COUNTY COMMISSIONERS OF KENT COUNTY, MARYLAND

REQUEST FOR PROPOSAL

#WW 25-03

FOR

DEWATERING EQUIPMENT
SELECTION OF VENDOR

Worton WWTP Dewatering Equipment Replacement

Daniel F. Mattson
Director of Public Works
709 Morgnec Road
Chestertown, Maryland 21620

NOTICE TO DEWATERING EQUIPMENT VENDORS

Worton WWTP Dewatering Equipment Replacement
REQUEST FOR PROPOSAL
Dewatering Equipment Selection of VENDOR

The County Commissioners of Kent County, MD hereby solicits the submittal of qualifications and PROPOSALS from interested manufacturers and suppliers of packaged Mechanical Dewatering Equipment to be used as the basis of design for the bidding documents associated with the Worton WWTP Dewatering Equipment Replacement Project.

Dewatering Equipment qualifications and PROPOSALS will be accepted by the Kent County Department of Public Works (OWNER), located at 709 Morgnec Rd., Chestertown, MD 21620 until 12:00 PM local time on Thursday, October 17, 2024. Electronic submittal of PROPOSALS will be accepted.

GMB is providing engineering design services for the Worton WWTP Dewatering Equipment Replacement Project and will be assisting the Kent County Commissioners with the technical aspects of the Dewatering Equipment Pre-selection. Inquiries during the Dewatering Equipment Pre-selection process should be directed to GMB.

The intent of the selection process is to identify a VENDOR, and for the County to then pre-purchase equipment for installation by the General Contractor. Once awarded, the successful VENDOR will be issued a Purchase Order for their scope of supply and will then be required to compile a complete submittal package for GMB's review. Once approved, the submittal information will be used to finalize the Contract Documents, and the equipment will be released for fabrication.

The Kent County Commissioners may reject any PROPOSAL not in compliance with all prescribed procedures and requirements of this document. They also may cancel this solicitation or reject any or all PROPOSALS upon finding that it is in the best interest of the public to do so.

RFP selection documents can be obtained by requesting an electronic copy of the package from the ENGINEER. An optional Pre-PROPOSAL meeting will be held virtually by GMB on Monday, September 23, 2024 at 1:30 PM local time.

OWNER: Commissioners of Kent County, MD - Phone: 410-778-2600
- Daniel Mattson, P.E., Director of Public Works; dmattson@kentgov.org
- Chris Yiannakis, Superintendent; cyiannakis@kentgov.org

ENGINEER: George, Miles & Buhr, LLC - Phone: 410-742-3115
- Jim Hoageson, P.E., Senior Vice President, jhoageson@gmbnet.com
- Matt Hall, P.E., Project Engineer, mhall@gmbnet.com

PROPOSALS to be sent to the below contact. Electronic submittals will be accepted.

Kent County Department of Public Works
709 Morgnec Rd., Chestertown, MD 21620
Attn: Jessica Conner, jconner@kentgov.org

TABLE OF CONTENTS

SECTION 5 - ATTACHMENTS

PROPOSAL
CONTRACT
VENDOR References

SECTION 6 – TERMS AND CONDITIONS

General Terms and Conditions of Contract
Supplemental Terms and Conditions

SECTION 7 – SPECIFICATIONS

01100	Summary of Work and General Requirements
01300	Submittals
01400	Testing of Equipment and System
11365	Sludge Dewatering System

SECTION 8 – DRAWINGS

SHEET NO. C1.0	SITE PLAN AND EXISTING CONDITIONS
SHEET NO. D1.0	EXISTING DEWATERING DEMOLITION
SHEET NO. EX1.0	ROOM AREA RESERVED FOR PROPOSED EQUIPMENT

SECTION 1 – INSTRUCTIONS FOR OFFERORS

1.1 General

1. The Commissioners of Kent County, MD (the OWNER) are soliciting PROPOSALS to select a Dewatering Equipment VENDOR for the Worton WWTP Dewatering Equipment Replacement Project.

2. The Contract with the successful OFFEROR, also referred to as Dewatering Equipment VENDOR, will remain assigned to the OWNER. The Dewatering Equipment VENDOR will be required to coordinate with both the ENGINEER to compile the Construction Contract Documents, and the General CONTRACTOR during construction to provide a fully functional and operational dewatering system.

3. The selection resulting from this RFP is contingent upon Construction Permit Approval from the State of Maryland.

4. OFFERORS shall provide all equipment and services to meet the requirements requested by this RFP and the successful OFFEROR shall remain responsible for contract performance including the startup, commissioning, and performance testing of the equipment provided.

1.2 Point of Contact (POC)

The point of contact for the OWNER, for purposes of this solicitation and prior to the award of any Contract, is the ENGINEER at the address listed below:

George, Miles, and Buhr, LLC
206 West Main Street
Salisbury, MD 21801
Phone Number: 410-742-3115

- Jim Hoageson, P.E., jhoageson@gmbnet.com
- Matt Hall, P.E., mhall@gmbnet.com

1.3 Pre-PROPOSAL Meeting

A pre-PROPOSAL meeting will be held virtually by GMB on Monday, September 23, 2024 at 1:30 PM local time. The pre-PROPOSAL meeting scheduled for this project is not mandatory. Please contact Sheryll Harrold, sharrold@gmbnet.com, for log in information to attend the virtual pre-PROPOSAL meeting.

1.4 Questions and Request for Information

Written questions from prospective OFFERORS will be accepted by the POC. Questions to the POC shall be submitted via e-mail.

Questions should be submitted to the POC email in a timely manner at least ten (10) days prior to the RFP due date. The last day questions will be accepted is Thursday, October 3, 2024 by 12:00 PM local time. POC based on the availability of time to research and communicate an answer, and

in its sole discretion, shall decide whether an answer can be given before the RFP due date. Time permitting, answers to all substantive questions that have not previously been answered, and are not clearly specific only to the requestor, will be distributed to the potential OFFERORS that have received a copy of the RFP. Written responses shall be considered the official answers and shall supersede any verbal discussions. Verbal answers are not binding, and reliance should not be placed on the same.

If it becomes necessary to revise this RFP before the due date for PROPOSALS, The POC shall endeavor to provide addenda to all prospective OFFERORS that were sent this RFP, or which are otherwise known by the POC to have obtained this RFP.

1.5 PROPOSALS Due Date, Time and Duration

PROPOSALS, in the format set forth in Section 3, must be received by 12:00 PM on Thursday, October 17, 2024 by the OWNER at the address listed on the **Notice to Dewatering Equipment Vendors**, and no later than the time stipulated, to be considered. Requests for an extension of this time or date will not be granted. OFFERORS mailing PROPOSALS should allow sufficient mail delivery time to ensure timely receipt. PROPOSALS received after the due date and time will not be considered. PROPOSALS may be modified or withdrawn by written notice received by the OWNER before the time and date set forth in this section for receipt of PROPOSALS. PROPOSALS will be accepted electronically to the email address indicated in the advertisement. All PROPOSALS will be opened and publicly read by designated OWNER'S staff. OFFERORS and other interested parties are invited to attend these public forums.

All price PROPOSALS shall be irrevocable for a period of ninety (90) days, but the time may be extended by mutual agreement between the OWNER and the OFFEROR.

1.6 Addenda

Addenda, if any will be emailed to all that are known to have received a complete set of bidding documents and will be posted on the eMaryland Marketplace Advantage. Copies of Addenda will be made available for inspection wherever PROPOSAL documents are on file for that purpose.

Addenda may be issued to prospective OFFERORS, but in no case less than at least four (4) days before the due date. It is OFFERORS responsibility to make sure all addendums are included and acknowledged in their PROPOSAL. Failure to acknowledge receipt of an addendum does not relieve the OFFEROR from complying with the terms, additions, deletions, or corrections set forth in the addendum.

1.7 Contract Type

The Contract that results from this RFP will be an agreement for the OFFEROR to supply equipment and provide services as specified and at the prices stated in the OFFERORS Price PROPOSAL. The OFFEROR will also be required to coordinate with the construction Contractor, also referred to as Installation Contractor (IC) for the **Worton WWTP Dewatering Equipment Replacement** project.

1.8 Contract Duration

The duration of the Contract will be for a period of approximately 18 months from the date of the agreement for this pre-selection Contract. The Contract Duration shall be for the finalization of the Construction Contract Documents, Dewatering Equipment Submittal Review, Equipment

Manufacturing, Delivery, Startup, and a minimum one (1)-year warranty correction period from the date of commissioning.

1.9 Site Visit

VENDOR shall visit the site of the Worton WWTP at his/her own discretion. The VENDOR shall contact Kent County Superintendent Chris Yiannakis, to schedule a site visit during normal business hours.

Worton WWTP
25300 Chinquapin Rd., Worton, MD 21678
Chris Yiannakis: 410-778-2600 or cyiannakis@kentgov.org

1.10 Confidential Information

OFFERORS should give specific attention to the identification of those portions of its PROPOSAL that it considers confidential and/or proprietary commercial information or trade secrets, and provide justification why such materials, upon request, should not be disclosed by the Owner.

OFFERORS are advised that, upon request for this information from a third party, the OWNER is required to make its own determination whether the information must be disclosed.

1.11 Award

Selection of the Dewatering Equipment VENDOR will be awarded to the OFFEROR submitting the PROPOSAL with the highest score as determined by the OWNER and GMB, considering price and evaluation factors set forth in this RFP for providing the goods and services as specified in this RFP.

The OWNER reserves the right, at its sole discretion; to award a contract based upon the written proposal received without prior discussions or negotiations.

The OWNER also reserved the right to negotiate further terms of the contract, including the award amount, with the selected OFFEROR prior to entering into a contract. If contract negotiations cannot be concluded successfully with the selected bidder, the OWNER may negotiate a contract with the next selected OFFEROR, so on. The OWNER reserves the right to waive any irregularities and technicalities and may, at its discretion, request a follow-up or amended proposal.

Only one Dewatering Equipment VENDOR will be selected for the scope included in this RFP.

1.12 Cancellations / Investigation

The OWNER, in its discretion, reserves the right to cancel this RFP, accept or reject all PROPOSALS, in whole or in part, received in response to this RFP, to waive or permit the cure of minor irregularities, and to conduct discussions with all qualified or potentially qualified OFFERORS.

The OWNER may make such investigations it deems necessary to determine the ability of the Dewatering Equipment VENDOR to perform the work and the OFFEROR shall furnish to OWNER

all such information and data for this purpose as requested. The OWNER reserves the right to reject any PROPOSAL if the evidence submitted by, or investigation of, such Dewatering Equipment VENDOR fails to satisfy the OWNER that such VENDOR is properly qualified to carry out the obligations of the Agreement and to complete the work contemplated herein.

1.13 Sales Tax

VENDOR prices should reflect the inclusion of Federal and State taxes on purchased supplies and materials as applicable.

1.14 Presentation

OFFERORS may be required to make oral presentations to the OWNER and its representatives. OFFERORS must confirm in writing any substantive oral clarification of, or change in, their PROPOSALS made during discussions. Any such written clarifications or changes then become part of the OFFERORS PROPOSAL and are binding if the Contract is awarded. If necessary, the OWNER will notify OFFERORS of the time and place of oral presentations.

1.15 Expenses

The OWNER will not be responsible for any costs incurred by any OFFEROR in preparing and submitting a PROPOSAL, in making an oral presentation, in providing a demonstration, or in performing any other activities related to this solicitation.

1.16 OFFEROR Responsibilities

The selected OFFEROR shall be responsible for all products and services required by this RFP. All subcontractors must be identified and a complete description of their role relative to the PROPOSAL must be included in the OFFERORS PROPOSAL.

If an OFFEROR that seeks to perform or provide the services required by this RFP is the subsidiary of another entity, all information submitted by the OFFEROR, including but not limited to references, minimum qualifications, and financial reports, or experience and documentation (e.g. insurance policies, bonds, letters of credit) used to meet minimum qualifications, if any, shall pertain exclusively to the OFFEROR, unless the parent organization will guarantee the performance of the subsidiary.

OFFEROR is responsible for inspecting the site at their own discretion and responsible for all logistical considerations and for reading and being thoroughly familiar with this RFP.

1.17 Substitution of Personnel

Unless substitution is approved as outlined herein, key personnel shall be the same personnel proposed in the Dewatering Equipment VENDORS Technical PROPOSAL, which will be incorporated into the Contract by reference. Such identified key personnel shall perform continuously for the duration of the Contract, or such lesser duration as specified in the Technical PROPOSAL. Key personnel may not be removed by the Dewatering Equipment VENDOR from working under this Contract, as described in the RFP or the Dewatering Equipment VENDORS Technical PROPOSAL, without the prior written approval of OWNER.

1.18 Contractual Terms

By submitting a PROPOSAL in response to this RFP, an OFFEROR, if selected for award, shall be deemed to have accepted the terms and conditions of this RFP. Any exceptions to this RFP or the Contract shall be clearly identified in the Technical PROPOSAL. A PROPOSAL that takes exception to any of these terms may be rejected at OWNER's sole discretion. All OWNER contracts are subject to the OWNER's General Terms and Conditions unless otherwise specifically changed or waived hereunder or in the Contract.

By submitting a PROPOSAL in response to this RFP, the OFFEROR acknowledges that All County purchases are subject to and to be accomplished in accordance with Chapter 49 of the County Public Local Laws (CPLL) and it is familiar with the OWNERS Code of Ethics, CPLL Chapter 29. A copy of the code is available on the County internet site http://kentcounty.com/government.

1.19 PROPOSAL Certifications

By submitting a PROPOSAL in response to this RFP, the OFFEROR, if awarded the contract, certifies that it will comply with all federal, state, and local laws applicable to its activities and obligations under the contract.

OFFEROR certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 1.18:

1. "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution.

2. "Fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of OWNER, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive OWNER of the benefits of free and open competition.

3. "Collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of OWNER, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

1.20 Most Cost Effective and Best Value

The most cost effective and best value shall be based on criteria set forth in this RFP including, but not limited to, the initial price, the total cost of operating, maintaining and supporting the equipment process, the assessed technical merit of the PROPOSAL, the Dewatering Equipment VENDOR and system suppliers and manufacturer's past performance, and the assessed likelihood of performing the requirements of this RFP on time and over the life of the contract with high quality, reliability,` and in a manner that best achieves the mission and objectives required of OWNER and serving the service area water customers. The information requested herein and submitted by the OFFERORS will be used for this evaluation.

SECTION 2 – SCOPE OF WORK

2.1 Background and Purpose

OWNER is replacing their existing mechanical dewatering unit at their **Worton Wastewater Treatment Facility** for the purpose of dewatering activated sludge from their wastewater treatment process. The Worton Wastewater Treatment Plant is located at 25300 Chinquapin Rd. Worton, MD 21678 on tax map/grid/parcel – 28/0002B/0144.

OWNER has selected to utilize volute press type mechanical dewatering equipment to dewater their waste sludge from their membrane bioreactor treatment process. The existing mechanical dewatering equipment has proven to be ineffective and is proposed for complete removal and replacement.

OWNER has chosen to pre-select the Dewatering Equipment VENDOR prior to finalizing the construction document and bidding of the project for construction. This approach will minimize current lead times for major equipment items and its impact on construction timelines. The method to be used by the OWNER to select the Dewatering Equipment will be based on the selection matrix outlined herein, to quantify the best-suited VENDOR and equipment for the facility.

OFFERORS shall submit their PROPOSALS for the Dewatering Equipment for the Worton WWTP in accordance with this Request for PROPOSALS and the attached exhibit drawings and specifications.

The intent of this effort is to select the equipment best suited for the application, in accordance with the selection matrix, and not solely identified by the lowest cost offering.

2.2 Scope of Work - Requirements

OFFERORS are responsible to configure a cost-effective Dewatering system that meets the project design conditions and to submit a complete PROPOSAL containing all the information requested so OWNER can evaluate the PROPOSAL on its merit and the procedure outlined herein.

The Successful OFFEROR shall furnish the equipment and services for the Dewatering Equipment System being proposed, complete and with appurtenances and accessories for the OWNER Worton WWTP Dewatering Equipment to fulfill the project requirements and schedule as specified herein.

OFFERORS shall refer to the specific project requirements outlined, specified, and/or shown on the drawings.

1. Specification Section 01100 includes the pre-select parameters and information to be included with the OFFERORS Technical PROPOSAL.

2. The quantities and design capacity of each unit process is listed in the Specifications and Design Criteria listed on the exhibit Drawing.

3. Specification Section 11365 – Sludge Dewatering System provides a summary of Dewatering related equipment and controls to be supplied and services to be performed by the Dewatering Equipment VENDOR.

4. The Dewatering Equipment VENDOR is also responsible for furnishing and providing the Process Control System for the full dewatering system and sludge cake conveying and loadout system.

5. All programming and controls shall be by Dewatering Equipment VENDOR as specified.

2.3 Scope of Work - Minimum Qualifications

The OFFEROR must provide proof with its Technical PROPOSAL that the minimum qualifications as listed in Specification 01100 and Specification 11365 are satisfied.

1. The OFFEROR shall have a minimum of ten (10) years' experience and list five (5) municipal installations comparable in size and flow rate to that specified herein. The OFFEROR shall provide its Technical PROPOSAL (company name, project name, time frame of project, level of responsibility, results achieved and reference contact name, phone number & email address) attesting to the OFFERORS experience. Refer to Specification 01100 and Attachment R.

2. Accept responsibility for the satisfactory start-up and operation of the entire dewatering equipment system, after acceptable installation checkout and commissioning efforts.

3. Guarantee for a period of one (1) year following the date of Installation Contractor Substantial Completion acceptance that all equipment is free from defects in design, materials, and workmanship. Furnish replacement parts for any defective component at no cost to the OWNER.

SECTION 3 – PROPOSAL FORMAT

3.1 PROPOSAL

1. The PROPOSAL shall be sealed and contain an unbound original, three (3) printed copies and an electronic version (USB flash drive). The submittal shall be labeled on the outside with the following:

   a. The RFP Title
   b. Name and address of the OFFEROR

2. The electronic version (USB flash drive) of the PROPOSAL is to be in a searchable Adobe.pdf format.

3.2 Delivery

OFFERORS may either mail, hand-deliver or email PROPOSALS.

1. For U.S. Postal deliveries, any PROPOSAL that has been received by OWNER by the time and date listed in the RFP will be deemed to be timely. For U.S. Postal delivery, GMB recommends that OFFERORS use Express Mail, Priority Mail, or Certified Mail as these are forms for which both the date and time of receipt can be verified.

2. PROPOSAL can be hand delivered to OWNER in Chestertown, MD at the address

provided. For any type of direct (non-mail) delivery, OFFERORS are advised to secure a dated and request signed (or otherwise indicated) receipt of delivery.

3. PROPOSAL can be emailed as one fully compiled searchable Adobe.pdf to jconner@kentgov.org. The OFFEROR shall request acknowledgment from OWNER for receipt of the full PROPOSAL. Appropriate time shall be allotted to confirm acknowledgment that the full PROPOSAL was received.

3.3 Format of PROPOSAL

PROPOSAL text shall be 8 1/2" x 11" size format with all standard font no smaller than 11-point. Submissions should be one-sided. Drawings shall be no larger than 12" x 18" size and scale provided along with clear indication of the paper size.

PROPOSALS shall be clearly labeled to include the format described below. Tabs or blank sheet dividers are preferred sectioning each area as follows:

SECTION 1	Cover Letter
SECTION 2	Background, Experience and History of Operating Facilities
SECTION 3	Scope of Work and Supply
SECTION 4	Price PROPOSAL (See attachment P)
SECTION 5	Provide References (See attachment R)

The OFFEROR shall be prepared to provide financial statements if requested by the OWNER. Financial statement would need to include commonly accepted methods to prove its fiscal integrity. If requested the OFFEROR shall include Financial Statements, preferably a Profit and Loss (P&L) statement and a Balance Sheet, for the last two (2) years (independently audited preferred). At the time of PROPOSAL submittal, financial statements are not required.

SECTION 1 – COVER LETTER:

OFFERORS shall include a cover letter signed by a party authorized to sign binding agreements on behalf of the OFFEROR. The cover letter should provide an overview of the key components of the submittal. The letter should clearly indicate that the OFFEROR has carefully read all the requirements in the RFP and indicate whether the OFFEROR takes any exceptions to the requirements.

SECTION 2 – BACKGROUND, EXPERIENCE AND HISTORY OF OPERATING FACILITIES:

This section of the PROPOSAL is for the OFFEROR to establish its ability and experience to fulfill the requirements specified in the RFP. The OFFERORS' background should be concise and clear and include descriptive information regarding the services delivered. The OFFEROR shall clearly provide and submit any minimum qualifications documentation that may be required. Minimum qualifications and information to be submitted are set forth in Specification Section 01100 – Summary of Work and General Requirements.

SECTION 3 - SCOPE OF WORK AND SUPPLY:

All PROPOSALS shall include a detailed description of the services to be rendered, including, but not limited to a written general understanding and any deviations to the

requirements outlined in the Scope/Statement of Work contained herein and as set forth in Specification Section 01100 – Summary of Work and General Requirements. The OFFEROR shall provide the minimum information listed in Section 01100 with their technical PROPOSAL. OFFERORS shall also clearly list any items required but not included in their scope.

Any OFFEROR taking an exception to the stated specification or requirements must make such exceptions clear and in writing, and shall attach such exceptions to, or include them in, the PROPOSAL. The OWNER is not obligated to accept any PROPOSAL not in conformance with RFP Specifications and may reject such PROPOSALS without comment or review. OFFERORS taking such exceptions do so at their own risk.

SECTION 4 – PRICE PROPOSAL (See Attachment P):

The Price PROPOSAL should contain all price information in the format specified in Attachment-P.

Guarantee for a period of one (1) year following the date of Installation Contractor (IC) Substantial Completion acceptance that all equipment is free from defects in design, materials, and workmanship. Furnish replacement parts for any defective component at no cost to the OWNER. Accept responsibility for the satisfactory operation of the entire filtration system and equipment.

Cost of travel and accommodations for the VENDORS staff and suppliers and subcontractors attending site meetings, design meeting, assisting Installation Contractor and providing all technical services for the required days and trips as specified shall also be included in this Price PROPOSAL.

SECTION 5 – REFERENCES:

References shall be submitted in the References Section (See Attachment R). Furnish proof of successful operating experience during the last ten (10) years on five (5) municipal installations comparable in size and flow rate to that specified herein.

SECTION 4 – COMMITTEE, CRITERIA, SELECTION AND AWARD PROCEDURE

4.1 Selection/Award

OWNER and the ENGINEER will review and evaluate the PROPOSALS and will conduct its evaluation of the merits of the PROPOSALS and score PROPOSALS in accordance with the following criteria. Refer to Section 01100 for description and detail of each criterion.

4.2 Criteria

Criteria and Rating Points	
1. Dewatering System and Equipment	**15**
2. Experience & References	**10**
3. System Operation	**5**
4. System Maintenance	**5**

5. Process Control	**5**
6. Terms and Conditions	**5**
7. VENDOR Services	**5**
8. Capital Cost	**50**
Total Points	**100**

1. The OFFEROR submitting the PROPOSAL with the highest score as determined by the OWNER and ENGINEER, considering price and evaluation factors set forth in this RFP for providing the goods and services as specified in this RFP will be selected and included in the contract of the Installation Contractor.

2. OFFERORS may be required to make presentations to OWNER. Following the presentation, OFFERORS must confirm in writing any clarification of, or change in, their PROPOSALS made during discussions. Any such written clarifications or changes then become part of the OFFERORS PROPOSAL and are binding if the Contract is awarded. The OWNER will notify OFFERORS of the time and date of presentations (if needed).

4.3 Proposed Project Schedule

The ***tentative*** schedule for the entire project including final design, project bidding for construction, construction, start-up, performance testing, acceptance, and one-year correction period is as follows. An updated schedule will be prepared during the document preparation and bidding phase.

9/12/24	Dewatering Equipment VENDOR RFP Advertised
10/3/24	Questions Due in Writing to the ENGINEER.
10/17/24	Dewatering Equipment VENDOR RFP Due
10/31/24	Recommendation and Award
January 2025	VENDOR Design coordination & incorporation in construction
February 2025	Construction Contract Bidding & Award
April 2025	VENDOR Dewatering Equipment Shop Drawing Approval
April 2025	Construction Notice to Proceed
July 2025	Pressure Filter Equipment delivery
August 2025	Construction Substantially Complete
September 2025	Testing and Training Complete
September 2027	End of one-year warranty

4.4 Agreement Required upon Notice of Award

Upon receipt of a notification of award for selection, the OFFEROR shall complete and submit within five (5) working days, unless noted otherwise, three (3) copies with original signatures of the Contract (see Form of Contract, Attachment FC).

SECTION 5

ATTACHMENTS

PROPOSAL FORM

CONTRACT FORM

REFERENCES FORM

PROPOSAL

FORM

The undersigned VENDOR proposes and agrees, if this PROPOSAL is accepted, to enter into an Agreement with OWNER in the form included in the RFP to perform all WORK as specified or indicated in the RFP for the prices and within the times indicated in this PROPOSAL and in accordance with the other terms and conditions of the RFP.

VENDOR accepts the terms and conditions of the Instructions to OFFERORS. This PROPOSAL will remain subject to acceptance for 90 days after the PROPOSAL opening, or for such longer period that VENDOR may agree to in writing upon request of OWNER.

VENDOR represents that:

A. VENDOR has examined and carefully studied the RFP, and any data and reference items identified, and hereby acknowledges receipt of the following Addenda:

Addendum No.	**Addendum, Date**

B. VENDOR is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the WORK.

C. VENDOR has considered the information known to VENDOR itself; information commonly known to contractors doing business in the locality of the Site; with respect to the effect of such information, and observations on (1) the cost, progress, and performance of the WORK; (2) the means, methods, techniques, sequences, and procedures for goods and services to be provided. VENDOR agrees, based on the information and observations referred to above that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this PROPOSAL or for performance of the WORK at the price PROPOSAL and within the times required, and in accordance with the other terms and conditions of the RFP.

D. VENDOR is aware of the general nature of WORK to be performed by Owner and others at the Site that relates to the WORK as indicated in the RFP.

E. VENDOR at its own discretion may visit the Site.

F. VENDOR has given the Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that VENDOR has discovered in the RFP Documents and confirms that the written resolution thereof by Engineer is acceptable to VENDOR.

G. The RFP is generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the WORK.

H. The submission of this PROPOSAL constitutes an incontrovertible representation by VENDOR that VENDOR has complied with every requirement, and that without exception the PROPOSAL and all prices in the PROPOSAL are premised upon performing and furnishing the WORK required by the RFP.

VENDOR certifies that:

A. This PROPOSAL is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

B. VENDOR has not directly or indirectly induced or solicited any other VENDOR to submit a false or sham PROPOSAL;

C. VENDOR has not solicited or induced any individual or entity to refrain from submitting a PROPOSAL; and

D. VENDOR has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this paragraph:

1. “Corrupt practice” means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the RFP process;

2. “Fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the RFP process to the detriment of Owner, (b) to establish PROPOSAL prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “Collusive practice” means a scheme or arrangement between two or more VENDORs, with or without the knowledge of Owner, a purpose of which is to establish PROPOSAL prices at artificial, non-competitive levels; and

4. “Coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the RFP process or affect the execution of the Contract.

VENDOR will complete the WORK in accordance with the RFP for the following price(s):

SCHEDULE A – LUMP SUM PRICES PROPOSAL

Item No.	Description	Lump Sum Price
A1	Dewatering Equipment and auxiliary Systems such as, sludge conditioning tank(s), polymer system, flowmeter, conveyors, piping, valves, and all other auxiliary components of the Dewatering Equipment package related items delivered to the site. Please Note: The OWNER has requested the existing sludge feed pump be reused. Included in this item is a trained field service technician provided for a period of three (3) consecutive 8-hour days during construction. The service technician shall assist the equipment installer or subcontractor with technical advice on the installation of the major components of the treatment equipment.	
A2	The Dewatering Equipment Control System complete including PLC, panels, hardware, software, I/O panels System, delivered to the site, tested, started and made complete for continuous operation in accordance with the Specifications. Please Note: Existing sludge feed pump power and control to be fed from proposed panel. Include in this item startup, testing, trouble shooting of control system.	
A3	Upon completion of the installation, the services of the factory trained field service technician shall be provided for a period of four (4) consecutive 8-hour days to check the completed installation, make any required adjustments, and place the system in satisfactory operation. In addition, the manufacturer shall provide the services of the factory trained field service technician for a period of one (1) 8-hour day for instructing the plant operating personnel in the proper care and operation of the equipment.	
A4	Technical Assistance to the Engineer / OWNER through design and completion of contract.	
A5	Shop Drawing, Submittal and Operation & Maintenance Manuals Preparation as specified in Specification Section 01300.	
	Total Items A1 to A5 Schedule A	$

TOTAL BASE PROPOSAL (SCHEDULE "A"): Dollars $(_____.____)

_____

Amount as Written

Attachments to this PROPOSAL

The following documents are submitted with and made a condition of this PROPOSAL.

A. Evidence of authority to do business in the state of Maryland; or a written covenant to obtain such license within the time for acceptance of PROPOSALS; and

B. Required VENDOR Qualification Statement with supporting data.

PROPOSAL SUBMITTAL

VENDOR: *[Indicate correct name of entity]*

_____

By:
[Signature] _____

[Printed name] _____
(If VENDOR is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:
[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

_____

_____

Telephone Number: _____

Contact e-mail address and Name:

_____ _____

VENDOR's License No.: _____
(where applicable)

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REFERENCES

1. Project Name and Description: _____
   Reference Name: _____
   Title: _____
   Email: _____
   Telephone: _____
   Describe Scope of Supply and Services, Cost and Performance: _____
   _____

2. Project Name and Description: _____
   Reference Name: _____
   Title: _____
   Email: _____
   Telephone: _____
   Describe Scope of Supply and Services, Cost and Performance: _____
   _____

3. Project Name and Description: _____
   Reference Name: _____
   Title: _____
   Email: _____
   Telephone: _____
   Describe Scope of Supply and Services, Cost and Performance: _____
   _____

4. Project Name and Description: _____
   Reference Name: _____
   Title: _____
   Email: _____
   Telephone: _____
   Describe Scope of Supply and Services, Cost and Performance: _____
   _____

5. Project Name and Description: _____

Reference Name: _____

Title: _____

Email: _____

Telephone: _____

Describe Scope of Supply and Services, Cost and Performance: _____

_____

Add additional pages as necessary.

SECTION 6

TERMS AND CONDITIONS

GENERAL TERMS AND CONDITIONS OF CONTRACT

SUPPLEMENTAL TERMS AND CONDITIONS

SECTION 6A – SUPPLEMENTAL TERMS AND CONDITIONS

TERMS AND APPLICABILITY

The provisions herein are appended to the General Terms and Conditions of Contract Between County and Contractor. This document and the General Conditions are intended to be complementary and shall be construed accordingly. However, should there be a direct contradiction between the Terms and Conditions contained herein and the General Conditions then the General Conditions shall govern and control the Contract.

Note: The number of each Supplemental Terms and Conditions below references the numbered Article in the General Conditions.

Specific terms used in this document have the following definitions:

(a) "Contract" means the executed document to which the Supplemental Terms and Conditions contained herein are appended and incorporated into the General Conditions.

(b) "Contractor" means the direct contractual relation between the OWNER and the VENDOR including all terms and conditions contained herein and in Contract.

(c) "General Terms" means the General Terms and Conditions of Contract Between County and Contractor

(d) "Installation Contractor" means a contractor chosen by the OWNER through an Invitation for Bids to install the System.

(e) "County" means the County Commissioners of Kent County or OWNER.

(f) "Director of Purchasing" as stated in the General Conditions means the OWNER Contract Representative.

(g) "OFFEROR" means the Dewatering Equipment VENDOR.

(h) "Scope of Work" or "WORK" refers to the specific contractual obligation of the VENDOR, as identified in the Request for Proposal, Scope of Services, Proposal, or other work statement incorporated into the Contract.

(i) "System" means the equipment and services described in the VENDOR's proposal and the technical specifications of the OWNER.

(j) "VENDOR" means the person, firm, corporation, or other entity obligated to perform services for OWNER under this Contract. Also known as OFFEROR.

S-4 – ASSIGNMENTS AND SUBCONTRACTS

The benefits and obligations hereunder shall insure to and be binding upon the parties hereto and their respective successors, provided that the personnel of any such successor, whether such successor be an individual, a partnership or a corporation, is acceptable to OWNER. The VENDOR shall not hire consultants, sublet, sell, transfer, assign or otherwise dispose of this

Contract in any portion thereof, or of its light, title or interest therein, without the prior written consent of OWNER.

In the case of any subcontract, the VENDOR agrees to bind the subcontractor, and every subcontractor agrees to be bound by all terms of this Contract unless particular provisions are expressly waived, in writing, by OWNER.

S-6 - CONTRACT ADMINISTRATION

Unless otherwise specified in an addendum to the Contract, the VENDOR's Contract Representative as identified in the Contract, shall be deemed to have authority to render any decision or take any action required under the Contract. OWNER Contract Representative, as identified in the Contract, is the person to be contacted by the VENDOR for the purposes of communicating routine information, requesting assistance, or making routine inquiries with respect to the Contract. Unless otherwise specified by law or regulation or in an addendum to the Contract, the OWNER Contract Representative is the only official authorized by the OWNER to

administer the Contract, to make determinations and findings with respect to the Contract, authorize changes to the Scope of Services, or issue Stop Work Orders.

Service of any notice required by the Contract shall be complete upon mailing of such notice, postage prepaid, to the appropriate Contract Representative as the address indicated in the Contract.

S-8 – DISPUTES DURING CONTRACT PERFORMANCE

All disputes under this Contract, if not resolved by the parties, shall be resolved by courts of competent jurisdiction in the State of Maryland and in accordance with the laws of the State of Maryland.

S-9 – DOCUMENTS, MATERIALS AND DATA

Unless otherwise specified by addendum to this Contract, the VENDOR agrees that all reports, drawings, shop drawings, studies, specifications, estimates, maps, and computations prepared by or for it under the terms of this Contract as required by permit or regulation shall be delivered to and become and remain the property of the OWNER upon termination or completion of the work. OWNER shall have the right to duplicate and use, for any purpose whatsoever, all or any part of the technical data which are to be delivered under this Contract.

The VENDOR shall have the right to duplicate and use, for internal program purposes, all or any part of the technical data which are to be delivered under this Contract.

The VENDOR shall notify the OWNER in advance of public disclosure of any information related to this Contract, unless such disclosure is compelled by legislative or judicial process. The VENDOR shall in all cases submit to OWNER three (3) copies of any scientific or technical paper, abstract, report or other vehicle pertaining in whole or in part to this Contract which the VENDOR desires to publish, submit for publication, distribute or otherwise publicly disseminate. Such submission shall be made by the VENDOR to OWNER at least thirty (30) days prior to its planned initial public dissemination, disclosure, or submission for publication. The VENDOR shall include in any such documents or vehicles of public disclosure a statement which acknowledges OWNER, the specific programs therein, and the financial support provided by this Contract. Furthermore, upon receipt of a written request from OWNER, the VENDOR shall also provide a disclaimer stating that the contents of the aforesaid document or vehicle of public disclosure do not in any

way reflect the views, opinions, or policies of the OWNER.

S-13 - GUARANTEE

VENDOR guarantees and warrants the System according to the terms of the Scope of Services and specifications. Supply and delivery shall be made in accordance with the Scope of Services. Upon completion of the installation by the Installation Contractor, OWNER will notify the VENDOR in writing that the Equipment is ready for operation, indicating the specifications have been met and that VENDOR's representative has performed start-up, fine tuning, inspection and training of OWNER designated personnel in the safe and proper operation of the Equipment. The System and materials listed in the Scope of Services shall be delivered FOB the point specified. Any material that is defective or fails to meet the terms of the Scope of Services shall be rejected. Rejected materials shall be promptly replaced.

S-17 - INDEMNIFICATION

The VENDOR will be responsible for all damage to life and property due to its activities, or those of its agents, employees, or subcontractors, in connection with its performance under this Contract, and will be responsible for all work, both permanent and temporary, until the date of Operation.

The VENDOR shall indemnify and save harmless and defend OWNER, and all its representatives from all suits, actions, or claims of any character, brought on account of any injuries or damage sustained by any person or property in consequence of VENDOR's negligent acts or omissions. This responsibility is not to be deemed as a waiver of any immunity which may exist in any action against OWNER.

The VENDOR agrees to indemnify, protect and save harmless OWNER, its officers, agents and employees with respect to any claim, action, cost or judgment for patent infringement, arising out of purchase or use of materials, supplies, equipment or services covered by this Contract.

S-21 - INSURANCE

In any instance when the VENDOR, any of its subcontractors, or their respective employees, agents or representatives perform any obligation hereunder upon any property owned, controlled or managed by OWNER, then the VENDOR shall have and maintain comprehensive Liability Insurance in the following minimum amounts: for bodily injury, Two Million Dollars ($2,000,000)

per occurrence, One Million Dollars ($1,000,000) per person; and for property damage, One Million Dollars ($1,000,000) per occurrence. Certificates of such insurance acknowledging the Hold Harmless Clause contained in this document shall be filed with OWNER.

S-26 -TERMINATION FOR CAUSE

If the VENDOR fails to fulfill its obligations under this Contract properly and on time, or otherwise violates any material provision of the Contract, OWNER may terminate the Contract by written notice to the VENDOR. The notice shall specify the acts or omissions relied on as cause for termination. The VENDOR shall have 30 days after its receipt from OWNER of a written notice of termination within which to remedy the default and to provide evidence thereof to OWNER. If any

such default is not cured within that time, this Contract will terminate after expiration of the 30-day

period, following written notice to the VENDOR that the Contract has been terminated. All finished or unfinished supplies, services and plans provided by this VENDOR, shall at OWNER option, become OWNER property. OWNER shall pay VENDOR fair and equitable compensation for satisfactory performance prior to receipt of notice of termination, less the amount of damages caused by the VENDOR's breach. If the amount of the damages incurred by OWNER are more than the compensation due to the VENDOR, the VENDOR will remain liable for the amount of excess damages. The rights and remedies of OWNER provided in this Article shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract. If it is determined for any reason that the VENDOR was not in default under the provisions of this Article, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to

S-27-TERMINATION FOR CONVENIENCE

The performance of work under this Contract may be terminated by OWNER in accordance with this Article in whole, or from time to time in part, whenever OWNER shall determine that such termination is in its best interest. Notice of Termination shall be in writing and shall be effective upon receipt. The VENDOR will cease work under the Contract on the date and to the extent specified in the Notice of Termination. The VENDOR agrees to take any action that may be necessary, or as OWNER may direct, for the protection and preservation of the property related to this Contract which is in the possession of the VENDOR and in which OWNER has or may acquire an interest. OWNER will pay all reasonable costs associated with this Contract that the Contractor has included up to the date of termination and all reasonable costs associated with termination of the Contract.

However, the VENDOR shall not be reimbursed for any anticipatory profits not earned as of the date of termination.

S-31 - SUSPENSION OF PERFORMANCE

OWNER may, at any time, order in writing a temporary suspension of performance for a period of time it deems appropriate. An adjustment shall be made for any increase in the cost of performance of this Contract (excluding profit) caused by an unreasonable suspension or a suspension for an unreasonable length of time. Should an adjustment be necessary, the Contract shall be modified in writing accordingly. Any adjustment claimed by the VENDOR under this Article must be presented in writing to OWNER as soon as practicable after the termination of the suspension, but not later than the date of final payment under the Contract. Notwithstanding this **Article 11,** VENDOR understands and agrees that the Notice to Proceed under this contract may not be issued for a period of 12 months from Contract award.

S-32 - SEVERABILITY

It is understood and agreed by the parties hereto that if any of these provisions shall contravene, or be invalid under, the laws of the particular state, county or jurisdiction where used, such contravention or invalidity shall not invalidate the whole agreement, but the Contract shall be construed as if not containing the particular provision or provisions held to be invalid in the said particular state, county, or jurisdiction, and the rights and obligations of the parties shall be construed and enforced accordingly.

S-33 - STATE REGISTRATION

Pursuant to Subtitle 2 of Title 7 of the Corporations and Associations Article of the Annotated

Code of Maryland, corporations not incorporated in the State shall be registered with the State Department of Assessments and Taxation, 301 W. Preston Street, Baltimore, Maryland 21201, before doing any interstate or foreign business in this State. Before doing any intrastate business in this State, a foreign corporation shall qualify with the Department of Assessments and Taxation.

S-34 - OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.)

All materials, supplies, equipment, or services provided under this Contract shall comply with the applicable U.S. and Maryland Occupational Safety and Health Act Standards.

SECTION 7

SPECIFICATIONS

01100 - Summary of Work and General Requirements
01300 - Submittals
01400 - Testing of Equipment and System
11365 - Sludge Dewatering System

SECTION 01100

SUMMARY OF WORK AND GENERAL REQUIREMENTS

PART 1 - GENERAL

A. Background

OWNER is replacing their existing mechanical dewatering unit at their Worton Wastewater Treatment Facility for the purpose of dewatering activated sludge from their wastewater treatment process.

OWNER has chosen to pre-select the Dewatering Equipment VENDOR prior to finalizing the construction document and bidding of the project for construction. This approach will minimize current lead times for major equipment items and its impact on construction timelines. The method to be used by the OWNER to select the Dewatering Equipment will be based on the selection matrix outlined herein, to quantify the best-suited VENDOR and equipment for the facility.

The intent of this effort is to select the equipment best suited for the application, in accordance with the selection matrix, and not solely identified by the lowest cost offering.

B. RFP Description

OWNER is seeking PROPOSALS from Dewatering Equipment VENDORS to pre-select the Dewatering System equipment to be used for the project. The rationale for pre-selection is based on multitude factors including concerns with current equipment lead times and the goal to incorporate dewatering equipment as soon as feasible. Pre-selection of this major equipment will also minimize variables and uncertainties for the general CONTRACTOR.

The RFP consists of the solicitation documents and attachments, general conditions, technical specifications, drawings and design criteria, the limits of the VENDORS scope and the General CONTRACTOR (Installation CONTRACTOR) responsibilities for the construction of the Worton WWTP dewatering system, which collectively provides the information necessary to submit a complete PROPOSAL.

It is the responsibility of the VENDOR to configure a cost effective and efficient Dewatering Equipment PROPOSAL that meets the project design conditions and to submit a complete PROPOSAL containing all the information requested, so OWNER and the ENGINEER can evaluate the PROPOSAL on its merit and the procedure outlined herein.

OWNER has selected to utilize screw press type mechanical dewatering equipment to dewater their waste sludge from their membrane bioreactor treatment process. The existing mechanical dewatering equipment has proven to be ineffective and is proposed for complete removal and replacement. The Dewatering Equipment VENDOR is also responsible for furnishing the entire instrumentation and control system for the Dewatering system as specified herein.

C. Dewatering Equipment Pre-selection Parameters

1. Procurement: The successful VENDOR will be notified by OWNER of the selection. After the Contract between the OWNER and VENDOR is executed, OWNER will issue a Notice to Proceed to the VENDOR. The Notice to Proceed will authorize the VENDOR to prepare submittals and shop drawings for the ENGINEER to finalize the design based on the selected Dewatering system. The VENDOR shall assist the ENGINEER in the completion of the project design by providing the information requested, as determined by the ENGINEER, to prepare construction documents for the project bidding.

   The VENDOR'S Contract, amendments, price information and other associated pertinent documents will be incorporated into the construction documents used to secure the installation construction CONTRACTOR.

2. VENDOR Scope of Supply and Quality Basis

   The VENDOR'S PROPOSAL shall be based on components used by VENDOR and based on the newest technological developments as is most appropriate for the specific project conditions. The manufacturers are expected to use their documented sizing criteria and support systems when information is not provided herein which provides a level of quality.

   Equipment manufacturers and design criteria named herein is to establish a level of quality considered acceptable to OWNER and for the VENDORS to determine equipment to be used in the preparation of the PROPOSAL.

3. VENDOR Services, Testing and Quality Control, Extended Services

   The VENDOR shall provide the services summarized and acknowledge in the PROPOSAL Form and provided herein this Request for PROPOSAL. The VENDOR shall include experience and qualifications to ensure a qualified and experienced team.

   The following is a Sequence of Operation for the project to provide an understanding of the VENDOR'S responsibility during the construction phase and plant operation. The sequence of operation shall generally consist of the following stages.

   a. Planning: The CONTRACTOR shall be responsible for all equipment, systems and unit processes during testing, the start-up period and until final acceptance of the equipment, and systems and/or process train being commissioned. Refer to Specification Section 01400 Testing and Quality Control for the minimum requirements and herein this Section for modifications and supplemental requirements.
   b. Preliminary Inspection/Testing, Final Testing and Start-up: Equipment system check-out includes, but is not limited to factory testing, field testing, dry testing, wet testing, and manufacturer's check-out and start-up per section 01400. CONTRACTOR and VENDOR representatives shall inspect all equipment and systems prior to each start-up and verify in writing the readiness to process. This includes all electrical systems,

controls, and instruments. All O&M manuals shall be available prior to start-up. The start-up period shall commence after completion of the final testing.

4. Construction Sequencing: The Installation CONTRACTOR will prepare a final sequence of construction as part of the construction schedule. The VENDOR will be responsible to assist the CONTRACTOR in the development of the plan and implementation of the construction as it is sequenced.

5. Most Cost Effective and Best Value Assessment Criteria

The PROPOSALS will be evaluated based on Technical considerations, Capital cost and Manufacturer experience and references. Refer to RFP for evaluation criteria.

The following is a description of each evaluation criteria.

a. Dewatering System and Equipment - The ENGINEER will prepare a comparison of the proposed Dewatering systems submitted for review and consideration by OWNER. The comparison will summarize similarities and differences of the proposed process layouts, type and number of associated support systems and equipment, motors, drivers and sizes, equipment manufacturers, simplicity or complexity of the system or its layout, flexibility provided for in the system and layout for operation and maintenance, accessibility, the effect of corrosion on the equipment, how well the package fits in the existing building requirements. VENDOR should provide a list of all major equipment weights.

b. Experience of Operating Facilities - This item will be evaluated based on the operation experience and history of operation and difficulties encountered with plants that are operating and have been delivered by the VENDOR. Consideration will be given to length of providing systems, number of systems in operation, reliability of system, longevity of system, ability for delivery of the projects, and ability to dewater the sludge to design criteria required. The intent of this section is to establish the qualifications of the VENDOR to provide adequate support before, during and after commissioning of the System. The VENDOR shall provide a listing of similar Dewatering systems including contact information and testimonials to confirm claims made in the PROPOSAL. Also, the VENDOR shall identify the status of each project and proposed team members that worked on the listed project.

c. System Operation - This item will consider how a system is to operate, simplicity of operation, ability to operate a system in automatic mode and manual mode, reliability of past systems that have operated in the same mode, difficulties that have been encountered with similar system of operation, longevity of the proposed operational mode, aspects of the system operation that make it energy and cost efficient, aspects of the system that make it robust and stable, operational flexibility, control parameters in place and proposed to prevent operational difficulties and major upsets, and ability to operate the system remotely (off-site).

d. System Maintenance - This Item will consider the maintenance required on the system PROPOSAL, labor needed to perform the maintenance,

simplicity of each maintenance task, proposed maintenance program and its purpose to prevent operational difficulties and major maintenance.

e. Process Control - This item shall consider: the programming basis used by the integrator; the reliability and longevity of the proposed program on previous projects; difficulties that have been encountered and how they have been corrected; the standardization of control logic including applicable sub-routines, addressing strategies and nomenclature; the ability to have ladder logic and/or source code made available to the OWNER when requested; and the accuracy of the screens' representation of the process, process flow and navigation and functionality of the proposed system. Also considered is the VENDOR'S integrator who delivered on previous projects, with a minimum of five (5) projects of similar type provided for reference including the programmer's name, project location and contact name for the plant.

f. Terms and Conditions - Sample terms and conditions shall be submitted with the PROPOSAL.

g. Dewatering Equipment VENDOR's Services - This item will consider: the overall corporate structure of the VENDOR; the location of offices and service centers; the organizational structure of the company; the length of service to the company performing similar projects; the ability to deliver similar projects; and the organizational chart for this project with individuals to do the work and their background and experience. Also, considered will be the services available after construction, including parts and operational assistance both on-site and remotely.

6. The capital cost shall be itemized per **Attachment P - PROPOSAL**. All prices in this PROPOSAL form shall be for the expected delivery date and performance of services as shown on the anticipated schedule included in RFP. The pricing shall not be tied to any escalation provisions. The pricing is to be firm for the project with the exception that adjustments may be made by amendments to the PROPOSAL when final design is finished. Incomplete or imbalanced pricing may be considered as non-responsive and could cause the PROPOSAL to be rejected in its entirety or scored very poorly.

7. Terms and Warranty:

   a. The OFFEROR shall have a minimum of ten (10) years' experience.
   b. Guarantee for a period of one (1) year following the date of Installation CONTRACTOR (IC) Substantial Completion acceptance that all equipment is free from defects in design, materials, and workmanship. Furnish replacement parts for any defective component at no cost to the OWNER.
   c. Accept responsibility for the satisfactory start-up and operation of the entire dewatering system and equipment.
   d. The warranty shall be for all costs, labor, travel, equipment, and tools necessary to keep the Dewatering System in operation for the warranty period. As part of the warranty, the VENDOR shall provide all inspections, maintenance, and replacement of parts/materials. If extensive maintenance is required by the VENDOR, the extensive maintenance shall occur within 14 calendar days of being notified by the OWNER. If the

VENDOR does not respond and correct the performance within 14 calendar days, then the OWNER may perform necessary maintenance and pursue reimbursement by the System VENDOR.

e. Performance guarantees as indicated herein and demonstrated by the performance testing.

8. Schedule: The anticipated tentative schedule, which includes equipment and services under this RFP is included in Section 4.3 of the RFP. A more refined schedule will be established when the General CONTRACTOR'S bid package is prepared.

D. **Information to be Submitted with the PROPOSAL:**

The following is a minimum listing of the necessary information that the VENDOR shall furnish in the PROPOSAL. The VENDOR is also encouraged to review the selection criteria to identify any additional information that may need to be submitted for an accurate evaluation of the PROPOSAL. This information shall be reviewed, considered and/or relied upon during the VENDOR assessment and selection.

1. Dewatering System Design, Layout and Overview:

   a. Preliminary Drawings: Provide drawings of the overall package configuration of the Dewatering system. The drawings shall include but shall not be limited to process arrangement and plan dimensions. Include the minimum allowable, maximum allowable and proposed flow rates per unit. The drawings shall include: the location, type and name of equipment; name, type, size and location of piping; support systems and hardware; and critical dimensions such as clearances, etc. Preliminary Flow and P&ID diagrams would be beneficial for review. Provide list of all major pieces of equipment and weights.

   b. Design Criteria: Provide a summary of the proposed Dewatering design and performance criteria, chemical system requirements, pumping and mixing requirements and criteria for other processes that are necessary for a complete dewatering system to ensure compliance with the project parameters. When appropriate, provide the equipment flow rates and operating pressure or total dynamic head.

2. Scope of Supply: Provide a detailed scope of supply recommended for the project, given the site specific conditions, listing all equipment and components. Include in the table for all equipment or component the name, type, size and/or capacity with units, material, manufacturer, model, motor horsepower, efficiency and drive type, quantity, hardware, function, mode of operation and location. Also identify all equipment that is recommended to complete the installation which is not provided by the Dewatering Equipment VENDOR.

3. Dewatering System Operation and Maintenance:

   a. Dewatering System Operation: Provide a preliminary overall functional description of the Dewatering System operation specific to this project and

for periods during average day flow and peak flow conditions. The functional description shall include a description of how the process is controlled, parameters controlling the process, expected operating durations or time periods, manual or automatic operations, finite and field adjustable set points. Also provide a description of the process system architecture, components and instruments specific to this project. Identify those typically used and available manufacturers and software. Refer to Specifications and drawings for a description/information of the required system.

b. Process Operation & Maintenance: Provide a description of daily, weekly, monthly, bi-monthly, quarterly, bi-annually and annual process maintenance on the Dewatering System and for all support equipment or systems. Identify the expected spare parts needed during the first two years of operation and any expected part or equipment replacement(s) expected in the first ten years.

c. Services During Design & Construction: Provide a description of the process support services that will be provided during the design and construction including shop drawings; equipment installation, check out, calibrations, testing and start-up; initiation of operation, process unit demonstration and performance testing; operator process operation and maintenance training; remote monitoring and system service.

4. Equipment Warranty

Provide a description of the standard equipment warranties available from Dewatering System VENDOR and/or manufacturer. Provide alternate pricing for the standard 1-year warranty and an additional option for a total 5-year warranty for the Dewatering system complete. Provide a description of the OWNER'S requirement over the warranty period so as not to void the warranty.

5. Performance Guarantee:

Provide a performance guarantee that the process being supplied will meet the requirements and conditions of the specifications. The performance guarantee shall be for meeting the dewatered solids limits continuously that are listed in Specification 11365 including both current and future conditions. Indicate any exceptions that are taken regarding the specifications. If no exceptions are taken, then state so. Provide a description of the OWNER'S requirement over the performance guarantee period so as not to void the guarantee.

6. Experience requirements of the VENDOR: Provide an experience summary of the VENDOR and the dewatering system that they have used for up to the past 10 years. All such references must be for working dewatering plants. Refer to Attachment R.

7. Explain the company structure, location of main company offices, company headquarters and offices closest to the project site. Provide an organization chart for support, personnel available to assist on the project and after operation has begun. Identify parts availability, location of storage and delivery times. Explain the quality control/quality assurance program with respect to plant difficulties and support to OWNER during and after construction. Include any other information

which would provide background on the company supplying the system or that may be pertinent to the Best Value Improvement evaluation.

*** END OF SECTION ***

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.01 Shop Drawings, Product Data and Samples

A. Shop drawings are generally defined as all fabrication and erection drawings, diagrams, brochures, schedules, bills or material and other data prepared by the VENDOR, his subcontractors, suppliers or manufacturers which illustrate the manufacturer, fabrication, construction and installation of the WORK, or a portion thereof.

B. All costs necessary for compliance with the Requirements of this Section of the Specifications shall be included under the lump sum price bid.

C. Submit five (5) copies of shop drawings, three (3) will be kept by OWNER, one (1) provided to the Installing CONTRACTOR, and one (1) returned to VENDOR. VENDOR/Installing CONTRACTOR shall coordinate with subcontractors for any additional copies of the submittal that are required. Clearly indicate the equipment tag or identification number, specification section(s) and drawing number to which each shop drawing is referenced.

D. Detailed shop drawings, data, literature for fabricated materials or equipment to be incorporated in the WORK shall be submitted to the ENGINEER for review for general compliance with the Project Manual before fabrication. The VENDOR shall obtain and check the manufacturer's shop drawings, certified prints and other pertinent data for conformance with all requirements of the Plans and Specification and in ample time to permit satisfactory progress of the WORK. After the completion of such checking and verification, the VENDOR shall sign or stamp such drawing, which stamp shall state as follows:

Specification Section_____

Checked by_____
(VENDOR'S Name)

Signed by_____
(Checker's Name)

E. All data, drawings and correspondence from subcontractors, manufacturers or suppliers shall be routed through the VENDOR. The ENGINEER shall review only such data and details as are transmitted to him by the VENDOR. All correspondence from the VENDOR to the ENGINEER shall refer to the appropriate section of these specifications containing the subject matter of the inquiry.

F. All shop drawings shall be in conformity with all requirements of the plans and specifications. All shop drawings, except diagrams, brochures, schedules and illustrations, shall be to an appropriate scale, no smaller than 1/8 inch = 1 foot 0 inches, and shall give all dimensions necessary for installation and incorporation in the WORK. All shop drawings shall be accurate

and complete, showing outline and section views, details, materials, accessories, appurtenances and related items. Shop drawings showing piping and conduit systems shall incorporate sufficient views to show all fittings and specialties including locations and spacing of hangers and supports. Piping and/or conduit systems 3–inches in diameter and smaller may be shown as single line. Equipment and specialties installed within and/or connected to piping and conduit systems shall be cross referenced to equipment and specialty shop drawings by shop drawing identification number, manufacturer name, catalog or model number, and equipment numbers shown on the plans. Electrical shop drawings shall include, but are not necessarily limited to, complete terminal identification diagrams and schedule, complete point–to–point interconnection diagram, complete single line and elementary wiring diagrams for all power, signal, control and lighting systems, together with panel layout drawings. Terminal point and wire identification on all working drawings shall be identical to related terminal point and wire identifications on equipment and panels, and absolutely no deviation from this requirement will be permitted.

G. The VENDOR shall submit to the ENGINEER a minimum of six (6) copies of shop drawings and approval data plus any additional number required for the VENDOR'S use. The ENGINEER/ OWNER will retain four (4) copies of each submittal, provide one (1) copy to Installing CONTRACTOR and return one (1) copy to the VENDOR. The ENGINEER'S notation of the action taken will be noted on all the returned copies. At the time of each submission, the VENDOR shall call to the ENGINEER'S attention, **in writing**, any deviations that the shop drawings may have from the requirements of the Plans and Specifications.

H. Upon review by the ENGINEER of the above drawings, lists, samples and other data the same shall become a part of the Contract, and the fabrications furnished shall be in conformity with the same, provided that the review of the above drawings, lists, specifications sample or other data shall in no way release the VENDOR from his responsibility for the proper fulfillment, by any fabrication, or the requirements of this Contract.

I. Corrections or comments made on the shop drawings during the ENGINEER'S review do not relieve the VENDOR from compliance with the requirements of the drawings and specifications. This check is only for review of general conformance with the design concept of the project and general compliance with the information given in the Specifications and RFP. The VENDOR is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, and in performing his work in a safe manner. If the shop drawings deviate from the Specification, the VENDOR shall advise the ENGINEER of the deviations, in writing accompanying the shop drawing, including the reasons for the deviations, and shall request deviation from the Project Manual.

J. The VENDOR'S attention is specifically directed to the fact that no work shall be fabricated, nor equipment or materials ordered, nor any construction performed, prior to approval by the ENGINEER of shop drawings applicable thereto. Construction performed in violation of this requirement will be neither approved nor certified for payment until applicable shop drawings have been submitted and approved. If the ENGINEER so directs, the VENDOR shall disassemble and remove any such construction performed prior to approval by the ENGINEER of shop drawings applicable thereto, and the VENDOR will be allowed no additional compensation nor extension of contract time. If any equipment or materials are ordered by the VENDOR prior to submission and approval of shop drawings he does so at his own risk.

K. It shall be the responsibility of the VENDOR to make all the necessary changes in other items, which result from deviations or changes requested by the CONTRACTOR and approved

by the ENGINEER, so that all items perform the requirements and intent of the Project Manual.

L. The shop drawings are intended to be utilized by the VENDOR for additional fabrication, assembly and erection data. The shop drawings do not change or supersede the Plans and Specifications except in specific cases when the VENDOR requests in writing and receives approval in writing for a deviation from the Plans and Specifications. The VENDOR'S request for a change shall give, in detail, the specific change requested and shall state the reason for the change. Changes requested by the VENDOR and approved by the ENGINEER shall not be construed to include approval of any change except the changed details specifically requested and approved.

M. The VENDOR will also submit to the ENGINEER for review, with such promptness as to cause no delay in work, all samples required by the Project Manual. All samples shall have been checked by and stamped with the approval of the CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers, and the use for which intended.

N. After review by the ENGINEER, shop drawings shall be returned to the VENDOR marked as follows: APPROVED, APPROVED AS NOTED, REVISE AND RESUBMIT, or REJECTED. Unapproved shop drawings (i.e., REVISE AND RESUBMIT or REJECTED) shall be returned to the VENDOR for necessary modifications. Subsequently, the VENDOR shall submit complete, revised shop drawings to the ENGINEER for approval.

1.02 Submittal Requirements: There are three phases of submittals:

PHASE 1, During Request for Proposal (RFP): Refer to Section 01100 for information, drawings and design criteria to be submitted during RFP. Submittal shall include layouts, cut sheets, P&IDs, I/0 list, equipment summary with power requirements, equipment list of major items with associated weights (lbs.).

PHASE 2, During ENGINEER'S facility design: Provide the following submittals:

1. After the VENDOR receives a notice of award from OWNER, a design workshop will be held at the Engineering office of GMB in Salisbury, MD to discuss, review and finalize the equipment selection. The VENDOR will then prepare a complete submittal package (electronic submission by email or FTP site) including all final layouts, cut sheets, P&IDs, I/0 list and equipment power requirements, CAD drawings for Dewatering Equipment and other associated major equipment within 20 days of the design workshop.

2. Any changes and modifications to initial submittals as a part of RFP pre-selection and design workshop should all be finalized, coordinated and re-submitted.

PHASE 3, Coordination with Installation CONTRACTOR”

1. Submittals shall be coordinated with the Installation CONTRACTOR and his installers and provided through CONTRACTOR in digital and hard copies as specified.

2. Apply CONTRACTOR'S stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction WORK,

and coordination of information, is in accordance with the requirements of the WORK and Contract Documents.

1.03 Operation and Maintenance Manuals

A. The VENDOR shall furnish the ENGINEER four (4) copies of a complete instruction manual for installation, operation, maintenance and lubrication of each component of mechanical and electrical equipment. The operation and maintenance manual shall be submitted at least ninety (90) days prior to the anticipated completion of the project.

B. Manuals shall include operating and maintenance information on all systems and items of equipment. The data shall consist of catalogs, brochures, bulletins, charts, schedules, equipment numbers, wiring diagrams and assembly drawings which shall describe location, operation, maintenance, lubrication, operating weight, lubrication charts showing manufacturer recommended lubricants for each rotating or reciprocating unit and other necessary information for the OWNER to establish a complete maintenance program.

1. Manuals shall include a complete and detailed listing describing routine maintenance for each time interval: daily, weekly, monthly, quarterly, semi–annually and yearly. Routine maintenance shall include lubrication, adjustments, inspections, calibrations, etc., and a list of acceptable equivalent lubricants from at least three (3) different major manufacturers whose products are locally available. A manufacturer and/or VENDOR response such as "see instruction manual" will not be acceptable.

C. The following items shall also be submitted:

1. Two (2) prints of one (1) 8x10 color photograph of each major piece of equipment.

2. Name of manufacturer with address and phone number for service and parts.

3. Name, address and phone number of the nearest service representative for the manufacturer.

4. Complete "nameplate" data including serial number for each piece of equipment.

5. A list of spare parts including part number and other information needed to order parts.

6. Weight of individual components of each piece of equipment weighing over 100 pounds.

7. Complete electrical wiring diagrams.

D. Where an O&M manual includes information on equipment not supplied or installed, the extraneous information shall be marked out to avoid confusion.

E. Where an O&M manual contains a written warranty or guarantee, it shall be certified to meet the minimum length of time and requirements defined in the Project Manual.

1.04 Electronic O&M Data

A. In addition to the printed operations and maintenance materials specified above, the VENDOR shall furnish all specified operations and maintenance materials in electronic format prior to Substantial Completion. Electronic equipment manual files shall be submitted in Adobe Acrobat Reader (.PDF) format.

B. Electronic files shall be submitted on one or more compact disks (650 MB CD). Two sets of compact disks shall be provided, one for OWNER and one for ENGINEER. CDs and covers shall be labeled with the project name, supplier, equipment identification and specification section. CDs shall be provided in individual hard plastic cases.

C. In addition to the complete manual submitted in PDF format, the supplier shall furnish electronic files containing the following information in Microsoft Word (.doc).

1. Operation Description – Discuss operational procedures for the equipment supplied. Operational procedures shall include “startup procedures,” “normal operation,” “automated operation,” and “shutdown procedures.” Where multiple modes of automatic operation exist, describe each mode separately.

2. Controls – Provide a table outlining the controls provided for the unit. Utilize two columns in the table. The left-hand column shall indicate the location of the control (e.g., local to the pump, remote control panel, etc.). In the right-hand column describe the control and its function.

3. Troubleshooting – Provide a troubleshooting table with three columns entitled “Problem,” “Possible Causes,” and “Corrective Action.” Under the “Problem” column, identify possible problems that may occur with the equipment or system including but not limited to, all malfunctions that can be expected for the equipment and all alarm indications provided by the system. Under the “Possible Causes” column, identify the causes that may be the root of each “problem.” Under the “Corrective Action” column, provide direction to verify and rectify / repair the “Problem.”

4. Preventive Maintenance – Provide a preventive maintenance table containing headings for “Daily,” “Weekly,” “Monthly,” and “Annual” (or other period as required) maintenance requirements. Under each heading, indicate visual inspections, procedural inspections, calibration routines, lubrication, and all other manufacturer-suggested preventive maintenance procedures required for the equipment or system. List recommended lubricants and any special tools required for the recommended maintenance.

5. Nameplate Data – Provide nameplate data tables consisting of two columns. In the left-hand column, indicate the equipment name, equipment designation, manufacturer, model number, serial number, year installed, dimensions, min and max speed, min and max torque, measurement range, accuracy, and all other data that may assist maintenance persons in identifying, replacing, and maintaining the piece of equipment. Provide the appropriate values and designations in the right-hand column. Provide a separate nameplate data table for each major system component, including gear reducers, motors, etc. Motor nameplate data tables shall include as a minimum, manufacturer, model, serial number, enclosure type,

voltage, speed, service factor, frame size, NEMA design, and insulation class.

6. Manufacturer and Sales Representative Information – Indicate the equipment manufacturer name, mailing address, telephone number, fax number, email address, website address, and contact person's name. Provide the same information for the local manufacturer's representative who supplied the equipment.

7. PLC and HMI data files to be provided on CD in their native format and PDF report format where applicable. These CDs are to be provided with O&M and updated when any program change is made during warranty period.

1.05 Submission of Manufacturer's Certificates

A. General:

1. The Installation CONTRACTOR or VENDOR shall submit Manufacturer's Certificates for the installation of those items of major equipment named in the various sections of specifications.
2. Such Manufacturer's Certificates shall state that the equipment has been installed under either the continuous or periodic supervision of the manufacturer's authorized representative, that it has been adjusted and initially operated in the presence of the manufacturer's authorized representative and that it is operating in accordance with the specified requirements, to the manufacturer's satisfaction.

B. Manufacturer's Representative:

1. The definition of "manufacturer's representative" shall be as follows: a representative from the manufacturer's plant, familiar with the actual problems of manufacturing, installing and operating the equipment or product and with enough years of experience in this field to determine the successful operation of the equipment or product. Sales representatives or agents of the manufacturers will not be acceptable.
2. As related to his obtaining the manufacturer's certificates, the VENDOR shall include in this contract price the cost of furnishing competent and experienced manufacturer's representatives who shall represent the manufacturer on equipment and products furnished and listed under this Contract, to assist the CONTRACTOR to install, adjust, start up and test the equipment and products in conformity with the Project Manual. After the equipment and products have been operated through the trial period for each phase of construction and before being put into permanent service by the OWNER, such manufacturer's representative shall make all adjustments and tests required to provide that such equipment and products are in proper and satisfactory operating condition and meet the requirement for issuing the manufacturer's certificate.

1.08 Warranty Submittal Requirements

A. For all major pieces of equipment, submit a warranty from the equipment manufacturer. The manufacturer's warranty period shall be concurrent with the CONTRACTORS for a minimum period of one year from Substantial Completion.

B. Copies of all approved equipment warranties shall be included in the final operations and maintenance manual in the appropriate equipment section.

C. All equipment warranties shall be received and approved prior to approval of the final payment application for the project.

*** END OF SECTION ***

SECTION 01400

TESTING OF EQUIPMENT AND SYSTEM

PART - GENERAL

1.01 TESTING OF EQUIPMENT AND SYSTEMS

A. Preliminary Testing:

1. When the CONTRACTOR has completed the installation of all equipment including electrical appurtenances, he shall perform preliminary testing on each piece of equipment with the approval from the VENDOR.

2. The CONTRACTOR shall provide for the inspection of each piece of equipment by authorized and qualified VENDOR/manufacturer representatives. These VENDOR/manufacturer representatives shall verify that all equipment has been installed properly.

3. VENDOR/manufacturer representatives shall verify that the individual equipment and/or components are functioning in accordance with the Project Manual.

4. The VENDOR/manufacturer of each piece of equipment shall provide a manufacturer's certificate in accordance with Section 01300 - SUBMITTALS.

B. Pre-Final Testing:

1. After receipt of all VENDOR manufacturer's certificates, the CONTRACTOR will be required to perform wet tests on all pieces of equipment.

2. In addition, the CONTRACTOR will be required to pressure test piping. Tanks, chemical feed, and piping shall be inspected for any noticeable leaks. The CONTRACTOR will be responsible for furnishing piping and pumps as necessary to fill tanks. The CONTRACTOR will also be responsible for disposing of water once tests are completed.

3. Pre-final testing shall include the actual running of equipment to ensure that all electric and controls are properly connected. This testing shall be done under the supervision of the manufacturer's representative.

4. Pre-final testing shall include operation of the system components with sludge for a minimum of 6 hours (unless otherwise noted) and shall be completed prior to the final testing / plant startup.

C. Final Testing/Plant Startup:

1. Purpose and Scope: The purpose of a final test/startup period is to operate the system to demonstrate that the work constructed in accordance with the Project Manual will operate on a continuous basis (with prescribed care). The startup

period will be for a period of thirty (30) days, unless otherwise noted.

2. Permanent safety and protection devices, unless specifically exempted by the OWNER and ENGINEER, shall be in place and operational prior to plant startup. Safety devices shall include, but not be limited to, fall protection, hand railing, grating and floor plates, leak detection, motor thermal and overload protection, emergency power generation, fire alarms and systems, ventilation systems, and lighting in operational areas in or directly related to the system to be started.

3. Readiness to Operate: When the CONTRACTOR has substantially completed the work and when Preliminary, Pre-Final and Operational Tests are complete, the CONTRACTOR shall notify the ENGINEER in writing, requesting permission to start up and operate the dewatering system. The ENGINEER will respond in writing, authorizing the start-up of the system or will state reasons why the operation may not commence.

4. Plan of Operation: The CONTRACTOR shall include with his request permission to start up and operate the system and a schedule for demonstrating the system operation and for the completion of the remainder of the project.

5. The actual operation of the system will be by the OWNER. However, the CONTRACTOR shall make available his personnel to correct any deficiencies that are discovered during this thirty (30) day startup period.

6. The CONTRACTOR will be required to provide temporary piping and pumps as necessary during start-up.

7. Each major process system shall be tested including all components necessary for that system to fully function for its intended purpose, including structural/architectural components, HVAC, plumbing, process equipment, piping, safety equipment, power, instrumentation, and controls.

    a. For equipment intended to be operated on an intermittent basis (i.e., during normal working hours between 7:00 a.m. to 3:30 p.m.), the CONTRACTOR shall demonstrate equipment reliability by operating the equipment for a minimum of 35 hours over a 7-day period. No single period of operation shall exceed eight hours of operation for such systems.
    b. For equipment intended to be operated on a continuous basis, the CONTRACTOR shall demonstrate equipment reliability by operating the equipment for 24 hours per day continuously over a 7-day period.

D. Satisfactory Performance:

1. Satisfactory performance is defined as the system accepting sludge and dewatering with all equipment and facilities operating satisfactorily for a minimum of thirty (30) days.

2. From time to time during the operating period, the CONTRACTOR shall demonstrate, as required by the ENGINEER, that all equipment and systems are capable of operating throughout the full range of specified operation.

1.02 FINAL ACCEPTANCE

A. Upon completion of all work under this Contract including the testing of equipment and placing the system in operation and operating the system continuously for thirty (30) days, the CONTRACTOR shall request, in writing, final acceptance by the OWNER.

B. Upon receipt of the request, the ENGINEER, the OWNER, and the CONTRACTOR will make a Final Inspection of the Project to determine the status of completion as follows:

1. If the ENGINEER does not consider the Project to be complete, the ENGINEER will notify the CONTRACTOR in writing of this fact and will include the reasons why the Project is not considered complete.

2. Any items not satisfactorily completed or unsatisfactory as determined by the ENGINEER, shall be promptly remedied or completed.

3. Upon satisfactory correction of defects or incomplete information or work, the ENGINEER will certify to the OWNER that the system is finally complete.

*** END OF SECTION ***

SECTION 11365

SLUDGE DEWATERING SYSTEM

PART 1 - GENERAL

1.01 GENERAL

A. This specification describes a complete operational system to be furnished by a single responsible equipment manufacturer. The equipment described herein was prepared using as a "basis of design" having been deemed to represent the minimum level of quality, performance and service acceptable for this equipment and being based on products and services as manufactured by Process Wastewater Technologies, LLC and is the basis of design.

B. In order to unify responsibility for proper operation of the proposed equipment, it is the intent of these Specifications that all system components be furnished by a single supplier (unitary source). The equipment must be of standard catalog design, totally warranted by the manufacturer and in full conformity with the drawings, specifications, engineering data, instructions, and recommendations of the equipment manufacturer unless exceptions are noted and approved by the ENGINEER prior to installation. Under no circumstances will a system consisting of parts compiled and assembled by a manufacturer's representative or distributor be accepted. Therefore, the dewatering equipment manufacturer shall provide the dewatering equipment, and all appurtenances described in this section of the specification including but not limited to the volute press, polymer system, conveyors, flowmeter and controls. The OWNER will provide an existing sludge feed pump to be integrated with the dewatering equipment power and controls.

C. No equipment shall be supplied by any manufacturer who is not regularly engaged in the manufacturing and production of Volute dewatering and thickening presses. The equipment manufacturer shall demonstrate their qualifications to furnish the dewatering equipment and shall submit written evidence that their company has been regularly engaged in the design, fabrication, testing, start-up and service of full-scale systems for a period of not less than ten (10) years and has no fewer than twenty (20) installations on similarly sized municipal water treatment facilities that have been in operation for at least ten (10) years.

The installation list shall include, but not be limited, to the following information:

1. Name and location of installation
2. Name of person in direct responsible charge for the equipment
3. Address and phone number of person in direct responsible charge
4. Month and year the equipment was placed in operation
5. Brief description of equipment

D. Acceptable Manufactures: All equipment specified under this section shall be supplied by a single reputable manufacturer, fully experienced, reputable, and qualified in the manufacture of the equipment specified. Plans and specifications have been prepared based on the existing building space requirements and design to accommodate equipment supplied. The equipment shall be provided by Process Wastewater Technologies or pre-approved equal. Only manufacturers offering equipment which meets the mechanical, structural, process and

performance requirements of these specifications shall be considered acceptable.

E. Other manufacturers pre-approved to submit for consideration shall offer equipment proposals for this work, provided any and all exceptions or deviations taken to the plan design and product specifications shall be approved by the ENGINEER prior to bidding. Consideration will be given only to products of manufacturers who can demonstrate that their equipment fully complies with all requirements of the specifications, warranties, and contract documents. The OWNER and/or ENGINEER of Record, at all times, are the sole judge of “Approved Equal”, “Approved Alternate”, and “Or Equal” designations to these specifications.

F. Other manufacturers approved to submit for consideration shall perform a pilot test at the facility prior to the bid date. The pilot test results must clearly demonstrate that the performance of the proposed equipment will meet all requirements of this specification section. The pilot test must be performed using equipment of the exact size and type to be proposed at bid time.

G. All bidders must recognize that, if any alternate equipment or system is used and does not meet or exceed the physical and dimensional standards nor perform as specified in the judgement of the ENGINEER or OWNER, the CONTRACTOR shall be required to modify or replace the alternate equipment with the original equipment at no additional cost to the OWNER or ENGINEER.

H. In order for alternate equipment to be considered an "approved equal," prospective suppliers must make a pre-bid submittal as detailed in the following paragraphs and make it available to the design ENGINEER fifteen (15) calendar days prior to the time of bidding. All differences shall be clearly marked between the specifications and proposed substitute equipment. No substitutions shall be accepted that are not preapproved by the ENGINEER and do not meet the requirements listed in this specification. All costs associated with substituting alternate equipment shall be the responsibility of the CONTRACTOR and/or alternate Manufacturer. In addition, on the date instructed by the ENGINEER, the manufacturer shall perform a pilot test at the facility. The pilot test results must clearly demonstrate that the performance of the proposed equipment will meet all requirements of this specification section. The pilot test must be performed using equipment of the exact size and type proposed at bid time.

I. The pre-bid submittals for qualification to bid must contain an installation list of ten (10) similar in size and capacity completed and in operation within the past ten (10) years. The installation list will be complete with the date of installation, the name and telephone number of the equipment operator and the name and telephone number of the design ENGINEER.

J. This specification has been prepared on the basis of the specific requirements for this application. These specifications may require modification of the manufacturer’s standard equipment design. It will be mandatory that all equipment manufacturers meet all requirements of this specification. Equipment manufacturers shall modify their standard designs and recommended operational parameters to meet all requirements of this specification. Any claims to the contrary, whether specific or implied, indicating that the equipment may not meet the specifications, will be considered grounds for rejection of the bid.

1.02 SCOPE OF WORK

A. This section shall include furnishing One (1) Volute Dewatering Press together with associated sludge conditioning tank(s), control panel, polymer system, flowmeter, sludge feed pump controls, conveyors, and all appurtenances as specified in the Contract Documents and as required to meet the specified performance requirements and to provide a full and properly functioning sludge dewatering system. The OWNER will provide an existing sludge feed pump to be integrated with the dewatering equipment power and controls.

B. Unit responsibility: All equipment furnished under this section shall be the responsibility of a single Manufacturer to fabricate or procure, integrate, factory test, and deliver to the project site. It shall be the responsibility of the Manufacturer to coordinate all details and components required for a properly functioning system.

C. If the system requires additional space, utilities, and/or equipment which are not described in the Contract Documents or cannot be provided within sufficient existing footprint in the sludge handling building, the Manufacturer shall be responsible for costs associated with modifications, additions, and changes, including design effort, required to locate and place the proposed equipment into service.

D. The Dewatering Unit provided must include at least two (2) separate Dewatering Drums that operate independently such that if one Drum is inoperable for any reason, the unit can still dewater sludge at a minimum of 50% of its full capacity. In the event that a unit only has a single Dewatering Drum, two (2) separate units will need to be provided under this section.

1.03 RELATED SECTIONS

A. LIQUID POLYMER BLENDING SYSTEM

B. SLUDGE FEED PUMP (BY OWNER)

C. DEWATERED SOLIDS CONVEYORS

D. FLOWMETER

1.04 REFERENCES

A. National Electrical Manufacturers Association (NEMA).

B. Underwriters Laboratory (UL).

1.05 SUBMITTALS

A. The following design submittals are to be provided by Manufacturer following award of contract. All submittals shall be approved by the ENGINEER, prior to installation of such equipment. Submittals shall include as a minimum:

1. General Assembly drawings of all equipment to be supplied detailing all relevant dimensions and connection sizes.

2. Electrical drawings for all control panels showing all necessary field connections to be made.

3. Manufacturer's catalog sheets showing specified equipment, control panel, connecting piping and valves, spare parts package, O&M Manuals, and warranty information.

4. Installation instructions.

5. Motor characteristics and performance information.

6. Parts list including a list of recommended spare parts, and all components located within the control panel.

1.06 SYSTEM PERFORMANCE

A. The sludge dewatering system will be capable of dewatering the feed sludge and producing a solids cake with no free water present. The system will be able to start up, operate as required and shut down in the absence of any operators.

1.07 SYSTEM DESCRIPTION

A. The sludge dewatering system shall consist of One (1) Volute Dewatering Press and all appurtenances.

B. The Volute Dewatering Press shall be a complete prefabricated system consisting of:

1. Sludge conditioning system consisting of two-stage flocculation tanks with a mixing tank with gear motor and mixing impeller to allow efficient mixing of polymer in the sludge and a flocculation tank including gear motor and large cross-sectional area agitator.

2. Two (2) x 300 series "Dewatering drums" including spray wash down system and gear drives.

3. Support structure for the Dewatering Drum, including filtrate collection pan and outlet plumbing.

4. A self-contained electrical and control panel including control for ancillary equipment such as the sludge feed pump and solids conveying.

C. Appurtenances:

1. One (1) polymer dilution and dosing equipment

2. One (1) sludge feed pump

3. One (1) magnetic flow meter

4. One (1) shaftless screw conveyors

1.08 SPARE PARTS

A. Furnish the following spare parts:

1. Spray wash system solenoid valve.

1.09 PATENTS

A. The manufacturer warrants that the use of this system and its equipment, in the process for which the system has been expressly designed, will not infringe on any U.S. or foreign patents or patents pending. In the event of any claim of infringement the manufacturer shall defend and indemnify the OWNER free from any liabilities associated with the use of the patented equipment or process.

B. The CONTRACTOR hereby grants to the OWNER, in perpetuity, a paid-up license to use any inventions covered by patent or patents pending, owned, or controlled by the supplier in the operation of the facility being constructed in conjunction with the equipment supplied under this contract, but without the right to grant sublicenses.

1.10 WARRANTY

A. The manufacturer shall warrant, in writing, that all equipment supplied by them shall be free from defects in material and workmanship, for a period of twelve (12) months from the date of startup, not to exceed eighteen (18) months from the date of delivery, unless noted otherwise within the specifications.

1.11 CONDITIONS OF SERVICE

A. The sludge dewatering equipment shall be designed to adequately condition and dewater the sludge such that a dewatered sludge cake is produced that easily discharges from the dewatering unit, without blinding or plugging, and that may be handled by solids conveying equipment.

B. Each unit shall be designed to operate in the environment for which it is intended, continuously or intermittently on demand, and shall perform the required dewatering operations without spillage of water or sludge beyond the nominal machine envelope. In addition, the unit will operate with no requirement for operator attention other than periodic inspection and chemical replenishment.

1.12 QUALITY ASSURANCE

A. All components of the sludge dewatering equipment shall be engineered for long, continuous, and uninterrupted service with minimal operator intervention. Provisions shall be made for easy maintenance, adjustment, or replacement of all parts.

B. To ensure unity of responsibility, the volute press, supporting frames, polymer mixing and feeding blend unit, press discharge conveyor, dumpster leveling conveyor, flowmeter, and control systems shall be furnished and coordinated by a single supplier. The OWNER will provide an

existing sludge feed pump. The CONTRACTOR shall assume full responsibility for the satisfactory installation and operation of the entire volute press dewatering system package.

C. Prior to shipment, the Volute Dewatering Press and control panel shall be factory tested at the place of assembly. Factory test each pre-assembled, pre-wired, Volute Dewatering Press and its associated control panel to be supplied to the job site. Prior to shipment, verify through a one-hour continuous operating test that the Volute Dewatering Press and associated equipment operate smoothly, noiselessly, vibration free, and without overheating of any bearing or motor.

D. The OWNER/ENGINEER shall, at their option, be permitted to witness the factory quality control test at the manufacturer's facility. The manufacturer shall give the OWNER/ENGINEER a minimum of one (1) weeks' notice prior to testing.

E. The Supplier shall have at least ten (10) full-scale systems utilizing the exact technology and exact equipment size proposed for this project operating successfully for at least five (5) years in North America at municipal wastewater treatment plants that were furnished under the manufacturer's own name.

PART 2 – PRODUCTS

2.01 VOLUTE DEWATERING PRESS

A. Manufacturer

1. Volute Dewatering Press Model ES-302 as supplied by Process Wastewater Technologies LLC, Rosedale, MD or pre-approved equal.

B. This specification is based on one product, which will be the basis of design and the base bid by CONTRACTORS. Alternative designs will be considered, but the base bid will be based on the Model ES-302 Volute Dewatering Press as specified herein.

C. The CONTRACTOR may substitute an alternative product for sludge dewatering, but his base bid must be based on supplying the model ES-302 Volute Dewatering Press. The alternative bid shall show a deduct for the alternative supply, and the CONTRACTOR shall supply information on the alternative to the Consulting ENGINEER at least 2 weeks before bid showing that it meets the performance requirements of this specification.

D. The CONTRACTOR shall also provide pilot testing data on the sludge from the WWTP, showing final sludge water content, filtrate quality, and chemical dosing rates. The CONTRACTOR shall also produce at that time drawings showing the layout of the alternative dewatering system as well as any changes in the building, foundation, and civil/mechanical/electrical construction details to accommodate the alternative device.

E. The CONTRACTOR shall also pay for the services of the Consulting ENGINEER in reviewing the alternative product. A down payment for these services of $10,000, non-refundable, shall accompany the Alternative Bid Engineering Design Package when it is submitted at least 2 weeks before the bid date.

F. The Unit provided must include at least two (2) separate Dewatering Drums that operate independently such that in the event that one Drum is inoperable for any reason, the unit can still dewater sludge at a minimum of 50% of its full capacity. In the event that a unit only has a single Dewatering Drum, two (2) separate units will need to be provided under this section.

G. Materials and Coatings Schedule

1. All materials utilized in the construction of the sludge dewatering equipment shall be entirely suitable in every respect for the service required. All metals in contact with polyelectrolyte or sludge, and all other metal components other than those specified below in Table 1 shall be stainless steel, type 304 or 316.

2. No carbon steel will be used for any part of the press with the exception of gearmotors. Table 1 indicates the materials and coatings that shall be provided for the Volute Dewatering Press and related components unless specified otherwise herein:

Table 1. Material and Coatings Schedule

Item of Equipment	Material
Tanks and support frame	Type 304 Stainless steel
Plumbing and Spray bars	Type 304 Stainless steel
Dewatering Drums	Type 304 Stainless steel
Dewatering Drum screw	Type 304 Stainless steel with flame coating 10Co-4Cr
Gear Motors	Die cast Aluminum and Type 304 Stainless steel
Gear Motor coating	Acrylic paint
Spray nozzles	Polypropylene
Electrical enclosure	Type 304 Stainless steel
Electrical wiring housing	Non-metallic flexible liquid-tight conduit and fittings
Valves – wetted sections	Stainless Steel, EPDM Seating

H. Structural Components

1. The structural support frame shall be fabricated of type 304 stainless steel members conforming to the latest ASTM Standard Specifications for Structural Steel, Designation A36. The support frame will be a rigid structure, adequately braced to withstand intended loads without excessive vibration or deflection.

2. The framework shall be of welded and/or bolted construction. All welding shall conform with the American Welding Society Structural Welding Code.

3. The structure shall be designed for installation on a prepared concrete foundation, suitable flat concrete slab, or fabricated platform and secured with anchor bolts.

4. The construction shall allow easy access and visual inspection of all internal components.

I. Dewatering Drums

1. The dewatering drums will be constructed of ATSM type 304 SS. All circular components will be laser cut to ensure maximum evenness of wear and therefore operating life.

2. Assembly will be undertaken in such a way that all fixed rings are concentric and parallel. All fixed rings will be equally spaced apart for each section of the dewatering drum. When mounted on the retaining rods and installed, all moving rings will move freely between the fixed rings.

3. Each Dewatering Drum shall be equipped with individual spray bars. Each spray bar shall consist of a spray pipe fitted with spray nozzles, located above the dewatering drum. The spray pipe and spray nozzle assembly shall be readily removable. Nozzle spacing and spray pattern shall be such that the sprays from adjacent nozzles overlap one another on the dewatering drum surface. The sprays will operate periodically and will remove solids built up externally on the drum such that over time no significant buildup of solids occurs on the drum.

4. Each Dewatering Drum will have a drive motor:

   a. The Dewatering Drum drive motor will be a one-piece gearmotor. Gearmotors will be hollow shaft design designed to drive the dewatering drum screws with no additional couplings or joints. Motors will be filled with grease on assembly and sealed for life. Screw rotational speed shall be obtained through a hypoid reduction gear. Input power to the dewatering drum drive shall be supplied through an A.C. variable frequency drive unit.

   b. Drive Motor Data:

a.	Maximum Horsepower:	0.55
b.	Power Requirements:	208/240/480 VAC, 3 phase, 60 hertz
c.	No load motor speed:	1760 RPM
d.	Gear Reduction:	750:1
e.	Output shaft speed:	2.6 RPM @ 60Hz
f.	Ingress Protection Rating:	IP65
g.	Enclosure:	TEFC
h.	Enclosure material:	Die Cast Aluminum

J. Mixing and Flocculation Tanks

1. Each Volute Dewatering Press shall have an integrated two-stage mixing system comprising of a flash/rapid mix tank and flocculation tank, each with mixers and drive motors. Tank sizing and design will ensure adequate residence times and

mixing conditions to ensure complete flocculation and satisfactory dewatering performance.

2. Tank design will minimize the possibility of any short circuiting of flow.

3. Design and manufacture of tanks and spill trays must ensure no leakage or spillage of fluids under normal working conditions.

4. Mixing and flocculation tanks will be manufactured in type 304 stainless steel and will be a minimum of 14 gauge (0.0747”). Tanks and spill containment trays will be fully welded internally and externally.

5. Each Mixer will have a drive motor:

   a. The mixer and flocculation tank drive motors will be a one-piece gearmotor. Gearmotors will be hollow shaft design designed to drive the mixing impeller shafts with no additional couplings or joints. Motors will be filled with grease on assembly and sealed for life. Mixer rotational speed shall be obtained through a hypoid reduction gear. Input power to the dewatering drum drive shall be supplied through an A.C. variable frequency drive unit allowing variable mixing energy to be input to the system.

   b. Flash Mixing tank drive motor data:

      a. Maximum Horsepower: 0.3
      b. Power Requirements: 208/240/480 VAC, 3 phase, 60 hertz
      c. No load motor speed: 1760 RPM
      d. Gear Reduction: 10:1
      e. Output shaft speed: 180 RPM @ 60Hz
      f. Ingress Protection Rating: IP65
      g. Enclosure: TEFC
      h. Enclosure material: Die Cast Aluminum
      i. Service Factor: 1.15

   c. Flocculation tank drive motor data:

      a. Maximum Horsepower: 0.55
      b. Power Requirements: 208/240/480 VAC, 3 phase, 60 hertz
      c. No load motor speed: 1760 RPM
      d. Gear Reduction: 60:1
      e. Output shaft speed: 30 RPM @ 60Hz
      f. Ingress Protection Rating: IP65
      g. Enclosure: TEFC
      h. Enclosure material: Die Cast Aluminum
      i. Service Factor: 1.15

2.02 CONTROL PANEL

A. Each Volute Dewatering Press shall have an integrated electrical and control system that will allow for safe, simple and automated operation of the unit. All electrical work, motors and drives will comply with any relevant NEMA standards.

B. The electrical control system will be able to accept remote start and stop signals, and will have outputs for unit in operation, and unit alarms to an external PC.

C. Control Panel Features:

1. Control Panel will be UL listed.

2. Enclosures: Control panel enclosures shall be wall mounted or free-standing, fabricated of type 304 stainless steel and shall be suitable for NEMA 4X service.

3. The control panel shall accept a 208/240/480-volt, 60 hertz, 3 phase ac power input. A main disconnect circuit breaker and operator mechanism shall be included. When the disconnect is in the open position, all power shall be removed from the control system.

4. IEC rated motor starters shall be provided for all non-VFD and DC motors.

5. Variable frequency drives (VFD) shall be provided for the dewatering drum drive and mixing and flocculation tank agitators as well as the OWNER provided sludge feed pump.

6. Short circuit protection for system components shall be accomplished utilizing fuses. Individual thermal overload protection shall be provided.

7. A transformer shall be included that will provide 120 volts, ac for the polymer dilution and dosing system and control system.

8. A Programmable Logic Controller (PLC) will control all timing and switching functions.

D. External Enclosure Features:

1. The external door of the panel will have the following switches and indicators:

   a. Main Isolating Switch (Circuit Breaker)
   b. An emergency stop button which shall be a mushroom head style pushbutton that when depressed shall immediately de-energize all moving equipment in the system.

2. Within a windowed enclosure mounted on the panel door:

   a. HMI Touch Screen
   b. An H-O-A system switch to switch the system from Auto to off to manual modes
   c. Power on Light (white)
   d. An Operating Light -for when the unit is actually in operation - (green)

3. In addition to items located on the main enclosure door:

   a. An Alarm Light - a flashing light located on the top of the panel (red).

2.03 PROGRAMMABLE LOGIC CONTROLLER (PLC)

A. Each Volute Dewatering Press will be provided with an Allen Bradley CompactLogix PLC, installed, wired and programmed to perform the following functions:

1. Operational Control

    a. Control of all components of the Volute Thickener system including the ability to set times and operating speeds for any feed pump installed, solids conveyors, dewatering drums, mixers, polymer dosing system and wash-down sprays.

2. System Tuning

    a. PLC will allow suitably qualified operators to adjust operating parameters such as delay timers for fault alarms and system calibration constants.

3. Monitoring Operation

    a. PLC will allow the operator to inspect the operation of all the components including indicators such as output frequency, current draw, thermal condition, elapsed operating times, and any faults present. Operators will be able to view approximated readouts of all operational speeds and flowrates relevant to the operation of the system.

4. Manual operation of components

    a. Operators will be able to manually operate each item of equipment from the PLC interface for inspection and maintenance reasons.

5. Time Clocks

    a. Operators will be able to set the unit to operate at specific times or on specific days with no operators present.

2.04 ELECTRICAL HARDWARE

A. Power Wiring

1. All power and wiring shall be 600-volt, type THHN insulation, stranded copper and shall be sized for the required load, 14 AWG minimum, and color coded for voltage.

B. Control Wiring

1. Control wiring shall be 250-volt type THHN insulation, stranded copper and shall be sized for the required load, 18 AWG minimum, and color coded for voltage.

C. Circuit Breakers

1. Circuit breakers for the main disconnect shall be thermal magnetic molded case units. Circuit breakers shall be Square D, Class 650, Type FAL or equivalent.

D. Motor Starters

1. Motor starters shall be full voltage, non-reversing, IEC style across-the-line units. Coils shall be 120 volts ac. Siemens type Sirius 3RT10 or equivalent.

E. Selector Switches

1. All selector switches shall be heavy duty, corrosion resistant units rated for NEMA 4X service. Contact blocks shall be rated for 10 ampere continuous service. Selector switches shall be Idec Series TWTD.

F. Pilot Lights

1. Pilot lights shall be heavy duty, corrosion resistant units rated for NEMA 4X service. Units shall be 120 VAC full voltage incandescent type. Pilot lights shall be Idec Series TWTD or equal.

G. Terminal Blocks

1. Terminal blocks shall be high density, solderless box lug style, with 600-volt rating. Terminal blocks shall be Allen Bradley type 1492 or equal.

H. Control Relays

1. Control relays shall be of general-purpose type with a 10 amp contact rating, miniature square base and internal on status pilot light. Relays shall be Allen Bradley Type 700-HF Series or equal.

I. Programmable Logic Controller

1. The programmable relay shall be an Allen Bradley CompactLogix PLC.

J. Variable Frequency Drives (VFD) shall be UL listed and shall be Altivar 320 Series as manufactured by Square D.

1. Each VFD will include a 2 Port ATV320 Communications card with Modbus/TCP, Ethernet/IP (DLR) capability.

2.05 FUNCTIONAL SPECIFICATION

A. The control panel will undertake the following operations:

B. Auto-Manual Operation:

1. The Volute Thickener-Dewatering Press system may be set to either Auto/Manual/Off on the control panel via a 3-position switch. This will be the "main switch" for the plant.

2. When set to manual, all items may be switched on and off at the control panel by the switches on the HMI unit.

3. When set to off, no items will work whether switched on or off either at the control panel or anywhere else.

4. When set to Auto, all items of equipment will work as per the following descriptions.

C. Clock Operation

1. The clock function will be controlled by the PLC in the control panel. Two clock functions will be allowed for in the program. The clock may be set to either "On" or "Auto/timer" via at the PLC. If the clock is set to "On" the plant will run for as long as the main switch is set to "Auto". When the clock is set to "Auto/Timer" the plant will operate in accordance with the clock settings.

2. Clock function settings will allow the operator to set the dewatering press and all associated equipment to switch on and off, at pre-designated times on pre-designated days with no operators being present. A minimum of two (2) different "clock programs" will be allowed for in the PLC program.

D. Sludge Feed to Plant

1. Sludge is fed to the plant by a feed pump controlled from the control panel. A VFD will control the speed of the pump. In the event of a pump overload or a VFD fault the plant will shut down and an alarm will occur.

2. A flow meter will monitor the sludge flow. The operator will be able to set the flow, and the feed pump will operate to maintain that flow via a PID loop. Any variations from the preset flow will cause the system to shut down and an alarm to occur.

E. Polymer Feed

1. Polymer feed to the plant is achieved by the integral polymer preparation system connected to the plant. This system is controlled and powered by the control panel. Outputs from the control panel to the polymer preparation system will include power, start and stop signals, and variable speed control for the polymer feed pump.

2. Manual adjustment of the speed control for the polymer dilution mixing chamber will be made from the control panel. The control panel will also monitor the polymer

preparation system for faults due to low water pressure, or no polymer flow and shut the system down with an alarm should this occur.

F. Flocculation Tank Agitation

1. Whenever the plant is operating two (2) motorized agitators will operate continuously, stirring the contents of the flocculation tank. These are geared motors and will be controlled by a VFD in the control panel. The VFD will be adjustable from 5 Hz up to 75 Hz.

2. A high-level sensor will detect any high fluid level in the flocculation tank and will shut the plant down and cause an alarm should this occur.

G. Dewatering Drums

1. The Dewatering Drums will operate whenever the plant is operating. The motor is controlled by a single VFD. The Range of Adjustment for this will be 15 Hz to 100Hz. When the plant shuts down the dewatering drum will continue to operate for a pre-set time before they shut down. Sprays will periodically switch on while the dewatering drum is operating. The frequency and duration of the spray are adjustable in the PLC.

H. Conveyors

1. The Conveyors will operate whenever the dewatering drums are operating and will shut down following a pre-set delay following the shutdown of the dewatering drums. E-stop and no-motion sensors on the conveyors will shut down the system and cause an alarm in the event they are activated. The conveyors will also shut down the system and cause an alarm on over torque.

2. A dumpster leveling conveyor shall be provided if required by the OWNER.

2.06 LIQUID POLYMER BLENDING SYSTEM

A. The work in this section consists of furnishing and installing one (1) polymer blending unit to feed polymer to the solids dewatering system. The blending unit shall be supplied with progressive cavity pump, motors and controls, including all integral piping, valves, fitting, pipe supports, special equipment and appurtenances in accordance with these specifications, including all incidental work necessary to make it complete, satisfactory and ready for operation.

B. The polymer dilution and feed system shall be capable of effectively activating and fully blending with water a homogenous polymer solution ranging from 0.1% to 1% concentration of emulsion polymers with active contents up to 75%.

C. The polymer dilution system shall be provided by the dewatering system manufacturer.

D. Design Criteria

1. Polymer Type: Emulsion

2. Polymer Activity (percent active): 30 to 75

3. Solution Concentration Range: 0.1% to 2% based on neat polymer

4. Solution Concentration Range: 0.5% based on neat polymer

5. Neat Polymer Flow Range (GPH): 0.25 to 5

6. Dilution Water Range (GPH): 60 – 600

E. Spare Parts & Special Tools

1. One (1) progressive cavity pump stator.

2. One (1) progressive cavity pump lip seal.

3. One (1) banding clamp tool for replacement of the progressive cavity metering pump pin joint banding clamps.

4. One (1) neat polymer check valve, complete.

F. Polymer Dilution Equipment

1. General: CONTRACTOR shall provide polymer dilution systems as specified herein. The polymer dilution/feed unit shall be capable of automatically metering, diluting, activating and feeding a liquid polymer with water. Units are not standard design; they shall be modified as specified herein.

2. Manufacturers: Unit shall be VeloDyne, VeloBlend VM Series; or equal, modified as required to meet the specified requirements.

   a. The naming of a manufacturer in this specification is not an indication that the manufacturer's standard equipment is acceptable in lieu of the specified component features. Naming is only an indication that the manufacturer may have the capability of engineering and supplying a system as specified.

3. Equipment: These specifications are based on a multi-stage, multi-zone, Hydro-Mechanical polymer activation & blending technology. Alternate technologies will only be considered if proven to provide an equal level of performance, versatility, reliability and quality, otherwise the following technology will be provided without exception.

4. Materials of Construction: The following material requirements will be strictly adhered to:

   a. System skid: 304 stainless steel
   b. Hardware: Type 18-8 stainless steel
   c. Inlet and Outlet fittings: 304 stainless steel
   d. Piping & pipe fittings: schedule 80 PVC
   e. Tubing and tube fittings: polyethylene, polypropylene, stainless steel and Viton

f. Water solenoid valve: brass
g. Pressure gauges: stainless steel, liquid filled
h. Pressure switches: NEMA 4, brass connection
i. Flow meter: acrylic, stainless steel, PVC and or polypropylene
j. Water control valve: stainless steel with stainless steel seat
k. Mixing chamber body / flanges: stainless steel
l. Mixing chamber cover / chamber: clear polycarbonate
m. Mixing chamber discharge: stainless steel
n. Impeller: 304 stainless steel
o. Impeller shaft seal: Viton, stainless steel, ceramic, carbon
p. Mixing chamber pressure relief valve: brass, stainless steel or PVC
q. Metering Pump wetted parts: stainless steel & Viton
r. Metering Pump Shaft Seals: Viton, stainless steel ceramic, carbon
s. Junction box: FRP.

5. In order to provide control and versatility to optimize the performance of the wide range of polymers available and to optimize system reliability, a multi-stage Hydro-Mechanical polymer blending technology shall be provided with both a non-mechanical and mechanical mixing stage:

   a. Non-Mechanical Stage: To optimize reliability, the device shall be capable of activating and blending polymer based on plant water pressure alone at 30 psid or greater. Polymer shall be injected directly into a water jet by means of an injection quill positioned such that the non-mechanical mixing energy is no way diminished prior to polymer and water contact. The non-mechanical zone shall be designed such that the velocity of the mixing energy-producing water jet is maintained or increases as flow decreases.
   b. Hydro-Mechanical mixing Stage: In order to provide optimal polymer performance under all operating conditions and to provide total control over mixing energy, in addition to the non-mechanical mixing stage the device shall be capable of producing its mixing energy independent of plant water pressure through a variable intensity, controllable stainless-steel hydro-mechanical mixer. The mixing impeller shall be fully controllable and capable of inducing ultra-high, non-damaging mixing energy at all flow rates. This shall be accomplished by controlling mixing intensity and preventing over exposure to, or damaging recirculation through the impeller. The polymer mixing impeller shall be designed to produce both axial and radial flow to optimize mixing effectiveness and to effectively induce high, non-damaging mixing energy over the system's full flow range.
   c. Mixers that rely solely on plant water pressure and or flow for mixing energy will not be acceptable. Mixers where performance is affected by flow rate and therefore retention time resulting in under or over exposure to mixing energy, or which rely on constant speed impellers or that rely on close tolerances for blending shall not be acceptable.

6. In order to prevent polymer build-up, the mixing chamber shall maintain high velocity in the entire chamber - at no time shall there be low velocity within any portion of the mixing chamber.

7. The mixing impeller shall be controlled by a VFD motor controller located in the Volute Dewatering Press control panel and driven by a wash-down duty motor.

The motor shall be mounted horizontally or above the mixing chamber. Motors mounted under the mixing chamber where seal failure or leaks can damage the motor shall not be acceptable.

8. The mixer drive shaft shall be sealed by a mechanical seal which shall have an integrally mounted and factory plumbed seal flush. A drain port behind the seal shall be provided in the mixing chamber to drain the polymer solution in case of a seal failure. The seal shall be easily accessible for replacement. Systems without a seal flushing system shall not be considered. All bearings shall be external from the mixing chamber. Internal bearings shall not be acceptable.

9. Both mechanical and non-mechanical mixing zones shall be clear polycarbonate to view the mixing action and blending effectiveness. Acrylic chambers prone to becoming brittle over time and cracking, or opaque pipe shall not be acceptable to meet this requirement. The clear cover shall have a stainless steel reinforced gusseted flange with a stainless-steel discharge connection in order to handle maximum operating pressures.

10. The mixing chamber shall have a maximum rated pressure of 100 psi. Provide pressure relief on the mixing chamber factory set at 75 psi.

11. Provide a neat polymer check valve specifically designed to isolate neat polymer from dilution water. The valve shall be designed with an open, unobstructed path to the valve seat. To minimize check valve plugging due to normally occurring polymer agglomerations, the minimum open area up to and including the valve seat shall be 3/16” without exception. The valve body shall be constructed of Teflon with Viton seals. The valve poppet and spring shall be stainless steel. The spring shall be outside of the polymer flow path to prevent build-up and plugging. The locking pin used to hold the valve in place shall be attached to the mixing chamber with a lanyard. The valve shall be readily accessible for cleaning and shall not require tools for removal, cleaning or replacement. Conventional check valves, valves that rely on ball seals, and or check valves that are installed inside the mixing chamber, or which require mixing chamber disassembly for servicing will not be accepted.

G. Dilution Water Assembly

1. The dilution water flow rate shall be monitored by a Rotameter type flow meter having the range as specified under paragraph 1.02 above. Unions or flanges shall be provided on the flow meter to allow easy removal for cleaning.

2. The unit shall have an electric solenoid valve for on/off control of total dilution water flow. An isolation ball valve shall be provided upstream of each solenoid valve to allow for maintenance of the solenoid valve.

3. A differential pressure type low water differential pressure alarm shall be provided. The switch shall be adjustable between 9 and 60 psid. Static working pressure, 500 psi. The pressure switch shall be manufactured by Ashcroft.

4. Provide a 2-1/2” stainless steel liquid filled pressure gauge to monitor dilution water inlet pressure.

H. Progressive Cavity Neat Polymer Metering Pumps

1. The unit shall have one (1) neat polymer metering pump(s) integrally mounted on the systems skid. The metering pump(s) shall have a range as specified under paragraph 1.02 above. The pump shall be a positive displacement, progressive cavity type constructed of stainless steel and Viton. The shaft seal shall be a lip seal type riding on a ceramic sleeve. Mechanical seals shall not be used. A 240/480 VAC 3-phase wash-down duty motor shall drive the pump. A gear reducer shall be provided to produce a maximum pump shaft speed of not more than 545 RPM. The motor shall be controlled by a VFD motor controller located in the Volute Dewatering Press control panel.

2. Provide a calibration column with two full port PVC ball valves having Viton o-rings. The column shall be calibrated for a one-minute draw-down at maximum pump rate and read in GPH and milliliters. The calibration column shall be rigidly mounted to the systems frame with a minimum of two heavy duty brackets. Mounting the calibration to the neat polymer inlet piping shall not be acceptable. Provide a breather plug in the top of the calibration column designed to allow adequate displacement of air during calibration while preventing water or other foreign material from entering the calibration column.

3. Provide a thermal type loss of polymer flow sensor.

I. Solution Discharge Assembly

1. Provide a 2-1/2” stainless steel liquid filled pressure gauge to monitor system discharge pressure.

2. Provide a swing type check valve to prevent back flow. The check valve shall be sized for the total solution flow of the system, constructed of PVC and Viton.

J. Controls

1. The polymer feed system shall be controlled by the Volute Dewatering Press control panel.

2. A junction box integral to the systems frame shall be provided. The junction box shall be rated NEMA 4X and constructed of FRP. All skid mounted electrical components interconnected to the control panel shall terminate at numbered and labeled terminal blocks. The terminal blocks shall be sized for 14 ga. wire. Wires shall be neatly run through conduit and numbered with shrink tubing type labels.

3. The junction box shall be positioned such that there are no obstructions in front of the control panel per related NFPA requirements.

4. All control and alarm functions and displays, as well as operator input will be available at the Volute Dewatering Press System control panel mounted at the press.

5. Inputs from Volute Dewatering Press control panel:

a. Water Valve Open
b. Mixing Motor Power
c. Pump Motor Power

6. Outputs to Volute Dewatering Press control panel:

a. Low Water Pressure Alarm (discrete dry contact)
b. Low Polymer Flow Alarm (discrete dry contact)

K. System Skid

1. The system's frame shall be of rugged 304 stainless steel construction. No mild steel shall be used. All piping shall be rigidly supported.

2. Under no circumstance shall the pump suction exceed 5” from the bottom of the skid for progressive cavity pumps.

3. The skid shall have an integral stainless steel drip pan located under the neat polymer metering pump. Provide one dozen absorbent pads designed for oil and sized to fit within the drip pan.

4. The overall system dimensions shall not exceed 34”W x 24”D X 42”H.

5. Skid shall allow for operation and maintenance from one side (allowing for skid to be mounted against wall with no clearance behind skid).

2.07 SLUDGE FEED PUMP (BY OWNER)

A. The OWNER will provide an existing progressing cavity-type sludge feed pump used to feed sludge to the existing SOMAT dewatering system located in the Dewatering Room. The existing sludge feed pump is located in the Drain Pump Station valve vault and will remain in place. All feed piping to the dewatering building and power from the local disconnect will remain as well.

B. The existing sludge feed pump is a Netzsch Nemo pump Model NM053BY01L07V positive displacement, progressing cavity-type pump with a 7.5 HP inverter duty direct drive motor. The pump has a maximum feed rate of 112 gpm. The pump has been recently rebuilt and shall meet the operating requirements of the proposed Volute dewatering system. Use of the existing pump will be determined if it can be integrated seamlessly with the proposed dewatering system and controls.

C. The pump shall have a variable speed drive and be controlled by the proposed dewatering system control panel. The pump shall meet the operating conditions of the volute dewatering press.

D. Pump controls shall include a Hand-Off-Auto selector switch and Run and Stop indicator lights. The dewatering system control panel shall contain adequate I/O for remote control of the sludge feed pump.

E. The existing pump inlet chamber flush solenoid valve located at the pump shall remain operational. The on/off and timer set point for startup from the existing HMI shall be integrated into the proposed dewatering system control panel.

2.08 DEWATERED SOLIDS CONVEYORS

A. General

1. A Dewatered Solids Conveyor System for the conveyance of dewatered wastewater sludge from the Volute Dewatering Press to the Dumpster.

2. Shafted screw conveyors will not be acceptable. Conveyors utilizing shafts with flights and intermediate bearings will not be acceptable due to their inherited ability to become clogged from the stringy, sticky, gelatinous, thixotropic characteristics of the conveyed material. Conveyor rotational speeds shall not be greater than herein specified.

3. Spiral flighting for the shaftless screw conveyors shall be designed to convey material without a center shaft. The minimum overall spiral weight and surface pressure shall be as specified herein. The conveyor will include an inner flight to increase axial strength and capacity of the conveyor. The minimum spiral weight shall be specified herein.

4. The Conveyors will be supplied by the dewatering equipment manufacturer in accordance with the following design conditions:

	PRESS DISCHARGE CONVEYOR	DUMPSTER LEVELING CONVEYOR (if required)
Cubic ft per Hour	80	80
Material	Sludge	Sludge
Material Density (lbs/cubic foot)	55	55
Max Solids	25%	25%
Length [ft] – Estimated	~40	~10
Angle	25 Degrees	Horizontal
Max Screw Speed RPM	25	25
Max Trough Fill	50%	50%
Min Flight OD	12”	12”
Min Spiral Weight per ft	27	27
Minimum Trough Width	12.5”	12.5”
Minimum HP	5	1
Drive Location	Discharge	Inlet
Motor Type	TEFC	TEFC
Reversing Screw	No	No

B. Materials

1. Unless otherwise specified or permitted, the materials used in the fabrication of the equipment under this section shall conform to the following:

a. Chutes and Hoppers: 304 stainless steel

b. Troughs, End Plates, Covers: 304 stainless steel
c. Supports: 304 stainless steel
d. Spiral Flighting: Cold formed, High Strength Micro Alloy Carbon Steel with a minimum hardness of 220 Brinell (+/-)
e. Wear Liner: Ultrahigh molecular polyethylene
f. Bolts, Nuts, and Washers: 316 stainless steel

C. Spare Parts

1. Provide the following spare parts:

a. Two (2) sets of packing materials.
b. One (1) set of trough wear liners.
c. One (1) zero speed switch.
d. One (1) safety trip cord switch.

D. Horizontal and Inclined Troughs

1. Troughs shall be similar to the dimensional standards of CEMA 300 and enclosure classification IIE. Each conveyor trough shall be U-shaped, fabricated from a minimum 1/8-inch stainless steel plate.

2. Stiffeners shall be placed across the top of the trough and fastened to both sides of the trough to maintain trough shape and act as a face seal for the covers; apply a continuous gasket, one half inch width, to the entire top face of the trough top flange and stiffeners.

3. Each trough shall be equipped with filling and/or discharge openings as required by the contract drawings. If required, each filling and discharge opening shall be flanged suitable for interconnection to other devices. Any interconnecting devices such as chutes and hoppers shall be fabricated from the same material as the troughs.

a. A flanged covered drain outlet shall be provided with each conveyor to facilitate cleaning.
b. The portion of each trough that is not covered by the filling chute shall be covered by a bolted cover of a material identical to the trough. The covers shall be manufactured in a maximum of four-foot length sections to allow for access to the conveyors. To prevent unsafe access to the conveyors, quick opening covers will not be allowed.

E. Wear Liner

1. The wear liner for each conveyor shall be fabricated of ultra-high molecular weight polyethylene (UHMW) sintered with an anti-wear filler to reduce wear and synthetic lubricant to reduce friction.

a. The wear liner shall be furnished in maximum four-foot sections, 3/8” minimum thickness, to provide ease of replacement.
b. The liner shall be held in place with clips; no fasteners will be allowed.

F. Inlet and Discharge Chutes

1. Inlet and discharge chutes shall be provided by the conveyor supplier. All chutes shall be fabricated from the same material as the conveyor trough.

G. Conveyor Supports

1. Each conveyor shall be furnished complete with supports suitable for mounting as shown on the contract drawings and as required by the supplier's design. The supports shall be shop fabricated from structural steel shapes and plates and shall be assembled and fitted to the conveyor prior to its delivery to the jobsite. Supports and conveyor segments shall be match marked and shipped to the jobsite for assembly by the contraction others. At a minimum, each conveyor shall be provided with support at the inlet and discharge end, with intermediate support as required.

    a. Support shall be fabricated of AISI 304 stainless steel or equal.
    b. All shop welding shall conform to the latest standards of the American Welding Society (AWS). The supports shall be designed to avoid interference with other equipment or equipment supports.

H. Structural Design

1. All structural supporting members shall be designed such that the ratio of the unbraced length to least radius of gyration (slenderness ratio) shall not exceed 120 for any compression member and shall not exceed 240 for any tension member (of angles about Z-Z axis). In addition, all structural members and connections shall be designed so that the unit stresses will not exceed the American Institute of Steel Construction allowable stresses by more than 1/3 when subject to loading of twice the maximum design operating torque of the spiral conveyor drive motors.

I. Drive Units

1. Each spiral conveyor shall be driven by a constant-speed integral gear reducer/motor drive unit mounted to an adapter flange mounted to the end plate of the conveyor. The adapter flange shall allow the leakage of any material from the conveyor trough to atmosphere rather than into the gear reducer/ motor drive unit. Direct coupling of the gear reducer/motor drive unit to the end flange of the conveyor will not be acceptable.

2. The drive unit shall be rigidly supported so there is no visible "wobble" movement under any operating condition. In the event of a prolonged power failure or emergency system shutdown the drive system shall be designed, at a minimum, to start the conveyor from a dead stop with the trough filled throughout its entire cross-sectional area and length with partially dried and hardened dewatered material.

3. Each motor shall be 230/460-volt, 60 Hz, 3 phase conforming to the General Equipment specifications, except as modified herein. Each motor shall be high efficiency, 40C ambient rated, 1.15 service factor and shall have Class F

insulation. Motor shall have a TEFC enclosure with Design B speed/torque characteristics.

J. Gear Reducers

1. All gears shall be AGMA Class II, single or double reduction, helical gear units with high-capacity roller bearings.

   a. Bearings shall be designed for the thrust loads from the fully loaded startup condition and shall have an AFBMA B10 life of 30,000 hours.
   b. The reducer will be the standard air-cooled unit with no auxiliary cooling.
   c. The gear reducer shall be sized with a torque service factor of 1.5 times the absorbed power or 1.1 times the motor nameplate, at the driven shaft speed, whichever is greater.

K. Packing

1. An adjustable greased gland packing ring consisting of two Teflon coated packing rings shall seal the drive shaft at its penetration through the end plate.

L. Conveyor Control Safety Devices

1. Motion Failure Alarm Unit - Each conveyor drive unit shall be equipped with a motion failure alarm unit. The location and mounting details shall be as recommended by the conveyor manufacturer. Motion sensors shall be the non-contacting type using a probe with a pre-amplifier and main electronic assembly. The main electronic unit shall operate on 120-volt, single phase, 60 Hz power supply, and shall be housed in a NEMA 4X enclosure. A 0 to 60 second time delay shall be provided for startup of the conveyor.

2. Emergency Shutdown - Each conveyor shall be furnished with an emergency trip cord and safety switch. The cord shall run the full length of each conveyor. The trip switch shall immediately stop all conveyors when the switch is actuated.

M. Slide Gates

1. The conveyor system shall include slide gates. Each slide gate shall be manually operated. The slide gates shall be specifically designed to operate as an integral part of the conveyor system and shall be supplied by the conveyor manufacturer.

   a. The slide gates shall be designed with a maximum vertical dimension of 10" including the electric motor operator. The slide gate shall be designed so that in the full, open position at least one rotation of the spiral is exposed to the opening in the direction of transport. The slide gates shall have an opening at least the full width of the conveyor. Minimum opening size shall be 12" x 14". The slide gates shall be fabricated entirely of AISI 304 stainless steel and suitable non-metallic components, all minimum 3/16" thickness. The conveyor manufacturer shall provide electric motor operated gate operator, NEMA 4X limit switches to indicate open and closed status, and worm gear motor. The gate operator shall include a stainless-steel cylindrical housing, stainless steel shaftless spiral, stainless steel activator, stainless steel input shaft, and non-metallic wear surfaces.

The gate operator shall be driven by a flange mounted worm gear motor, 1/2 HP, 50 RPM output speed, and of the same manufacture as that of the conveyor drive unit.

2.09 MAGNETIC FLOW METER

A. Manufacturer

1. Rosemount Magnetic Flow Meter Model 8750W as supplied by Process Wastewater Technologies LLC, Rosedale, MD or pre-approved equal.

B. This specification is based on one product, which will be the basis of design and the base bid by CONTRACTORS. The CONTRACTOR shall furnish, test, install and place in satisfactory operation the magnetic flow meter, with all spare parts, accessories, and appurtenances for real-time monitoring of sludge feed flow as herein specified.

C. Meter shall be adequately sized for the expected flow ranges with stainless steel flanged connections (ASME B16.5 Class 150), stainless steel flow tube with polyurethane liner, 316L stainless steel electrodes, 316L grounding rings and shall have 0.5% accuracy.

D. Furnish meter with remote wall mount transmitter with 4-20 mA output, NEMA 4X enclosure, local operator interface with keypad & LCD. Sludge flow rate signal shall be fully integrated into the dewatering press control panel for system operation.

E. Spare Parts and Tools

1. Furnish one portable primary head simulator for calibration and testing of magnetic Flowmeter signal converters. The calibrator shall be furnished complete with rechargeable battery pack, test leads, spare battery pack, charger, carrying case and accessories. The calibrator shall be furnished by the Flowmeter manufacturer and shall be fully matched to the instrumentation furnished.

PART 3 - EXECUTION

3.01 INSTALLATION

A. The CONTRACTOR will undertake installation of equipment in this section as per the manufacturer’s submitted instructions and in accordance with these specifications and associated plans.

B. The Manufacturer will provide phone/email consultation as necessary to ensure correct installation and resolve any issues that arise during installation.

C. No on-site supervision should be required for installation, however, should the CONTRACTOR deem it necessary, onsite services may be provided and charged to the CONTRACTOR at the manufacturer's standard service rates plus travel.

3.02 START-UP AND COMMISSIONING

A. Upon completion of the installation, and at a time that is deemed to be most appropriate by consensus of all parties, the services of the manufacturer's factory trained startup technician shall be provided at the project site for equipment start-up. The following tasks will be undertaken during this time:

1. Installation inspection to ensure all equipment is installed properly and is ready to be started up and operated.

2. Functional Startup of equipment, calibration and setting of equipment parameters.

3. Operational startup, optimization and data collection.

4. Operator Training

B. Start-up or commissioning service provided by anyone other than the manufacturer, or their authorized representative shall limit or void equipment warranty.

C. The CONTRACTOR shall provide the Manufacturer with a minimum of two (2) weeks' notice prior to onsite start up, functional testing, and manufacturer training services.

D. In the event that the manufacturer's startup technician arrives on site and equipment is not ready for start-up, functional testing, field performance testing, and training services on date CONTRACTOR stated to manufacturer, the CONTRACTOR shall pay all additional costs incurred by manufacturer incurred as a result of the equipment not being ready for start-up.

E. The CONTRACTOR shall ensure that start up is not performed until there is a minimum volume of sludge to allow four (4) days of operation at dewatering system design capacity plus sludge production rates sufficient to allow plant operators to operate the press on a regular schedule following start-up and training of plant staff.

3.03 DELAYED START-UP

A. In the event that enough sludge (as per S3.02 E) is not available prior to substantial completion of the project the following will occur:

1. CONTRACTOR/OWNER may at their discretion and cost bring the manufacturer's trained representative to site to undertake inspection and functional start-up to ensure equipment is ready for full start-up and commissioning once sludge is available. CONTRACTOR will return to site as necessary to ensure successful start-up and commissioning at the time it occurs.

2. Manufacturer will issue a promissory note to undertake start-up, commissioning and operator training at a future date when enough sludge is present.

3. The OWNER may withhold final payment directly from the manufacturer equivalent to four (4) days at the manufacturer's standard service rates plus travel.

3.04 OPERATOR TRAINING

A. Upon satisfactory completion of the start-up and calibration, a representative of the manufacturer shall be provided to instruct the OWNER'S personnel in the proper operation and maintenance of the equipment.

B. The manufacturer will provide training during the four (4) day start-up period.

C. Training will occur during one (1) training session for all relevant plant staff.

D. Total time for the equipment training session will not exceed three (3) hours.

3.05 ON SITE SERVICES

A. The manufacturer will allow for one (1) trip of four (4) consecutive days on site for installation inspection, start-up, and operator training.

3.06 DOCUMENTATION

A. Upon completion of commissioning, the manufacturer will provide the OWNER with four (4) copies of the operation and maintenance manuals for the Volute Dewatering Press.

B. Upon completion of commissioning, the manufacturer will provide an electronic copy of the PLC program to the OWNER.

3.07 OTHER SERVICES

A. Additional services, other than those provided for by warranties or as specified herein, may be charged to the OWNER/CONTRACTOR at the manufacturer's standard service rates.

*** END SECTION ***

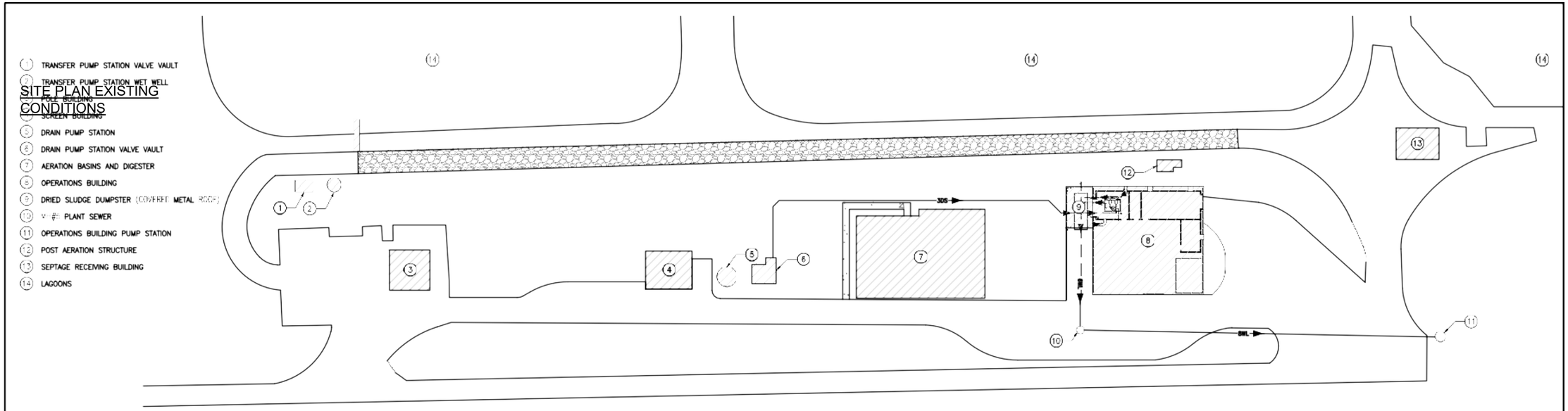
SECTION 8

DRAWINGS

(For Reference Only)

1. TRANSFER PUMP STATION VALVE VAULT
2. TRANSFER PUMP STATION WET WELL
3. POLE BUILDING
4. SCREEN BUILDING
5. DRAIN PUMP STATION
6. DRAIN PUMP STATION VALVE VAULT
7. AERATION BASINS AND DIGESTER
8. OPERATIONS BUILDING
9. DRIED SLUDGE DUMPSTER (COVERED METAL ROOF)
10. W #" PLANT SEWER
11. OPERATIONS BUILDING PUMP STATION
12. POST AERATION STRUCTURE
13. SEPTAGE RECEIVING BUILDING
14. LAGOONS

SITE PLAN EXISTING CONDITIONS



STRUCTURE
BITUMEN PAVEMENT
CONCRETE PAVEMENT
GRAVEL ROAD

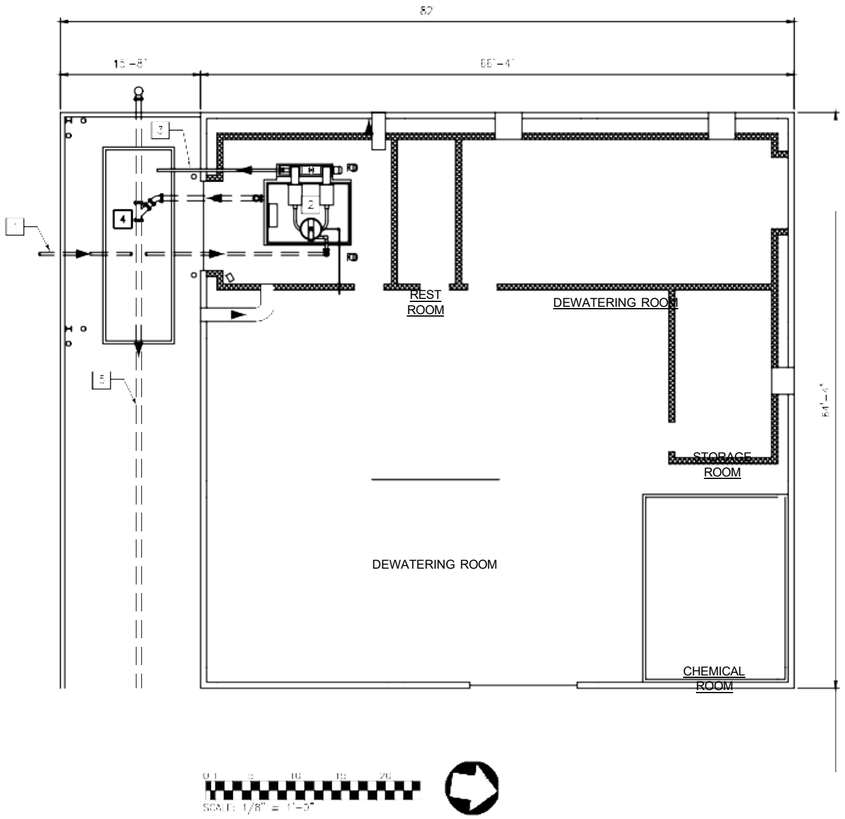
LEGEND

0 15 30 60 90
SCALE: 1" = 30'

SITE PLAN EXISTING CONDITIONS
SCALE: 1" = 30'

1. 3" D.I. SLUDGE FEED PIPING
2. DEWATERING ROOM
3. 3" S.S. DRIED SLUDGE DISCHARGE PIPING
4. DRIED SLUDGE DUMPSTER (COVERED METAL ROOF)
5. 6" D.I. DEWATERING UNIT DRAIN PIPING

OPERATIONS BUILDING EXISTING CONDITIONS

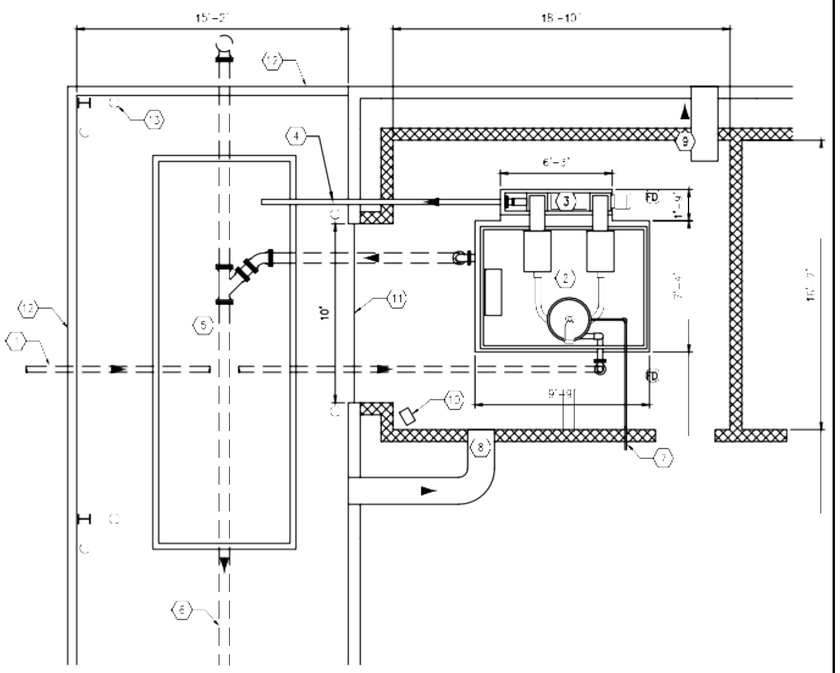


0 1 5 10 20
SCALE: 1/8" = 1'-0"

OPERATIONS BUILDING EXISTING CONDITIONS
SCALE: 1/8" = 1'-0"

1. 3" D.I. SLUDGE FEED PIPING
2. DEWATERING UNIT MOUNTED TO 2'-10" TALL CONCRETE PEDESTAL MEASURING 6'-3" X 11'-9"
3. DRIED SLUDGE PUMPS MOUNTED TO 2'-0" TALL CONCRETE PEDESTAL MEASURING 6'-3" X 11'-9"
4. 3" S.S. DRIED SLUDGE DISCHARGE PIPING
5. DRIED SLUDGE DUMPSTER UNDER COVERED METAL ROOF LEAN-TO STRUCTURE
6. 6" D.I. DEWATERING UNIT DRAIN PIPING
7. 3/4 PVC POTABLE WATER PIPING
8. AIR INTAKE DUCT
9. EXHAUST FAN AND DUCT
10. HEATER
11. 8' TALL ROLL-UP DOOR
12. CURB
13. PIPE BOLLARD TYP. OF (6)

DEWATERING ROOM EXISTING CONDITIONS



0 1 5 10
SCALE: 1/4" = 1'-0"

PRINTS ISSUED FOR:
REVIEW

NO.	REVISIONS	DATE

GEORGE, MILES & BUHR, LLC
ARCHITECTS & ENGINEERS
SALISBURY • BALTIMORE • SEAFORD
206 WEST MAIN STREET
SALISBURY, MARYLAND 21801
410-742-3115, FAX 410-548-5790
www.gmbnet.com

WORTON WWTP DEWATERING
EQUIPMENT REPLACEMENT

WORTON, MD

EXISTING CONDITIONS

DESIGN BY	
DRAWN BY	
CHECKED BY : MMH	C1.0
GMB FILE	

PLOT CODE
PEN-BLACK
PEN-YELLOW
PEN-GREEN
PEN-BLUE
PEN-MAGENTA
PEN-WHITE

G:\Projects\2024\24004-Worton WWTP Dewatering Equip Replacement\Drawings\Working Set\CAD\C1.0 EXISTING CONDITIONS.dwg, C1.0 EXISTING CONDITIONS, 1/22/2024 2:20:20 PM

PENT-RED

DEWATERING ROOM EXISTING CONDITIONS

SCALE: 1/4" = 1'-0"

SCALE : AS NOTED
DESIGN BY : MMH
DRAWN BY : MDM
CHECKED BY : MMH
GMB FILE : 240004
DATE : JAN 2024

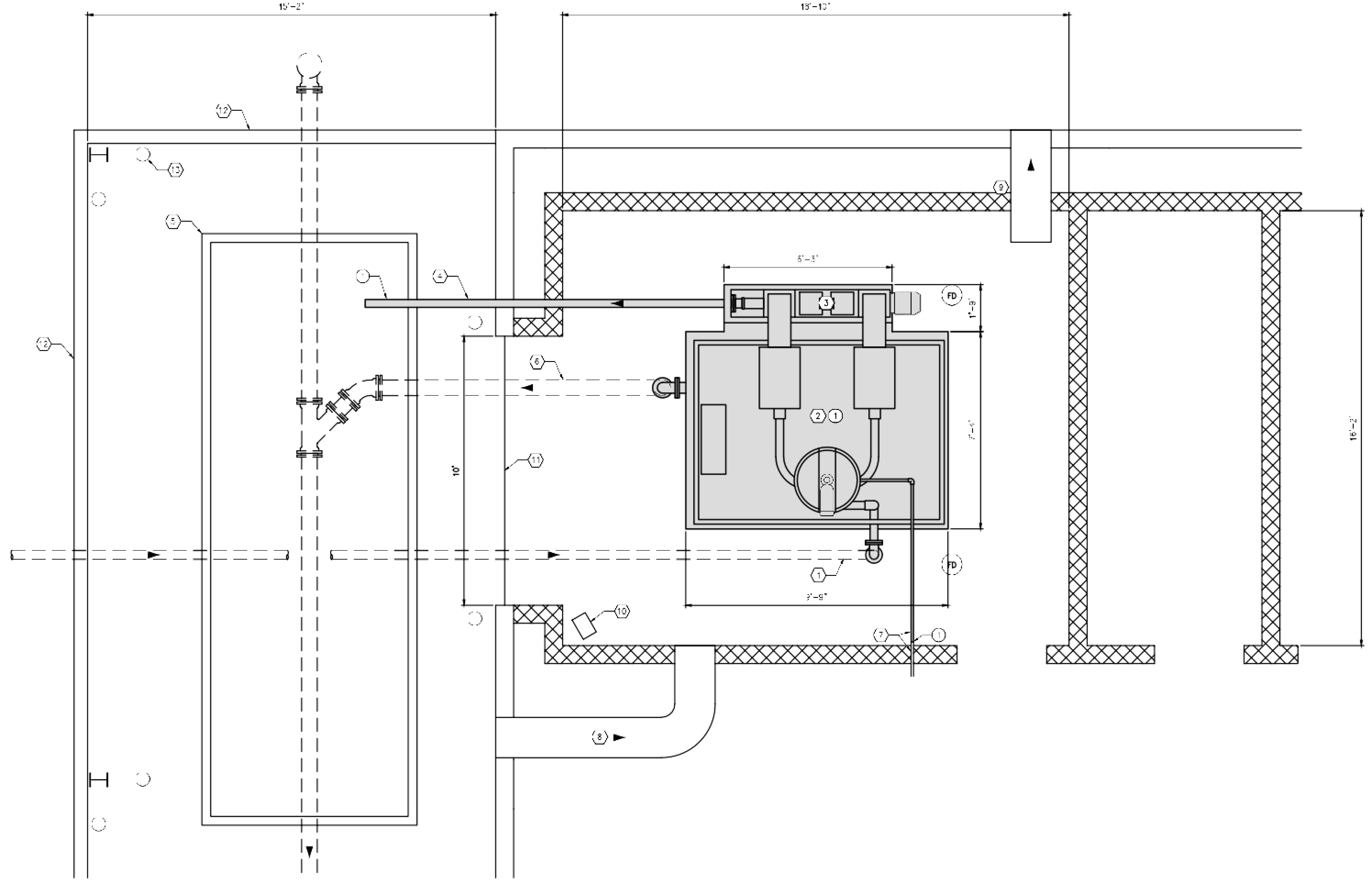
SHEET NO.
DRAWING 3 OF 6

EXISTING

1. 3" D.I. SLUDGE FEED PIPING
2. DEWATERING UNIT MOUNTED TO 2'-10" TALL STEEL PLATFORM MOUNTED TO 6" TALL CONCRETE PAD (PAD DIMENSIONS 9'-9" X 7'-4")
3. DRIED SLUDGE PUMPS MOUNTED TO 2'-0" TALL CONCRETE PEDESTAL MEASURING 6'-3" X 1'-9"
4. 3" S.S. DRIED SLUDGE DISCHARGE PIPING
5. DRIED SLUDGE DUMPSTER UNDER COVERED METAL ROOF LEAN-TO STRUCTURE
6. 6" D.I. DEWATERING UNIT DRAIN PIPING
7. 3/4" PVC POTABLE WATER PIPING
8. AIR INTAKE DUCT
9. EXHAUST FAN AND DUCT
10. HEATER
11. 8' TALL ROLL-UP DOOR
12. CURB
13. PIPE BOLLARD TYP. OF (5)

DEMOLITION NOTES

1. DEMOLISH ALL TO EXTENTS SHOWN



EXISTING DEWATERING DEMOLITION PLAN
SCALE: 1/2" = 1'-0"

LEGEND

- DEMOLISH
- CMU WALL

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GMB
GEORGE, MILES & BUHR, LLC
ARCHITECTS & ENGINEERS
SALISBURY • BALTIMORE • SEAFORD
206 WEST MAIN STREET
SALISBURY, MARYLAND 21801
410-742-3115, FAX 410-548-5790
www.gmbnet.com

WORTON WWTP DEWATERING EQUIPMENT REPLACEMENT

WORTON, MD

EXISTING DEWATERING DEMOLITION

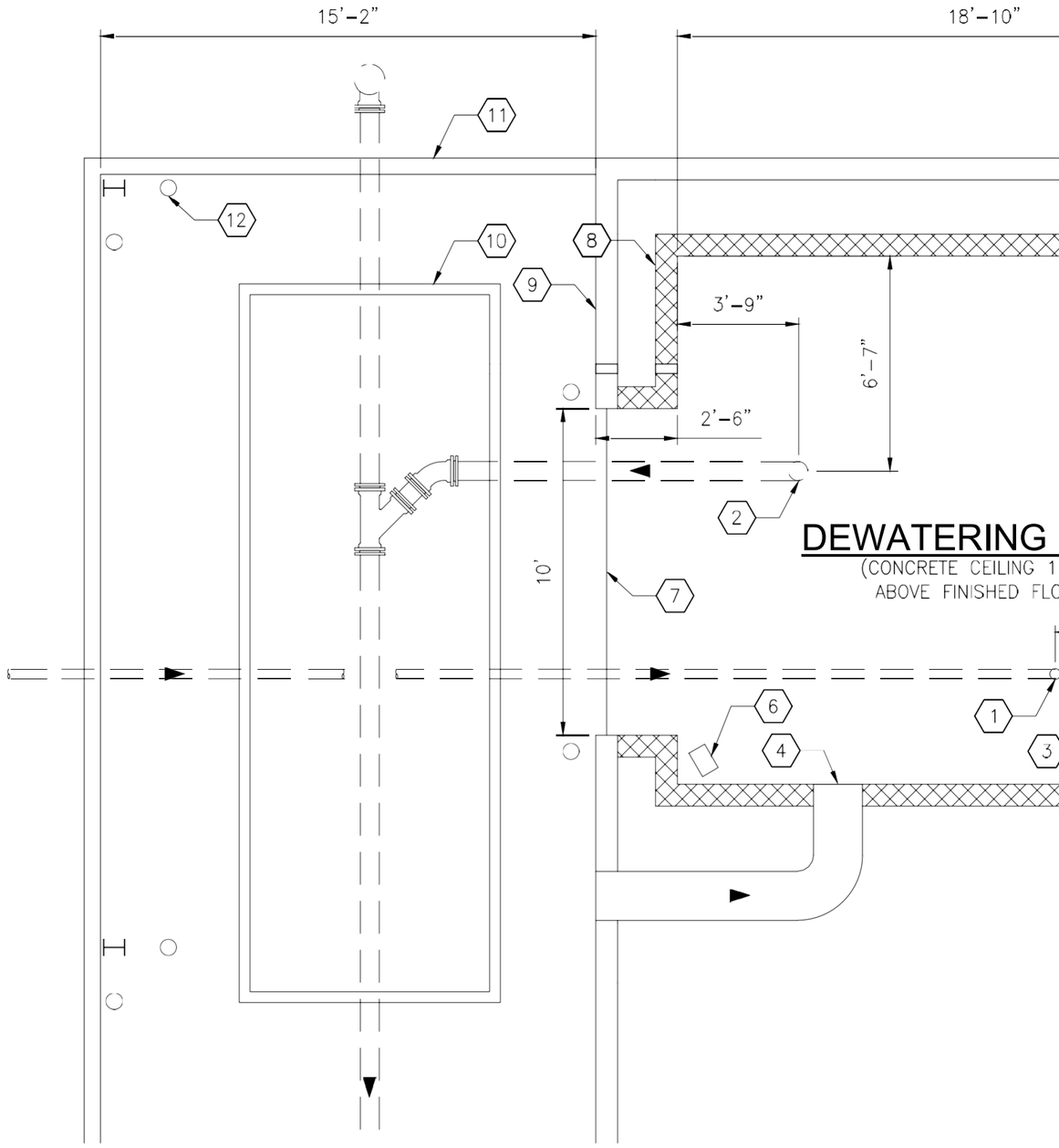
SCALE : AS NOTED
DESIGN BY : MMH
DRAWN BY : MDM
CHECKED BY : MMH
GMB FILE : 240004
DATE : JAN 2024

SHEET NO. D1.0

DRAWING 4 OF 6

EXISTING

1. 3" D.I. SLUDGE UNDERGROUND FEED PIPING
2. 6" D.I. DEWATERING UNIT UNDERGROUND DRAIN PIPING
3. 1" PVC POTABLE WATER PIPING
4. AIR INTAKE DUCT
5. EXHAUST FAN AND DUCT
6. HEATER
7. 8' TALL ROLL-UP DOOR
8. CMU WALLS
9. STEEL BUILDING WITH METAL SIDING
10. DRIED SLUDGE DUMPSTER UNDER COVERED METAL ROOF LEAN-TO STRUCTURE
11. CURB
12. PIPE BOLLARD TYP. OF (6)



DEWATERING PLAN

SCALE: 1/4" = 1'-0"

0 1 5 10

SCALE: 1/4" = 1'-0"

WORTON WWTP DEWATERING EQUIPMENT REPLACEMENT

WORTON, MD

GMB
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SALISBURY • BALTIMORE • SEAFORD
206 WEST MAIN STREET
SALISBURY, MARYLAND 21801
410-742-3115, FAX 410-548-5790
www.gmbnet.com

AREA RESERVED
FOR
REPLACEMENT
DEWATERING
UNIT

SCALE : AS NOTED	SHEET NO.
DESIGN BY : MMH	
DRAWN BY : MDM	EX1.0
CHECKED BY : MMH	
GMB FILE : 240004	
DATE : JAN 2024	