Contract Documents.
3. *Burden of proof.*— The degree of proof required for approval of a proposed product as acceptable for use in place of a named product or products is that amount of proof necessary to convince a reasonable person beyond all doubt.
 4. *Request for conference.*—Any Bidder who alleges that rejection of a submittal is the result of bias, prejudice, caprice, or error on the part of the Engineer may request a conference with a representative of the Owner: PROVIDED, that the request for said conference, submitted in writing, shall be received by the Owner at least five (5) days prior to the date set for the opening of Bids, time being of the essence.
 5. *Issuance of addenda.*— If the submittal is approved by the Engineer, an addendum will be issued to all prospective Bidders. Issuance of an addendum is a representation to all Bidders that the Engineer, in the exercise of its professional judgment and discretion, established that the product submitted for approval is acceptable and meets or exceeds all express requirements.
- B. Each Bid must be submitted on the Bid forms which are a part of the Contract Documents. **All blank spaces for Bid prices, both words and figures, must be filled in and completed in ink.** In case of discrepancy, the amount shown in words will govern. All required enclosed certifications or other documents must be fully completed and executed when submitted.
- C. In case of discrepancies between the figures shown in the unit prices and the totals, the unit prices shall apply and the totals shall be corrected to correspond with the unit prices. In case of discrepancies between written amounts and figures, written amounts shall take precedence over figures and the sum of all Bid extensions (of unit prices) plus lump sum items shall take precedence over the Bidders input of the Bid Total.
- D. Each Bid must be submitted in a sealed envelope, addressed to the Macon Water Authority (the “Owner”). Each sealed envelope containing a Bid must be plainly marked on the outside as, “AWTP-Thickener and Washwater Tank Pumps Replacement”.
- E. The Bidder shall provide on the outside of the sealed envelope the following information:
1. Bidder's Name;
 2. Bidder's Georgia Utility Contractor License Number; and,
 3. The words, “SEALED BID”
- F. Any Bid submitted which does not contain the above information on the outside of the sealed envelope will not be opened and will be returned to the Bidder.

- G. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed as follows:
- THE MACON WATER AUTHORITY
Attn: Jay Payne, Engineering Technician II
790 Second Street
Post Office Box 108
Macon, Georgia 31202-0108
- H. Any and all Bids not meeting the aforementioned criteria for Bid submittal may be declared non-responsive, and subsequently returned to the Bidder unopened.
- I. The Bidder, in signing a Bid on the whole or any portion of the Project, shall conform to the following requirements:
1. Bids which are not signed by individuals making the Bid shall have attached thereto a power of attorney evidencing authority to sign the Bid in the name of the person for whom it is signed.
 2. Bids which are signed for a partnership shall be signed by all of the partners or by an attorney-in-fact. If a Bid is signed by an attorney-in-fact, there should be attached to the Bid a power of attorney executed by the partners evidencing authority to sign the Bid.
 3. Bids which are signed for a corporation shall have the correct, legal corporate name thereof, as reflected in the records of the Georgia Secretary of State, and the signature of the president or other authorized officer of the corporation manually written below the corporate name following the wording "By _____." The corporate seal shall be affixed to the Bid.
 4. The Bidder shall complete, execute and submit the following documents, which are a part of the Contract Documents:
 - a. The Bid;
 - b. The Bid Bond;
 - c. Statement of Bidder's Qualifications;
 - d. Statement of Equipment;
 - e. Corporate Certificate, if the Bidder is a corporation;
 - f. Statement of Disadvantaged Business Enterprise ("DBE") compliance;
 - g. Contractor's License Certification;
 - h. Photocopy of State of Georgia Utility Contractor's License;
 - i. Photocopy of Certificate of Authority from Georgia Secretary of State's Office to do work in Georgia (if out of state contractor);
 - j. Non-Collusion Affidavit of Prime Bidder;
 - k. Any and all forms, certifications or other documentation required by the Georgia Department of Natural Resources Environmental Protection Division.

1.04 METHOD OF BIDDING

The unit or lump sum price for each of the several items in the Bid of each Bidder shall include its pro rata share of overhead and profit so that the sum of the products, obtained by multiplying the quantity shown for each item by the unit price, represents the total Bid. Any Bid not conforming to this requirement may be rejected. Additionally, unbalanced Bids (including unbalanced unit prices) may be rejected. Conditional Bids shall not be accepted. **The special attention of all Bidders is called to this provision, for should conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities, nor extra compensation allowed.**

1.05 ADDENDA AND INTERPRETATIONS

- A. No interpretation of the meaning of the Drawings, Specifications or other pre-bid documents or Contract Documents shall be made to any Bidder orally.
- B. Any and all such interpretations and any supplemental instructions will be in the form of written Addenda to the Contract Documents which, if issued, will be mailed, shipped or faxed to all prospective Bidders (at the respective addresses furnished) at least seventy-two (72) hours (exclusive of weekends and holidays) prior to the date fixed for the opening of Bids.
- C. Failure of Bidders to receive or acknowledge any Addendum shall not relieve them of any obligation under the Bid or the Contract Documents. All Addenda shall become part of the Contract Documents and obligations there under binding.

1.06 BID MODIFICATIONS

Bidders may modify their Bid by facsimile communication at any time prior to the scheduled closing time for receipt of Bids, provided such facsimile communication is received by the Owner prior to the time Bids are required, and provided further that the Owner is satisfied that a written confirmation of the facsimile modification over the signature of the Bidder was mailed by the Bidder to the Owner prior to the time Bids are required. The facsimile communication should not reveal the Bid price but should provide the addition or subtraction or other modification so that the final prices or terms will not be known by the Owner until the sealed Bid is opened. If written confirmation from the Bidder is not received by the Owner within two business days from the time Bids are required, no consideration will be given to the facsimile modification and the facsimile modification shall be rejected.

1.07 BID SECURITY

- A. Each Bid must be accompanied by a Bid Bond, prepared on the form of Bid Bond included herein, duly executed by the Bidder as principal and having as surety thereon a surety company authorized to do business in the State of Georgia and listed in the latest issue of U.S. Treasury Circular 570, in the amount of **ten (10%)** percent of the

Bid. Attorneys-in-fact who sign Bonds must file with each Bond a currently dated and valid original of their power of attorney. Where validity and currentness of a power of attorney are established by certification executed by a corporate officer, the certification shall be made and executed by a corporate officer of record, as reflected in the records of the Georgia Secretary of State, or by valid corporate resolution or authorization identifying such corporate officer.

- B. Except as provided in O.C.G.A. §§ 36-91-52 and 36-91-53, if for any reason whatsoever the successful Bidder withdraws from the competition after opening of the Bids, or if Bidder refuses to execute and deliver the Contract and Bonds required in Article 2 of the General Conditions, the provisions of the Bid Bond may be enforced.
- C. Except as provided in O.C.G.A. §§ 36-91-52 and 36-91-53, a Bid may not be revoked or withdrawn until sixty (60) days after the time set for opening the Bids. Upon expiration of this time period, the Bid will cease to be valid, unless the Bidder provides written notice to the Owner prior to the scheduled expiration date that the Bid will be extended for a time period specified by the Owner.

1.08 RECEIPT AND OPENING OF BIDS

The Owner may consider a technicality and informality any Bid not prepared and submitted in strict accordance with the provisions hereof and may waive any technicality and informality or reject any and all Bids. Any Bid may be withdrawn prior to the above scheduled time for the opening of Bids or authorized postponement thereof. Any Bid received after the time and date specified shall not be opened.

1.09 CONDITIONS OF THE PROJECT

- A. Each Bidder must be informed fully of the conditions relating to the work of the Project and the employment of labor thereon. Failure to do so will not relieve a successful Bidder of the obligation to furnish all material and labor necessary to carry out the provisions of the Contract Documents. Insofar as possible, the Bidder, 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.
- B. The Bidder is advised to examine the location of the Project and to be informed fully as to its conditions; access requirements, the conformation of the ground; the character, quality and quantity of the products needed preliminary to and during the prosecution of the work; the general and local conditions and all other matters which can in any way affect the work to be done under the Contract Documents. Failure to examine the site will not relieve the successful Bidder of an obligation to furnish all products and labor necessary to carry out the provisions of the Contract Documents.
- C. The Bidder shall notify the Owner of the date and time Bidder proposes to examine the location of the Project. The Bidder shall confine examination to the specific areas designated for the proposed work, ~~including easements and public right-of-ways~~. If, due to some unforeseen reason, the proceedings for obtaining the proposed work site ~~(including easements)~~, have not been completed, the Bidder may enter the site only with

the express consent of the property owner. The Bidder is solely responsible for any damages caused by examination of the site.

- D. All anticipated federal, state and local permits required for the Project have been obtained.
- E. All rights of way and easements anticipated for the Project have been obtained.

1.10 EQUAL EMPLOYMENT OPPORTUNITY

- A. During the performance of the Contract, the Bidder agrees as follows:
 - 1. The Bidder shall not discriminate against any employee or applicant for employment, or in any employment action during employment, based upon any applicable, legally-recognized and protected basis, including, but not limited to, veteran status, uniformed service member status, race, color, religion, sex, sexual orientation, gender identity, age (40 and over), pregnancy (including childbirth, lactation and related medical conditions), national origin or ancestry, citizenship status, physical or mental disability, genetic information (including testing and characteristics), or any other consideration protected by federal, state, or local law.
 - 2. The Bidder shall, in all solicitation or advertisement for employees placed by or on behalf of Bidder, state that all qualified applicants will receive consideration for employment without regard to any applicable, legally-recognized and protected consideration, including, but not limited to veteran status, uniformed service member status, race, color, religion, sex, sexual orientation, gender identity, age (40 and over), pregnancy (including childbirth, lactation and related medical conditions), national origin or ancestry, citizenship status, physical or mental disability, genetic information (including testing and characteristics), or any other characteristic or basis protected by federal, state, or local law.
 - 3. The Bidder shall send to each labor union or representative of the workers, with which the Bidder has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or worker's representative of the Bidder's commitments under the Equal Employment Opportunity Program of the Owner and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - 4. The Bidder and its subcontractors, if any, shall file compliance reports at reasonable times and intervals with the Owner in the form and to the extent prescribed by the Owner or the Georgia Department of Natural Resources. Compliance reports filed at such times as directed shall contain information as to the employment practices, policies, programs and statistics of the Bidder and its subcontractors.
 - 5. The Bidder shall demonstrate by the documentation required in Paragraph C, below, that a "Good Faith Effort" has been made to achieve compliance with the Owner's goal that a minimum of ten percent (10%) of the Contract Price shall be

subcontracted to a Disadvantaged Business Enterprise (DBE), which includes *business enterprises owned by women and by minorities*. More specifically, as used herein, the term “DBE” means a firm or business which is at least fifty-one percent (51%) owned, operated, capitalized, and controlled by one or more United States citizens or lawfully admitted residents who are socially and economically disadvantaged, as defined below.

As used herein, social disadvantage means an individual who is a member of a *presumed group* or who is a *woman*. Economic disadvantage, as used herein, means, generally, a socially disadvantaged individual who does not have a personal net worth in excess of \$1.32 million dollars, excluding the primary residence and ownership in the subject firm.

Member(s) of a *presumed group* include Black Americans (any Black racial group originating in Africa); Hispanic Americans (origins in Mexico, Puerto Rico, Cuba, Central and South America, or other Spanish or Portuguese cultures); Native Americans (Native of Alaska or Hawaii or certified member of a federal or state recognized Tribe); Asian Pacific Americans (origins in the Pacific Islands, China, Taiwan, Korea, Japan, Thailand, Burma, Cambodia, Vietnam, Malaysia, Indonesia, Singapore, or Philippines); and Subcontinent Asian Americans (origins in India, Pakistan, Bangladesh, Bhutan, Maldives Islands, Nepal, or Sri Lanka).

As used herein, the term “subcontracted” means providing subcontracting services or furnishing products or materials to be utilized in the performance of the Work.

6. The Bidder shall include the provisions of paragraphs 1 through 6 of this Section 1.10.A in every subcontract or purchase order so that such provisions will be binding upon each subcontractor or vendor.
- B. In determining whether a Bidder has made “Good Faith Efforts”, the Owner will look not only at the different kinds of effort that a Bidder has made, but also the quantity and intensity of these efforts.
- C. The following list of kinds of efforts is provided for consideration:
 1. Whether the Bidder attended any pre-solicitation or pre-bid meetings that were scheduled by the Agent to inform DBEs of contracting and subcontracting opportunities;
 2. Whether the Bidder advertised in general circulation, trade association, and minority-focus media concerning the sub-contracting opportunities;
 3. Whether the Bidder provided written notice to a reasonable number of specific DBEs that their interest in the Contract was being solicited, in sufficient time to allow the DBEs to participate effectively;
 4. Whether the Bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether the DBEs were interested;

5. Whether the Bidder selected portions of the Work to be performed by DBEs in order to increase the likelihood of meeting the DBE goals (including, where appropriate, breaking down contracts into economically feasible units to facilitate DBE participation);
 6. Whether the Bidder provided interested DBEs with adequate information about the Drawings, Specifications and requirements of the Contract Documents;
 7. Whether the Bidder negotiated in good faith with interested DBEs, not rejecting DBEs as unqualified without sound reasons based on a thorough investigation of their capabilities;
 8. Whether the Bidder made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance required by the Contract Documents or Contractor; and
 9. Whether the Bidder effectively used the services of available minority or women community organizations; minority or women contractor's groups; local, state and federal minority or women business assistance offices and other organizations that provide assistance in the recruitment and placement of DBEs.
- D. Each Bidder shall include with his or her Bid a Statement of Disadvantaged Firm Utilization. Such statement shall include, as a minimum, the names and addresses of all disadvantaged/minority/women enterprise firms providing subcontracting services, furnishing products or materials, etc., the nature of the work to be contracted; and the anticipated cost of the services by each named firm as a percentage of the total Contract Price set forth in the Bid. The percentage participation should be calculated on the basis of the proportion of total dollar value of the Bid, including bulk purchase materials supplied by DBEs.
- E. It is the desire of the Owner that DBEs be given the opportunity to bid on the various parts of the Work, and that to the extent feasible, DBE firms in the Middle Georgia area will be solicited and used in order to meet the DBE goal set forth above. However, this desire is not intended to restrict or limit competitive bidding or to increase the cost of the Work. The Owner supports a healthy, free market system that seeks to include responsible businesses and provide ample opportunities for business growth and development.

In an effort to assist minority-owned businesses, Georgia law permits an income tax adjustment on the state tax return of any company that subcontracts with a certified minority-owned firm to furnish goods, property or services to the State of Georgia pursuant to O.C.G.A. §48-7-38. Suppliers should consult with their tax advisors to find out how to take advantage of these tax credits.

1.11 NOTICE OF SPECIAL CONDITIONS

If any special federal, state, county or city laws, municipal ordinances, and the rules and

regulations of any authorities having jurisdiction over work of the Project, enclosed, herein referred to, or applicable by law to the Project, conflict with requirements of the Contract Documents, then the federal, state, county or city laws, municipal ordinances, and the rules and regulations of any authorities having jurisdiction over work of the Project shall prevail and supersede the conflicting requirements of the Contract Documents.

1.12 OBLIGATION OF BIDDER

- A. By submission of a Bid, each Bidder warrants that Bidder has inspected the site and has read and is thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any Bidder to examine any form, instrument or document shall in no way relieve any Bidder from any obligation in respect to the Bid.
- B. Special attention is directed to Article 2 and Article 4, “Insurance” contained at pages 00700-3 through 00700-6 in the General Conditions. The Owner requires (1) “Worker’s Compensation and Employer’s Liability Insurance,” (2) “Commercial General and Umbrella Liability Insurance,” (3) “Business Auto and Umbrella Liability Insurance,” and (4) “Materials and Floater” Insurance. For each of the required policies, the Owner requires a certificate of insurance at least quarterly, a copy of the endorsement of the insurance company showing the Owner as an additional insured, and a copy of the insurance policy declaration and any necessary endorsements.
- C. Attention is further directed to Paragraph 6 of 00500, Contract Agreement and Article 9 of 00700, General Conditions regarding assignments. Prior written consent of the Owner is required for any assignment of any portion of this Contract, including any assignment due to “buyout” of Bidder or other acquisition of Bidder where the Bidder is a corporation or where Bidder is 50 percent or more owned by a corporation, firm, or person.

1.13 METHOD OF AWARD

- A. The Contract, if awarded, will be awarded to the lowest responsible and responsive Bidder whose Bid meets the requirements and criteria set forth in the Contract Documents. The Contract, if awarded, will be awarded by base bid [or “*by base bid plus selected alternates*”] on a lump sum basis, comprised of unit prices, for the performance and completion of all Work required by the Contract Documents.
- B. The Bidder to whom the award is made will be notified. The Owner reserves the right to reject any and all Bids and to waive any technicalities and informalities in Bids received whenever such rejection or waiver is in the Owner’s interest.
- C. A responsive Bidder shall be one who submits a Bid in the proper form without qualification or intent other than as called for in the Contract Documents, and who binds itself on behalf of the Bid to the Owner with the proper Bid Bond completed and attached, and who properly completes all forms required to be completed and submitted at the time of the Bidding. The Bidder shall furnish all data, documents, forms, and certifications required by the Contract Documents. Failure to do so may result in the

Bid being declared non-responsive.

D. A responsible Bidder shall be one who can fulfill the following requirements:

1. The Bidder shall maintain a permanent place of business. This requirement applies to the Bidder where the Bidder is a division of a corporation, or where the Bidder is 50 percent or more owned by a person, corporation or firm.
2. The Bidder shall demonstrate adequate work experience and sufficient equipment resources to properly perform the work under and in conformance with the Contract Documents. This evaluation will be based upon a list of completed or active projects and a list of work equipment available to the Bidder to perform the work. The Owner may make such investigations as deemed necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may reasonably request. The Owner reserves the right to reject any Bid if the evidence submitted by, or investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations of the Contract Documents and to complete the Project contemplated therein.
3. The Bidder shall demonstrate financial resources of sufficient strength to meet the obligations incident to the performance of the Work covered by the Contract Documents. The ability to obtain the required Performance and Payment Bonds will not alone demonstrate adequate financial capability.

1.14 EMPLOYMENT OF LOCAL LABOR

Preference in employment on the Project shall, insofar as practical, be given to qualified local labor.

END OF SECTION

FEDERAL WORK AUTHORIZATION PROGRAM AFFIDAVITS

**EACH BIDDER MUST PROVIDE THE OWNER WITH THE
PROPERLY COMPLETED AND PROPERLY SIGNED FEDERAL
WORK AUTHORIZATION PROGRAM AFFIDAVITS AS
REQUIRED BY O.C.G.A. § 13-10-91**

**THIS FORM MUST BE COMPLETED BY ALL CONTRACTORS, ALL
SUBCONTRACTORS AND ALL SUB-SUBCONTRACTORS**

THE FORMS ARE ATTACHED HERETO.

Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Contractor

Name of Project

Name of Public Employer: the Macon Water Authority

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20___ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME

ON THIS THE _____ DAY OF _____, 20___.

NOTARY PUBLIC

My Commission Expires: _____, 20___.

Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with _____ [insert name of contractor] on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice that a sub-subcontractor has received an affidavit from any other contracted sub-subcontractor, the undersigned subcontractor must forward, within five business days of receipt, a copy of the notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Subcontractor

Name of Project

Name of Public Employer: Macon Water Authority

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 20__.

NOTARY PUBLIC

My Commission Expires: _____, 20__.

Sub-subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(4)

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract for _____ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract] and _____ [insert name of contractor] on behalf of the Macon Water Authority has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned sub-subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned sub-subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-subcontractor with the information required by O.C.G.A. § 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to _____ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract]. Additionally, the undersigned sub-subcontractor will forward notice of the receipt of any affidavit from a sub-subcontractor to _____ [insert name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract]. Sub-subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Sub-subcontractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 20__ in _____ (city), _____ (state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 20__.

NOTARY PUBLIC

My Commission Expires: _____, 20__.

BID

TO: MACON WATER AUTHORITY

FROM: _____
(Bidder's Name)

FOR: _____

Submitted: _____, 20__

The undersigned Bidder, in compliance with your Invitation to Bid for the services of this Project, having examined the Contract Documents and the site of the proposed Work, and being familiar with all of the conditions surrounding the services of the proposed Project, including the availability of materials and labor, hereby proposes to construct the Project in accordance with the Contract Documents.

The Bidder proposes and agrees, if this Bid is accepted, to contract with the Macon Water Authority, in the form of Contract Agreement specified, and to furnish all necessary products, machinery, tools, apparatus, means of transportation and labor necessary to complete the services of the Work in full and complete accordance with the reasonably intended requirements of the Contract Documents to the full and entire satisfaction of the Macon Water Authority with a definite understanding that no money will be allowed for extra work except as set forth in the Contract Documents, for the following prices:

<u>SCHEDULE OF BID PROPOSAL - BASE BID</u>					
- PUMPS AND INSTALLATION					
Item No.	Quantity	Unit	Description	Unit Price	Total Base Price
1	4	Per Each	Progressive Cavity Pump & Motor	\$	\$
2	Lump Sum	LS	Pump Installation/Replacement	\$ LUMP SUM	\$
TOTAL BASE BID - (Items 1-2)					\$
<i>END OF BASE BID</i>					

Total Bid for Items 1 through _____, inclusive, in the amount of

_____ Dollars

(\$ _____) which sum hereinafter is called the "Base Bid".

The Bidder agrees hereby to commence Work under this Contract, with adequate personnel and equipment, on a date to be specified in a written order of the Engineer, and to fully complete all Work under this Contract within _____ (_____) consecutive calendar days from and including said date specified in the written order of the Engineer. Bidder further agrees to pay as liquidated damages, the sum of \$_____.00 for each calendar day thereafter required to achieve substantial completion of all Work.

The Bidder declares an understanding that the quantities shown for unit price items are subject to either increase or decrease, and that should the quantities of any of the items of Work be increased, the Bidder proposes to do the additional Work at the unit prices stated herein; and should the quantities be decreased, the Bidder also understands that payment will be made on the basis of actual quantities at the unit price bid and will make no claim for additional costs or anticipated profits for any decrease in quantities; and that actual quantities will be determined upon completion of Work, at which time adjustment will be made to the Contract Price by direct increase or decrease.

In case of discrepancies between the figures shown in the unit prices and the totals, the unit prices shall apply and the totals shall be corrected to agree with the unit prices. In case of discrepancies between written amounts and figures, written amounts shall take precedence over figures and the sum of all Bid extensions (of unit prices) plus lump sum items shall take precedence over the Bidder's represented BID TOTAL.

The Bidder furthermore agrees that, in the case of a failure to execute the Contract Agreement and Bonds within ten days after receipt of conformed Contract Documents for execution, the attached Bid Bond accompanying this Bid and the monies payable thereon shall be paid into the funds of the Macon Water Authority as liquidated damages for such failure.

Attached hereto is a Bid Bond for the sum of _____

_____ Dollars (\$_____) according to the conditions of "Instructions to Bidders" and provisions thereof.

Bidder acknowledges receipt of the Following Addenda:

Addendum No. 1, dated: _____

Addendum No. 2, dated: _____

Addendum No. 3, dated: _____

Addendum No. 4, dated: _____

Remainder of Page Left Blank
[Signatures, attestations, and seal on following page]

BIDDER: _____

By: _____

Name: _____
(Print or Type)

Title: _____

Address: _____

Phone: _____

Attest: _____

Name: _____
(Print or Type)

Title: _____

(SEAL)

Note: Attest for a corporation must be by the secretary of record for the corporation, as reflected in the records of the Georgia Secretary of State; for a partnership by another partner; for an individual by a notary.

Note: If the Bidder is a corporation, the Bid shall be signed by an officer of the corporation; if a partnership, it shall be signed by a partner. If signed by others, authority for signature shall be attached.

The full names and addresses of persons or parties interested in the foregoing Bid, as principals, are as follows:

<u>Name</u>	<u>Address</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

END OF SECTION

SECTION 00422

CORPORATE CERTIFICATE

I, _____, certify that I am the Secretary of the Corporation named as Bidder in the foregoing Bid; that _____, who signed said Bid on behalf of the Bidder was then _____ of said Corporation; that said Bid was duly signed for and on behalf of said Corporation by authority of its Board of Directors, and is within the scope of its corporate powers; that said Corporation is organized under the laws of the State of _____.

This _____ day of _____, 20____.

(Corporate Secretary) _____

(SEAL)

END OF SECTION

SECTION 00423

STATEMENT OF DISADVANTAGED FIRM UTILIZATION

The Bidder shall list all disadvantaged firms, as are defined in the Instructions to Bidders, providing subcontracting services, furnishing products or materials, etc., to be utilized in the performance of the work. This list shall be submitted in the following format:

Subcontractor (Name & Address)	Nature of Work to be Contracted	Group (Local, DBE)	Anticipated Cost of Services (\$ Value, %)
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%
			\$
			%

NOTE: Any proposed changes from the above list shall be submitted in writing to the Macon Water Authority prior to initiation of the action, with the reason for the proposed deviation.

END OF SECTION

SECTION 00480

NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

STATE OF GEORGIA COUNTY OF _____
_____, being first duly sworn, deposes and says that:

He or she is _____
(Owner, Partner, Officer, Representative or Agent)
of _____, the Bidder that has submitted the attached Bid;

He or she is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid;

He or she understands that collusive bidding is a violation of State and Federal law and can result in fines, prison sentences, and civil damages awards;

Such Bid is genuine and is not a collusive or sham Bid;

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 Owner, the Macon Water Authority, or any person interested in the proposed Contract; and

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. Affiant agrees to abide by all conditions of this Bid, and certifies that he or she is authorized to sign this Bid for the Bidder.

(Signed) _____

(Title) _____

Subscribed and Sworn to before me this _____ day of _____, 20____.

(Notary Public)
(SEAL)

My Commission Expires: _____

may have represented or acted for the partnership shall also make the foregoing oath. If the Bidder is a corporation, all officers, agents, or other persons who may have acted for or represented the corporation shall also make the oath.

END OF SECTION

MACON WATER AUTHORITY

Agreement Number 001

Agreement For Services

This Agreement For Services (“Agreement”), dated this ____ day of _____ 20__, sets forth the terms and conditions under which the **MACON WATER AUTHORITY** (the “Owner”) hereinafter retains the Services of _____ (the “Contractor”). This Agreement shall be effective on the date above if signed by both of the Owner’s Board Chairman and Executive Director.

1. PARTIES TO AGREEMENT

The Owner’s address and its contact person(s) are:

Macon Water Authority
790 Second Street
P.O. Box 108
Macon, GA 31202-0108

Eric Barron, Maintenance Planner
Phone: (478)-464-6475
Cell: (478)-733-0646

Jay Payne, Engineering Technician II
Phone: (478) 738-6521

The Contractor’s address and its contact person(s) are:

2. PROJECT AND SCOPE OF SERVICES

2.1 The Contractor shall provide Services, as hereinafter particularly described below, on the following project (hereinafter referred to as the "Project"):

AWTP-Thickener and Washwater Tank Pumps Replacement as described herein.

2.2 The Contractor represents to the Owner that individuals that the Contractor shall utilize to fulfill and complete this Agreement possess expertise in the following disciplines and possess the following accreditations or other credentials, if any:

2.3 The Contractor shall provide the Owner the following Equipment and Services with respect to the Project:

The work includes furnishing all labor, materials, equipment, tools and incidentals required for a complete and operable installation (replacement) of four (4) progressive cavity pumps (direct drive) and motors. All equipment shall be installed, adjusted, tested and placed in operation in accordance with the Specifications (Section 04100) and the manufacturer's recommendations. The pumps shall be non-overloading throughout the following operating range:

- Primary Flow Rate: 275 GPM
- Differential Pressure: 60 psi
- Suction Conditions: 5 feet flooded
- Medium: Sludge
- Solids Content: 1%
- Viscosity: 1 cp
- Density: 62.43 lb/cf
- pH level: 6-8
- Maximum Power at Duty Suction: 20 HP
- Suction and Discharge Flange Size: 6 inch ANSI
- NPSHr shall not exceed: 12 feet
- Maximum speed shall be 290 rpm

Installation services will include:

1. Mobilize to Amerson Water Treatment Plant (703 River Bend Rd., Macon, GA 31211)
2. Disconnect and remove complete pumps and motors (4 total) from base

3. Form up and grout pump base to match new pump centerline
4. Install new Progressive Cavity Pump skid on modified pump base
5. Grout new pump skid
6. Provide all parts to make piping changes required for fitment
7. Provide new Hardware and gaskets
8. Make all connections and make pump ready to run
9. Perform startup services
10. Disposal of old equipment.

Please note that access to at least 2 operational units (one per location) at a time will be required throughout installation. One pump in the Washwater Building and one pump in the Thickener Building must remain accessible and operational throughout the life of the project. In each building, the removal of the second pump (after the initial pump replacement) will be contingent on the new pump being tested and operating satisfactorily for a minimum of 48 hours.

2.4 As part of its Services, the Contractor shall produce for the Owner the following tangible products or deliverables:

See Section 2.3 of this document, SECTION 00500.

3. WHEN SERVICES WILL BE PERFORMED

- 3.1 Start Date:
Completion Date:

4. COMPENSATION PAYABLE TO CONTRACTOR

- 4.1 Compensation under this Agreement shall be pursuant to the terms specified in the amount of \$_____

5. WORKING RELATIONSHIP

5.1 The Contractor will function in cooperation with the Owner's designated representative, which is set forth in Section 1 of this Agreement. The Contractor will consult with the Owner before finalizing recommendations or taking action at Project milestones or other key decision points.

5.2 The Owner shall have the right, at its sole discretion, to demand and require the Contractor to remove any employee or subcontractor working for the Contractor on the Project and to replace such employee or subcontractor without cost or liability to the Owner.

5.3 For purposes of safety and otherwise, the Contractor, at all times, shall ensure its ability to thoroughly and clearly communicate, in any and all necessary languages, with the Owner and with the Contractor's employees, agents, representatives, and subcontractor. The Contractor agrees to employ one or more supervisory-level personnel capable of thoroughly and clearly communicating, in any and all necessary languages, with the Owner and with the Contractor's employees, agents, representatives, and subcontractor, and that such supervisory-level and language-capable personnel shall be stationed at and assigned to the location(s) or site(s) where, and at all times when, any and all work or services under this Agreement shall be performed.

5.4 The Contractor shall ensure that any and all electronic devices, computers, software, hardware, equipment and other similar and related items that are utilized by the Contractor, or any entity or person under the Contractor's supervision or control, do not harm, or allow harm, to the Owner's computers, systems, networks, and technology. The Contractor shall take any and all measures possible to protect the Owner's computers, systems, networks, and technology from viruses and other malicious codes.

6. COMPENSATION, BILLINGS AND BONDS

6.1 The Contractor's compensation shall be as set forth in Section 4.1.

6.2 The Owner shall pay all accurate and properly rendered invoices within thirty (30) days from their date of receipt at the Owner's offices. The Owner agrees to pay any undisputed portion of any disputed invoice.

6.3 As a condition precedent to final payment, whether upon completion of all Services or upon cancellation or termination of the Agreement, the Contractor shall (1) perform and engage in a formal checkout process with the Owner for purposes of completing all forms, submitting documentation, and providing the Owner any and all other information, items or things required by the Contract Documents, and (2) return all of the Owner's property to the Owner.

6.4 The contractor for this project shall be required to furnish both a Performance and a Payment Bond, satisfactory to the owner, each in the amount of 100% of the Contract Price.

7. CANCELLATION OR TERMINATION BY OWNER

7.1 The Owner reserves the right to cancel or terminate this Agreement with notice in writing to the Contractor. In the event of cancellation or termination, the Owner shall pay to the Contractor all compensation earned and, where applicable, reimbursable expenses incurred up to and including the effective date of cancellation or termination provided the Contractor is not in breach of this Agreement.

7.2 Within three (3) business days of such cancellation or termination, and pursuant to Paragraph 6.3, above, the Contractor shall produce, submit and deliver to the Owner all documents, material, data and information gathered or developed for the Project, including all of the items identified in Paragraphs 10.1, 10.2, and 10.3, below. Under no circumstances shall the Contractor assert any lien or other claim over or relating to any such documents, material, data and information.

7.3 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the work or services covered by this Agreement, in whole or in part, for such period of time as the Owner may determine. For an extended delay beyond 30-days, the Owner will pay the Contractor for costs caused by a delay in work due to price increase, if this applies.

8. INDEPENDENT CONTRACTOR

8.1 The Contractor and its employees shall perform as an independent Contractor and not as employee(s) of the Owner. The Contractor retains sole and exclusive liability for all contributions, taxes or payments required to be made on account of the Contractor's employees under federal or state income tax laws, unemployment compensation acts, social security acts, and all other legislation requiring employer contributions or withholdings.

8.2 The Contractor shall maintain strict discipline among all personnel employed at any Project site, and no person under the influence of drugs or alcohol shall be allowed on the property of the Owner, nor shall any person employed on any Project site have in his or her possession any drugs, alcohol or firearms. Unprofessional conduct, including but not limited to horseplay, wrestling, and fighting, shall not be permitted or allowed.

9. RESPONSIBILITY FOR SERVICES

9.1 In the performance of this Agreement, the Contractor warrants that it shall consistently render its best efforts and shall exercise that degree of skill and care which others would exercise in like circumstances and that its Services will be performed without errors or omissions.

9.2 If Services performed by the Contractor fail to meet the standards set forth in Section 9.1, the Owner may elect to have the Contractor re-perform, or cause to be re-performed, at no cost to the Owner any of the Services which fail to meet said standards where: (i) such failure appears during the performance of the Contractor's Services or within one year from the date of completion of the Contractor's Services, and (ii) the Owner notifies Contractor of any such failure within sixty (60) days of the time that the failure becomes apparent. This paragraph shall not be interpreted to limit the right of the Owner to pursue and obtain any and all other remedies against the Contractor at law or in equity.

9.3 The Owner acknowledges that the Contractor shall be entitled to rely on the accuracy and currency of information supplied by the Owner or by any of the Owner's Contractors or consultants, or available from generally accepted reputable sources.

9.4 OWNER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED.**10. OWNERSHIP OF WORK PRODUCT**

10.1 The reports, recommendations, specifications, drawings, technical data, sketches, computer software, and all other information developed by the Contractor in connection with its performance under this Agreement (the "Information") shall be the property of the Owner. In entering into this Agreement, the Contractor hereby transfers to the Owner all right, title, and interest, including the copyright, in and to the Information.

10.2 The reports, recommendations, specifications, drawings, technical data, sketches, computer software, and all other information developed by equipment vendors or other third parties in this Agreement shall be the property of the Owner. This provision shall not act to transfer rights of owners of standard software or specification packages for which copyright is retained by the developer.

10.3 All original technical data, evaluations, reports and other work product of the Contractor shall be delivered to the Owner upon the completion or cancellation of Services under this Agreement, pursuant to Paragraph 7.2, above. The Contractor may retain one (1) copy of all documents produced by the Contractor for its permanent file.

10.4 Notwithstanding any other provision herein, the Contractor does not hereby provide owner with any rights or licenses expressed or implied, to any intellectual property rights of any nature owned by the Contractor.

11. ACCOUNTING AND RECORDS

11.1 Where the Contractor's compensation includes reimbursement for any labor or expenses, the Contractor will maintain a system of accounting and record keeping for such labor and expenses. Further, the Contractor shall allow the Owner's inspection of necessary supporting receipts and documentation for audit purposes for a period of six (6) years after completion of Services provided under this Agreement. The Owner's audit rights shall not extend to the characterization of any lump sums, unit rates or fixed percentage, other than to verify such costs are properly chargeable to the Owner.

12. COMPLIANCE WITH LAWS

12.1 The Contractor shall comply with all federal, state and local laws, regulations, ordinances, and other legal mandates applicable to the performance of its Services under this Agreement including but not limited to laws governing health, safety, the protection or preservation of the environment, and occupational licensing. The provisions of O.C.G.A. 45-10-20 et seq. have not and must not be violated under the terms of this Agreement.

12.2 Contractor certifies that Contractor is not currently engaged in, and agrees for the duration of the contract not to engage in, a boycott of Israel, as defined in O.C.G.A. Section 50-5-85.

13. DRUG-FREE WORKPLACE

13.1 Contractor hereby certifies that he or she will not engage in the unlawful contract, sale distribution, dispensation, possession, or use of a controlled substance or marijuana during the performance of this Agreement.

13.2 Contractor hereby certifies that, if he or she has more than one employee, including the Contractor, Contractor shall provide for such employee(s) a drug-free workplace, in accordance with the Georgia Drug-free Workplace Act as provided in O.C.G.A. Section 50-24-1 et seq., throughout the duration of this Agreement.

13.3 Contractor hereby certifies that Contractor will secure from any subcontractor hired to work on any job assigned under this Agreement the following written certification: "As part of the subcontracting agreement with (Contractor's Name), (Subcontractor's Name) certifies to the contractor that a drug-free workplace will be provided for the subcontractor's employees during the performance of this Contract pursuant to paragraph 7 of subsection (b) of O.C.G.A. Section 50-24-3."

13.4 Contractor makes these certifications with the understanding that he or she may be suspended, terminated, or debarred if it is determined that the Contractor made false certification of the above or if Contractor has violated such certification by failure to carry out the requirements of O.C.G.A. Section 50-24-3(b).

14. EQUAL EMPLOYMENT OPPORTUNITY

14.1 The Contractor will not discriminate against any worker, employee or applicant for employment because of race, color, religion, sex, national origin, age, citizenship status, veteran status, or handicap. The Contractor will take affirmation action to ensure that applicants are employed, and that workers are treated during employment, without regard to their race, color, religion, sex, national origin, age, citizenship status, veteran status, or handicap. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment, or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

15. CONTINGENCY FEES

15.1 The Contractor represents that it has not employed and shall not employ any person other than its own principals and employees to solicit this Agreement or any contract with the Owner, and that it has not and shall not pay any person other than its own principals and employees any fee, commission, percentage, gift or other consideration contingent upon or resulting from the award or making of this Agreement or any other contract with the Owner.

16. **SUBCONTRACTORS**

16.1 The Contractor shall manage all work and Services performed under this Agreement. Upon the Owner's prior written consent, the Contractor may subcontract the Services to be provided. In such event, the rights and obligations of the Contractor and the Owner will not be diminished.

16.2 All of the Contractor's subcontractors shall be directly responsible to Contractor and shall be under the Contractor's direct supervision. The Contractor shall be as fully responsible and accountable to the Owner for the acts and omissions of its subcontractor and of persons either directly or indirectly employed by subcontractor in the performance of Services under this Agreement as the Contractor is for the acts and omissions of persons it directly employs. Nothing contained in this Agreement shall create any contractual relationship between any subcontractor and the Owner.

16.3 If the Contractor utilizes subcontractor(s) with respect to this Agreement, then the Contractor will require subcontractor(s) to comply with all terms and conditions of this Agreement including, but not limited to the insurance requirements. The Contractor shall require all Subcontractors to supply a certificate of insurance as required herein before the Subcontractor commences any work.

17. **INSURANCE**

17.1 The Contractor and all Subcontractors shall maintain insurance in the types and coverage amounts shown below, which insurance shall provide coverage for Contractor during the term of this Agreement. On the date the Contractor signs this Agreement, the Contractor shall provide the Owner with (i) an endorsement from the insurer naming the Owner as an additional insured under the liability policies and (ii) certificate(s) verifying that these insurance coverages and limits are in force. Additional certificates of insurance shall be provided whenever individual policies are renewed (or replaced) on their anniversary date and at such other times as the Owner requests.

17.2 The insurance requirements of this Agreement are:

Type of Insurance	Coverage Limits
Workers' Compensation with GEORGIA under Section 3A (Statutory)	
Employer's Liability	\$1,000,000 Each Accident
	\$1,000,000 Disease Policy Limit
Waiver of subrogation in favor of MWA	\$1,000,000 Disease Each Employee
Comprehensive General Liability	\$1,000,000 per occurrence
Including Contractual Liability,	\$2,000,000 annual aggregate
Including Products and Completed Operations	

Bodily Injury and Property Damage
Including Products and Completed Operations
Including Primary and Non-Contributory endorsement
Including Per project aggregate endorsement
Owner is named as additional insured

Comprehensive Auto Liability, \$1,000,000 combined single limit
Including owned, hired and non owned Liability
Owner is named as additional insured

Umbrella Liability Insurance \$5,000,000 annual aggregate
Covering Comprehensive General Liability (CGL) and
Comprehensive Auto Liability
Owner is named as additional insured
Covering Employer's Liability

17.3 If such CGL insurance contains a general aggregate limit, it shall apply separately to this project, (Per Project Aggregate Endorsement). Each policy shall be indorsed with ISO Form CG 25 03 11 85 or equivalent form with wording satisfactory to Owner.

17.4 The Contractor waives all rights, including rights of subrogation, against the Owner and its respective directors, officers, partners, commissioners, officials, agents, insurers, Subcontractors, consultants and employees for damages covered by any type of insurance during and after the completion of the Work.

17.5 The Contractor will retain ownership of all equipment supplied as set forth in: Section 2.4 until the equipment is operational.

18. INDEMNIFICATION

18.1 The Contractor agrees to hold harmless and indemnify the Owner, its directors, officers, and employees from and against any and all liability, claims, actions, causes of action, losses, damages, demands, suits, judgments, costs and expenses arising out of bodily injury (including death) to persons, damage to property, including, but not limited to, any and all costs, expenses, legal fees and liabilities, incurred in and about investigation, defense or prosecution thereof, to the extent caused by a negligent act, error or omission of the Contractor or any Subcontractor(s), or as a result of defective Services under this Agreement.

19. CONTRACT ADMINISTRATION

19.1 The Owner and the Contractor have each appointed certain individuals whose names and phone numbers appear in Section 1 to be their respective representatives in the administration

and performance of this Agreement. The Owner's representative shall have no power or authority to change this Agreement or to execute or agree to any change orders.

19.2 To be binding against the Owner, and as a condition precedent thereto, any addition, deletion or modification to the terms of this Agreement must be in writing and signed by the Board Chair and Executive Director. The Contractor acknowledges that the Owner does not, and will not be deemed to, waive this condition precedent under any circumstances.

19.3 Failure of the Owner or the Contractor to insist in any one or more instances on performance of any of the terms and conditions of this Agreement, or to exercise any right or privilege contained in this Agreement, or the waiver of any breach of the terms and conditions of this Agreement, shall not be considered as creating or constituting a waiver of any such terms, conditions, rights or privileges, and the same shall continue and remain in force and effect.

19.4 The Contractor and the Owner will adhere to all applicable health and safety laws, rules and regulations including Occupational Safety and Health Administration's ("OSHA") Rules and Regulations effective at the time the work was performed.

19.5 The Contractor shall not assign any of its rights, or delegate any of its duties, under this Agreement without the prior written consent of the Owner.

19.6 This Agreement shall be governed by the laws of the State of Georgia.

19.7 All agreements between the parties are incorporated into this Agreement. In the event of any conflict or inconsistency between this Agreement and any provisions, terms or conditions of any other prior agreement, the provisions, terms and conditions of this Agreement shall supersede, control and prevail over the conflicting or inconsistent provisions of the prior agreement.

19.8 For purposes of this Agreement, The Macon Water Authority itself will serve in the capacity of engineer through the use of The Macon Water Authority's own employees. Any reference to "engineer" in this Agreement, is understood to refer to The Macon Water Authority's employees.

20. FORCE MAJEURE

20.1 The Contractor will not be responsible or liable in any way for delay or failure to perform its obligations under this Agreement during any period which performance is prevented or hindered by conditions reasonably beyond its control, acts of God, fire, flood, and other unusually adverse weather conditions, war, embargo, explosions, riots, laws, rules, regulations and order of any governmental authority.

21. AMENDMENTS

21.1 The Agreement may be amended in writing by mutual consent of the parties. All amendments to the Agreement must be in writing and fully executed by duly authorized representatives of the parties.

22. CAPTIONS

22.1 The headings in this Agreement are for the convenience of the parties hereto and shall in no way affect the work or interpretation of this Agreement or any part hereof.

[Remainder Of Page Left Blank]

[Signatures On Following Page]

SECTION 00500

IN WITNESS WHEREOF, the Owner and the Contractor, intending to be legally bound and each acting through persons duly authorized, have placed their signatures on duplicate original copies of this Agreement.

MACON WATER AUTHORITY
(Owner)

(Contractor)

Gary Bechtel, Board Chairman

Authorized Signature

Ron Shipman, Executive Director &
President

Printed Name

Title

Date

(Official Seal)

Attest: _____

Signature

Title: _____

Approved as to form:

(Corporate Seal)

By: _____

Printed Name: _____
Attorney for Macon Water Authority

SECTION 00600

PERFORMANCE BOND

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS:

That

(Legal title and address of the Contractor)

as Principal (hereinafter referred to as “Contractor”), and _____

(Legal title and address of Surety)

as Surety (hereinafter referred to as “Surety”), do hereby acknowledge ourselves indebted and firmly bound and held unto the Macon Water Authority (the “Owner”) in the amount of _____ Dollars (\$ _____ .00) to which payment Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bound Principal has entered into a Contract with Owner bearing date of _____ for construction of AWTP-Thickener and Washwater Tank Pumps Replacement Project in accordance with Contract Documents prepared by Owner all of which said Contract Documents are incorporated herein by reference and made a part hereof, and are hereinafter collectively referred to as the “Contract.”

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Contractor shall promptly and faithfully perform and comply with the terms and conditions of said Contract; and shall indemnify and save harmless the Owner against and from all costs, expenses, damages, injury or loss to which said Owner may be subjected by reason of any wrongdoing, including patent infringement, misconduct, want of care or skill, default or failure of performance on the part of said Principal, his agents, subcontractors or employees, in the execution or performance of said Contract, and shall fully reimburse and repay the said Owner any and all outlay, costs, and expense which it may incur in making good any such default and shall guarantee all products and workmanship against defects, as provided in the Contract Documents which comprise and constitute the Contract, for a period of one year and shall replace all defective work and products for such period of one year then this obligation shall be null and void; otherwise it shall remain in full force and effect.

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change or changes, extension of time or

extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work or to the specifications or drawings.

2. It is expressly agreed that this bond shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than 20 percent in excess of the original Contract Price, so as to bind the Principal and Surety to the full and faithful performance of the Contract as so amended. The term "amendment" shall include any alteration, addition, extension, or modification of any character whatsoever.
3. If pursuant to the Contract Documents the Contractor shall be declared in default by the Owner under the aforesaid Contract, the Owner shall take possession of the Project and finish the Work by whatever method the Owner may deem expedient, in accordance with Section 7 of the Services Agreement.
4. Supplementary to and in addition to the foregoing, whenever the Owner shall notify the Surety that the Owner has notice that the Contractor has failed to pay any subcontractor, materialman, or laborer for labor or materials certified by the Contractor as having been paid for by the Contractor, the Surety shall, within thirty (30) days of receipt of such notice, cause to be paid any unpaid amount for such labor or materials.
5. It is expressly agreed by the Principal and the Surety that the Owner, if it desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.
6. The Surety agrees that other than as is provided in this bond it may not demand of the Owner that the Owner shall (a) perform any thing or act, (b) give any notice, (c) furnish any clerical assistance, (d) render any service, (e) furnish any papers or documents, or (f) take any action of any nature or description which is not required of the Owner to be done under the Contract Documents.
7. No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the legal successors of the Owner.

This bond is given pursuant to and in accordance with the provisions of the Georgia Procurement Manual and of Title 36, Chapter 91 of the Official Code of Georgia Annotated, as may be amended or modified from time to time, and all the provisions of the law referring to this character of bond as set forth in said sections or as may be hereafter enacted or amended and these are hereby made a part hereof to the same extent as if set out in full herein.

Remainder of Page Left Blank

[Signatures, attestations, and seals on following Page]

Signed and sealed this _____ day of _____, 20__.

Signed, sealed and delivered
in the presence of:

(Insert Name of Contractor)

1. _____

By: (Signed)_____

(Printed)_____

2. _____

Attest :(Signed) _____

(Printed)_____

(CORPORATE SEAL)

Signed, sealed and delivered
in the presence of:

(Insert Name of Surety)

1. _____

By: (Signed)_____

(Printed)_____

2. _____

Attest :(Signed) _____

(Printed)_____

(CORPORATE SEAL)

APPROVED AS TO FORM:

(Printed Name)

Attorney for the Macon Water Authority

END OF SECTION

PLACE SURETY FOR PERFORMANCE BOND HERE

PAYMENT BOND

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS:

That

(Legal title and address of the Contractor)

as Principal (hereinafter referred to as “Contractor”), and _____

(Legal title and address of Surety)

as Surety (hereinafter referred to as “Surety”), do hereby acknowledge ourselves indebted and firmly bound and held unto the Macon Water Authority (the “Owner”), in the amount of _____ Dollars (\$ _____ .00) to which payment Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a Contract with Owner bearing date of _____ for construction of AWTP-Thickener and Washwater Tank Pumps Replacement Project in accordance with the Contract Documents prepared by Owner, all of which said Contract Documents are incorporated herein by reference and made a part hereof, and are hereinafter collectively referred to as the “Contract.”

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Contractor shall promptly make payment to all claimants as hereinafter defined for all labor and material supplied in the prosecution of the work provided for in said Contract Documents, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the Work to be performed thereunder, or the specifications or drawings accompanying same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the Contract or to the work or to the specifications or drawings.
2. It is expressly agreed that this bond shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract Documents not increasing the Contract Price more than 20 percent in excess of the original Contract Price, so as to bind the Contractor and Surety to the full and faithful performance of the Contract as so amended. The term “amendment” shall include any alteration, addition, extension, or modification of any character whatsoever.

3. A Claimant is defined as any subcontractor and any person supplying labor, materials, machinery, or equipment in the prosecution of the Work provided for in said Contract.
4. Every person or entity entitled to the protection hereunder and that has not been paid in full for labor or materials furnished in the prosecution of the Work referred to in said bond before the expiration of a period of ninety days after the day on which the last of the labor was done or performed by them, or materials or equipment or machinery was furnished or supplied by them for which such claim is made, or when they have completed its subcontract for which claim is made, shall have the right to sue on such payment bond for the amount, or the balance thereof, unpaid at the time of the commencement of such action and to prosecute such action to final execution and judgment for the sum or sums due them; provided, however, that any person or entity having direct contractual relationship with a subcontractor, but no contractual relationship, express or implied, with the Contractor, shall have the right of action upon this bond upon giving written notice to said Contractor within ninety days from the day on which such person or entity did or performed the last of the labor, or furnished the last of the materials or machinery or equipment for which such claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or supplied or for whom the labor was performed or done; provided further that nothing contained herein shall limit the right of action to said 90-day period. Notice may be served by depositing a notice, registered mail, postage prepaid, duly addressed to the Contractor at any place the Contractor maintains an office or conducts business, including any post office or branch post office or any letter box under the control of the United States Postal Service, or notice may be served in any manner in which the sheriffs of Georgia are authorized by law to serve summons or process.
5. Every suit instituted under this section shall be brought in the name of the claimant without the Owner being made a party thereto. The official who has the custody of said bond is authorized and directed to furnish, to any person or entity making application therefor who submits an affidavit that it has supplied labor or material for such work and payment therefor has not been made, or that it is being sued on any such bond, a copy of such bond and the Contract for which it was given, certified by the official who has custody of said bond; this copy shall be primary evidence of this bond and Contract and shall be admitted as evidence without further proof. Applicants shall pay for such certified copies and such certified statements such as fees as the official fixes to cover the cost of preparation thereof, but in no case shall the fee exceed the fees which the clerks of the superior courts are permitted to charge for similar copies.
6. No action can be instituted on this bond after one year from the date of the final acceptance of the Owner.

This bond is given pursuant to and in accordance with the provisions of Title 36, Chapter 91 of the Official Code of Georgia Annotated, as may be amended or modified from time to time, and all the provisions of the law referring to this character of bond as set forth in said sections or as may be hereafter enacted or amended and these are hereby made a part hereof to the same extent as if set out in full herein.

[Signatures, attestations, and seals on following Page]

Signed and sealed this _____ day of _____, 20__

Signed, sealed and delivered
in the presence of:

(Insert Name of Contractor)

1. _____

By: (Signed)_____

(Printed)_____

2. _____

Attest :(Signed) _____

(Printed)_____

(CORPORATE SEAL)

Signed, sealed and delivered
in the presence of:

(Insert Name of Surety)

1. _____

By: (Signed)_____

(Printed)_____

2. _____

Attest :(Signed) _____

(Printed)_____

(CORPORATE SEAL)

APPROVED AS TO FORM:

(Printed Name)

Attorney for the Macon Water Authority

END OF SECTION

PLACE SURETY FOR PAYMENT BOND HERE

SUPPLEMENTARY CONDITIONS**GENERAL** (Example, if any conditions exist)

The provisions in these Supplementary Conditions shall govern in the event of any conflict between the General Conditions and the provisions herein.

Policy “A”. ~~Compaction Tests and Shop Drawing Submittals~~

~~Please contact Mr. Joel Herndon, the Macon Water Authority’s (the “Owner’s”) Chief Inspector, at 478.464.5639 before commencing the construction activity. Compaction tests, where required, shall be performed in accordance with Macon Water Authority’s policy. The Contractor and the soil testing laboratory shall contact Mr. Herndon before the testing. The location at which the tests are performed will be decided by our inspection crew. The test report shall be submitted to the Engineering Division before the Owner can accept the Project for operation and maintenance. The Contractor shall submit five (5) copies of the shop drawings (ductile iron pipe, gate valve, valve box, ductile iron fittings, fire hydrant, manholes, manhole frames and covers, gravity sewer pipe, support structures, appurtenances, etc.) before installation. The Contractor will not be permitted to install materials and appurtenances until all the shop drawings are approved. The Contractor shall submit two copies of as-built drawings after the completion of construction but before the Project is accepted for operation and maintenance. The as-built drawings shall include the following for water/sewer portion of the Project: location of water main, valves, fire hydrants, fittings, water services to each lot, location of sewer mains, manholes (including rim and invert elevations), distance and angle between manholes, distance and length of each lateral from manholes, location of water main, gate valves, fire hydrants and fittings, width of easements and any other pertinent information.~~

Note: See Section 01720 for additional requirements.

Policy “B”. ~~Televising: NOT USED~~

Policy “C”. ~~As-Built: Produce and submit “AS-BUILT” survey of the generator, electrical lines to and from transfer switch, and any other underground utilities that were encountered during the installation. As-Built shall be prepared by a licensed Professional Engineer or Georgia Registered Land Surveyor, as appropriate for the project, and shall be submitted before the project is accepted by the Owner for operation and maintenance and before any project plat is signed.~~

~~The As-Built drawings shall be submitted in either the (.dxf) or the (.dwg) version DWG 2010 or later on a USB Flash Drive, along with two (2) sets of plans in the same format as shown on the drive. The As-Built drawings shall be submitted on a (24” x 36”) sheet. The vertical and horizontal accuracy of the as-builts shall be within 0.1 foot accuracy.~~

~~All relative information such as right-of-way, property corners, state plane monuments, etc. shall be located and tied to Georgia State Plane Coordinates.~~

Policy “D” – Payment Estimate Form – The Contractor shall generate an EXCEL spreadsheet listing all items in the Proposal and columns for quantities this period, total this period, total quantities to date, and total amount to date for a detail backup for the attached pay estimate summary sheet.

MWA PAY ESTIMATE FORM – ON NEXT PAGE

- **Project Milestone & Scheduling-** It is the desire of the Owner to complete this Project within the Contract Time allocated in the Contract Documents.

END OF SECTION



PAY ESTIMATE Summary Sheet

Macon Water Authority

790 Second Street P.O. Box 108
Macon GA 31202
Phone: (478) 464-5600
Fax: (478) 738-3864

Project Name: _____

Project Number: _____

Pay Estimate Number: _____ Partial: _____

Final: _____

Pay Period: _____

Original Contract Amount: \$ _____

Total Change Orders to Date: _____

Current Contract Amount: \$ _____

Original contract Work Performed to Date: _____

Change Order Work Performed to Date: _____

Materials Stored on Job Site: _____

Subtotal: _____

Less (5 %) Previous Retainage: _____

Subtotal: _____

Less Previous Payments: _____

Current Invoice Amount: _____

Less (5 %) Current Retainage: _____

Balance Due This Payment: _____

According to the best of my knowledge and belief, all items and amounts shown on the face of this Pay Estimate are correct; that all Work has been performed or materials supplied, or both, in full accordance with the requirements of the Contract Documents, or duly authorized deviations or additions thereto; that the foregoing is a true and correct statement of the Contract Price account up to and including the last day of the period covered by this Pay Estimate; that none of the "Balance Due This Payment" has been received, and that the undersigned and its Subcontractors have complied with all the labor provisions of the Contract Documents.

The Contractor further certifies that on those items of Work not disputed that all payables, materials, bills, and other indebtedness connected with the Work have been paid (less retention equal to that being retained by the Owner) for Work covered by previous payments. Quantities on request for partial payment are estimated only. Final quantities are by a final survey and "as built" drawings by Contractor.

(Contractor's Name-PRINT)

By: _____
(Signature of **Authorized Representative**)

Date: _____

Title: _____

By: _____
MWA-Inspector

By: _____
Project Engineer

By: _____
MWA-Project Manager

Date: _____

Date: _____

Date: _____

CODES AND STANDARDS**PART 1 GENERAL****1.01 DESCRIPTION**

- A. Whenever reference is made to conforming to the standards of any technical society, organization, body, code or standard, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the time of advertisement for Bids. This shall include the furnishing of materials, testing of materials, fabrication and installation practices. In those cases where the Contractor's quality standards establish more stringent quality requirements, the more stringent requirement shall prevail. Such standards are made a part hereof to the extent which is indicated or intended.
- B. The inclusion of an organization under one category does not preclude that organizations' standards from applying to another category.
- C. In addition, all work shall comply with the applicable requirements of local codes, utilities and other authorities having jurisdiction.
- D. All material and equipment, for which a UL Standard, an AGA or NSF approval or an ASME requirement is established, shall be so approved and labeled or stamped. The label or stamp shall be conspicuous and not covered, painted, or otherwise obscured from visual inspection.
- E. The standards which apply to this Project are not necessarily restricted to those organizations which are listed in Article 1.02.

1.02 STANDARD ORGANIZATIONS**A. Piping and Valves**

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

- | | | |
|--|-------|-------------------------------|
| | UBPPA | Uni-Bell PVC Pipe Association |
|--|-------|-------------------------------|
- B. Materials**
- | | | |
|--|--------|--|
| | AASHTO | American Association of State Highway and Transportation Officials |
| | ANSI | American National Standards Institute |
| | ASTM | American Society for Testing and Materials |
- C. Painting and Surface Preparation**
- | | | |
|--|------|---|
| | NACE | National Association of Corrosion Engineers |
| | SSPC | Steel Structures Painting Council |
- D. Electrical and Instrumentation**
- | | | |
|--|-------|--|
| | AEIC | Association of Edison Illuminating Companies |
| | AIEE | American Institute of Electrical Engineers |
| | EIA | Electronic Industries Association |
| | ICEA | Insulated Cable Engineers Association |
| | IEEE | Institute of Electrical and Electronic Engineers |
| | IES | Illuminating Engineering Society |
| | IPC | Institute of Printed Circuits |
| | IPCEA | Insulated Power Cable Engineers Association |
| | ISA | Instrument Society of America |
| | NEC | National Electric Code |
| | NEMA | National Electrical Manufacturers Association |
| | NFPA | National Fire Protection Association |
| | TIA | Telecommunications Industries Association |
| | UL | Underwriter's Laboratories |
| | VRCI | Variable Resistive Components Institute |
- E. Aluminum**
- | | | |
|--|------|--|
| | AA | Aluminum Association |
| | AAMA | American Architectural Manufacturers Association |
- F. Steel and Concrete**
- | | | |
|--|------|--|
| | ACI | American Concrete Institute |
| | AISC | American Institute of Steel Construction, Inc. |
| | AISI | American Iron and Steel Institute |
| | CRSI | Concrete Reinforcing Steel Institute |
| | NRMA | National Ready-Mix Association |
| | PCA | Portland Cement Association |
| | PCI | Prestressed Concrete Institute |
- G. Welding**

ASME	American Society of Mechanical Engineers
AWS	American Welding Society

H. **Government and Technical Organizations**

AIA	American Institute of Architects
APHA	American Public Health Association
APWA	American Public Works Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE	American Society of Civil Engineers
ASQC	American Society of Quality Control
ASSE	American Society of Sanitary Engineers
CFR	Code of Federal Regulations
CSI	Construction Specifications Institute
EDA	Economic Development Administration
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FmHA	Farmers Home Administration
FS	Federal Specifications
IAI	International Association of Identification
ISEA	Industrial Safety Equipment Association
ISO	International Organization for Standardization
ITE	Institute of Traffic Engineers
NBFU	National Board of Fire Underwriters
(NFPA)	National Fluid Power Association
NBS	National Bureau of Standards
NISO	National Information Standards Organization
OSHA	Occupational Safety and Health Administration
SI	Salt Institute
SPI	The Society of the Plastics Industry, Inc.
USDC	United States Department of Commerce
WEF	Water Environment Federation

I. **General Building Construction**

AHA	American Hardboard Association
AHAM	Association of Home Appliance Manufacturers
AITC	American Institute of Timber Construction
APA	American Parquet Association, Inc.
APA	American Plywood Association
BHMA	Builders Hardware Manufacturers Association
BIFMA	Business and Institutional Furniture Manufacturers Association
DHI	Door and Hardware Institute
FM	Factory Mutual Fire Insurance Company
HPMA	Hardwood Plywood Manufacturers Association
HTI	Hand Tools Institute

IME	Institute of Makers of Explosives
ISANTA	International Staple, Nail and Tool Association
ISDSI	Insulated Steel Door Systems Institute
IWS	Insect Screening Weavers Association
MBMA	Metal Building Manufacturers Association
NAAMM	National Association of Architectural Metal Manufacturers
NAGDM	National Association of Garage Door Manufacturers
NCCLS	National Committee for Clinical Laboratory Standards
NFPA	National Fire Protection Association
NFSA	National Fertilizer Solutions Association
NKCA	National Kitchen Cabinet Association
NWMA	National Woodwork Manufacturers Association
NWWDA	National Wood Window and Door Association
RMA	Rubber Manufacturers Association
SBC	SBCC Standard Building Code
SDI	Steel Door Institute
SIA	Scaffold Industry Association
SMA	Screen Manufacturers Association
SPRI	Single-Ply Roofing Institute
TCA	Tile Council of America
UBC	Uniform Building Code

J. Roadways

AREA	American Railway Engineering Association
DOT	Department of Transportation
SSRBC	Standard Specifications for Construction of Transportation Systems, Georgia Department of Transportation

K. Plumbing

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

L. Refrigeration, Heating, and Air Conditioning

AMCA	Air Movement and Control Association
ARI	American Refrigeration Institute
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
CGA	Compressed Gas Association
CTI	Cooling Tower Institute
HEI	Heat Exchange Institute
IIAR	International Institute of Ammonia Refrigeration

NB	National Board of Boilers and Pressure Vessel Inspectors
PFMA	Power Fan Manufacturers Association
SAE	Society of Automotive Engineers
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SMC	SBCC Standard Mechanical Code
TEMA	Tubular Exchangers Manufacturers Association

M. Equipment

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

1.03 SYMBOLS

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

END OF SECTION

SAFETY IN WORK AREAS

PART 1 GENERAL

1.01 SCOPE

- A. 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 protection is described in Articles 21 and 22 of the General Conditions.
- B. All construction shall be conducted in accordance with the latest applicable requirements for 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, state or federal safety codes and regulations.
- C. 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.
- D. The Contractor shall determine the safety hazards involved in prosecuting 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, it shall be Contractor's responsibility to determine such information prior to beginning the Work.
- E. The Contractor shall bear all risks associated with performing the Work and shall fully indemnify and hold harmless the Owner and Engineer.

1.02 SPECIAL REQUIREMENTS – Not Used.

END OF SECTION

TRANSPORTATION AND HANDLING**PART 1 GENERAL****1.01 SCOPE**

- A. The Contractor shall provide transportation of all equipment, materials and products furnished under these Contract Documents to the Work site. In addition, the Contractor shall provide preparation for shipment, loading, unloading, handling and preparation for installation and all other work and incidental items necessary or convenient to the Contractor for the satisfactory prosecution and completion of the Work.
- B. All equipment, materials and products damaged during transportation or handling shall be repaired or replaced by the Contractor at no additional cost to the Owner prior to being incorporated into the Work.

1.02 TRANSPORTATION

- A. All equipment shall be suitably boxed, crated or otherwise protected during transportation.
- B. Where equipment will be installed using existing cranes or hoisting equipment, the Contractor shall ensure that the weights of the assembled sections do not exceed the capacity of the cranes or hoisting equipment.
- C. Small items and appurtenances such as gauges, valves, switches, instruments and probes which could be damaged during shipment shall be removed from the equipment prior to shipment, packaged and shipped separately. All openings shall be plugged or sealed to prevent the entrance of water or dirt.

1.03 HANDLING

- A. All equipment, materials and products shall be carefully handled to prevent damage or excessive deflections during unloading or transportation.
- B. Lifting and handling drawings and instructions furnished by the manufacturer or supplier shall be strictly followed. Eyebolts or lifting lugs furnished on the equipment shall be used in handling the equipment. Shafts and operating mechanisms shall not be used as lifting points. Spreader bars or lifting beams shall be used when the distance between lifting points exceeds that permitted by standard industry practice.
- C. Under no circumstances shall equipment or products such as pipe, structural steel, castings, reinforcement, lumber, piles, poles, etc., be thrown or rolled off of trucks onto the ground.

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

END OF SECTION

STORAGE AND PROTECTION**PART 1 GENERAL****1.01 SCOPE**

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

1.02 STORAGE AND PROTECTION**A. Storage**

1. Maintain ample way for foot traffic at all times, except as otherwise approved by the Engineer.
2. All property damaged by reason of storing of material shall be properly replaced at no additional cost to the Owner.
3. Packaged materials shall be delivered in original unopened containers and so stored until ready for use.
4. All materials shall meet the requirements of these Specifications at the time that they are used in the Work.
5. Store products in accordance with manufacturer's instructions.

B. Protection

1. Use all means necessary to protect the materials, equipment and products of every section before, during and after installation and to protect the installed work and materials of all other trades.
2. All materials shall be delivered, stored and handled to prevent the inclusion of foreign materials and damage by water, breakage, vandalism or other causes.
3. Substantially constructed weathertight storage sheds, with raised floors, shall be provided and maintained as may be required to adequately protect those materials and products stored on the site which may require protection from damage by the elements.

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

- D. Equipment and products stored outdoors shall be supported above the ground on suitable wooden blocks or braces arranged to prevent excessive deflection or bending between supports. Items such as pipe, structural steel and sheet construction products shall be stored with one end elevated to facilitate drainage.
- E. Unless otherwise permitted in writing by the Engineer, building products and materials such as cement, grout, plaster, gypsumboard, particleboard, resilient flooring, acoustical tile, paneling, finish lumber, insulation, wiring, etc., shall be stored indoors in a dry location. Building products such as rough lumber, plywood, concrete block and structural tile may be stored outdoors under a properly secured waterproof covering.
- F. Tarps and other coverings shall be supported above the stored equipment or materials on wooden strips to provide ventilation under the cover and minimize condensation. Tarps and covers shall be arranged to prevent ponding of water.

1.03 EXTENDED STORAGE

In the event that certain items of major equipment such as air compressors, pumps and mechanical aerators have to be stored for an extended period of time, the Contractor shall provide satisfactory long-term storage facilities which are acceptable to the Engineer. The Contractor shall provide all special packaging, protective coverings, protective coatings, power, nitrogen purge, desiccants, lubricants and exercising necessary or recommended by the manufacturer to properly maintain and protect the equipment during the period of extended storage.

1.04 OWNER FURNISHED EQUIPMENT

The Contractor shall provide storage and protection for all Owner furnished equipment and materials, including extended storage as specified above.

END OF SECTION

CLEANING**PART 1 GENERAL****1.01 SCOPE**

This Section covers the general cleaning which the Contractor shall be required to perform both during construction and before final acceptance of the Project unless otherwise shown on the Drawings or specified elsewhere in these Specifications.

1.02 QUALITY ASSURANCE

- A. Daily, and more often if necessary, conduct inspections verifying that requirements of cleanliness are being met.
- B. In addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

1.03 HAZARDOUS MATERIAL AND WASTE

- A. The Contractor shall handle hazardous waste and materials in accordance with applicable local, state, and federal regulations. Waste shall also be disposed of in approved landfills as applicable.
- B. The Contractor shall prevent accumulation of wastes which create hazardous conditions.
- C. Burning or burying rubbish and waste materials on the site shall not be allowed.
- D. Disposal of hazardous wastes or materials into sanitary or storm sewers shall not be allowed.

1.04 DISPOSAL OF SURPLUS MATERIALS

Unless otherwise shown on the Drawings, specified or directed, the Contractor shall legally dispose off the site all surplus materials and equipment from demolition and shall provide suitable off-site disposal site, or utilize a site designated by the Owner.

PART 2 PRODUCTS**2.01 CLEANING MATERIALS AND EQUIPMENT**

Provide all required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

Use only the cleaning materials, methods and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Engineer.

PART 3 EXECUTION**3.01 PROGRESS CLEANING****A. General**

1. Do not allow the accumulation of scrap, debris, waste material and other items not required for construction of this Work.
2. At least each week, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
3. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.

B. Site

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
2. Restack materials stored on site weekly.
3. At all times maintain the site in a neat and orderly condition which meets the approval of the Engineer.

3.02 FINAL CLEANING

- A. Definitions: Unless otherwise specifically specified, "clean" for the purpose of this Article shall be interpreted as the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.
- B. General: Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in 3.01 above.
- C. Site: Unless otherwise specifically directed by the Engineer, hose down all paved areas on the site and all public sidewalks directly adjacent to the site; rake clean other

surfaces of the grounds. Completely remove all resultant debris.

- D. Post-Construction Cleanup: All evidence of temporary construction facilities, haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other evidence of construction, as directed by the Engineer.
- E. Restoration of Landscape Damage: Any landscape feature damaged by the Contractor shall be restored as nearly as possible to its original condition at the Contractor's expense. The Engineer will decide what method of restoration shall be used.
- F. Timing: Schedule final cleaning as approved by the Engineer to enable the Owner to accept the Project.

3.03 CLEANING DURING OWNER'S OCCUPANCY

Should the Owner occupy the Work or any portion thereof prior to its completion by the Contractor and acceptance by the Owner, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the Engineer in accordance with the Supplementary Conditions of the Contract Documents.

END OF SECTION

PART 1 – GENERAL**1.01 DESCRIPTION****A. SCOPE**

The work described in this Section includes furnishing all materials, equipment, tools and incidentals required for a complete and operable installation of progressive cavity pumps, variable speed drives as applicable, motors and controls. All equipment shall be installed, adjusted, tested and placed in operation in accordance with these Specifications and the manufacturer's recommendations.

B. TYPE

The pumps shall be of the positive displacement, progressive cavity pump type, specifically designed for pumping sludge derived from the treatment of wastewater containing organic solids, small inorganic particles, and grit. The rotor shall be of a convoluted design to provide uniform pulse-free flow throughout the entire operating range. The design of the rotor and stator shall be such that they allow for either manual or automatic adjustment to overcome wear, and significantly extend the life of the pump between rebuilds.

C. EQUIPMENT LIST

Item	Equipment No.
	Tag
	Tag

D. PERFORMANCE AND DESIGN REQUIREMENTS

1. Each pump shall be designed and selected to operate satisfactorily with a minimum of noise, vibration and cavitation during continuous or intermittent operation for pumping concentrated solids derived from waste water treatment and to have a sufficiently long service life.
2. Pumps shall be designed for the operating conditions indicated as scheduled in the following table. The pump shall be non-overloading throughout this operating range.

Primary Flow Rate	275 gpm
Differential Pressure	60 psi
Suction Conditions	5 feet flooded
Medium	Sludge
Solids Content	1 %

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Viscosity	1 cp
Density	62.43 lb/ft ³
pH level	6-8
Maximum Power at Duty Condition	20 HP
Suction and Discharge Flange Size	6 inch ANSI
NPSH _r shall not exceed	12 feet
Maximum speed shall be	290 rpm

3. Where specified, pumps shall operate at variable speed. Variable Speed Drives if required, should be of constant torque. Pumps shall be suitable for exposure to mixed liquor and waste secondary sludge containing grit, small particles of wood, metal, industrial solvents, greases, detergents, petroleum products, dissolved ammonia and hydrogen sulfide, and organic particles.
4. The pumps shall be of the compact, close-coupled design. The gear reducer shall be sized for a minimum service factor of 1.5 and designed with a thrust load capability of 150 percent of the actual thrust load.
5. The pumps, along with associated drive appurtenances, shall be mounted on a common fabricated steel. The base plate shall be hot-dip galvanized after fabrication.

These Specifications are intended to give a general description of what is required, but do not cover all details which will vary in accordance with the requirements of the equipment application. It is, however, intended to cover the furnishing, the shop testing, the storage and delivery of all materials, equipment and all appurtenances for the complete pumping units as herein specified, whether specifically mentioned in these Specifications or not.

1.02 QUALITY ASSURANCE**A. REFERENCES**

Design, manufacturing, and assembly of elements of the equipment herein specified shall be in accordance with the standards of the below listed organizations. Where reference is made to a standard of one of the following or other organizations, the version of the standard in effect at the time of the bid opening shall apply.

1. American Gear Manufacturing Association (AGMA)
2. American Institute of Steel Construction (AISC)
3. American Iron and Steel Institute (AISI)
4. American Society of Mechanical Engineers (ASME)
5. American National Standards Institute (ANSI)
6. American Society for Testing Materials (ASTM)
7. American Water Works Association (AWWA)
8. American Welding Society (AWS)
9. Anti-Friction Bearing MANUFACTURERS Association (AFBMA)
10. Hydraulic Institute Standards
11. Institute of Electrical and Electronics Engineers (IEEE)
12. National Electrical Code (NEC)
13. National Electrical MANUFACTURERS Association (NEMA)

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14. Occupational Safety and Health Administration (OSHA)
15. Steel Structures Painting Council (SSPC)
16. Underwriters Laboratories, Inc. (UL)

A. QUALIFICATIONS

To assure unity of responsibility, the pumps and motors, shall be furnished and coordinated by the pump manufacturer (MANUFACTURER). The CONTRACTOR shall assume full responsibility for the satisfactory operation of the entire pumping systems including pumps, motors, and controls as specified.

The equipment covered by these Specifications shall be standard units of proven ability as manufactured by competent organizations having long experience in the production of such equipment. The pumps shall be the standard cataloged product of the MANUFACTURER. The pumps furnished shall be designed, constructed and installed in accordance with the best practice and methods, and shall operate satisfactorily when installed. Pumps shall be manufactured in accordance with the Hydraulic Institute Standards, except as otherwise specified herein.

All Equipment furnished under this Specification shall be new and unused and shall be the standard product of MANUFACTURERS showing a successful record of manufacturing and servicing the equipment and systems specified herein for a minimum of twenty (20) years, and be ISO 9001:2008 compliant, and shall be either fully assembled or manufactured in the United States of America.

The MANUFACTURER shall be fully responsible for the design, arrangement, and operation of all connected rotating components of the assembled pumping unit to ensure that neither harmful nor damaging vibrations occur within the specified operating range. Design shall include a fabricated steel baseplate for mounting the units.

1.03 SUBMITTALS

Copies of all materials required establishing compliance with the specifications shall be submitted in accordance with the provisions of Section 0. The submittal format shall be in the form of a booklet, suitably tabbed and divided, to cover at least the areas noted below for each major equipment item. The submittal booklet shall include adequate detail and sufficient information for the ENGINEER to determine that all of the equipment proposed meets the detailed requirements of the Specifications. Incomplete or partial submittals will not be reviewed. Submittals shall include at least the following:

1. A copy of this specification section, with addendum updates included, and all referenced and applicable sections, with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks (✓) shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated, and therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph, referenced to a detailed written explanation of the reasons for requesting the deviation. The Engineer shall be the final authority for determining acceptability of requested deviations. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
2. Certified shop and erection drawings showing all, important details of construction, dimensions, and anchor bolt locations.

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3. Descriptive literature, bulletins and/or catalogs of the equipment.
4. Data on the characteristics and performance of each pump. Data shall include guaranteed performance curves, based on actual shop tests of similar units, which show that they meet the specified requirements for head, capacity and horsepower. Curves shall be submitted on 8 ½" by 11" sheets, at as large a scale as is practical. Catalog sheets showing a family of curves will not be acceptable.
5. Operation and Maintenance manuals specified under paragraph 1.05.
6. Complete motor and control systems data.
7. Warranty as described in paragraph 1.08.

Submit the MANUFACTURER'S Certificate of Installation, Testing, and Instruction.

In the event that it is impossible to conform to certain details of the specifications due to different manufacturing techniques, describe completely all non-conforming aspects.

1.04 FACTORY TESTING

- A. Each pump shall be factory tested prior to shipment.
- B. All tests shall be performed in North America according to Hydraulic Institute Standards, Section 3.6.
- C. If the results of the factory tests fail to demonstrate compliance with the requirements of this Section, the Contractor shall modify and/or replace the deficient pumps as necessary at no additional cost to the Owner and shall re-submit certified factory test reports on the modified or replacement pump.

1.05 OPERATING INSTRUCTIONS

Complete operating and maintenance instructions shall be furnished for all equipment included under these specifications.

- A. Operating and maintenance manuals shall be furnished. The manuals shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions, etc., that are required to instruct operation and maintenance personnel who are unfamiliar with such equipment.
- B. The maintenance instructions shall include troubleshooting data and full preventative maintenance schedules and complete spare parts lists with ordering information.
- C. A trained instructor, with complete knowledge of proper operation and maintenance for all major components, shall be provided for two days to instruct representatives of the OWNER and the ENGINEER on proper operation and maintenance.
- D. Three (3) hard copies and one (1) digital copy of the Operating and Maintenance Manual/Instructions shall be provided.

1.06 TOOLS AND SPARE PARTS (TBD)

One set of special tools shall be provided for servicing all pumps. In addition, the following spare parts shall be provided for each size and type of pump:

1. Rotor-Stator-Cartridge
2. Cardan Joint

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3. Cartridge Mechanical Seal

Spare parts shall be properly bound and labeled for easy identification without opening the packaging and suitably protected for long term storage.

1.07 PRODUCT HANDLING

- A. All parts shall be properly protected so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed and the units and equipment are ready for operation.
- B. All equipment and parts must be properly protected against any damage during a prolonged period at the site.
- C. Factory assembled parts and components shall not be dismantled for shipment unless permission is received in writing from the ENGINEER.
- D. After hydrostatic or other tests, all entrapped water shall be drained prior to shipment, and proper care shall be taken to protect parts from the entrance of water during shipment, storage, and handling.
- E. Each pump shall be secured to a wooden skid to facilitate handling and storage.
- F. Each box or package shall be properly marked to show its net weight in addition to its contents.

1.08 WARRANTY

- A. The equipment shall be warranted to be free from defects in workmanship, design, and materials for a period of two (2) years. Typical wear parts such as the rotor, stator, mechanical seal and carbon shaft are considered typical wear parts, and are covered by the materials and workmanship warranty only. If any part of the equipment should fail during the warranty period, it shall be replaced in the machine(s), and the unit(s) restored to service at no expense to the OWNER.
- B. The MANUFACTURER'S warranty period shall run concurrently with the CONTRACTOR'S warranty period. No exception to this provision shall be allowed.

PART 2 – PRODUCTS**2.01 ACCEPTABLE PRODUCTS****2.02 PUMP****A. ROTOR AND STATOR**

Each pump shall be employing a convoluted rotor operating in a similarly convoluted stator. The convolutions shall be configured to form a cavity between the rotor and stator, which shall progress from the pump's inlet to discharge port with the operation of the rotor. The fit between the rotor and stator at the point of contact shall compress the stator material sufficiently to form a seal and to prevent leakage from the discharge back to the inlet end of the pumping chamber. The stator shall be molded with a seal integral to the stator elastomer preventing the metal stator tube and the bonding agent from the elastomer from contacting the pumped liquid. Gaskets or O-rings may not be used to

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form this seal. Stators for sludge pumps shall have NBR elastomer. The sludge pump rotors shall be constructed of AISI D6 Tool Steel. The pump rotors shall be vacuum-hardened and have a hardness of 56-62 HRC. Chromium nitride coatings, hard chrome plating or ceramic coatings are not acceptable due to the ease at which this coating will crack and the lack of diffusion into the rotor base metal.

The rotor and stator shall be of conical shape to allow wear compensation by axial adjustment of the rotor. The inner diameter of the stator and the outer diameter of the rotor shall decrease from the pump's inlet to discharge port. The pump cavities shall have the same size over the entire length of the rotor and stator. The use of rotor and stator designs that cannot be adjusted to provide additional life between replacement of wear parts, either mechanically or automatically, will not be considered.

B. DRIVE TRAIN

Each pump rotor shall be driven through a positively sealed cardan joint. The joint shall be covered with a NBR elastomer sleeve and positively sealed with hose clamps constructed of 316 stainless steel. The shall be of adequate design to transmit the required thrust and torque while allowing the rotor to move in its eccentric path. The joint seal shall be designed to prevent any liquid from contaminating the cardan joint.

C. HOUSING

1. A 150-pound (ANSI B16.5) flanged connection shall be provided at both the inlet and discharge ports. The suction and discharge housings shall each be provided with a 2" threaded and capped tap to permit installation of pressure instruments.
2. The suction housing shall allow to be rotated in 90° increments to allow a versatile connection to a suction line above and to both sides of the pump.
3. The discharge housing shall be quick service type, angled to allow the replacement of the rotor and stator to without dismantling the piping at the pump's inlet and discharge port. Designs that require the pump to be removed from line to exchange the rotor and stator are not allowed, as they result in significant increases in both labor and special tools.

D. BEARINGS

Each pump shall be provided with oil lubricated thrust and radial bearings, located in the drive unit, designed for all loads imposed by the specified service. Apart from the bearings in the drive unit, gearbox or geared motor, no additional bearings are accepted as part of the pump. All bearings will be sized as such to provide a B10 life of a minimum of 100,000 hours. Designs that do not provide this B10 life will not be considered.

E. SHAFT SEALING

Shaft shall be sealed by using a single acting internal mechanical seal as a cartridge unit. Mechanical seals shall be provided of Blockring with CrO/Duronit seal faces for each positive displacement pump. The cartridge mechanical seal shall include the mechanical seal faces, the seal holder and carrier, all applicable O-rings, the mechanical seal faces, and stainless steel shaft sleeve. The use of manual pre-load mechanical seals, packings, will not be accepted.

A blocking chamber located behind the mechanical seal, and in front of the gear reducer lip seal shall be fitted into the cartridge seal of the pump to prevent contamination of the bearings on the event of a seal failure. This chamber shall be suitable for fill, from the top of the pump, and have

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an external pressurized oil bottle to review the status of the mechanical seals operation, mounted on the top of the pump, located in easy view of the operator. Pumps with open to air cavities located behind the mechanical seal housing, those that require water flush or quench, or those without oil bottles, will not be accepted, due to their potential for product spill failure on the surrounding areas of the pump, and the added maintenance and cost associated with mechanical seal water flushing systems. Additionally, pumps using packing in place of a mechanical seal will not be considered.

2.03 DRIVE

- A. The gearbox shall be a parallel shaft gearbox manufactured by Nord Gear. The gear reduction units shall be designed with a service factor of 2.0. Gears shall run in an oil bath and the reducer housing shall be equipped with oil fill and drain located in a convenient position. Gearbox housings shall be single piece iron castings with internal reinforcements.
- B. Due to space constraints only parallel shaft geared motors or gearboxes and motors with NEMA C-face connection are permitted.
- C. The drive shaft of the pump shall be directly coupled with the gear reducer without use of a coupling.
- D. Motors shall be TEFC with a minimum service factor of 1.15.
- E. Maximum motor speed shall not exceed 1800 rpm, and should provide a minimum of 10% reserve hp as evidenced by specific requirements at maximum design.
- F. Motors shall be built in accordance with latest NEMA, IEEE, ANSI and AFBMA standards where applicable.
- G. Motors shall conform to all requirements stipulated in the motor section of this specification.
- H. Motors shall be specifically designed for inverter duty to allow for the potential of future variable frequency drives.

2.04 ACCESSORIES**A. PRESSURE SENSORS**

The CONTRACTOR shall furnish and install for each pump in tapped holes in the discharge and suction piping to accommodate the gauges which shall be supplied by the CONTRACTOR as shown on the Drawings.

B. RUN DRY PROTECTION

The pump stator shall be fitted with a sensor sleeve and PT100 type Resistance Temperature Detector (RTD). A controller shall also be provided and shall be installed by the CONTRACTOR in the motor control center. The controller shall monitor the stator temperature and activate a shutdown and alarm sequence if the stator temperature reaches the adjustable limit on the controller.

C. VARIABLE FREQUENCY DRIVES

The CONTRACTOR shall furnish and install a variable frequency drive (VFD) for each pump. The unit shall be in a NEMA 12 painted steel enclosure. No modular style enclosure will be accepted. Also, no through-door disconnects will be accepted. The enclosure shall be equipped with start and stop push button, potentiometer for speed control, hoist switch, speed reference 4-20mA, speed feedback 4-20mA. RTD's shall produce 4-20mA.

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PART 3 – EXECUTION**3.01 INSTALLATION**

- A. Installation in strict accordance with the MANUFACTURER'S instructions and recommendations in the locations shown on the Drawings. Installation shall include furnishing the required oil and grease for initial operation. The grades of oil and grease shall be in accordance with the MANUFACTURER'S recommendations. Anchor bolts shall be set in accordance with the MANUFACTURER'S recommendations.
- B. Upon completion of the installation, the CONTRACTOR shall submit a certificate from the MANUFACTURER stating that the installation of the equipment is satisfactory, that the equipment is ready for operation, and that the operating personnel have been suitably instructed in the operation of lubrication and are of each unit.

3.02 SHOP PAINTING

- A. Before exposure to weather and prior to shop painting all surfaces shall be thoroughly cleaned, dry and free from all mill-scale, rust, grease, dirt and other foreign matter.
- B. All exposed portions of the pumps and motors shall be shops primed, with primer compatible with field painting as specified.
- C. All nameplates shall be properly protected during painting.
- D. All pumps shall be painted in the USA and a certificate confirming conformance to this requirement shall be submitted during the submittal phase of this specification.
- E. Pumps shall have a minimum US content inclusive of materials of construction, labor, and motors and gear boxes equal to or greater than 60% of the proposed purchase price, thus qualifying for current BABA United States Regulations.

3.03 FIELD PAINTING

- A. Field painting is specified under Painting Section of this specification. The primer and paint used in the shop shall be products of the same MANUFACTURER as the field paint to assure compatibility.
- B. All nameplates shall be properly protected during painting.

3.04 INSPECTION AND TESTING**A. GENERAL**

- 1. The ENGINEER shall have the right to inspect, test or witness tests of all materials or equipment to be furnished under these specifications, prior to their shipment from the point of the manufacture.
- 2. The ENGINEER shall be notified in writing prior to initial shipment, in ample time so that arrangements can be made for inspection by the ENGINEER.
- 3. Field tests shall not be conducted until such time that the entire installation is complete and ready for testing.

B. FIELD INSPECTION AND OWNER INSTRUCTION

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1. The CONTRACTOR shall furnish the services of the MANUFACTURER'S field service technician, who has complete knowledge of proper operation and maintenance of the equipment, for a period of no less than two (2) days to inspect the installed equipment, supervise the initial test run, and to provide instruction to the plant personnel. The first visit shall be checking and inspecting the equipment after it is installed. The second visit will be to operate and supervise the initial field test.
2. At least one (1) of the two (2) days shall be allocated solely to instruction of plant personnel in operation and maintenance of the equipment. The instruction period shall be scheduled at least 14 days in advance with the OWNER and shall take place prior to start up and acceptance by OWNER. The final copies of operation and maintenance manuals specified must be delivered to the ENGINEER prior to scheduling the instruction period with the OWNER with the permission of the ENGINEER, these services may be combined with those specified by Paragraph 1.05.

C. FIELD PUMP TESTING

1. In the presence of the ENGINEER such tests as necessary to indicate that the pumps and motors conform to the operating conditions specified shall be performed. A 30-day operating period of the pumps will be required before acceptance. If a pump performance does not meet the specified requirements, corrective measures shall be taken. All test procedures shall be in accordance with factory test procedures specified above and certified results of tests shall be submitted. Provide, calibrate, and install all temporary gauges and meters, make necessary tapped holes in the pipes, and install all temporary piping and wiring required for the field acceptance tests. Written test procedures shall be submitted to the ENGINEER for approval 30 days prior to testing. after it is installed. The second visit will be to operate and supervise the initial field test.
2. Noise and vibration tests shall be conducted in conformance with the Hydraulics Institute Test Codes and OSHA Standards of Occupational Noise Exposure. Maximum allowable noise level, corrected for background sound, shall not exceed 85 dBA when measured at a horizontal distance of 3 meters from the equipment being tested, at a height of 3 meters above floor level. The actual natural frequency of the installed pumping units will be verified using industry accepted procedures.
3. All pumps operating settings, alarms, controls, and shutdown devices shall be calibrated and tested during the field tests.
4. The CONTRACTOR shall furnish all power, water, facilities, labor, materials, supplies and test instruments required to conduct field test.
5. Please note that access to at least 2 operational units (one per location) at a time will be required throughout installation. One pump in the Washwater Building and one pump in the Thickener Building must remain accessible and operational throughout the life of the project. In each building, the removal of the second pump (after the initial pump replacement) will be contingent on the new pump being tested and operating satisfactorily for a minimum of 48 hours.

D. FIELD ELECTRONIC CONTROL SYSTEM TESTING

1. The electric control system shall be test operated for proper functioning prior to the pump mechanical test. The control system shall be checked out using simulated operating signals as per pump MANUFACTURER'S recommendations.

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2. The CONTRACTOR shall check all drives for correct clearances, alignment, and lubrication in accordance with MANUFACTURER'S instructions. The CONTRACTOR shall check direction of rotation of all motors and reverse connections if necessary.
3. The CONTRACTOR shall meet all the testing requirements of Division.
4. The CONTRACTOR shall furnish all power, water, facilities, labor, materials, supplies and test instruments required to conduct field test.

E. FIELD ALARM SYSTEM TESTING

1. Check each alarm and detection device for proper operation.

PART 4 – CERTIFICATION**4.01 DESCRIPTION**

- A. Consideration will be given only to products of manufacturers who can demonstrate that their equipment fully complies with all requirements of the specifications and contract documents. The equipment shall be supplied by a firm which has been regularly engaged in the design, fabrication, assembly, testing, start-up, and service of positive displacement pumps, operating in the U.S., with similar materials, for a period of not less than ten (10) years prior to the bid date of this contract. To insure that the highest standards are met, the manufacturer shall be ISO 9001:2008 compliant, as evidenced with a current ISO certificate at the time of bid. The pumps in the specification shall be manufactured or fully assembled in the United States of America. Manufacturers that are ISO compliant, but not certified to ISO 9001:2008, or do not fully assemble or manufacture their pumps in the USA, will not be considered.
- B. If a bidding progressive cavity pump manufacturer does not have a formal quality system in place, or documentation to prove so, a performance/maintenance bond in the amount of 100% of the installed price (including equipment, labor, piping, and wiring associated with the equipment covered under this specification) shall be included in the bid proposal. The bond should be made out to the owner for 100% of the amount bid, and shall be in force for a minimum of five (5) years from the date of first beneficial use of the equipment. The five (5) year minimum is to cover all warranties listed under this specification.

****END OF SECTION****