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Addendum # 2 Riddle Farm Wastewater Treatment Plant Upgrades

Date of Addendum: 5/10/2024

NOTICE TO ALL BIDDERS AND PLANHOLDERS

The Bid Documents for the above-referenced Project are modified as set forth in this Addendum. The original Bid Documents and any previously issued addenda remain in full force and effect, except as modified by this Addendum, which is hereby made part of the Bid Documents. Vendors will take this Addendum into consideration when preparing and submitting a bid and shall acknowledge receipt of this Addendum in the space provided in the Bid Documents.

BID SUBMITTAL DEADLINE

The bid submittal time has not been changed.

1.0 – ATTACHMENTS

Item	Description
1	Revised Project Manual Section “00410 – Bid Form”
2	Revised Project Manual Section “01200 – Measurement and Payment”
3	Revised Project Manual Section “16140 – Enclosed Switches”

2.0 – CLARIFICATIONS

The following clarifications are provided as a matter of information to clarify issues raised about the Bid Documents.

Item	Description
1	On Sheet E-2, REVISE the symbol for the disconnect switch at DIP Tank Blower to be Rotary type. See added Paragraphs 2.04 and 2.05 in the Attached Section 16140.
2	Project Manual, Paragraph 01500, 1.01.B, DELETE “The Contractor shall provide two (2) telephone lines.”
3	Project Manual Section 00410, REPLACE Section in entirety with the attached document
4	Project Manual Section 01200, REPLACE Section in entirety with the attached document.
5	Project Manual Section 16140, REPLACE Section in entirety with the attached document.
6	Project Manual Section 09900, 3.04.B.1. & 3.04.B.5, DELETE both paragraphs in entirety.
7	Project Manual Section 09900, INSERT Paragraph “3.01.F Concrete: Prepare surface in accordance with coating manufacturer’s guidelines.”
8	On Sheet Q-2.8, Note #3, REVISE note to read, “Owner Shall provide all chemicals necessary to operate treatment unit.
9	Project Manual Section 01540, Paragraph 1.01.B ADD , “Coordinate with clarifications provided under Addendum #2 and see Project Manual Section 00340.”
10	Questions that were submitted in advance of the issuance of Addendum #2, which were not answered in this Addendum, will be answered in Addendum #3.

3.0 – QUESTIONS AND ANSWERS	
The following questions and answers are provided as a matter of information to clarify issues raised about the Bid Documents.	
Item	Questions and Answers
1	<p>Q. Provide a specification for the rotary disconnect switches. Sheet E-2 shows a regular safety switch for the DIP Tank Blower; however, the single line diagram on E-7 shows a rotary disconnect.</p> <p><i>A. The disconnect switch for DIP Tank Blower shall be rotary type. Rotary Switches specification has been added to the Project Manual.</i></p>
2	<p>Q. Sheet Q-2.8 Note 3: How many chemicals will be required to operate the temporary treatment equipment?</p> <p><i>A. There are two (2) chemicals to be used in association with this unit which are for membrane cleaning; they are sodium hypochlorite and citric acid; Owner will provide these chemicals. See Clarification made in above section.</i></p>
3	<p>Q. Is there a confirmed date for delivery of all owner-supplied equipment? If yes, please provide the date of delivery for each item of equipment. Will liquidated damages be assessed to the general contractor if there is an incomplete or late delivery of owner-supplied equipment?</p> <p><i>A. The Owner supplied equipment will consist of the membrane cassettes, these are expected to be delivered to the Worcester Co. Mystic Harbor or Landings WWTP in July 2024. Contractor will be responsible for pickup and transport of membranes from either of these two facilities to the Riddle Farm WWTP. It is the Owner's intent to have the other equipment and services described within Project Manual Section 00330 (Bid Item C1) assigned to the General Contractor and be within its scope of supply. Owner is amenable to not assessing liquidated damages for delays Contractor incurs associated with this scope of supply that is outside of the Contractor's direct control.</i></p>
4	<p>Q. Will the exterior temporary supply/return lines require heat trace & insulation?</p> <p><i>A. These temporary lines will require insulation but will not require heat tracing.</i></p>
5	<p>Q. Sheet C-1: How is the contractor to protect the existing pond where the proposed backwash tank is to be installed? Is this pond a permanent stormwater control facility, requiring protection?</p> <p><i>A. The measures necessary for protection of the existing pond are to be determined by the Contractor in association with its means and methods of construction. Contractor shall provide silt fence along the pond's perimeter, to the extent necessary, to prevent sediment from entering the existing pond.</i></p>
6	<p>Q. Sheet C-1: A note states, "Cut trees back 10' from edge of road". Is this area considered wetlands, requiring protection? Are these trees located inside a permanent stormwater control facility?</p> <p><i>A. The area along the entrance road where the trees are to be cut back is not considered wetlands. The extent of tree cutback may be less than 10-feet and will only be as necessary to allow for installation of proposed force main.</i></p>
7	<p>Q. Specification Section 01200 – Measurement and Payment: 1.03.C; Bid Item B3: Furnish and Place Special Backfill. Please define the word, "special", located throughout this bid item.</p> <p><i>A. The word "special" is used to emphasize that this backfill is utilized for a specific purpose and shall meet certain specification requirements and shall only be implemented as directed by the Owner or Engineer.</i></p>
8	<p>Q. Specification Section 01500 – Construction Facilities and Temporary Controls: 1.01.B; Will two (2), telephone lines be required within the Owner/Engineer's construction office trailer? 1.02.A; May the construction office trailer(s) be connected to the existing WWTP electric service, eliminating the need to include electric charges which will be passed on to the project owner?</p> <p><i>A. The requirement for two (2) phone lines in Field Office shall be deleted. The Field Office may be connected to the existing WWTP electric service and the Owner will therefore pay for that electric use. However, the Contractor is responsible for all costs associated with connection of the Field Office to the existing electric service.</i></p>
9	<p>Q. Specification Section 01540 – Temporary Membrane Filtration System: 1.01.B Can the temporary membrane filtration system's electrical system be connected directly to the existing WWTP's electric?</p> <p><i>A. The Temporary Membrane Filtration System is to be connected to the existing WWTP's electric, see Sheet E-2 (Note 18) and Sheet E-7 (Note 1).</i></p>
10	<p>Q. Specification Section 05500 – Metal Fabrications: 2.03.E; Are floor access hatches manufactured by Halliday Products an acceptable equal to ITT Flygt?</p> <p><i>A. Yes, they will be considered as equal; however, they may require additions from standard form in order to provide fall protection coverage across the entire clear opening of the hatch.</i></p>

11	<p>Q. Project Manual Section 01200 Measurement and Payment, please provide a M&P description for Bid Items B-4, C-1 & D-1.</p> <p><i>A. The description for these Bid Items has been added to the Measurement and Payment Section 01200 which has been issued as an attachment under this Addendum. Note that Bid Item D-1 has been removed.</i></p>
12	<p>Q. Section 01540 MHFS, Bid Item B-4 Scope of Work, Line 1.01, B states; All required labor, materials and equipment and electrical power supply shall be provided by Contractor and included within the bid fee schedule. 1.01, F states that the scope of supply includes equipment, materials, and field services. Bid Item B-4 is already filled in with monthly rental rate. Please provide a clear description of what the GC is required to do and provide for Section 01540 and what Worcester County is doing and supplying.</p> <p><i>A. The County will operate the temporary unit, supply all chemicals pay for electric power, and final clean-up of the filters used by the unit. Contractor shall be responsible for all other costs and efforts associated with supply, set-up and removal of unit. Refer to Project Manual Section 00340 for services that Veolia will be providing.</i></p>
13	<p>Q. Project Manual Section 09900, Painting, Line 3.04, B- b. Existing Concrete Structures – Existing Wet Well. (1) Surface Preparation: See Section 3.01.F, There is no Section 3.01 F, Please provide. Please clarify if we are to paint the existing PS wet well. Please state if we (GC) are to paint any of the WWTP Tank Chambers; 1, 1-A, 1-B, 2, 2-A or 2-B, inside or outside.</p> <p><i>A. None of the existing or proposed concrete structures are to be painted, delete Paragraph 3.04.B.1. Regarding the reference to Paragraph 3.01.F, this is now N/A. Any proposed PVC piping shall not be painted. All proposed improvements that meet the definition of Section 09900, Paragraphs 3.04.B.2, 3 & 4 shall be coated in accordance with that described.</i></p>
14	<p>Q. Can you clarify the painting scope for inside the building? Will any concrete surfaces, existing piping, walls or chambers be required to be coated?</p> <p><i>A. Existing features of the facility are not proposed to be coated. However, if the Contractor damages coatings on any of these existing features in performing the proposed work, then it is expected that the Contractor will repair the damage coating in kind.</i></p>

END OF ADDENDUM

DIVISION 00 – BIDDING AND CONTRACT REQUIREMENTS

SECTION 00410 – BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

**WORCESTER COUNTY, MARYLAND
ATTN: NICHOLAS RICE, PROCUREMENT OFFICER
1 WEST MARKET STREET, ROOM 103
SNOW HILL, MARYLAND 21863**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Required Bid security;
- B. List of Proposed Subcontractors;
- C. List of Proposed Suppliers;
- D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
- E. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids; failure to do so may result in rejection of Bid;
- F. Required Bidder Qualification Statement with supporting data;
- G. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplementary Conditions of the Construction Contract (EJCDC C-800);
- H. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
- I. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q Exhibit A-1, Certification for Contracts, Grants, and Loans.

ARTICLE 3—BASIS OF BID

- 3.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):
- A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s):

SCHEDULE A –LUMP SUM PRICES BID

ITEM NO.	DESCRIPTION	UNIT	EST QTY	BID PRICE
A1	Mobilization/General Conditions (not exceeding 5% of the value of Bid Item A3 and A4)	Lump Sum	1	\$
A2	Demolition and Disposal of existing structures, equipment, buildings, and all appurtenances.	Lump Sum	1	\$
A3	Treatment Plant and all appurtenances not included within Bid Item B4 and C1.	Lump Sum	1	\$
A4	Waste Backwash Settling Tank and Pump Station and Appurtenances	Lump Sum	1	\$
Subtotal Schedule A				\$

- B. Bidder will complete the Work under Schedule B, when authorized, in accordance with the Contract Documents for the following price(s):

SCHEDULE B – UNIT PRICE CONTINGENT BID ITEMS

ITEM NO.	DESCRIPTION	SIZE	UNIT	EST QTY	BID UNIT PRICE	ESTIMATED BID PRICE
B1	Furnish and Place Miscellaneous Concrete 3,000 psi	--	CY	10	\$	\$
B2	Furnish and Place Gravel Bedding	--	CY	10	\$	\$
B3	Furnish and Place Special Backfill	--	CY	10	\$	\$
B4	Temporary Membrane Filtration System	100,000 gpd	Month	6	\$ 43,500.00	\$ 261,000.00
Subtotal Schedule B						\$

- 3.02 Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor’s overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in

the Contract Documents.

Item C1, (MBR) Membranes and Controls: This item includes a stipulated price for furnishing all equipment and manufacturer's services assigned to Contractor. This price is based upon the procurement purchase order 160-22120 between the OWNER and Zenon Environmental Corporation dated July 6, 2023. Note that this stipulated price is subject to change following Award of the Contract and execution of the Agreement between OWNER and Bidder.

SCHEDULE C: EQUIPMENT AND SERVICES ASSIGNMENT

ITEM NO.	DESCRIPTION	STIPULATED PRICE
C1	ZW500D Replacement Cassettes & Adder for Controls Upgrade Hardware & Services described in purchase order and proposal in Section 00330.	\$312,050.00

3.03 *Total Bid Price (Basis of Award)*

Total Bid Price: Total of Schedule A + B + C	\$
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_____ Dollars \$(_____)

ARTICLE 4—TIME OF COMPLETION

4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, RECEIPT OF ADDENDA, AND ASSIGNMENT OF PROCUREMENT CONTRACT

5.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 100 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

5.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

5.04 *Assignment of Procurement Contract*

A. Bidder acknowledges the provisions of the Agreement as to the assignment of the procurement contract for ZW500D LEAPmbr SUPPLY AND SERVICES of goods and special services for Membrane Bio-Reactor and Controls Upgrade Hardware.

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder’s Representations*

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work, including all American Iron and Steel requirements.
 4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
 5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
 6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder’s (Contractor’s) safety precautions and programs.
 7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Bidder 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 Bidding Documents.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. 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.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. 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.
 - d. 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.
5. There has been no violation of copyrights or patent rights in manufacturing, producing, or selling the product or services shipped or ordered as a result of this Bid. The successful Bidder shall, at his own expense, defend any and all actions or suits charging such infringements, and will save Worcester County, and its appointed and elected officials, officers, partners, directors, employees, and agents harmless from any and all liability, loss, or expense occasioned by any such violation.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

Address for giving notices:

Bidder's Contact:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Phone: _____

Email: _____

Address: _____

Bidder's Contractor License No.: (if applicable) _____

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DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01200

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Payment for materials furnished and work done under this contract will be made as hereinafter stipulated, for the actual amount of materials supplied and work done under authorization of the Engineer and in accordance with the lump sum or unit prices bid in the proposal form; and the Contractor shall not be entitled to receive additional compensation for anything furnished or done, except for such extra work as shall be required by written order.

B. It is intended that all work shown on the Contract Drawings and included in the specifications is to be paid for under the items listed in the proposal form. The absence from the proposal form of bid items for any specific category of work shall be interpreted as meaning that the cost of such work, accomplished as defined by the Contract Documents, shall be included in the prices bid for related items listed in the proposal form. Should the Contractor feel that the cost for any item of work has not been defined by a Bid Form payment item, he shall include the cost for that work in some other applicable bid item, so that his proposal for the project reflects his total price for completing the work in its entirety.

C. The prices stated in the proposal(s) include all costs and expenses for taxes, labor, equipment, materials, commissions, transportation charges and expenses, patent fees and royalties, labor for handling materials during inspection, together with any and all other costs and expenses for performing and completing the work as shown on the Drawings and specified herein. The basis of payment for an item at the lump sum or unit price shown in the proposal(s) shall be in accordance with the description of that item in this Section.

D. All items in the Bid which are designated as “Contingent Bid Items” are to be used and will be paid for only at the written direction and authorization of the Engineer, if agreed to by the Owner. Payment under this section will be made for materials furnished and placed in addition to those shown or beyond the limits indicated or reasonably inferred from the Contract Documents. All materials furnished and installed shall be in accordance with these specifications. Measurements and payment will be in accordance with the proposal and will include but not necessarily be limited to the furnishing, hauling, placing, and installing of materials, and the furnishing of such manpower and equipment as required to accomplish the work as directed in writing by the Engineer.

E. All excavation under this Contract is unclassified; that is, the unit prices bid shall be taken to include and cover all materials required to be excavated and backfilled, whether wet or dry, and regardless of the character of the materials. The excavations, removal and replacement of road surfacing materials, curb, sidewalk, gutter and yard restoration, as required, shall be included in the unit prices bid with any exceptions as noted herein or as designated on the plans.

F. The cost of dewatering and associated work will not be separately paid for but shall be considered as incidental to other bid items and included in the prices bid for them.

G. All removal, relocation and disposal work as indicated in the Contract Documents, and/or as necessary to complete the proposed work shall be performed at no additional cost to the Owner. Cost of all removal, relocation and disposal work shall be included in the price bid.

H. For the unit price Items included in the Bid, the Contractor will be paid for the actual quantity of the authorized work done or material furnished under each item of the proposal, at the unit price bid for such item. The quantities for payment under this Contract shall be determined by actual measurement of the completed items, in place, ready for service and accepted by the Owner, in accordance with the General Conditions.

I. All items of work shall be measured concurrently, upon installation and before covering or backfilling, by the Resident Project Representative and the Contractor's representative. All items so measured will be recorded by both parties in a format which can be kept current until completion of work. All measurements, to the maximum extent possible, shall be referenced to base dimensions and stationing shown on the Drawings.

J. Payments during the course of the work for lump sum items will be made on the basis of percentage completion of the work items listed in the Schedule of Values for each lump sum item. The Schedule of Values shall be prepared by the Contractor and submitted to the Engineer and shall serve as a breakdown of the Lump Sum bid for the purpose of arriving at a basis for the monthly estimate. The Schedule shall add up to 100% of the Lump Sum bid.

1.02 SCHEDULE A: LUMP SUM BID ITEMS

A. Bid Item A1: Mobilization / General Conditions

1. Payment for mobilization and general conditions associated with the work shown under this Construction Contract shall be made at the lump sum price bid for Bid Item A1. The value of this lump sum bid item shall not exceed 5% of the value of Bid Item A3 and A4. At the onset of

construction and full mobilization, fifty percent (50%) of the Bid Item amount can be requested for payment and the remaining 50% will be paid on a pro-rated basis for the remainder of the construction contract duration.

B. Bid Item A2: Lump Sum Bid – Demolition and Disposal

1. Payment for all demolition and disposal work shall be made at the lump sum price bid for Bid Item A2.
2. The lump sum prices bid shall include all demolition and disposal work associated with the existing Riddle Farm WWTP and WTP.
3. Payment will be made in accordance with Section 01200 1.01 J.

C. Bid Item A3: Lump Sum Bid - WWTP Work and All Appurtenances

1. Payment for constructing the improvements to the Riddle Farm WWTP shall be made at the lump sum price bid for Bid Item A3.
2. The lump sum prices bid for constructing the improvements to the Riddle Farm WWTP shall include, but not be limited to, all work related to furnishing and installing all equipment and appurtenances complete with backwash waste pump station, reclaimed water settling tank, replacement membranes, internal recycle pumps, aeration blower, process blower variable speed drives, aeration diffusers, hoists and cranes, flow meters, PLC controls and SCADA alarms, electrical conduits, site restoration work, dewatering, sediment and erosion control, all other appurtenances on the site specified or detailed. The lump sum price bid shall include all incidental minor and miscellaneous items, work and materials for which no specific lump sum or unit price bit item is shown, and which are necessary to complete the work and to maintain and/or repair the work.
3. The lump sum pricing shall include all materials and services in support of the Temporary Membrane Filtration System, both for installation and removal, including site preparations, piping connections, electrical supply, including coordination and accommodation for the filtration system supplier.
4. Lump Sum Bid shall include the furnishing of all labor, tools and services associated with Contractor's installation of Equipment Supply Contract and Assignment provided by "VEOLIA-ZENON", inclusive of the membranes and control hardware upgrades.
5. Payment will be made in accordance with Section 01200 1.01 J.

D. Bid Item A4: Lump Sum Bid – Waste Backwash Settling Tank and Pump Station and All Appurtenances

1. Payment for constructing the improvements at the Riddle Farm WTP shall be made at the lump sum price bid for Bid Item A4.

2. The lump sum prices bid for constructing the improvements to the Riddle Farm WTP shall include, but not be limited to, all work related to furnishing and installing all equipment and appurtenances complete with backwash waste pump station, pump station control panel, reclaimed water settling tank, tank slab and foundation, PLC controls and SCADA alarms, electrical conduits, site piping to the WWTP, site restoration work, dewatering, sediment and erosion control, all other appurtenances on the site specified or detailed. Lump sum price bid shall include all incidental minor and miscellaneous items, work and materials for which no specific lump sum or unit price bit item is shown, and which are necessary to complete the work and to maintain and/or repair the work.
3. At the discretion of the Owner, Bid Item A4 may be deleted from the scope of work.
4. Payment will be made in accordance with Section 01200 1.01 J.

1.03 SCHEDULE B: CONTINGENT BID ITEMS

A. Bid Item B1: Furnish and Place Miscellaneous Concrete

1. The price bid shall include and cover furnishing and placing miscellaneous 3,000 psi concrete, including forming, finishing, and all other incidental work or other construction not included as part of other pay items.
2. Measurement of quantities for miscellaneous concrete will be made based upon authorized depth, width, and length of concrete placement.
3. Sackrete, or similar product, will be allowed in miscellaneous concrete.
4. Payment for all work in connection with miscellaneous concrete will be made at the appropriate unit prices bid for the volume of concrete actually furnished and placed within the limits defined here in before and as authorized by the Engineer.

B. Bid Item B2: Furnish and Place Gravel Bedding

1. The price bid for furnishing and placing additional gravel bedding shall include and cover furnishing, placing and compacting and shaping gravel in excavations and all other incidental work not specifically detailed on the Contract Drawings or Specifications. Only additional gravel bedding ordered by the Engineer will be paid for under this item.
2. Measurement for quantities of additional gravel bedding will be based upon the authorized depth and width of placement, as directed by the Engineer.
3. The Contractor shall not be paid for gravel bedding used for dewatering in addition to bedding requirements shown on plans.
4. Gravel bedding specifically called out for on the plans and specifications under pipelines and structures will not be paid for under "Furnish and Place Gravel Bedding," but will be incidental to other bid items.

5. Payment for all work in connection with additional gravel bedding will be made at the appropriate unit price bid for the volume actually furnished and placed within the limits defined here in before and as authorized by the Engineer in writing prior to the work being performed.

C. Bid Item B3: Furnish and Place Special Backfill

1. The price bid for furnishing and placing special backfill shall include and cover furnishing, placing and compacting special backfill and other incidental work not specifically detailed on the Contract Drawings or Specifications. Only additional special backfill as ordered by the Engineer will be paid for under this item.
2. Measurement for quantities of special backfill will be placed upon the authorized depth and width of placement.
3. Payment for all work in connection with special backfill will be made at the appropriate unit price bid for the volume actually furnished and placed within the limits defined here in before and as authorized in writing by the Engineer prior to the work being performed.

D. Bid Item B4: Temporary Membrane Filtration System

1. The monthly unit price bid for furnishing and installing the Temporary Membrane Filtration System shall include all equipment and services as described in Section 00340 Mobile Hollow Fiber Treatment System.
2. Measurement of quantities will begin on the date the system becomes operational and treats wastewater. Each 30 days equates to a monthly unit quantity. Each month will be measured to the next highest 10 percentage-based days. (For example: 13, 14 or 15 days will be rounded to 50% of the monthly unit price)
3. Payment for all work in connection with temporary membrane filtration will be made at the monthly unit price bid or appropriate percentage for the month, in increments of 10 percent.

1.04 SCHEDULE C: EQUIPMENT AND SERVICES ASSIGNMENT – STIPULATED PRICE

1. The Stipulated Price for installing equipment and services provided by Veolia-Zenon is the balance owed under purchase order 160-22120, between the Owner and Veolia, plus amendments to the purchase order. Changes in the stipulated price will be reflected by a change order.
2. Payment will be made in accordance with the schedule and conditions outlined in the Owner purchase order.

1.05 PAYMENT

A. Payment for Material not incorporated in the Work

1. Storage of Material
 - a. Payment for equipment and materials stored on the site and not actually incorporated in the work will be made on the basis of 95 percent of the amount of paid invoices submitted to the Engineer for incorporation in the monthly estimate.
2. Authorization for Payment
 - a. Payment will be authorized after delivery to the Construction site or other approved, owner accessible location within Somerset County, Maryland and after being certified by the Engineer as being stored in conformance with the manufacturers recommendations and satisfactory evidence is provided that the items are as specified.
 - b. Title to all items of equipment and materials upon which payment has been made shall rest with the Owner and document transferring title shall be executed by the Contractor. Transfer of ownership shall not relieve the Contractor of continuing insurance coverage and of protecting stored items against damage, deterioration or loss of any kind.
 - c. Should material or equipment become damaged or stored improperly and contrary to manufacturers recommendations, being therefore subject to later damage, then the Engineer will reduce the next following monthly payments by an amount sufficient to repair or replace such units.
 - d. To initiate a request for partial payment the Contractor shall submit his request in writing to the Engineer with all necessary evidence.

B. Payments Withheld

1. The Owner may decline to pay all or any part thereof or, because of subsequent observations, it may nullify the whole or any part of any payment previously issued, to such extent as may be necessary in its opinion to protect the Owner from loss because of:
 - a. Defective work not remedied.
 - b. Third party claims filed or reasonable evidence indicating probable filing of such claims.
 - c. Failure of the Contractor to make payments properly to subcontractors or for labor, material or equipment.
 - d. Reasonable evidence that the work cannot be completed for unpaid balance of the Contract Sum.
 - e. Damage to the Owner or another Contractor.
 - f. Reasonable evidence that the work will not be or has not been completed within the Contract time.
 - g. Failure to carry out the work in accordance with the Project Manual.
 - h. Cancellation, material change or lapse of required insurance as specified in the Project Manual.

PART 2 - NOT USED

PART 3 - NOT USED

*** END OF SECTION ***

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DIVISION 16 - ELECTRICAL

SECTION 16410

ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Molded-case circuit breakers (MCCBs).
 - 2. Enclosures.

1.03 DEFINITIONS

- A. NC: Normally closed.
- B. NO: Normally open.
- C. SPDT: Single pole, double throw.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
 - 1. Enclosure types and details for types other than NEMA 250, Type 1.
 - 2. Current and voltage ratings.
 - 3. Short-circuit current ratings (interrupting and withstand, as appropriate).
 - 4. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.

5. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in PDF electronic format.

1.05 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.06 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals.
 1. Include the following:
 - a. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.
 - b. Time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Provide in PDF electronic format.

1.07 WARRANTY

- A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components that fail in materials or workmanship within specified warranty period.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.
- C. Comply with NFPA 70.

2.02 MOLDED-CASE CIRCUIT BREAKERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Square D; Schneider Electric USA.
 - 2. ABB, Electrification Business.
 - 3. Eaton.
 - 4. Siemens Industry, Inc., Energy Management Division.
 - 5. Approved Equal.
- B. Circuit breakers shall be constructed using glass-reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.
- C. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.
- D. The maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker.
- E. MCCBs shall be equipped with a device for locking in the isolated position.
- F. Lugs shall be suitable for 140 deg F (60 deg C) rated wire on 125-A circuit breakers and below.
- G. Standard: Comply with UL 489 with interrupting capacity to comply with available fault currents.
- H. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- I. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
- J. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.
- K. Features and Accessories:
 - 1. Standard frame sizes, trip ratings, and number of poles.

2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
3. Electrical Operator: Provide remote control for on, off, and reset operations.

2.03 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
- B. Enclosure Finish: The enclosure shall be finished with gray baked enamel paint, electrodeposited on cleaned, phosphatized steel (NEMA 250 Type 1) or gray baked enamel paint, electrodeposited on cleaned, phosphatized galvanized steel (NEMA 250 Types 3R, 12).
- C. Conduit Entry: NEMA 250 Types 4, 4X, and 12 enclosures shall contain no knockouts. NEMA 250 Types 7 and 9 enclosures shall be provided with threaded conduit openings in both endwalls.
- D. Operating Mechanism: The circuit-breaker operating handle shall be directly operable through the front cover of the enclosure (NEMA 250 Type 1) or directly operable through the dead front trim of the enclosure (NEMA 250 Type 3R). The cover interlock mechanism shall have an externally operated override. The override shall not permanently disable the interlock mechanism, which shall return to the locked position once the override is released. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.
- E. Enclosures designated as NEMA 250 Type 4, 4X stainless steel, 12, or 12K shall have a dual cover interlock mechanism to prevent unintentional opening of the enclosure cover when the circuit breaker is ON and to prevent turning the circuit breaker ON when the enclosure cover is open.

2.04 NONFUSIBLE SWITCHES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Square D; a brand of Schneider Electric
 2. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 3. Siemens Energy & Automation, Inc.
 4. Approved equal.

- B. Type HD, Heavy Duty, Single Throw, 600-V ac, 1200 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- C. Accessories:
 - 1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
 - 2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
 - 3. Auxiliary Contact Kit: One NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open. Required for VFD controlled motors.
 - 4. Lugs: Mechanical type, suitable for number, size, and conductor material.

2.05 NONFUSIBLE ROTARY SWITCHES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Pass & Seymour, PS series (Basis-of-Design)
 - 2. Square D
 - 3. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 4. Hubbell
 - 5. Approved equal.
- B. Type HD, Heavy Duty, Single Throw, 600-V ac, 100 A and Smaller: UL 50, UL94, UL508, and NEMA KS 1, horsepower rated, lockable handle with capability to padlocks, and interlocked with cover in closed position.
- C. Accessories:
 - 1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
 - 2. Lugs: Mechanical type, suitable for number, size, and conductor material.
 - 3. Auxiliary contacts: Break-before-switch / break-before-break required for VFD controlled motors.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 ENCLOSURE ENVIRONMENTAL RATING APPLICATIONS

- A. Enclosed Switches and Circuit Breakers: Provide enclosures at installed locations with the following environmental ratings.
 - 1. Indoor, Dry and Clean Locations: NEMA 250, Type 1.
 - 2. Outdoor Locations: NEMA 250, Type 3R.

3.03 INSTALLATION

- A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- B. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- C. Comply with NFPA 70 and NECA 1.

3.04 IDENTIFICATION

- A. Comply with requirements in Section 16075 "Electrical Identification."
 - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
 - 2. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.05 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections for Switches:
 - 1. Visual and Mechanical Inspection:
 - a. Inspect physical and mechanical condition.
 - b. Inspect anchorage, alignment, grounding, and clearances.
 - c. Verify that the unit is clean.

- d. Inspect bolted electrical connections for high resistance using one of the two following methods:
 - 1) Use a low-resistance ohmmeter.
 - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
 - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
- e. Verify correct phase barrier installation.
- f. Verify lubrication of moving current-carrying parts and moving and sliding surfaces.

2. Electrical Tests:

- a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.

C. Tests and Inspections for Molded Case Circuit Breakers:

1. Visual and Mechanical Inspection:

- a. Verify that equipment nameplate data are as described in the Specifications and shown on the Drawings.
- b. Inspect physical and mechanical condition.
- c. Inspect anchorage, alignment, grounding, and clearances.
- d. Verify that the unit is clean.
- e. Operate the circuit breaker to ensure smooth operation.
- f. Inspect bolted electrical connections for high resistance using one of the two following methods:
 - 1) Use a low-resistance ohmmeter.
 - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.

- 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
 - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
 - g. Inspect operating mechanism, contacts, and chutes in unsealed units.
 - h. Perform adjustments for final protective device settings in accordance with the coordination study.
2. Electrical Tests:
 - a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
3. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
4. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.
 1. Test procedures used.
 2. Include identification of each enclosed switch and circuit breaker tested and describe test results.
 3. List deficiencies detected, remedial action taken, and observations after remedial action.

3.06 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly and lubricate as recommended by manufacturer.
- B. Set field-adjustable circuit-breaker trip ranges.

END OF SECTION