Contract Documents for City of Rehoboth Beach, Delaware Rehoboth Beach WWTP Capital Improvement Program Upgrade Phase 1: Filtration Equipment Goods and Special Services Contract No. RB-WWTP CIP 01-2016



GHD INC.

16701 Melford Boulevard Suite 330 Bowie, Maryland 20715



January 2017

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INVITATION TO BID City of Rehoboth Beach

Rehoboth Beach WWTP Capital Improvement Program Upgrade Phase 1: Filtration Equipment Goods and Special Services

City Project RB-WWTP CIP 01-2016

Sealed Bids for City Project RB-WWTP CIP 01-2016 will be received by the Mayor and City Manager at the City of Rehoboth Beach, City Hall Complex, 229 Rehoboth Avenue, Rehoboth Beach, DE 19971 until 2:00 p.m. Wednesday, February 15, 2017. The bids will be publicly opened and read aloud at 2:30 p.m. on the same day at 219 Rehoboth Avenue, Rehoboth Beach Volunteer Fire Department, on the 2nd floor.

The contract generally consists of furnishing Filtration Equipment Goods and Special Services in accordance with the Bidding Documents heretofore prepared by GHD Inc.

The Contract Documents may be examined at the following locations:

GHD Inc. 16701 Melford Boulevard Suite 330 Bowie, MD 20715

City Hall Complex 229 Rehoboth Avenue Rehoboth Beach, DE 19971

F.W. Dodge

Construction Journal

(www.dodgeprojects.construction.com) (www.constructionjournal.com)

Copies of Bidding Documents may be received electronically, at no cost, or purchased at City Hall at 229 Rehoboth Avenue, Rehoboth Beach, DE 19971 on or after Monday, January 16, 2017, upon submission of a check or money order payable to the City of Rehoboth Beach in the amount of \$50.00 per set. If mailing of documents is requested, a separate check payable to the City of Rehoboth Beach in the amount of \$25.00 per set must be included with the request to cover handling and postage fees. No refunds will be made for the return of Bidding Documents. Direct all questions regarding distribution of Bidding Documents to Sharon Lynn, City Manager, Phone: (302) 227-4641, Fax: (302) 227-4643, Email: slynn@cityofrehoboth.com.

All other questions shall be submitted in writing to Steven Clark at steven.clark@ghd.com. The subject heading for all e-mails shall be:

Subject: Rehoboth Beach WWTP Filtration Equipment

The cutoff date for questions is identified in the Instructions to Bidders.

A mandatory pre-bid conference will be held at 11:00 a.m. on Tuesday, January 24, 2017, at the Rehoboth Beach Volunteer Fire Department, on the 2nd floor, 219 Rehoboth Avenue, Rehoboth Beach, DE 19971, followed by a site inspection at the Rehoboth Beach Wastewater Treatment Plant, 20573 Roosevelt Street, Rehoboth Beach, DE 19971.

Bidders shall review and acknowledge all Addenda on the Bid Form.

The project will be financed through the Delaware Water Pollution Control Revolving Loan Fund, Department of Natural Resources and Environmental Control, State of Delaware and all provisions shall apply. The conditions of the CWSRF loan govern the requirements for this contract. The applicable conditions include compliance with the American Iron and Steel (AIS) requirements and Disadvantaged Business Enterprises (DBE), which are included within the Bidding Documents. Other program requirements not applicable to the contract will not be required.

A Bid must be accompanied by Bid security made payable to the City of Rehoboth Beach in an amount of 5% percent of Bidder's Total Bid price and in the form of a Bid Bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of paragraph 4.01.B of the Standard General Conditions for Procurement Contracts.

If, upon acceptance of a Bid, a Bidder fails to enter into a Contract with the City of Rehoboth, the bid security shall be forfeited to and become the property of the City.

No Bidder may withdraw its Bid within 60 days after the date of the Bid opening. The successful Bidder must furnish a 100% Performance Bond and a 100% Payment Bond with a surety company satisfactory to the City of Rehoboth and conforming to the prerequisite requirements of Article 4 of the Standard General Conditions for Procurement Contracts on the forms included in the Bidding Documents.

The City of Rehoboth reserves the right to waive any informalities or to reject any or all Bids.

Bidders are required to certify, under penalty of perjury, that Bids have been prepared without collusion with other Bidders, subcontractors, suppliers, etc. This certification is included with the Bid Form and each Bidder must sign in the space provided.

City Manager

Dated: IDIAWIT

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INSTRUCTIONS TO BIDDERS

ARTICLE 1 - DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the Standard General Conditions for Procurement Contracts (General Conditions) and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below.
 - A. *Issuing Office* The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
 - B. Prefixes to Referenced Paragraph Numbers are as follows

Standard General Conditions; "GC	
Supplementary Conditions; "SC	.,,

ARTICLE 2 - BIDS RECEIVED

2.01 Refer to Invitation to Bid for information on receipt of Bids.

ARTICLE 3 - COPIES OF BIDDING DOCUMENTS

- 3.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office. Refer to the Invitation to Bid for information on obtaining Biding Documents.
- 3.02 Complete sets of the Bidding Documents shall be used in preparing Bids; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 3.03 Buyer and Engineer have made copies of Bidding Documents available on the above terms only for the purpose of obtaining Bids for furnishing Goods and Special Services and do not authorize or confer a license for any other use.

ARTICLE 4 - QUALIFICATIONS OF BIDDERS

- 4.01 Bidders are required to be the manufacturer of the cloth disc filtration equipment that is listed in the Bidder's Major Products Schedule. A Bidder can be considered the manufacturer of the proposed equipment if its own workforce will be responsible for 75% or more of all fabrication and assembly required for production of the Goods to be furnished under the Contract Documents.
- 4.02 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 5 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND POINT OF DESTINATION

- 5.01 Upon request Buyer will provide Bidder access to the Point of Destination and the site where Goods are to be installed or Special Services are to be provided so that Bidder may conduct such investigations, examinations, tests, and studies as Bidder deems necessary for submission of a Bid. Requests for access to the Point of Destination shall be submitted in accordance with details given in the Invitation to Bid for other questions.
- 5.02 It is the responsibility of each Bidder before submitting a Bid to:
 - A. examine and carefully study the Bidding Documents, including any Addenda, and the related data identified in the Bidding Documents;
 - B. visit the Point of Destination and the site where the Goods are to be installed and Special Services are to be provided to become familiar with the local conditions if required by the Bidding Documents to do so, or if, in Bidder's judgment, any local condition may affect cost, progress, or the furnishing of Goods and Special Services. One of the tanks that will be used to accommodate the Goods specified in the Bidding Documents will be drained and available for inspection at the time of the Pre-Bid Conference;
 - C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, or the furnishing of the Goods and Special Services;
 - D. carefully study, consider, and correlate the information known to Bidder; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Bidder's visits, if any, to the Point of Destination and the site where the Goods are to be installed or Special Services are to be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Contract Documents;
 - E. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution (if any) thereof by Engineer is acceptable to Bidder; and
 - F. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing Goods and Special Services.
- 5.03 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 5, that without exception the Bid is premised upon furnishing Goods and Special Services required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Bidding Documents and the

written resolutions (if any) thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing Goods and Special Services.

ARTICLE 6 - PRE-BID CONFERENCE

6.01 A pre-bid conference and inspection of the Point of Destination will be held as indicated in the Invitation to Bid. Representatives of Buyer and Engineer will be present to discuss the Goods and Special Services to be furnished. Bidders are required to attend and participate in the conference and inspection. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference and inspection. Oral statements may not be relied upon and will not be binding or legally effective. The Bid of a Bidder who does not attend the pre-bid conference and inspection will be returned to that Bidder unopened.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer as indicated in the Invitation to Bid. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda emailed, mailed or delivered to all parties recorded by Engineer as having received the Bidding Documents. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon and will not be binding or legally effective.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Buyer or Engineer.

ARTICLE 8 - BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Buyer in an amount of 5 percent of Bidder's maximum Bid price and in the form of a Bid Bond (on form attached) issued by a surety meeting the requirements of Paragraph 4.01.B of the General Conditions.
- 8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Buyer may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders that Buyer believes to have a reasonable chance of receiving the award may be retained by Buyer until the earlier of 7 days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 8.03 Bid security of other Bidders that Buyer believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

9.01 See applicable provisions in the Agreement.

ARTICLE 10 - LIQUIDATED DAMAGES

10.01 Any provisions for liquidated damages, such as those for *Seller's* failure to attain a Milestone, or to deliver the Goods or furnish Special Services within the Contract Times, are set forth in the Agreement.

ARTICLE 11 - "OR-EQUAL" ITEMS

11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, including the Addenda. Bidders may propose "or equal" equipment for items listed in the Major Products Schedule, which if approved by Engineer will be identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function, and quality to be met by any proposed "or-equal" item. No item of material or equipment will be considered by Engineer as an "or-equal" unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each such request shall conform to the requirements of Paragraph 5.04 of the General Conditions and the Supplementary Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. Bidders shall not rely upon approvals unless set forth in an Addendum.

ARTICLE 12 - PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
- 12.02 All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each item listed therein.
- 12.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.
- 12.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
- 12.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 12.06 A Bid by an individual shall show the Bidder's name and official address.

- 12.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 12.08 All names must be typed or printed in ink below the signature.
- 12.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 12.10 Each Bidder shall list the postal address, e-mail address, and telephone number for communications regarding the Bid.

ARTICLE 13 - BASIS OF BID; COMPARISON OF BIDS

13.01 Lump Sum

- A. Bidder shall submit a Bid for each lump sum item as set forth on the Bid Form, and shall compute and enter the total of all lump sum items in the space provided on the Bid Form.
- B. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the arithmetically correct sum.

13.02 Unit Prices

- A. For each unit price item on the Bid Form, Bidder shall enter the unit price Bid, and shall enter the computation of the respective quantity times the Bidder's unit price for that item. Bidder shall compute and enter in the space provided on the Bid Form, the total of the products of quantity and unit price Bid for each unit price item.
- B. Discrepancies between the indicated result of the multiplication of the units of an item and the unit price for that item will be resolved in favor of the arithmetically correct result. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the arithmetically correct sum.

13.03 Total Bid Price

- A. For determination of the apparent low Bid, Bids will be compared on the basis of the total of all lump sum items and the products of the estimated quantity of each unit price item and unit price Bid for that item.
- B. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the arithmetically correct sum.

ARTICLE 14 - SUBMITTAL OF BID

- 14.01 Article 7 of the Bid Form identifies the items that must be included with a Bid.
- 14.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Invitation to Bid, and shall be enclosed in a plainly marked envelope with the Project

title and the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED". When using the mail or other delivery system, the Bidder is totally responsible for the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Invitation to Bid. A mailed Bid shall be addressed to the Buyer at the address in Article 1.01 of the Bid Form.

ARTICLE 15 - MODIFICATION OR WITHDRAWAL OF BID

- 15.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 15.02 If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Buyer and promptly thereafter demonstrates to the reasonable satisfaction of Buyer that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Goods and Special Services are rebid, that Bidder will be disqualified from further bidding on the Goods and Special Services.

ARTICLE 16 - OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the Invitation to Bid and read aloud publicly. An abstract of the amounts of the Base Bids and Alternate Bids, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 17 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Buyer may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18 - EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Buyer further reserves the right to reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to be nonresponsible. Buyer may also reject the Bid of any Bidder if Buyer believes that it would not be in the best interest of the Project to make an award to that Bidder. Buyer also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services, and to negotiate contract terms with the Successful Bidder.
- 18.02 More than one Bid for the same Goods and Special Services from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Goods and Special Services

- shall be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest
- 18.03 In evaluating Bids, Buyer will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or may be requested from Bidders prior to a Notice of Award.
- 18.04 Buyer may conduct such investigations as Buyer deems necessary to establish the responsibility, qualifications, and financial ability of Bidder.
- 18.05 If the Contract is to be awarded, Buyer will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of the Instructions to Bidders, is lowest price, and is in the best interest of the Project.

ARTICLE 19 - CONTRACT SECURITY AND INSURANCE

19.01 Article 4 of the General Conditions and Article 4 of the Supplementary Conditions set forth Buyer's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Buyer, it must be accompanied by such bonds.

ARTICLE 20 - SIGNING OF AGREEMENT

20.01 When Buyer issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents that are to be identified in the Agreement and attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Buyer. Within 10 days thereafter, Buyer shall deliver one fully signed counterpart to Successful Bidder with a complete set of Drawings with appropriate identification.

ARTICLE 21 - SALES AND USE TAXES

21.01 Not Used.

ARTICLE 22 - RETAINAGE

22.01 Not Used.

ARTICLE 23 - CONTRACT TO BE ASSIGNED

23.01 Bidder's attention is directed to the provisions of Paragraph 11.02 of the Agreement which provide for the assignment of the Contract to a construction contractor designated by the Buyer to construct the Rehoboth Beach WWTP Capital Improvement Program Upgrade Phase 1. Bidder should consider the application of the terms and conditions of the Contract Documents after assignment, and is advised of the duty to continue to perform the Contract after it has been assigned to the construction contractor. Timing of the assignment is set forth in the Agreement. Forms documenting the assignment of the Contract and for the

agreement of the Seller's surety to such assignment are included as attachments to the Agreement.

ARTICLE 24 - FUNDING REQUIREMENTS

24.01 The project will be financed through the Delaware Water Pollution Control Revolving Loan Fund, Department of Natural Resources and Environmental Control, State of Delaware and all provisions shall apply. The conditions of the CWSRF loan govern the requirements for this contract. The applicable conditions include compliance with the American Iron and Steel (AIS) requirements and Disadvantaged Business Enterprises (DBE), which are included within the Bidding Documents. Other program requirements not applicable to the contract will not be required.

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BID FORM

ARTICLE 1 - BID RECIPIENT

1.01 This Bid is submitted to:

City of Rehoboth Beach City Hall Complex 229 Rehoboth Avenue Rehoboth Beach, Delaware 19971

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with Buyer in the form included in the Bidding Documents to furnish the Goods and Special Services 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 - BIDDER'S ACKNOWLEDGMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Buyer.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
 - A. Bidder has examined and carefully studied the Bidding Documents, the related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date		

B. Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of Goods and Special Services, if required to do so by the Bidding Documents, or if, in Bidder's judgment, any local condition may affect cost, progress, or the furnishing of Goods and Special Services.

- C. Bidder is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the Bid that may affect cost, progress, and the furnishing of Goods and Special Services.
- D. Bidder has carefully studied, considered, and correlated the information known to Bidder; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Bidder's visits, if any, to the Point of Destination and the site where the Goods will be installed or Special Services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Bidding Documents.
- E. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.
- F. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the Goods and Special Services for which this Bid is submitted.

ARTICLE 4 - BIDDER'S CERTIFICATIONS

4.01 Bidder certifies that:

- A. 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;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer 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 Buyer, 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.

ARTICLE 5 - BASIS OF BID

- 5.01 Bidder will furnish the Goods and Special Services in accordance with the Contract Documents for the following price(s):
 - A. Schedule A: Lump Sum Bid Items
 - 1. Lump sum items include all Goods and Special Services in the Contract Documents except items specifically identified as Unit Price Goods and Special Services.

Item No.	Description	Total Price
A-1	Cloth Disc Filter Equipment	\$
Subtotal A		\$

B. Schedule B: Unit Price Bid Items

- 1. Unit Prices have been computed in accordance with Paragraph SC-10.08 of the Supplementary Conditions.
- 2. Bidder acknowledges that 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. Bidder also acknowledges that each unit price includes an amount considered by Bidder to be adequate to cover Bidder's overhead and profit for each separately identified item.

Item No.	Description	Unit	Estimated Quantity	Unit Price	Bid Price
B-1	Trip by Manufacturer's Representative to Point of Destination for training, testing and startup.	Trip	3	\$	\$
B-2	Time for Manufacturer's Representative at the Point of Destination for training, testing and startup.	Day	8	\$	\$
Subtotal B			\$		

C. Schedule C: Total Bid Price

1. Determination of the apparent low Bidder shall be based on the Total Bid Price determined as follows.

Item No.	Total Price
Subtotal A	\$
Subtotal B	\$
Total Bid Price	\$

ARTICLE 6 - TIME OF COMPLETION

- 6.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule set forth in Article 5 of the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 - ATTACHMENTS TO THIS BID

- 7.01 The following documents are attached to and made a condition of this Bid:
 - A. Required Bid security in the form of a Bid Bond (on form attached);
 - B. Non-Collusive Bidding Certification; and
 - C. Major Products Schedule.

ARTICLE 8 - DEFINED TERMS

8.01 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 9 - BID SUBMITTAL

This Bid submitted by:	
If Bidder is:	
An Individual	
Name (typed or printed):	
Doing business as:	(Individual's signature)
Dusiness address.	
Phone:	Facsimile:
E-mail address:	
A Partnership	
Partnership Name:	
(SEAL)	
By:	
(Signature of genero	al partner - attach evidence of authority to sign)
Name (typed or printed):	
Business address:	
Phone:	Facsimile:
E-mail address:	

A Corporation		
Corporation Name:		
State of Incorporation:		
Type (General Business, Professional	, Service, other):	
By:		
By:(Signature - attach evidence	e of authority to sign)	
Name (typed or printed):		
Title:		
(CORPO	ORATE SEAL)	
Attest		
(Signature of Corporate Se	cretary)	
Business address:		
Phone:	Facsimile:	
E-mail address:		
A Limited Liability Company (LLC)		
LLC Name:		
State in which organized:		
By:		
By:(Signature - attach evidence	e of authority to sign)	
Name (typed or printed):		
Title:		
Business address:		
Phone:	Facsimile:	
E-mail address:		

A Joint Venture					
First Joint Venturer Name:					
By:					
By:(Signature - attach evidence of	of authority to sign)				
Name (typed or printed):					
Business address:					
Phone:	Facsimile:				
E-mail address:					
Second Joint Venturer Name:		(SEAL)			
By:					
By:(Signature - attach evidence of	of authority to sign)				
Name (typed or printed):					
Title:					
Business address:					
Phone:	Facsimile:				
E-mail address:					
Phone and Facsimile Number, and Add	ress for receipt of official communication	ns to Joint			
Venture:					
	anner of signing for each individual, partrany that is a party to the joint venture sho				

BID BOND

Any sing	gular referenc	ce to Bidder, Surety, Buye	er or othe	er party s	hall be considered plural where	applicable.
BIDDEF	R (Name and	Address):				
SURET	Y (Name and	l Address of Principal Pla	ice of Bu	siness):		
229 Reh BID Bid Des BOND Born Date	of Rehoboth Rehoboth A oboth Beach Due Date: cription:	venue , DE 19971 February 15, 2017 Rehoboth Beach WWTF Equipment Goods and S r than Bid due date):	pecial So	-	ement Program Upgrade Phase 1	
(Words)			rds)		(I	Figures)
-	d to be duly	tending to be legally bount executed by an authorized	d officer,	-	-	
Bidder's	Name and C	Corporate Seal	(Seal)	Surety's Name and Corporate Seal		_ (Seal)
By:	Signature		_	By:	Signature (Attach Power of At	_ torney)
	Print Name		_		Print Name	_
	Title		-		Title	_
Attest:	Signature		-	Attest:	Signature	_
	Title		-		Title	_

This document has been modified from its original form as an EJCDC document and the user did not highlight the modification. You are encouraged to read the document carefully and consult Legal Counsel prior to its execution.

- 1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Buyer upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Buyer's sole and exclusive remedy upon default of Bidder.
- 2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Buyer) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
- 3. This obligation shall be null and void if:
 - 3.1 Buyer accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Buyer) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Buyer, or
 - 3.3 Buyer fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
- 4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Buyer, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
- 5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Buyer and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
- 6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date
- 7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
- 8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
- 9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
- 10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
- 11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

NON-COLLUSIVE BIDDING CERTIFICATION

- (a) By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in a case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:
- (1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.
- (2) Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and
- (3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
- (b) A bid shall not be considered for award nor shall any award be made where (1), (2) and (3) above have not been complied with; provided however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where (1), (2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publication of new or revised price lists for such items or has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph one (a).

Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bids and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

Dated:,	20	
	Signed:	Name
		Title
		Company
		Address

Corporate Seal

MAJOR PRODUCTS SCHEDULE

This document is an Attachment to the Bid Form and is a legally binding part thereof;

Each Bidder shall complete this "Major Products Schedule" in its entirety. Failure to do so shall render the Bid Form non-responsive and be grounds for its rejection by Buyer. Procedures for requesting approval of "or-equal" products is included in GC-5.04 and the Supplementary Conditions.

Equipment	Cloth Disc Filtration Equipment
Manufacturer Name	
Brand Name	
Model Number	

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AGREEMENT

THE A C	
	REEMENT is by and between("Buyer")("Seller").
<u> </u>	(Selici).
Buyer and	l Seller hereby agree as follows:
ARTICL	E 1 – GOODS AND SPECIAL SERVICES
1.01	Seller shall furnish the Goods and Special Services as specified or indicated in the Contract Documents.
ARTICL	E 2 – THE PROJECT
2.01	The Project, of which the Goods and Special Services may be the whole or only a part, is identified as follows: Rehoboth Beach WWTP Capital Improvement Program Upgrade Phase 1: Filtration Equipment Goods and Special Services.
ARTICL	E 3 – ENGINEER
3.01	The Contract Documents for the Goods and Special Services have been prepared by GHD Inc. ("Engineer"), which is to act as Buyer's representative, assume all duties and responsibilities as provided in Paragraph 9.01 of the General Conditions, and have the rights and authority assigned to Engineer in the Contract Documents in connection with Seller's furnishing of Goods and Special Services.
ARTICL	E 4 – POINT OF DESTINATION
4.01	The Point of Destination is designated as:
	Rehoboth Beach Wastewater Treatment Plant 20573 Roosevelt St Rehoboth Beach, DE 19971
ARTICL	E 5 – CONTRACT TIMES
5.01	Time of the Essence
	A. All time limits for Milestones, if any, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the

5.02 Milestones

A. Days for Submittal of Shop Drawings and Samples: Seller shall submit all Shop Drawings and Samples required by the Contract Documents to Buyer for Engineer's review and approval within 35 days after the date when the Contract Times commence to

Contract Documents, are of the essence of the Contract.

run as provided in Paragraph 2.04 of the General Conditions. It is the intent of the parties that (1) Engineer conduct such review and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within the time period specified in Specification 01300 Submittals; and (2) resubmittals be limited whenever possible. If more than one resubmittal is necessary for reasons not the fault and beyond the control of Seller, then Seller shall be entitled to seek appropriate relief under Paragraph 7.02.B of the General Conditions.

- B. *Days to Achieve Delivery of Goods:* The Goods are to be delivered to the Point of Destination and ready for Buyer's receipt of delivery 168 days (but not earlier than 126 days) after the date when the Contract Times commence to run as provided in Paragraph 2.04 of the General Conditions.
- C. *Days for Furnishing Special Services:* Special Services shall be furnished after the construction contractor has installed the equipment. It is expected that the construction contract to install and test this equipment will commence in July 2017 and be completed by April 2018.

5.03 Buyer's Final Inspection

A. Days to Achieve Final Inspection: Buyer shall make its final inspection of the Goods pursuant to Paragraph 8.01.C of the General Conditions within 14 days after Buyer's acknowledgement of receipt of delivery of the Goods and Seller's completion of furnishing Special Services, if any.

5.04 *Liquidated Damages*

A. Buyer and Seller recognize that Buyer will suffer financial loss if the Goods are not delivered at the Point of Destination and ready for receipt of delivery by Buyer within the times specified in Paragraph 5.02 above, plus any extensions thereof allowed in accordance with Article 7 of the General Conditions. The parties also recognize that the timely performance of services by others involved in the Project is materially dependent upon Seller's specific compliance with the requirements of Paragraph 5.02. Further, they recognize the delays, expense, and difficulties involved in proving the actual loss suffered by Buyer if complete acceptable Goods are not delivered on time. Accordingly, instead of requiring such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer \$250 for each day that expires after the time specified in Paragraph 5.02.B for delivery of acceptable Goods.

ARTICLE 6 - CONTRACT PRICE

- 6.01 Buyer shall pay Seller for furnishing the Goods and Special Services in accordance with the Contract Documents as follows:
 - A. The prices stated in Seller's Bid, attached hereto as an exhibit.

ARTICLE 7 – PAYMENT PROCEDURES

- 7.01 Submittal and Processing of Payment
 - A. Seller shall submit Applications for Payment in accordance with Article 10 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.
- 7.02 Progress Payments; Retainage
 - A. Buyer shall make progress payments on account of the Contract Price on the basis of Seller's Applications for Payment as follows:
 - 1. Upon receipt of the first Application for Payment submitted in accordance with Paragraph 10.01.A.1 of the General Conditions and accompanied by Engineer's recommendation of payment in accordance with Paragraph 10.02.A of the General Conditions, an amount equal to 10 percent of the Contract Price, less such amounts as Engineer may determine in accordance with Paragraph 10.02.A.3 of the General Conditions.
 - 2. Upon receipt of the second such Application for Payment accompanied by Engineer's recommendation of payment in accordance with Paragraph 10.01.A.2 of the General Conditions, an amount sufficient to increase total payments to Seller to 85 percent of the Contract Price, less such amounts as Engineer may determine in accordance with Paragraph 10.02.A.3 of the General Conditions.

7.03 Final Payment

A. Upon receipt of the final Application for Payment accompanied by Engineer's recommendation of payment, Buyer shall pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages in accordance with Paragraphs 10.05 and 10.06 of the General Conditions.

ARTICLE 8 – INTEREST

8.01 All monies not paid when due as provided in Article 10 of the General Conditions shall bear interest at the statutory rate.

ARTICLE 9 – SELLER'S REPRESENTATIONS

- 9.01 In order to induce Buyer to enter into this Agreement, Seller makes the following representations:
 - A. Seller has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents, as applicable to Seller's obligations identified in Article 1 above.

- B. If required by the Bidding Documents to visit the Point of Destination and site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any local condition may affect cost, progress, or the furnishing of the Goods and Special Services, Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, and the furnishing of the Goods and Special Services.
- C. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and the furnishing of the Goods and Special Services.
- D. Seller has carefully studied, considered, and correlated the information known to Seller; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Seller's visits, if any, to the Point of Destination and site where the Goods are to be installed or Services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Contract Documents.
- E. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.
- F. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing Goods and Special Services.

ARTICLE 10 – CONTRACT DOCUMENTS

10.01 Contents

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to 10, inclusive);
 - 2. Performance Bond (pages 1 to 4, inclusive);
 - 3. Payment Bond (pages 1 to 3, inclusive);
 - 4. General Conditions (pages 1 to 32, inclusive);
 - 5. Supplementary Conditions (pages 1 to 9, inclusive);
 - 6. Specifications as listed in table of contents of the Project Manual;
 - 7. Addenda (Numbers to , inclusive);

		8.	Ex	hibits to this Agreement (enumerated as follows):
			a.	Exhibit A-1 to Agreement between Buyer and Seller datedAssignment of Contract; Consent to Assignment; and Acceptance of Assignment.
			b.	Exhibit A-2 to Agreement between Buyer and Seller datedAgreement to Assignment by Seller's Surety.
			c.	Exhibit E to the Agreement, Requirements and Contract Provisions for the Project Financed Through the Delaware Water Pollution Control Revolving Loan Fund, Department of Natural Resources and Environmental Control, State of Delaware.
			d.	Seller's Bid, solely as to the prices set forth therein (pages to, inclusive);
			e.	Documentation submitted by Seller prior to Notice of Award (pages to inclusive);
		9.		e following which may be delivered or issued on or after the Effective Date of the greement and are not attached hereto:
			a.	Notice of Award
			b.	Notice to Proceed
	B.			ocuments listed in Paragraph 10.01.A are attached to this Agreement (except as sly noted otherwise above).
	C.	Th	ere	are no Contract Documents other than those listed above in this Article 10.
	D.			Contract Documents may only be amended, or supplemented as provided in aph 3.04 of the General Conditions.
TICL	E 11	l —	MI	SCELLANEOUS
11.01	Те	rms		
	A.			used in this Agreement will have the meanings indicated in the General tions and the Supplementary Conditions.
11.02	As.	sign	mei	nt of Contract
	A.	on thi ass exc	ly to s C sign	has the right to assign this Contract for furnishing Goods and Special Services, but a person or entity with sufficient ability to satisfy all of Buyer's obligations under ontract, and Seller hereby consents to such assignment. Forms documenting the ment of the Contract, and consent of Seller's surety to the assignment, have been ed by Buyer, Seller, and Seller's surety, and are attached as exhibits to this ment.

ARTICLE 11

- 1. The Contract will be executed in the name of Buyer initially, and will be assigned to a construction contractor designated by Buyer. Such construction contractor's responsibilities will include the installation of the Goods. The assignment will occur on the effective date of the agreement between Buyer and the construction contractor, which is expected to occur on or about July 2017. It is intended that the assignment will not occur prior to Shop Drawing approval and not before the seller has commenced manufacturing, fabrication and assembly of the Goods to be furnished under the Contract Documents. As of the date of acceptance of assignment by the construction contractor, all references in the Contract Documents to Buyer shall mean the designated construction contractor.
- 2. The assignment of the Contract shall relieve the assignor from all further obligations and liabilities under this Contract. After assignment, Seller shall become a subcontractor or supplier to the assignee and, except as noted herein, all rights, duties, and obligations of Buyer under the Contract shall become the rights, duties, and obligations of the assignee.

3. After assignment:

- a. All performance warranties, guarantees, and indemnifications required by the Contract Documents will continue to run for the benefit of assignor and, in addition, for the benefit of the assignee. However, if assignor and assignee make the same warranty or guarantee claim, then Seller shall only be liable once for such claim.
- b. Except as provided in this Paragraph 11.02.A.3.b, all rights, duties, and obligations of Engineer to assignee and Seller under this Contract will cease.
 - 1) Engineer will review Seller's Applications for Payment and make recommendations to assignee for payments as provided in Paragraphs 10.02 and 10.06 of the General Conditions.
 - 2) Upon the written request of either the assignee or Seller, Engineer will issue with reasonable promptness clarifications or interpretations of the Contract Documents pursuant to the terms of Paragraph 9.02.A of the General Conditions.
- B. No other assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound. Specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by Laws and Regulations). Unless specifically stated to the contrary in any written consent to such an assignment, such an assignment will not release or discharge the assignor from any duty or responsibility under the Contract Documents.

11.03 Successors and Assigns

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

11.04 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Buyer and Seller. The Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

11.05 Seller's Certifications

- A. Seller 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 11.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing 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 Buyer, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Buyer 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 Buyer, 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.

11.06 *Limitations*

A. Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Contract. Upon assignment the terms of this Paragraph 11.06.A shall be binding upon the assignee with respect to Seller and assignor. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or

to injury to or destruction of the tangible property of others, (c) intentional or reckless wrongful conduct, or (d) rights conferred by any bond provided by Seller under this Contract.

B. Upon assignment the terms of this Paragraph 11.06.C shall be binding upon both the assignor and assignee with respect to Seller's liability, and upon Seller with respect to both assignor's and assignee's liabilities. The terms of this mutual limitation do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification with respect to third-party claims, losses, and damages; (b) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the tangible property of others, (c) intentional or reckless wrongful conduct, or (d) rights conferred by any bond provided by Seller under this Contract.

IN WITNESS WHEREOF, Buyer and Seller have signed this Agreement. Counterparts have been delivered to Buyer and Seller. All portions of the Contract Documents have been signed or identified by Buyer and Seller or on their behalf.

This Agreement will be effective on *[insert date]* (which is the Effective Date of the Agreement).

Seller: By: _____ [Corporate Seal] [Corporate Seal] Attest: Attest: Address for giving notice: Address for giving notice: (If Buyer is a corporation, attach evidence of Agent for service of process: authority to sign. If Buyer is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of Buyer-Seller Agreement.) (If Seller is a corporation or a partnership, attach evidence of authority to sign.) Designated Representative: Designated Representative: Name: Name: Title: Address: Address: Phone: Phone: Facsimile: Facsimile:

EXHIBIT	A-1	to	Agreement	Between
Buver and	Seller	· da	ted	

ASSIGNMENT OF CONTRACT; CONSENT TO ASSIGNMENT; AND ACCEPTANCE OF ASSIGNMENT

This assignment will be effective on the Effective Date of the Agreement between Buyer and Construction Contractor. The Contract between ("Buyer") and ("Seller") for furnishing Goods and Special Services under the Contract Documents entitled is hereby assigned, transferred, and set over to ("Construction Contractor"). Construction Contractor shall be totally responsible for the performance of Seller and for the duties, rights and obligations of Buyer, not otherwise retained by Buyer, under the terms of the Contract between Buyer and Seller. ASSIGNMENT DIRECTED BY: Buyer (If Buyer is a corporation, attach evidence of authority to sign. If Buyer is a public body, attach evidence of authority to sign (Signature) (Title) and resolution or other documents authorizing execution of Buyer-Seller Agreement.) ASSIGNMENT ACKNOWLEDGED AND ACCEPTED BY: Seller (If Seller is a corporation, attach evidence of authority to sign.) (Signature) (Title) ASSIGNMENT ACCEPTED BY: Construction Contractor (If Construction Contractor is a

corporation, attach evidence of authority

to sign.)

EXHIBIT	A-2	to	Agreement	Between
Buyer and	Seller	· da	ted	

AGREEMENT TO ASSIGNMENT BY SELLER'S SURETY

Surety hereby acknowledges and agrees under the Contract Documents entitled	that the Contract for furnishing Goods and Special Services
	by and between ("Buyer") and
("Seller") may be assigned, transferred, a	
("Construction Contractor"), in accordant Seller.	ace with Paragraph 11.02 of Agreement between Buyer and
Surety further agrees that, upon assignment the rights of the Buyer under the Perform	ent of the Contract, the Construction Contractor shall have all nance Bond.
(Corporate Seal)	Surety
	Company:
	By:

EXHIBIT B

NOTICE OF AWARD AND NOTICE TO PROCEED

Notice of Award

		Date:
Project:		
Owner:		Owner's Contract No.:
Contract:		Engineer's Project No.:
Bidder:		
Bidder's A	ddress: [send Notice of Award C	Certified Mail, Return Receipt Requested]
	re notified that your Bid dated Bidder and are awarded a Contr	for the above Contract has been considered. You are the
Successiui	brader and are awarded a contr	
	[Indicate total Work, o	alternates, or sections of Work awarded.]
The Co	ontract Price of your Contract is	Dollars (\$).
I	Insert appropriate data if unit p	orices are used. Change language for cost-plus contracts.]
	copies of the proposed Contract	Documents (except Drawings) accompany this Notice of Award.
	sets of the Drawings will be deli	ivered separately or otherwise made available to you immediately.
You m Notice of A		conditions precedent within [15] days of the date you receive this
1.	Deliver to the Owner [] f	fully executed counterparts of the Contract Documents.
2.		ntract Documents the Contract security [Bonds] as specified in the cle 20), General Conditions (Paragraph 5.01), and Supplementary 1).
3.	Other conditions precedent:	
	1 2	ons within the time specified will entitle Owner to consider you in celare your Bid security forfeited.
	ten days after you comply with t of the Contract Documents.	n the above conditions, Owner will return to you one fully executed
	Ov By:	wner
		uthorized Signature
Copy to En	 Tit	tle

Notice to Proceed

	Date:
Project:	
Owner:	Owner's Contract No.:
Contract:	Engineer's Project No.:
Contractor:	<u> </u>
Contractor's Address: [send Certified Mail,	Return Receipt Requested]
on On or before that date, you are Documents. In accordance with Article 4 is, and the date of readiness for fina Substantial Completion is, and the s]. Before you may start any Work a provides that you and Owner must each of	
	[add other requirements].
	Owner Given by: Authorized Signature
	Title
Copy to Engineer	Date
EJCDO	C C-550 Notice to Proceed

EXHIBIT C

PERFORMANCE BOND AND PAYMENT BOND

PERFORMANCE BOND FOR PROCUREMENT CONTRACTS

Any singular reference to	o Seller, Surety, Buyer,	or other party shall be considered plus	ral where applicable.
SELLER (Name and Ad	dress):	SURETY (Name and Add Place of Business):	lress of Principal
BUYER (Name and Add	lress):		
CONTRACT Date: Amount: Description (Name and	Location):		
BOND Date (Not earlier than O Bond Number: Amount: Modifications to this B	,		
	2 2	hereby, subject to the terms set forth led on its behalf by its authorized office	-
Seller as Principal Company:	(Corp. Seal)	Surety Company:	(Corp. Seal)
Signature: Name and Title:		Signature: Name and Title: (Attach Power of Attorney) Address:	
		Telephone Number:	
(Space is provided below	v for signatures of addi	tional parties, if required.)	
Seller as Principal Company:	(Corp. Seal)	Surety Company:	(Corp. Seal)
Signature: Name and Title:		Signature: Name and Title: Address: Telephone Number:	

- 1. Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to Buyer for the performance of the Contract, which is incorporated herein by reference. For purposes of this bond, Buyer means Buyer's assigns, if and when Buyer has assigned the Contract.
- 2. If Seller performs the Contract, Surety and Seller have no obligation under this Bond, except to participate in conferences as provided in Paragraph 3.1.
- 3. If there is no Buyer Default, Surety's obligation under this Bond shall arise after:
 - 3.1. Buyer has notified Seller and Surety pursuant to Paragraph 10 that Buyer is considering declaring a Seller Default and has requested and attempted to arrange a conference with Seller and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. (If Buyer, Seller, and Surety agree, Seller shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Buyer's right, if any, subsequently to declare a Seller Default); and
 - 3.2. Buyer has declared a Seller Default and formally terminated Seller's right to complete the Contract. Such Seller Default shall not be declared earlier than 20 days after Seller and Surety have received notice as provided in Paragraph 3.1; and
 - 3.3. Buyer has agreed to pay the Balance of the Contract Price to:
 - a. Surety in accordance with the terms of the Contract;
 - b. Another seller selected pursuant to Paragraph 4.3 to perform the Contract.
- 4. When Buyer has satisfied the conditions of Paragraph 3, Surety shall promptly and at Surety's expense take one of the following actions:
 - 4.1. Arrange for Seller, with consent of Buyer, to perform and complete the Contract; or
 - 4.2. Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 4.3. Obtain bids or negotiated proposals from qualified sellers acceptable to Buyer for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Buyer and a seller selected with Buyer's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to Buyer the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by Buyer resulting from Seller Default; or
 - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new seller, and with reasonable promptness under the circumstances, either:
 - a. determine the amount for which it may be liable to Buyer and, as soon as practicable after the amount is determined, tender payment therefor to Buyer; or

- b. deny liability in whole or in part and notify Buyer citing reasons therefor.
- 5. If Surety does not proceed as provided in Paragraph 4 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Buyer to Surety demanding that Surety perform its obligations under this Bond, and Buyer shall be entitled to enforce any remedy available to Buyer. If Surety proceeds as provided in paragraph 4.4, and Buyer refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Buyer shall be entitled to enforce any remedy available to Buyer.
- 6. After Buyer has terminated Seller's right to complete the Contract, and if Surety elects to act under Paragraph 4.1, 4.2, or 4.3, then the responsibilities of Surety to Buyer shall not be greater than those of Seller under the Contract, and the responsibilities of Buyer to Surety shall not be greater than those of Buyer under the Contract. To a limit of the amount of this Bond, but subject to commitment by Buyer of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:
 - 6.1. the responsibilities of Seller for correction or replacement of defective Goods and Special Services and completion of the Contract;
 - 6.2. Additional legal, design professional and delay costs resulting from Seller's Default, and resulting from the actions of or failure to act of Surety under Paragraph 4; and
 - 6.3. Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Seller.
- 7. Surety shall not be liable to Buyer or others for obligations of Seller that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Buyer or its heirs, executors, administrators, successors, or assigns.
- 8. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.
- 9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location of the Point of Destination, and shall be instituted within two years after Seller Default or within two years after Seller ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
- 10. Notice to Surety, Buyer or Seller shall be mailed or delivered to the address shown on the signature page.
- 11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Point of Destination, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12. Definitions.

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

PAYMENT BOND FOR PROCUREMENT CONTRACTS

Any singular reference to	Seller, Surety, Buyer	or other party shall be considered plur	al where applicable.
SELLER (Name and Add	dress):	SURETY (Name and Ade Place of Business):	dress of Principal
BUYER (Name and Add	ress):		
CONTRACT Date: Amount: Description (Name an	nd Location):		
BOND Date (Not earlier than Bond Number: Amount: Modifications to this			
		nd hereby, subject to the terms set futed on its behalf by its authorize	
Seller as Principal Company:	(Corp. Seal)	Surety Company:	(Corp. Seal)
Signature: Name and Title:		Signature: Name and Title: (Attach Power of Attorney) Address: Telephone Number:	
(Space is provided below	for signatures of addit	ional parties, if required.)	
Seller as Principal Company:	(Corp. Seal)	Surety Company:	(Corp. Seal)
Signature: Name and Title:		Signature: Name and Title: Address: Telephone Number:	

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

- accepting this Bond, they agree that all funds earned by Seller in the performance of the Contract are dedicated to satisfy obligations of Seller and Surety under this Bond, subject to Buyer's priority to use the funds for the completion of the furnishing the Goods and Special Services.
- 9. Surety shall not be liable to Buyer, Claimants or others for obligations of Seller that are unrelated to the Contract. Buyer shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
- 10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders, and other obligations.
- 11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Goods relevant to the claim are located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
- 12. Notice to Surety, Buyer or Seller shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Buyer or Seller, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
- 13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.
- 14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Seller shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions

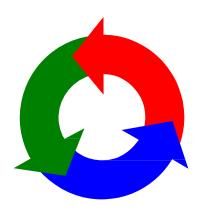
- 15.1 *Claimant:* An individual or entity having a direct contract with Seller or with a Subcontractor of Seller to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for furnishing the Goods and Special Services by Seller and Seller's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.
- 15.2. *Contract:* The agreement between Buyer and Seller identified on the signature page, including all Contract Documents and changes thereto.
- 15.3. *Buyer Default:* Failure of Buyer, which has neither been remedied nor waived, to pay Seller as required by the Contract or to perform and complete or comply with the other terms thereof.

EXHIBIT D CERTIFICATES OF INSURANCE

EXHIBIT E

PROGRAM REQUIREMENTS FOR THE DELAWARE WATER POLLUTION CONTROL REVOLVING LOAN FUND

DELAWARE WATER POLLUTION CONTROL REVOLVING LOAN FUND



PROGRAM REQUIREMENTS For City of Rehoboth Beach –WWTP Capital Improvement Program Upgrade Phase 1

Department of Natural Resources and Environmental Control
Office of the Secretary
Environmental Finance 5
E. Reed Street, Suite 200
Dover, DE 19901

Effective Date: November 2016

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L/141111111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1./

SUBPART A Delaware Prevailing Wage Regulations

The Project or Program to which the work covered by this contract pertains to is being assisted by the State of Delaware and the following provisions are included in this Contract pursuant to the provisions applicable to such Clean Water State Revolving Loan Fund (CWSRF) Program. Loan recipients or engineering representatives are to verify with the State of Delaware Department of Labor to the appropriate wage determination before they go out for competitive bidding.

Delaware Prevailing Wage Regulations, Worker Classifications, Current Prevailing Wage Rates and forms may be found at:

http://dia.delawareworks.com/labor-law/prevailing-wage.php

or by contacting:

State of Delaware Department of Labor Division of Industrial Affairs 225 Corporate Blvd. Suite 104
Newark, DE 19702
Telephone No. (302) 761-8200

Weekly sworn payroll forms are also to be submitted to the same address.

SUBPART B: Equal Opportunity Clause (41 CFR 60-1.4)

A. Executive Order 11246 (Applicable to Contracts/subcontracts above \$10,000).

- 1. During the performance of this contract the contractor and all subcontractors agree as follows:
 - a. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin, such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection of training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
 - b. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
 - c. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - d. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
 - e. The contractor will furnish all information and reports required by the Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
 - f. In the event of the contractors' noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be cancelled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

g. The contractor will include the portion of the sentence immediately preceding Paragraph (1) and the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: *Provided*, *however*, that in the event a contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

SUBPART C: Certification of Non-segregated Facilities (41 CFR 60-1.8)

Bidders and offerers are cautioned as follows: By signing this bid or offer, the bidder or offerers will be deemed to have signed and agreed to the provisions of the "Certification of Nonsegregated Facilities" in this solicitation. The certification provides that the bidder or offerer does not maintain or provide for his employees facilities which are segregated on a basis of race, creed, color, or national origin, whether such facilities are segregated by directive or on a <u>de facto</u> basis. The certification also provides that he will not maintain such segregated facilities.

SUBPART D

Disadvantaged Business Enterprise Regulations for Loan Recipients, Prime Contractors and Subcontractors (CFR Title 40, Part 33)

A. Introduction

EPA's Disadvantaged Business Enterprise (DBE) rule applies to procurement actions funded in part by EPA assistance agreements awarded after May 27, 2008. Loan recipients, their prime contractors and DBE subcontractors are responsible for complying with these regulations during procurement of construction contracts, equipment purchase orders, service agreements (engineering, inspection, legal, etc) and supplies. A list of Fair Share Objectives, the Six Good Faith Efforts, responsibilities for loan recipients, prime contractors and DBE subcontractors and appendices A, B, C and D are as follows:

B. Fair Share Objectives

The DBE fair share objectives for the loan recipients and prime contractors of the Delaware State Revolving Fund Program (SRF) which includes Minority Business Enterprises (MBEs) and Women's Business Enterprises (WBEs) is as follows:

		<u>MBE - %</u>	<u>WBE - %</u>
1.	Construction	4.41	4.04
2.	Goods/Equipment Combined	2.29	5.47
3.	Services	0.62	0.92
4.	Supplies	2.03	2.18

The above goals are <u>not</u> a quota and apply to DBE participation only.

C. Six Good Faith Efforts:

- 1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities; including placing qualified DBEs on solicitation lists and soliciting them whenever they are potential sources.
- 2. Make information on forthcoming opportunities available to DBEs. Adjust time frames and delivery schedules to encourage participation by DBEs. Advertise for bids and proposals for at least 30 calendar days before bid closing date, unless circumstances require a shorter advertising period.
- 3. Divide total requirements of the project, when economically feasible, to permit maximum DBE participation.

- 4. Encourage contracting with a consortium of DBE's when a contract is too large for one of these firms to handle individually.
- 5. To obtain lists of DBE firms, use the services of the Delaware Department of Transportation (DelDOT), the United States Small Business Administration (SBA), and the Minority Business Development Agency (MDBA) of the U.S. Department of Commerce.
- 6. Require the prime contractor to follow steps 1 through 5, if prime contractor will be sub-contracting parts of the contract work.

D. Loan Recipient's Responsibilities

- 1. Adopt the fair share objectives of the State of Delaware revolving loan fund (SRF) or conduct an Availability Analysis of local DBE resources and negotiate fair share objectives with EPA Region III Office of Policy and Management. Loan recipients who receive a loan of \$250,000 or less are exempt from adopting fair share objectives. This exemption from adopting fair share objectives does NOT exempt a loan recipient from the other DBE responsibilities.
- 2. Include a copy of Appendix A from the DBE regulations in each contract with prime contractor (for construction, engineering, equipment purchases, etc) which is fully or partially funded with a SRF loan subjective to DBE requirements.
- 3. Apply the six good faith efforts during procurement of construction, equipment, services, and supplies in each contract which is fully or partially funded with a SRF loan subjective to DBE requirements.
- 4. Require the prime contractor to complete all applicable items on the lists of Prime Contractor's Pre-award and Post-Award Responsibilities under section E of this subpart. In addition, the request for bids/proposal should define which items need to be included in the bid opening envelope and if necessary, a time frame for submitting additional forms to complete the bid package. State procurement laws and policies may define the bidding requirements that need to be followed by the recipient.
- 5. Report semiannually DBE participation achievements to the State of Delaware SRF using EPA form 5700-52A, even if the reports are negative reports. Reports are due no more than 30 days after March 31 and September 30. Report must be submitted until the final loan payment is made.

- 6. Maintain records documenting compliance achieved with the requirements of the DBE regulations, including documentation of the SRF loan recipient and its prime contractor's good faith efforts. Documents to be maintained include solicitation lists, evidence of contacts with DBEs (copies of letters, telephone memos, e-mails), explanations of decisions, EPA forms 6100-3 and EPA 6100-4, bidders list for designated SRF projects, copy of advertisements and copies of EPA forms 5700-52A.
- 7. Maintain a list of all firms (not just DBEs) that bid or provided a quote on prime contracts and subcontracts. The list must include:
 - (a) Entity's name and point of contact;
 - (b) Mailing address, telephone number, e-mail address;
 - (c) The procurement on which the entity bid or quoted and when the bid or quote was provided:
 - (d) Entity's status as a DBE or non-DBE

The list must be maintained until the end of the project period (e.g., construction period or as long as receiving funds from the SRF).

E. Prime Contractor Pre-Award Responsibilities

- 1. Apply the six good faith efforts, if the prime contractor awards subcontracts.
- 2. Continue to apply the six good faith efforts even if the prime contractor has achieved the fair share objectives.
- 3. Provide EPA form number 6100-2 *–DBE Program Subcontractor Participation Form* and EPA form number 6100-3 *–DBE Program Subcontractor Performance Form* to each DBE subcontractor selected. These forms are included in Appendix D of this subpart or may be downloaded from EPA's Office of Small Business Programs website: http://www.epa.gov/osbp/grants.htm. EPA form number 6100-3 must be completed by each selected DBE subcontractor and submitted back to the prime contractor so the form can be included in the bid package.
- 4. Complete EPA form number 6100-4 DBE *Program Subcontractor Utilization Form*. This form is also included in Appendix D of this subpart or may be downloaded from EPA's Office of Small Business Programs website: http://www.epa.gov/osbp/grants.htm. EPA form number 6100-4 must be completed by the prime contractor and included in the bid package.
- 5. Submit EPA form 6100-3 and 6100-4 to SRF loan recipient with bid package or proposal.

F. Prime Contractor Post-Award Responsibilities

- 1. Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the SRF loan recipient.
- 2. Notify the SRF loan recipient in writing prior to termination for convenience of a DBE subcontractor.
- 3. Employ the six good faith efforts if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason.
- 4. Semiannually (on March 31 and September 30) inform the SRF loan recipient of DBE participation achieved for the required reporting.
- 5. Maintain records documenting compliance with DBE regulations, including documentation of the contractors good faith efforts

G. **DBE Subcontractor's Responsibilities**

- 1. Obtain certification as a DBE. Self certification is NOT acceptable for EPAs DBE program. DBE firms may be certified by the Small Business Administration (SBA), the State of Delaware Department of Transportation (DelDOT), or by a State, locality or independent private organization provided their applicable criteria match SBA applicable Business Development Program regulations.
- 2. May submit EPA form 6100-2-*DBE Subcontractor Participation Form* to Ms. Romona McQueen, EPA region III DBE Coordinator. This form gives a DBE an opportunity to describe the work they received from the prime contractor, how they were paid and any other concerns they may have.
- 3. Must complete EPA form 6100-3-DBE Program Subcontractor Performance Form, and submit it to the prime contractor soliciting services from the subcontractor.

APPENDIX A:

DBE Rule Term and Condition

The following term and condition must be included in each procurement contract signed by an EPA loan recipient and their contractors:

The contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in termination of this contract or other legally available remedies.

Contractor:		
Authorized Representative:		
Date:		

APPENDIX B

Examples of Good Faith Efforts

A. Loan Recipient

- 1. **Effort 1**: Awareness covers a variety of activities, including direct solicitation through mailings, phone calls or e-mails, advertizing through publications (newspapers, journals or Dodge reports) and/or listing on websites. Loan recipients should maintain the solicitation list and a narrative statement which explains how the contacts were selected as part of their DBE documentation.
- 2. **Effort 2**: Soliciting (advertizing) should include a minimum 30-calender days advertizing period. A publisher's affidavit is typically used to document the 30-day advertizing period. If the recipient deviates from this minimum, they should document the reasons for a shorter solicitation period.
- 3. **Effort 3:** Dividing the total project into smaller tasks is an option that needs to be considered on a project by project basis. A \$100 million waste water treatment plant project may have no economic advantage if it is broken down into smaller contracts whereas a \$10 million sewer collection system project may easily be broken down into several contracts. Dividing a project based on contractors discipline such as electrical HVAC (Heating, Ventilation and Air Conditioning) would be a measure of compliance with this effort.
- 4. **Effort 4**: Encouraging contracting with DBE consortium could be as simple as stating this option in the bid advertisement (newspaper notice), solicitation letters to DBEs, and/or in the instruction to bidders section of the specifications.
- 5. **Effort 5**: Contacting the State of Delaware DOT (DelDOT) or any State of Delaware Certifying Office for a list of certified DBE firms would be appropriate.
- 6. **Effort 6**: This part may be complied with by incorporating the SPECIAL NOTICE Appendix C into the bidding documents.

B. Prime Contractors, if Subcontracting

1. **Effort 1**: The prime contract will place DBE's on the solicitation list. A prime contractor may have a limited amount of time to solicit subcontractors because of the 30-day advertisement period for the prime contract. The new regulations require the prime contractor to submit EPA forms 6100-3 and 6100-4 with the bid package. These forms will be part of the contractor's Good Faith Effort documentation.

- 2. **Effort 2**: The prime contractor will determine the time frames and delivery schedules for the contract. The prime contractor may have less than 30-days to solicit subcontractors. Depending upon the type of work being subcontracted, the time frame and delivery schedules can determine the availability of DBEs.
- 3. **Effort 3**: The prime contractor has to determine if the total requirements can be divided to allow smaller DBE firms to compete for the work.
- 4. **Effort 4**: Encouraging contracting with a consortium of DBEs when a subcontract is too large for one DBE firm to handle.
- 5. **Effort 5**: Prime contractors should be in contact with the State of Delaware DOT (DelDOT), Small Business Administration (SBA) and other Certifying Offices to develop their solicitation lists.
- 6. **Effort 6**: Not applicable to prime contractors.

APPENDIX C:

SPECIAL NOTICE: Insert into the Instructions for Bidders

- A. This is to advise bidders of the requirements of this program regarding the "Good Faith Efforts" necessary to be deemed a responsive and responsible bidder. The Federal Register Part 40 CFR 33.301 requires these Good Faith Efforts in procurement actions to assure that Disadvantaged Business Enterprises (DBE) are made aware of procurement opportunities in construction, equipment, services and supplies under EPA financial assistant agreements.
 - 1. Ensure DBE's are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities by placing qualified DBE's on solicitation lists whenever they are potential sources.
 - 2. Establish delivery schedules, where the requirement permits to encourage participation by DBE's. The loan recipient should allow a 30-day minimum advertising period for bidding.
 - 3. Dividing total requirements, when economically feasible, into small tasks or quantities, to permit maximum participation of DBE's.
 - 4. Encourage contracting with a consortium of DBE's when a contract is too large for one of these firms to handle individually.
 - 5. Using the services and of the Delaware Department of Transportation (DelDOT), the United States Small Business Administration (SBA), and the Minority Business Development Agency (MDBA) of the U.S. Department of Commerce.
 - 6. Require the prime contractor, if subcontracts are to be let, to take steps 1-5.

APPENDIX D: EPA FORMS

- A. DBE Subcontractor Participation Form **EPA FORM 6100-2** http://www.epa.gov/sites/production/files/documents/subcontractor_participation_6100_2.pdf
- B. DBE Subcontractor Performance Form- **EPA FORM 6100-3**http://www.epa.gov/sites/production/files/documents/subcontractor_participation_6100_3.pdf
- C. DBE Subcontractor Utilization Form- **EPA FORM 6100-4** http://www.epa.gov/sites/production/files/documents/subcontractor_participation_6100_4.pdf



Subcontractor Name

OMB Control No: 2090-0030 Approved: 8/13/2013 Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Participation Form

An EPA Financial Assistance Agreement Recipient must require its prime contractors to provide this form to its DBE subcontractors. This form gives a DBE¹ subcontractor² the opportunity to describe work received and/or report any concerns regarding the EPA-funded project (e.g., in areas such as termination by prime contractor, late payments, etc.). The DBE subcontractor can, as an option, complete and submit this form to the EPA DBE Coordinator at any time during the project period of performance.

Project Name

	Point of Contact	No. (II known)	Assistance Agreement II	No.	Bid/ Proposal	
					Address	
		Email Address		<u> </u>	Telephone No.	
	Issuing/Funding Entity:			Prime Contractor Name		
Amount Received by Prime Contractor	_		n of Work Received from Construction, Services , E		Contract Item Number	
	рпеѕ	uipment or Sup	Construction, Services , Ed			

EPA FORM 6100-2 (DBE Subcontractor Participation Form)

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



Subcontractor Name

Bid/ Proposal No.

Address

OMB Control No: 2090-0030 Approved: 8/13/2013 Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Performance Form

Point of Contact

This form is intended to capture the DBE¹ subcontractor's² description of work to be performed and the price of the work submitted to the prime contractor. An EPA Financial Assistance Agreement Recipient must require its prime contractor to have its DBE subcontractors complete this form and include all completed forms in the prime contractors bid or proposal package.

Assistance Agreement ID No. (if known)

Project Name

Telephone No.		Email Address			
Prime Contractor Name		Issuing/Funding	Issuing/Funding Entity:		
		•			
Contract Item Number	Description of Work Submitted to the Prime Contractor Involving Construction, Services, Equipment or Supplies		Price of Work Submitted to the Prime Contractor		
DBE Certified By: DOT	SBA	Meets/ exceeds EPA cer	tification standar	ds?	
Other:		YESNOU	nknown		

EPA FORM 6100-3 (DBE Subcontractor Performance Form)

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.



OMB Control No: 2090-0030 Approved: 8/13/2013 Approval Expires: 8/31/2015

Disadvantaged Business Enterprise (DBE) Program DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. An EPA Financial Assistance Agreement Recipient must require its prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name		Project Name			
Bid/ Proposal No.	Assistance Agreement ID No. (if known)		Point of Contact		
Address	1				
Telephone No.		Email Address	ř		
Issuing/Funding Entity:					
I have identified potential DE certified subcontractors		YES			NO
If yes, please complete the ta	ble below. If no, please expla	ain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Ema		Amt D		Currently DBE Certified?
	Continue or	back if needed			

EPA FORM 6100-4 (DBE Subcontractor Utilization Form)

¹ A DBE is a Disadvantaged, Minority, or Woman Business Enterprise that has been certified by an entity from which EPA accepts certifications as described in 40 CFR 33.204-33.205 or certified by EPA. EPA accepts certifications from entities that meet or exceed EPA certification standards as described in 40 CFR 33.202.

² Subcontractor is defined as a company, firm, joint venture, or individual who enters into an agreement with a contractor to provide services pursuant to an EPA award of financial assistance.

SUBPART E

Civil Rights Act of 1964

The contractor and any subcontractors shall not, on the grounds of race, color, or national origin, or sex, exclude from participation in, deny the benefits of, or subject to discrimination any person under any program or activity receiving Federal financial assistance.

SUBPART F

Section 13 of PL 92-500; Under the Federal Water Pollution Control Act; Rehabilitation Act of 1973; PL 93-112; and Age Discrimination Act of 1975

The contractor and any subcontractors shall not on the ground of race, color, national origin, or sex, exclude from participation in, deny the benefits of, or subject to discrimination any person or activity funded in whole or in part with Federal funds. Any prohibition against discrimination on the basis of age under the Age Discrimination Act of 1975, or with respect to any otherwise qualified handicapped individual as provided in Section 504 of the Rehabilitation Act of 1973 shall also apply to any such program of activity.

SUBPART G Required Provisions of 40 CFR Part 31 Subpart C

A. Contracts awarded in excess of \$10,000

- 1. Equal Employment Opportunity Clause
 - a. The contractor agrees to comply with Executive Order 11246, entitled Equal Employment Opportunity, "as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60).

B. Contracts awarded in Excess of \$100,000

- 1. Violating Facilities Clause
 - a. The contractor agrees to comply with all applicable standards, orders or requirements issued under section 306 of the Clean Air Act (42 U.S.C 1857 (h), section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and EPA regulations (40 CFR Part 15) which prohibits the award of this contract to facilities included on the EPA List of Violating Facilities. The contractor shall report violations to EPA.

SUBPART H Suspension and Debarment and Other Responsibility Matters

The Project or Program to which the work covered by this contract pertains to is being assisted by the State of Delaware and the following provision is included in this Contract pursuant to the provisions applicable to such SRF Program. Loan Recipients or engineering representatives are to refer to the "List of parties excluded from Federal Procurement and Nonprocurement Programs" to insure that the contractor or subcontracts are not on this list. A copy of the list may be obtained from the World Wide Web at www.epls.gov or by calling (202) 512-1800 or by writing to this address:

Superintendent of Documents U.S. Government Printing Office Washington, DC 20402

ACCESS TO PROJECT SITE

The Contractor shall allow representatives of U.S. EPA and the State of Delaware DNREC access to the project site.

ADDITIONAL PROGRAM REQUIREMENTS

- 1) AMERICAN IRON AND STEEL Appendix A
- 2) DAVIS-BACON WAGE RATES Appendix B

PROJECT SIGN

The contractor shall provide and erect a sign at a prominent location at each construction site. The sign and location shall be approved by the Environmental Finance Project Engineer. The sign shall be prepared in accordance with the attached detailed instructions. It shall be the responsibility of the Contractor to maintain the sign in good condition throughout the life of the project.

The sign wording shown on Figure 1 is an example only and must be adapted to suit each project. The Contractor shall be responsible for obtaining the appropriate wording from the Engineer.

The project sign for this project is also required to have the EPA Logo. See guidance below:

EPA LOGO & SEAL SPECIFICATIONS FOR SIGNAGE PRODUCED BY EPA ASSISTANCE AGREEMENT RECIPIENTS

SPA's logn is a two-leaved flower, without storm automorphism by the Agency's initials to the right. The EPA logo is the primary identifier for use on construction grant signage. Assistance agreement recipients are antirequired to receive IPA approval to use the EPA logo when used in accordance with the terms and conditions of their assistance agreement award.

The official sear of EPA is circular and is comprised of the two-leaved flower, with stem, entiroled by the TILLE UNITED STATES BRYIRON MENTAL PROTECTION AGENCY. The LPA seal may be usen only when official comparable seals are used and the reopent has received orion written EPA approval.

it is important that the EPAL cgo and seal always de reproduced with consistent high quality. The seal and logo must remain intest and unchanged (for example, don, use the flower from the seal by itself). The logo and seal may only be displayed using either the standard color scheme on a single culor that complements the background where it appears.

COLOR AND SPACING

- The entire logicand seal must appear in black, gray, or any uniform color or knock out white on a dark background. The flower and text may not be different colors. The flower itself may not contain more than une color. The seal can be monotone or full only, pased on the rest of the seals that it's placed with.
- The relationship hotomer the flower portion of the logo and He vertical type should never be shifted or adjusted.



PVS 563



PME 660



Process State at 20%



Process, sline



Krisik ost or A dokudor

PREFERRED USE

Use the preferred presentation of the logo on products that do not have enough space for the full logo with text, it may also be used in the presence of other logos.



SIZE AND LOGO WITH OTHER LOGOS

Pts important the Let i parts of the EPA logo be readable. The EPA logo should not be reproduced at sizes any smaller than 1.0° height on a sign. There are no maximum slot restrictions as only as the dear space requirements are met. The logo should be made the same relative size as the other logos on the signage.







NTRANSIT

SIZE AND SEAL WITH OTHER SEALS

When there are into tiple state or Federal sealistcind, an logos, the use of the EPA seal is appropriate with prior written FPA approaval. The EPA seal should be the same size as the seals that accompany stand should be a minimum of 3 inches in height.







IMPROPER LOGO USAGE













WORKING FOR YOU TO PROVIDE CLEAN WATER FOR TODAY & TOMORROW

NAME OF PROJECT

PROJECT NO. xxxx-xx Name of Engineering Firm

FUNDING PROVIDED BY:

DIVISION OF WATER RESOURCES

Funding Source \$xx,xxx,xxx
Funding Source \$xx,xxx,xxx
Funding Source \$xx,xxx,xxx
Total Project Costs \$xx,xxx,xxx



CONSTRUCTION SITE SIGN REQUIREMENTS

Sign Dimensions: 1200 x 2400 x 19 mm (4' x 8' x 3/4") Exterior Plywood (A-B Grade).

1st four lines are 4 inches in height; remaining lines are 2 inches in height.

DNREC Logo is to be the standard colors – decal to be provided by Environmental Finance.

Black letters on white background with 3 inch border around the perimeter in dark blue. Place bottom of sign 36 inches to 48 inches above grade to permit public viewing.

Provide adequate support for sign.

EXAMPLE Figure 1

American Iron and Steel Requirement P.L. 113-76, Section 436

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an "American Iron and Steel (AIS)" requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of a public water system or treatment works.

The Act states:

Sec. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j–12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

- (2) In this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.
- (b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the "Administrator") finds that—
 - (1) applying subsection (a) would be inconsistent with the public interest;
 - (2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or
 - (3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.
- (c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

- (d) This section shall be applied in a manner consistent with United States obligations under international agreements.
- (e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.
- (f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

The following guidance excerpt has been provided from EPA:

(Complete guidance may be downloaded from: http://water.epa.gov/grants_funding/upload/AIS-final-guidance-3-20-14.pdf)

Covered Iron and Steel Products

11) What is an iron or steel product?

For purposes of the CWSRF and DWSRF projects that must comply with the AIS requirement, an iron or steel product is one of the following made primarily of iron or steel that is permanently incorporated into the public water system or treatment works:

Lined or unlined pipes or fittings;

Manhole Covers;

Municipal Castings (defined in more detail below);

Hydrants:

Tanks;

Flanges;

Pipe clamps and restraints;

Valves:

Structural steel (defined in more detail below):

Reinforced precast concrete; and

Construction materials (defined in more detail below).

12) What does the term 'primarily iron or steel' mean?

'Primarily iron or steel' places constraints on the list of products above. For one of the listed products to be considered subject to the AIS requirements, it must be made of greater than 50% iron or steel, measured by cost. The cost should be based on the material costs.

13) Can you provide an example of how to perform a cost determination?

For example, the iron portion of a fire hydrant would likely be the bonnet, body

and shoe, and the cost then would include the pouring and casting to create those components. The other material costs would include non-iron and steel internal workings of the fire hydrant (i.e., stem, coupling, valve, seals, etc). However, the assembly of the internal workings into the hydrant body would not be included in this cost calculation. If one of the listed products is not made primarily of iron or steel, United States (US) provenance is not required. An exception to this definition is reinforced precast concrete, which is addressed in a later question.

14) If a product is composed of more than 50% iron or steel, but is not listed in the above list of items, must the item be produced in the US? Alternatively, must the iron or steel in such a product be produced in the US?

The answer to both question is no. Only items on the above list must be produced in the US. Additionally, the iron or steel in a non-listed item can be sourced from outside the US.

15) What is the definition of steel?

Steel means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements. Metallic elements such as chromium, nickel, molybdenum, manganese, and silicon may be added during the melting of steel for the purpose of enhancing properties such as corrosion resistance, hardness, or strength. The definition of steel covers carbon steel, alloy steel, stainless steel, tool steel and other specialty steels.

16) What does 'produced in the United States' mean?

Production in the United States of the iron or steel products used in the project requires that all manufacturing processes, including application of coatings, must take place in the United States, with the exception of metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and coating. Further, if a domestic iron and steel product is taken out of the US for any part of the manufacturing process, it becomes foreign source material. However, raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement, and the material(s), if any, being applied as a coating are similarly not covered. Non-iron or steel components of an iron and steel product may come from non-US sources. For example, for products such as valves and hydrants, the individual non-iron and steel components do not have to be of domestic origin.

17) Are the raw materials used in the production of iron or steel required to come from US sources?

No. Raw materials, such as iron ore, limestone, scrap iron, and scrap steel, can come from non-US sources.

18) If an above listed item is primarily made of iron or steel, but is only at the construction site temporarily, must such an item be produced in the US?

No. Only the above listed products made primarily of iron or steel, permanently incorporated into the project must be produced in the US. For example trench boxes, scaffolding or equipment, which are removed from the project site upon completion of the project, are not required to be made of U.S. Iron or Steel.

19) What is the definition of 'municipal castings'?

Municipal castings are cast iron or steel infrastructure products that are melted and cast. They typically provide access, protection, or housing for components incorporated into utility owned drinking water, storm water, wastewater, and surface infrastructure. They are typically made of grey or ductile iron, or steel. Examples of municipal castings are:

Access Hatches;

Ballast Screen;

Benches (Iron or Steel);

Bollards:

Cast Bases:

Cast Iron Hinged Hatches, Square and Rectangular;

Cast Iron Riser Rings;

Catch Basin Inlet;

Cleanout/Monument Boxes;

Construction Covers and Frames;

Curb and Corner Guards;

Curb Openings;

Detectable Warning Plates;

Downspout Shoes (Boot, Inlet);

Drainage Grates, Frames and Curb Inlets;

Inlets:

Junction Boxes;

Lampposts;

Manhole Covers, Rings and Frames, Risers;

Meter Boxes:

Service Boxes;

Steel Hinged Hatches, Square and Rectangular;

Steel Riser Rings;

Trash receptacles;

Tree Grates;

Tree Guards;

Trench Grates; and

Valve Boxes, Covers and Risers.

20) What is 'structural steel'?

Structural steel is rolled flanged shapes, having at least one dimension of their cross-section three inches or greater, which are used in the construction of bridges, buildings, ships, railroad rolling stock, and for numerous other constructional purposes. Such shapes are designated as wide-

flange shapes, standard I-beams, channels, angles, tees and zees. Other shapes include H-piles, sheet piling, tie plates, cross ties, and those for other special purposes.

21) What is a 'construction material' for purposes of the AIS requirement?

Construction materials are those articles, materials, or supplies made primarily of iron and steel, that are permanently incorporated into the project, not including mechanical and/or electrical components, equipment and systems. Some of these products may overlap with what is also considered "structural steel". This includes, but is not limited to, the following products: wire rod, bar, angles, concrete reinforcing bar, wire, wire cloth, wire rope and cables, tubing, framing, joists, trusses, fasteners (i.e., nuts and bolts), welding rods, decking, grating, railings, stairs, access ramps, fire escapes, ladders, wall panels, dome structures, roofing, ductwork, surface drains, cable hanging systems, manhole steps, fencing and fence tubing, guardrails, doors, and stationary screens.

22) What is not considered a 'construction material' for purposes of the AIS requirement?

Mechanical and electrical components, equipment and systems are not considered construction materials. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system. The following examples (including their appurtenances necessary for their intended use and operation) are NOT considered construction materials: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

23) If the iron or steel is produced in the US, may other steps in the manufacturing process take place outside of the US, such as assembly?

No. Production in the US of the iron or steel used in a listed product requires that all manufacturing processes must take place in the United States, except metallurgical processes involving refinement of steel additives.

24) What processes must occur in the US to be compliant with the AIS requirement for reinforced precast concrete?

While reinforced precast concrete may not be at least 50% iron or steel, in this particular case, the reinforcing bar and wire must be produced in the US and meet the same standards as for any other iron or steel product. Additionally, the casting of the concrete product must take place in

the US. The cement and other raw materials used in concrete production are not required to be of domestic origin.

If the reinforced concrete is cast at the construction site, the reinforcing bar and wire are considered to be a construction material and must be produced in the US.

Certification and Compliance

The attached "Contractor's American Iron and Steel Certification" must be executed and included in the bid package. The contractor will supply to the loan recipient manufacturers' certifications for each iron and steel item documenting/asserting that all manufacturing processes occurred in the United States. Such certifications will be submitted with shop drawings.

Waiver Process

The statute permits EPA to issue waivers for a case or category of cases where EPA finds (1) that applying these requirements would be inconsistent with the public interest; (2) iron and steel products are not produced in the US in sufficient and reasonably available quantities and of a satisfactory quality; or (3) inclusion of iron and steel products produced in the US will increase the cost of the overall project by more than 25 percent.

In order to implement the AIS requirements, EPA has developed an approach to allow for effective and efficient implementation of the waiver process to allow projects to proceed in a timely manner. The framework is described in the guidance document found at: http://water.epa.gov/grants_funding/upload/AIS-final-guidance-3-20-14.pdf. Approved and denied waivers may be reviewed at: http://water.epa.gov/grants_funding/aisrequirement.cfm.

De Minimis Materials Waiver

The EPA has granted a nationwide waiver of the AIS requirements of the Consolidated Appropriations Act under the authority of Section 436(b)(1) (public interest waiver) for de minimis incidental components of eligible infrastructure projects. For many of these incidental components, the country of manufacture and the availability of alternatives is not always readily or reasonably identifiable prior to procurement in the normal course of business; for other incidental components, the country of manufacture may be known but the miscellaneous character in conjunction with the low cost, individually and (in total) as typically procured in bulk, mark them as properly incidental. Examples of incidental components could include small washers, screws, fasteners (i.e., nuts and bolts), miscellaneous wire, corner bead, ancillary tube, etc. Examples of items that are clearly not incidental include significant process fittings (i.e., tees, elbows, flanges, and brackets), distribution system fittings and valves, force main valves, pipes for sewer collection and/or water distribution, treatment and storage tanks, large structural support structures, etc.

Appendix A

Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5 percent of the total cost of the total materials used in and incorporated into a project; the cost of an individual item may not exceed 1 percent of the total cost of the total materials used in and incorporated into a project. Contractors who wish to use this waiver should determine the costs of all items installed or supplied for the project. The contractor must retain relevant documentation (i.e., invoices) for each of these items in their project files, and must summarize the items in monthly draw requests to the owner: the total cost of all materials, the total cost of "incidental" materials, and the calculations by which they determined the percentage of incidental products installed or supplied for the project. None of the products specifically listed as "Covered Iron and Steel Products" are incidental. None of the products identified in detail in the technical specifications are considered incidental.

Construction Contract Language

The Contractor acknowledges to and for the benefit of ("Owner") that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund that have statutory requirements commonly known as "American Iron and Steel;" that requires all of the iron and steel products used in the project to be produced in the United States ("American Iron and Steel Requirement") including iron and steel products provided by the Contactor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner that (a) the Contractor has reviewed and understands the American Iron and Steel Requirement, (b) all of the iron and steel products used in the project will be and/or have been produced in the United States in a manner that complies with the American Iron and Steel Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the American Iron and Steel Requirement, as may be requested by the Owner or the State. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Owner resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Owner). While the Contractor has no direct contractual privity with the State, as a lender to the Owner for the funding of its project, the Owner and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

CONTRACTOR'S AMERICAN IRON AND STEEL CERTIFICATION

As the contractor for the	
project, I certify that I have read, understand and	d will comply with the "American Iron and Steel
(AIS)" requirements of section 436 of P.L. 113-	76, Consolidated Appropriations Act, 2014 (Act)
that requires Clean Water State Revolving Loan	Fund (CWSRF) and Drinking Water State
Revolving Loan Fund (DWSRF) assistance recip	pients to use iron and steel products that are
produced in the United States for projects for the	e construction, alteration, maintenance, or repair
of a public water system or treatment works.	
Name (Printed)	Company
Name (Signature)	Date

Davis-Bacon and Related Acts (DBRA) Provisions and Procedures for EPA Funded Projects Executed After October 30, 2009

A Supplement to the CWSRF Program Requirements

January 28, 2010 Updated April 5, 2011 Updated August 2015

I. Introduction

The Davis Bacon Act requires that all contractors and subcontractors performing construction, alteration and repair work under federal contracts in excess of \$2,000 pay their laborers and mechanics not less than the prevailing wage and fringe benefits. Projects executed after October 30, 2009 and are considered "treatment works" are subject to the Davis-Bacon provisions through completion of construction and must comply with the following:

- A. This contract clause pertains to minimum wages for any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole, or in part, from federal funds or in accordance with guarantees of a federal agency or financed from funds obtained by pledge of any contract of a federal agency to make a loan, grant or annual contribution.
 - 1. **Minimum wages**. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor at the following web site www.wdol.gov/dba.aspx, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. A "wage determination" is the listing of wage and fringe benefit for each classification of laborers and mechanics which the Administrator of the Wage and Hour Division of the U.S. Department of Labor has determined to be prevailing in a given area for a particular type of construction (e.g., building, heavy, highway, or residential). The wage determination (including any additional classification and wage rates) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. The poster may be downloaded from: http://www.dol.gov/esa/whd/regs/compliance/posters/fedprojc.pdf
 - 2. **Withholding**. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the regulations, the loan or grant recipient may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.
 - 3. Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. The contractor shall submit weekly for each week in which any contract work is performed, a copy of all payrolls to the recipient, sponsor, or owner. The required weekly payroll information may be submitted in any form

- desired. A contractor may use Form WH–347 which is available from the Wage and Hour Division web site at: http://www.dol.gov/esa/whd/forms/wh347.pdf.
- 4. **Subcontracts.** The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with the requirements above, the requirements identified in the Davis Bacon Terms and Conditions of the EPA assistance agreement, and the contract clauses in 29 CFR 5.5, which can be found at http://ecfr.gpoaccess.gov/
- B. Contract Work Hours and Safety Standards Act. In any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act, the following clauses shall apply:
 - 1. Overtime requirements. No contractor or subcontractor for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. The overtime rate of time and one half does not apply to fringe payments. For work in excess of forty hours, fringe payments should continue to be paid on a per hour worked basis.
 - 2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (B) (1) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States government, for liquidated damages.
 - 3. Withholding for unpaid wages and liquidated damages. The recipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (B) (2) of this section.
 - 4. **Subcontracts.** The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (B) (1) through (4) of this section.
- C) In any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years.

II. Davis Bacon Compliance Procedures

- A. **Before Contract Award** Once it is determined that Davis Bacon wage rates will apply to a construction contract, the recipient's contracting organization must state in the solicitation that Davis Bacon Prevailing wage rates are applicable, and bid packages must include the current Davis Bacon general wage determination for the area where construction will occur. To select the prevailing wage rate determination for a specific locality:
 - (i) Go to website http://www.wdol.gov/
 - (ii) Select "DBA WDs"
 - (iii) Input the State and County where the construction site is located.
 - (iv) Input the type of construction for the project as Building, Heavy, Highway or Residential.
- B. **Before Bid Opening-** The wage determination website should be continually monitored by the contracting organization for modifications. Generally, the most current published wage determination at the time of contract award must be incorporated into the contract. A wage determination update issued less than 10 days before bid opening shall be in effect unless there is not a reasonable time to notify all prospective bidders. In these cases the relevant facts should be documented in the contract file

A convenient way to monitor potential wage determination modifications is to sign up for the alert service as shown on the website http://www.wdol.gov/

C. **After Contract Award** - After solicitation, bid opening and contractor selection by the recipient contracting organization, the prevailing wage determination shall be included in the final construction contract between the recipient, sub recipient or borrower and its contractor.

In the event the construction contract is not awarded within 90 days of the bid opening date, any modification to the prevailing wage determination published prior to award of the contract shall be effective and should be included in the award documents, or by modification to the contract documents.

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

STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS

Prepared by



and

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STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

- A. Whenever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms
 - 1. Addenda—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 - 2. Agreement—The written instrument signed by both Buyer and Seller covering the Goods and Special Services and which lists the Contract Documents in existence on the Effective Date of the Agreement.
 - 3. *Application for Payment*—The form acceptable to Buyer which is used by Seller in requesting progress and final payments and which is accompanied by such supporting documentation as is required by the Contract Documents.
 - 4. *Bid* The offer or proposal of a Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.
 - 5. *Bidder*—The individual or entity that submits a Bid directly to Buyer.
 - 6. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 - 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.
 - 8. *Buyer*—The individual or entity purchasing the Goods and Special Services.
 - 9. Change Order—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Contract Documents or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.

- 10. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
- 11. *Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
- 12. Contract Documents—Those items so designated in the Agreement. Shop Drawings and other Seller submittals are not Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.
- 13. *Contract Price*—The moneys payable by Buyer to Seller for furnishing the Goods and Special Services in accordance with the Contract Documents as stated in the Agreement.
- 14. *Contract Times*—The times stated in the Agreement by which the Goods must be delivered and Special Services must be furnished.
- 15. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Drawings as so defined.
- 16. Effective Date of the Agreement—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
- 17. *Engineer*—The individual or entity designated as such in the Agreement.
- 18. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services but which does not involve a change in the Contract Price or Contract Times.
- 19. *General Requirements*—Sections of Division 1 of the Specifications. The General Requirements pertain to all sections of the Specifications.
- 20. *Goods*—The tangible and movable personal property that is described in the Contract Documents, regardless of whether the property is to be later attached to realty.
- 21. Goods and Special Services—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.

- 22. Laws and Regulations; Laws or Regulations—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
- 23. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to the Contract Times.
- 24. *Notice of Award*—The written notice by Buyer to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Buyer will sign and deliver the Agreement.
- 25. *Notice to Proceed*—A written notice given by Buyer to Seller fixing the date on which the Contract Times commence to run and on which Seller shall start to perform under the Contract.
- 26. *Point of Destination*—The specific address of the location where delivery of the Goods shall be made, as stated in the Agreement.
- 27. *Project*—The total undertaking of which the Goods and Special Services may be the whole, or only a part.
- 28. *Project Manual*—The documentary information prepared for bidding and furnishing the Goods and Special Services. A listing of the contents of the Project Manual is contained in its table of contents.
- 29. Samples—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.
- 30. *Seller*—The individual or entity furnishing the Goods and Special Services.
- 31. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services.
- 32. *Special Services*—Services associated with the Goods to be furnished by Seller as required by the Contract Documents.
- 33. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.
- 34. Successful Bidder—The Bidder submitting a responsive Bid, to whom Buyer makes an award

- 35. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
- 36. Work Change Directive—A written statement to Seller issued on or after the Effective Date of the Agreement and signed by Buyer ordering an addition, deletion, or other revision in the Contract Documents with respect to the Goods and Special Services. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Contract Documents.

B. Intent of Certain Terms or Adjectives:

- 1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Contract Documents.
- 2. The word "non-conforming" when modifying the words "Goods and Special Services," "Goods," or "Special Services," refers to Goods and Special Services that fail to conform to the Contract Documents.
- 3. The word "receipt" when referring to the Goods, shall mean the physical taking and possession by the Buyer under the conditions specified in Paragraph 8.01.B.3.
- 4. The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.
- 5. The word "furnish," when used in connection with the Goods and Special Services shall mean to supply and deliver said Goods to the Point of Destination (or some other

specified location) and to perform said Special Services fully, all in accordance with the Contract Documents.

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

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds

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

2.02 Evidence of Insurance

A. When Seller delivers the executed counterparts of the Agreement to Buyer, Seller shall deliver to Buyer, with copies to each additional insured identified by name in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Seller is required to purchase and maintain in accordance with Article 4.

2.03 Copies of Documents

A. Buyer shall furnish Seller up to five printed or hard copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.04 Commencement of Contract Times; Notice to Proceed

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

2.05 Designated Representatives

A. Buyer and Seller shall each designate its representative at the time the Agreement is signed. Each representative shall have full authority to act on behalf of and make binding decisions in any matter arising out of or relating to the Contract.

2.06 *Progress Schedule*

A. Within 15 days after the Contract Times start to run, Seller shall submit to Buyer and Engineer an acceptable progress schedule of activities, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Contract Documents. No progress payment will be made to Seller until an acceptable schedule is submitted to Buyer and Engineer.

B. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the submittals, tests, and deliveries to completion within the specified Milestones and the Contract Times. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of the work nor interfere with or relieve Seller from Seller's full responsibility therefor. Such acceptance shall not be deemed to acknowledge the reasonableness and attainability of the schedule.

2.07 Preliminary Conference

A. Within 20 days after the Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedule referred to in Paragraph 2.06.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.08 Safety

A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT AND AMENDING

3.01 *Intent*

- A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.
- C. Clarifications and interpretations of, or notifications of minor variations and deviations in, the Contract Documents, will be issued by Engineer as provided in Article 9.
- 3.02 Standards, Specifications, Codes, Laws and Regulations
 - A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

B. No provision of any such standard, specification, manual or code, or any instruction of a supplier shall be effective to change the duties or responsibilities of Buyer or Engineer, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to Buyer or Engineer, or any of their consultants, agents, or employees any duty or authority to supervise or direct the performance of Seller's obligations or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 Reporting and Resolving Discrepancies

A. Reporting Discrepancies:

- 1. Seller's Review of Contract Documents Before the Performance of the Contract: Before performance of the Contract, Seller shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Seller shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Seller discovers or has actual knowledge of and shall obtain a written interpretation or clarification from Engineer before proceeding with the furnishing of any Goods and Special Services affected thereby.
- 2. Seller's Review of Contract Documents During the Performance of the Contract: If, during the performance of the Contract, Seller discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Contract, any standard, specification, manual or code, or of any instruction of any Supplier, Seller shall promptly report it to Engineer in writing. Seller shall not proceed with the furnishing of the Goods and Special Services affected thereby until an amendment to or clarification of the Contract Documents has been issued.
- 3. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Seller had actual knowledge thereof.
- B. *Resolving Discrepancies:* Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - 1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
 - 2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions to the Goods and Special Services or to modify contractual terms and conditions by a Change Order.
- B. Buyer may issue a Work Change Directive providing for additions, deletions, or revisions to the Goods and Special Services, in which case (1) the Contract Price shall be equitably adjusted to account for any reasonable and necessary credits to Buyer for any such deletion, or for costs (including reasonable overhead and profit) incurred by Seller to accommodate such an addition or revision and (2) the Contract Times shall be equitably adjusted to account for any impact on progress and completion of performance. Such adjustments subsequently shall be duly set forth in a Change Order.
- C. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Goods and Special Services may be authorized, by one or more of the following ways:
 - 1. A Field Order;
 - 2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 5.06.D.3); or
 - 3. Engineer's written interpretation or clarification.

ARTICLE 4 - BONDS AND INSURANCE

4.01 *Bonds*

- A. Seller shall furnish to Buyer performance and payment bonds, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Seller's obligations under the Contract Documents. These bonds shall remain in effect until 1) one year after the date when final payment becomes due or 2) completion of the correction period specified in Paragraph 8.03, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Seller shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Seller is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases

to meet the requirements of Paragraph 4.01.B, Seller shall promptly notify Buyer and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 4.01.B and 4.02.

4.02 *Insurance*

- A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.
- B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Seller's obligation to maintain such insurance.
- C. Upon assignment of this Contract, Seller shall comply with the written request of assignee to provide certificates of insurance to assignee.
- D. Buyer does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Seller.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Seller's liability under the indemnities granted to Buyer in the Contract Documents.

4.03 Licensed Sureties and Insurers

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

ARTICLE 5 - SELLER'S RESPONSIBILITIES

5.01 Supervision and Superintendence

A. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Contract Documents. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Contract Documents. Seller shall not be responsible for the negligence of Buyer or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure that is shown or indicated in and expressly required by the Contract Documents.

5.02 Labor, Materials and Equipment

A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Contract.

- B. All Goods, and all equipment and material incorporated into the Goods, shall be as specified, and unless specified otherwise in the Contract Documents, shall be:
 - 1. new, and of good quality;
 - 2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer's instructions; and
 - 3. shop assembled to the greatest extent practicable.

5.03 Laws and Regulations

- A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.
- B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It shall not be Seller's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this provision shall not relieve Seller of Seller's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance shall be the subject of an adjustment in Contract Price or Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 9.06.

5.04 *Or Equals*

- A. Whenever the Goods, or an item of material or equipment to be incorporated into the Goods, are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier or manufacturer, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.
 - 1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or-equal" item.
 - 2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if:

- a. in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and
- b. Seller certifies that if approved: 1) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and 2) the proposed item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraph 5.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or submittal. No "or-equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Contract Documents.
- C. Special Guarantee: Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."
- D. *Data:* Seller shall provide all data in support of any such proposed "or-equal" at Seller's expense.
- 5.05 *Taxes*
 - A. Seller shall be responsible for all taxes and duties arising out of the sale of the Goods and the furnishing of Special Services. All taxes are included in the Contract Price, except as noted in the Supplementary Conditions.
- 5.06 *Shop Drawings and Samples*
 - A. Seller shall submit Shop Drawings and Samples to Buyer for Engineer's review and approval in accordance with the schedule required in Paragraph 2.06.A. All submittals will be identified as required and furnished in the number of copies specified in the Contract Documents. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide.
 - B. Where a Shop Drawing or Sample is required by the Contract Documents, any related work performed prior to Engineer's approval of the pertinent submittal will be at the sole expense and responsibility of Seller.

C. Submittal Procedures:

- 1. Before submitting each Shop Drawing or Sample, Seller shall have determined and verified:
 - a. all field measurements (if required), quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto; and
 - b. that all materials are suitable with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the furnishing of Goods and Special Services.
- 2. Seller shall also have reviewed and coordinated each Shop Drawing or Sample with the Contract Documents.
- 3. Each submittal shall bear a stamp or include a written certification from Seller that Seller has reviewed the subject submittal and confirmed that it is in compliance with the requirements of the Contract Documents. Both Buyer and Engineer shall be entitled to rely on such certification from Seller.
- 4. With each submittal, Seller shall give Buyer and Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both in a written communication separate from the submittal and by specific notation on each Shop Drawing or Sample.

D. Engineer's Review:

- 1. Engineer will provide timely review of Shop Drawings and Samples.
- 2. Engineer's review and approval will be only to determine if the Goods and Special Services covered by the submittals will, after installation or incorporation in the Project, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole.
- 3. Engineer's review and approval shall not relieve Seller from responsibility for any variation from the requirements of the Contract Documents unless Seller has complied with the requirements of Paragraph 5.06.C.4 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Seller from responsibility for complying with the requirements of Paragraph 5.06.C.1.

E. Resubmittal Procedures:

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

5.07 Continuing Performance

- A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.06.A., and the Goods shall be delivered and the Special Services furnished within the Contract Times specified in the Agreement.
- B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraphs 11.03 or 11.04, or as Buyer and Seller may otherwise agree in writing.

5.08 *Seller's Warranties and Guarantees*

- A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed shall be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.
- B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods shall comply with the requirements of Paragraph 5.02.B.
- C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller; or
 - corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Contract Documents and the Contract Documents required the Goods to withstand such conditions;
 - 3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or
 - 4. normal wear and tear under normal usage.
- D. Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Contract Documents:
 - 1. observations by Buyer or Engineer;
 - 2. recommendation by Engineer or payment by Buyer of any progress or final payment;

- 3. use of the Goods by Buyer;
- 4. any acceptance by Buyer (subject to the provisions of Paragraph 8.02.D.1) or any failure to do so;
- 5. the issuance of a notice of acceptance by Buyer pursuant to the provisions of Article 8;
- 6. any inspection, test or approval by others; or
- 7. any correction of non-conforming Goods and Special Services by Buyer.
- E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.
- F. Seller makes no implied warranties under this Contract.

5.09 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer and Engineer, and the officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Contract Documents, provided that any such claim, cost, loss, or damages attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent cause by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.
- B. In any and all claims against Buyer or Engineer or any of their respective assignees, consultants, agents, officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 5.09.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Seller under Paragraph 5.09.A shall not extend to the liability of Engineer and Engineer's officers, directors, partners, employees, agents, and consultants arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

5.10 Delegation of Professional Design Services

- A. Seller will not be required to provide professional design services unless such services are specifically required by the Contract Documents or unless such services are required to carry out Seller's responsibilities for furnishing the Goods and Special Services. Seller shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to the Goods and Special Services are specifically required of Seller by the Contract Documents, Buyer and Engineer will specify all performance and design criteria that such services must satisfy. Seller shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Goods and Special Services designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Buyer and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Buyer and Engineer have specified to Seller all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 5.10, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 5.06.D.2.
- E. Seller shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 6 - SHIPPING AND DELIVERY

6.01 *Shipping*

A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling and any other costs associated with shipment and delivery.

6.02 Delivery

- A. Seller shall deliver the Goods F.O.B. the Point of Destination in accordance with the Contract Times set forth in the Agreement, or other date agreed to by Buyer and Seller.
- B. Seller shall provide written notice to Buyer at least 10 days before shipment of the manner of shipment and the anticipated delivery date. The notice shall also include any instructions concerning special equipment or services required at the Point of Destination to unload and care

- for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours notice by telephone prior to the anticipated time of delivery.
- C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.
- D. Buyer will assure that adequate facilities are available to receive delivery of the Goods during the Contract Times for delivery set forth in the Agreement, or another date agreed by Buyer and Seller.
- E. No partial deliveries shall be allowed, unless permitted or required by the Contract Documents or agreed to in writing by Buyer.

6.03 Risk of Loss

- A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.
- B. Notwithstanding the provisions of Paragraph 6.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods shall remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

6.04 Progress Schedule

- A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.06 as it may be adjusted from time to time as provided below.
 - 1. Seller shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.06) proposed adjustments in the progress schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the progress schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 7. Adjustments in Contract Times may only be made by a Change Order.

ARTICLE 7 - CHANGES: SCHEDULE AND DELAY

7.01 Changes in the Goods and Special Services

- A. Buyer may at any time, without notice to any surety, make an addition, deletion, or other revision to the Contract Documents with respect to the Goods and Services, within the general scope of the Contract, by a Change Order or Work Change Directive. Upon receipt of any such document, Seller shall promptly proceed with performance pursuant to the revised Contract Documents (except as otherwise specifically provided).
- B. If Seller concludes that a Work Change Directive issued by Buyer affects the Contract Price or Contract Times, then Seller shall notify Buyer within 15 days after Seller has received the Work

Change Directive, and submit written supporting data to Buyer within 45 days after such receipt. If Seller fails to notify Buyer within 15 days, Seller waives any Claim for such adjustment. If Buyer and Seller are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 9.06.

- C. Seller shall not suspend performance while Buyer and Seller are in the process of making such changes and any related adjustments to Contract Price or Contract Times.
- 7.02 Changing Contract Price or Contract Times
 - A. The Contract Price or Contract Times may only be changed by a Change Order.
 - B. Any Claim for an adjustment in the Contract Price or Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 9.06.
 - C. If Seller is prevented from delivering the Goods or performing the Special Services within the Contract Times for any unforeseen reason beyond its control and not attributable to its actions or inactions, then Seller shall be entitled to an adjustment of the Contract Times to the extent attributable to such reason. Such reasons include but are not limited to acts or neglect by Buyer, inspection delays, fires, floods, epidemics, abnormal weather conditions, acts of God, and other like matters. If such an event occurs and delays Seller's performance, Seller shall notify Buyer in writing within 15 days of knowing or having reason to know of the beginning of the event causing the delay, stating the reason therefor.
 - D. Seller shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Seller. Delays attributable to and within the control of Seller's subcontractors or suppliers shall be deemed to be delays within the control of Seller.
 - E. If Seller is prevented from delivering the Goods or furnishing the Special Services within the Contract Times due to the actions or inactions of Buyer, Seller shall be entitled to any reasonable and necessary additional costs arising out of such delay to the extent directly attributable to Buyer.
 - F. Neither Buyer nor Seller shall be entitled to any damages arising from delays which are beyond the control of both Buyer and Seller, including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, and other like matters.

ARTICLE 8 - BUYER'S RIGHTS

- 8.01 *Inspections and Testing*
 - A. General:
 - 1. The Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable

tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.

- 2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of reinspection or retesting.
- 3. Buyer shall bear all expenses of inspections and tests that are not specified in the Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 8.01.A.2 immediately above); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.
- 4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Contract Documents specify are to be observed by Buyer prior to shipment.
- 5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination.
- 6. If, on the basis of any inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of said inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 8.02.
- Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests
 or inspections shall constitute acceptance of non-conforming Goods, or prejudice Buyer's
 rights under the Contract.

B. Inspection on Delivery:

- 1. Buyer or Engineer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods and general verification of quantities and observation of apparent condition in order to provide a basis for a progress payment. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.
- 2. Within ten days of such visual inspection, Buyer shall provide Seller with written notice of Buyer's determination regarding conformity of the Goods. In the event Buyer does not provide such notice, it will be presumed that the Goods appear to be conforming and that Buyer has acknowledged their receipt upon delivery.
- 3. If, on the basis of the visual inspection specified in Paragraph 8.01.B.1, the Goods appear to be conforming, Buyer's notice thereof to Seller will acknowledge receipt of the Goods.

C. Final Inspection:

- 1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as indicated, Buyer or Engineer will make a final inspection.
- 2. If, on the basis of the final inspection, the Goods are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods.
- 3. If, on the basis of the final inspection, the Goods are non-conforming, Buyer will identify the non-conformity in writing.

8.02 Non-Conforming Goods and Special Services

A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 8.03, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. Buyer's Rejection of Non-Conforming Goods:

- 1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Contract Times, remove and replace the rejected Goods.
- 2. Seller shall bear all costs, losses and damages attributable to the removal and replacement of the non-conforming Goods as provided in Paragraph 8.02.E.
- 3. Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

C. Remedying Non-Conforming Goods and Special Services:

- 1. If Buyer elects to permit the Seller to modify the Goods to correct the non-comformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.
- 2. If Buyer notifies Seller in writing that any of the Special Services are non-conforming, Seller shall promptly provide conforming services acceptable to Buyer. If Seller fails to do so, Buyer may delete the Special Services and reduce the Contract Price a commensurate amount.

D. Buyer's Acceptance of Non-Conforming Goods:

Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment, Buyer may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods as provided in Paragraph 8.02.E.

E. Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations shall include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.

F. Buyer's Rejection of Conforming Goods:

If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

8.03 Correction Period

A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the earlier of the date on which Buyer has placed the Goods in continuous service or the date of final payment, or for such longer period of time as may be prescribed by Laws or Regulations or by the terms of any specific provisions of the Contract Documents.

ARTICLE 9 - ROLE OF ENGINEER

9.01 Duties and Responsibilities

A. The duties and responsibilities and the limitations of authority of Engineer are set forth in the Contract Documents.

9.02 Clarifications and Interpretations

A. Engineer will issue with reasonable promptness such written clarifications or interpretations of the Contract Documents as Engineer may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. Such written

clarifications and interpretations will be binding on Buyer and Seller. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the Contract Price or Contract Times, either may make a Claim therefor.

9.03 Authorized Variations

A. Engineer may authorize minor deviations or variations in the Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 5.06.C.4, or 2) a Field Order.

9.04 Rejecting Non-Conforming Goods and Special Services

A. Engineer will have the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer will also have authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 8.01 whether or not the Goods are fabricated or installed, or the Special Services are completed.

9.05 Decisions on Requirements of Contract Documents

- A. Engineer will be the initial interpreter of the Contract Documents and judge of the acceptability of the Goods and Special Services. Claims, disputes and other matters relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to Seller's performance will be referred initially to Engineer in writing with a request for a formal decision in accordance with this paragraph.
- B. When functioning as interpreter and judge under this Paragraph 9.05, Engineer will not show partiality to Buyer or Seller and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by Engineer pursuant to this Paragraph 9.05 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 10.07) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.06 *Claims and Disputes*

- A. *Notice*: Written notice of each Claim relating to the acceptability of the Goods and Special Services or the interpretation of the requirements of the Contract Documents pertaining to either party's performance shall be delivered by the claimant to Engineer and the other party to the Agreement within 15 days after the occurrence of the event giving rise thereto, and written supporting data shall be submitted to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time to ascertain more accurate data.
- B. *Engineer's Decision*: Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

- C. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 9.06.B., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- D. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 9.06.C, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Article 13.
- E. If Article 13 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 13, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 9.06.
- G. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the time periods established in this Paragraph 9.06; if so, a written record of such mutual agreement should be made and jointly executed.

ARTICLE 10 - PAYMENT

10.01 Applications for Progress Payments

- A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Contract Documents and also as Buyer or Engineer may reasonably require. The timing and amounts of progress payments shall be as stipulated in the Agreement.
 - 1. The first application for Payment will be submitted after review and approval by Engineer of all Shop Drawings and of all Samples required by the Contract Documents.
 - 2. The second Application for Payment will be submitted after receipt of the Goods has been acknowledged in accordance with Paragraph 8.01.B and will be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights. In the case of multiple deliveries of Goods, additional Applications for Payment accompanied by the required

documentation will be submitted as Buyer acknowledges receipt of additional items of the Goods.

10.02 Review of Applications for Progress Payments

- A. Engineer will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Seller may make the necessary corrections and resubmit the Application.
 - 1. Engineer's recommendation of payment requested in the first Application for Payment will constitute a representation by Engineer, based on Engineer's review of the Application for Payment and the accompanying data, that the Shop Drawings and Samples have been reviewed and approved as required by the Contract Documents and Seller is entitled to payment of the amount recommended.
 - 2. Engineer's recommendation of payment requested in the Application for Payment submitted upon Buyer's acknowledgment of receipt of the Goods will constitute a representation by Engineer, based on Engineer's review of the Application for Payment and the accompanying data Seller is entitled to payment of the amount recommended. Such recommendation will not constitute a representation that Engineer has made a final inspection of the Goods, that the Goods are free from non-conformities, acceptable or in conformance with the Contract Documents, that Engineer has made any investigation as to Buyer's title to the Goods, that exhaustive or continuous inspections have been made to check the quality or the quantity of the Goods beyond the responsibilities specifically assigned to Engineer in the Contract Documents or that there may not be other matters or issues between the parties that might entitle Seller to additional payments by Buyer or Buyer to withhold payment to Seller.
 - 3. Engineer may refuse to recommend that all or any part of a progress payment be made, or Engineer may nullify all or any part of any payment previously recommended if, in Engineer's opinion, such recommendation would be incorrect or if on the basis of subsequently discovered evidence or subsequent inspections or tests Engineer considers such refusal or nullification necessary to protect Buyer from loss because the Contract Price has been reduced, Goods are found to be non-conforming, or Seller has failed to furnish acceptable Special Services.

10.03 Amount and Timing of Progress Payments

A. Subject to Paragraph 10.02.A., the amounts of the progress payments will be as provided in the Agreement. Buyer shall within 30 days after receipt of each Application for Payment with Engineer's recommendation pay Seller the amount recommended; but, in the case of the Application for Payment upon Buyer's acknowledgment of receipt of the Goods, said 30-day period may be extended for so long as is necessary (but in no event more than 60 days) for Buyer to examine the bill of sale and other documentation submitted therewith. Buyer shall notify Seller promptly of any deficiency in the documentation and shall not unreasonably withhold payment.

10.04 Suspension of or Reduction in Payment

- A. Buyer may suspend or reduce the amount of progress payments, even though recommended for payment by Engineer, under the following circumstances:
 - 1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Contract Documents, and
 - 2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.
- B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

10.05 Final Application for Payment

A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer, furnished all Special Services, and delivered all documents required by the Contract Documents, Engineer will issue to Buyer and Seller a notice of acceptance. Seller may then make application for final payment following the procedure for progress payments. The final Application for Payment will be accompanied by all documentation called for in the Contract Documents, a list of all unsettled Claims, and such other data and information as Buyer or Engineer may reasonably require.

10.06 Final Payment

A. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Contract Documents, and that Seller's has fulfilled all other obligations under the Contract Documents, then Engineer will, within ten days after receipt of the final Application for Payment, recommend in writing final payment subject to the provisions of Paragraph 10.07 and present the Application to Buyer. Otherwise, Engineer will return the Application to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the Application for payment. If the Application and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages to which Buyer is entitled.

10.07 Waiver of Claims

- A. The making and acceptance of final payment will constitute:
 - 1. a waiver of all Claims by Buyer against Seller, except Claims arising from unsettled liens from non-conformities in the Goods or Special Services appearing after final payment, from Seller's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Seller's continuing obligations under the Contract Documents; and
 - 2. a waiver of all Claims by Seller against Buyer (other than those previously made in accordance with the requirements herein and listed by Seller as unsettled as required in Paragraph 10.05.A, and not resolved in writing).

ARTICLE 11 - CANCELLATION, SUSPENSION, AND TERMINATION

11.01 Cancellation

- A. Buyer has the right to cancel the Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph shall not constitute a breach of contract by Buyer. Upon cancellation:
 - 1. Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.
 - 2. For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Contract Price of such Goods.

11.02 Suspension of Performance by Buyer

A. Buyer has the right to suspend performance of the Contract for up to a maximum of ninety days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Contract Times and Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

11.03 Suspension of Performance by Seller

- A. Subject to the provisions of Paragraph 5.07.B, Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:
 - 1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Contract; and,
 - 2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

11.04 Breach and Termination

A. Buyer's Breach:

- 1. Buyer shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including but not limited to:
 - a. wrongful rejection or revocation of Buyer's acceptance of the Goods,
 - b. failure to make payments in accordance with the Contract Documents, or
 - c. wrongful repudiation of the Contract.
- 2. Seller shall have the right to terminate the Contract for cause by declaring a breach should Buyer fail to comply with any material provisions of the Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.
 - a. In the event Seller believes Buyer is in breach of its obligations under the Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have seven days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. Seller's Breach:

- 1. Seller shall be deemed in breach of the Contract if it fails to comply with any material provision of the Contract Documents, including, but not limited to:
 - a. failure to deliver the Goods or perform the Special Services in accordance with the Contract Documents,
 - b. wrongful repudiation of the Contract, or
 - c. delivery or furnishing of non-conforming Goods and Special Services.
- 2. Buyer may terminate Seller's right to perform the Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.
 - a. In the event Buyer believes Seller is in breach of its obligations under the Contract, and except as provided in Paragraph 11.04.B.2.b, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have seven days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

b. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 4.01, the notice and cure procedures of that bond, if any, shall supersede the notice and cure procedures of Paragraph 11.04.B.2.a.

ARTICLE 12 - LICENSES AND FEES

12.01 Intellectual Property and License Fees

- A. Unless specifically stated elsewhere in the Contract Documents, Seller is not transferring any intellectual property rights, patent rights, or licenses for the Goods delivered. However, in the event the Seller is manufacturing to Buyer's design, Buyer retains all intellectual property rights in such design.
- B. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Contract Documents.

12.02 Seller's Infringement

- A. Subject to Paragraph 12.01.A, Seller shall indemnify and hold harmless Buyer, Engineer and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any United States or foreign patent or copyright by any of the Goods as delivered hereunder.
- B. In the event of suit or threat of suit for intellectual property infringement, Buyer will promptly notify Seller of receiving notice thereof.
- C. Seller shall promptly defend the claim or suit, including negotiating a settlement. Seller shall have control over such claim or suit, provided that Seller agrees to bear all expenses and to satisfy any adverse judgment thereof.
 - 1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound in any subsequent suit or claim against Seller by Buyer by any factual determination in the prior suit or claim.
 - 2. If Buyer fails to provide Seller the opportunity to defend such suit or claim after written notice by Seller, Buyer shall be barred from any remedy against Seller for such suit or claim.
- D. If a determination is made that Seller has infringed upon intellectual property rights of another, Seller may obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction as necessary to avoid the infringement at Seller's own expense.

12.03 Buyer's Infringement

- A. Buyer shall indemnify and hold harmless Seller, and its officers, directors, partners, employees, agents, consultants, contractors, and subcontractors from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any United States or foreign patent or copyright caused by Seller's compliance with Buyer's design of the Goods or Buyer's use of the Goods in combination with other materials or equipment in any process (unless intent of such use was known to Seller and Seller had reason to know such infringement would result).
- B. In the event of suit or threat of suit for intellectual property infringement, Seller must after receiving notice thereof promptly notify Buyer.
- C. Upon written notice from Seller, Buyer shall be given the opportunity to defend the claim or suit, including negotiating a settlement. Buyer shall have control over such claim or suit, provided that Buyer agrees to bear all expenses and to satisfy any adverse judgment thereof.
 - 1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound in any subsequent suit or claim against Buyer by Seller by any factual determination in the prior suit or claim.
 - 2. If Seller fails to provide Buyer the opportunity to defend such suit or claim after written notice by Buyer, Seller shall be barred from any remedy against Buyer for such suit or claim.

12.04 Reuse of Documents

A. Neither Seller nor any other person furnishing any of the Goods and Special Services under a direct or indirect contract with Seller shall: (1) acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions; or (2) reuse any of such Drawings, Specifications, other documents, or copies thereof on any other project without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer. This prohibition will survive termination or completion of the Contract. Nothing herein shall preclude Seller from retaining copies of the Contract Documents for record purposes.

12.05 Electronic Data

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

- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. The transferring party will correct any errors detected within the 60-day acceptance period.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 13 - DISPUTE RESOLUTION

13.01 Dispute Resolution Method

- A. Either Buyer or Seller may initiate the mediation of any Claim decided in writing by Engineer under Paragraph 9.06.B or 9.06.C before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the Engineer's decision from becoming final and binding.
- B. Buyer and Seller shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the mediation process does not result in resolution of the Claim, then Engineer's written decision under Paragraph 9.06.B or a denial pursuant to Paragraph 9.06.C shall become final and binding 30 days after termination of the mediation unless, within that time period, Buyer or Seller.
 - 1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
 - 2. agrees with the other party to submit the Claim to another dispute resolution process, or
 - 3. if no dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 14 - MISCELLANEOUS

14.01 Giving Notice

A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if: 1) delivered in person to the individual or to a member

of the firm or to an officer of the corporation for whom it is intended, or 2) if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

14.02 Controlling Law

- A. This Contract is to be governed by the law of the state in which the Point of Destination is located.
- B. In the case of any conflict between the express terms of this Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Contract shall apply.

14.03 *Computation of Time*

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

14.04 Cumulative Remedies

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

14.05 Survival of Obligations

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

14.06 Entire Agreement

A. Buyer and Seller agree that this Agreement is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Agreement may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

These Supplementary Conditions amend or supplement the Standard General Conditions for Procurement Contracts, EJCDC P-700 (2010 Edition). All provisions which are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings indicated herein, which are applicable to both the singular and plural thereof.

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

- SC-1.01 Defined Terms
- SC-1.01 Add the following new paragraph immediately after Paragraph 1.01.A.36:
 - 37. Unit Price Goods and Special Services—Goods and Special Services to be paid for on the basis of unit prices.

ARTICLE 2 - PRELIMINARY MATTERS

- SC-2.03 Copies of Documents
- SC-2.03 Delete Paragraph 2.03.A in its entirety and insert the following in its place:
 - A. Buyer shall furnish Seller up to five printed copies of the Contract Documents and one set in electronic format. Additional copies will be furnished upon request at the cost of reproduction.
- SC-2.06 Progress Schedule
- SC-2.06 Delete Paragraph 2.06 in its entirety.
- SC-2.07 Preliminary Conference
- SC-2.07 Delete Paragraph 2.07 in its entirety.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT AND AMENDING

- SC-3.01 Intent
- SC-3.01 Add the following new paragraph immediately after Paragraph 3.01.C:
 - D. Contract Documents are written in the imperative mood. When direction is given, it shall be understood that the direction is given to Seller. For example, the phrase "Provide two pumps" shall be understood to mean "Seller shall provide two pumps."

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SC-3.03 Reporting and Resolving Discrepancies

SC-3.03 Add the following new paragraph immediately after Paragraph 3.03.B.2:

- 3. In determining Contract Price with respect to a conflict, error, or discrepancy within the Contract Documents, the Contract Documents shall be given precedence in the following order with Laws and Regulations being the highest precedence:
 - 1. Laws and Regulations
 - 2. Change Orders
 - 3. Field Orders
 - 4. Written Amendments
 - 5. Agreement
 - Addenda
 - 7. Supplementary Conditions
 - 8. General Conditions
 - 9. Technical Provisions
 - 10. Bid Form
 - 11. Instructions to Bidders
 - 12. Invitation to Bid

ARTICLE 4 - BONDS AND INSURANCE

SC-4.02 Insurance

SC-4.02 Add the following new paragraphs immediately after Paragraph 4.02.E:

- F. Seller shall purchase and maintain such liability and other insurance as is appropriate for the furnishing of Goods and Special Services and as will provide protection from claims set forth below which may arise out of or result from Seller's furnishing of the Goods or Special Services and Seller's other obligations under the Contract Documents, whether the furnishing of Goods and Special Services, or other obligations are to be performed by Seller, any subcontractor or supplier, or by anyone directly or indirectly employed by any of them to furnish the Goods and Special Services, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Seller's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Seller's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by Seller, or (ii) by any other person for any other reason;
 - 5. claims for damages, other than to the Goods, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and

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- 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- G. The policies of insurance so required by this Paragraph 4.02 to be purchased and maintained shall:
 - with respect to insurance required by Paragraphs SC-4.02.F.3 through SC-4.02.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, and their consultants, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 - 2. include at least the specific coverages and be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater;
 - 3. include completed operations insurance;
 - 4. include contractual liability insurance covering Seller's indemnity obligations under Paragraphs 5.09 and 12.02;
 - 5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty days prior written notice has been given to Buyer and Seller and to each other additional insured identified in these Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Seller pursuant to Paragraph SC-4.02.I will so provide);
 - 6. remain in effect at least until final payment and at all times thereafter when ¬Seller may be correcting, removing, or replacing non-conforming Goods in accordance with Paragraph 8.03;
 - 7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Seller shall furnish Buyer and each other additional insured identified in these Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Buyer and any such additional insured of continuation of such insurance at final payment and one year thereafter); and
 - 8. with respect to any delegation of professional design services to Seller pursuant to Paragraph 5.10 of the General Conditions, include professional liability coverage by endorsement or otherwise.
- H. The limits of liability for the insurance required by Paragraph SC-4.02.F shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
 - 1. Workers' Compensation, and related coverages under Paragraphs SC-4.02.F.1 and F.2:

a. State: Statutory

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b. Applicable Federal (e.g., Longshoreman's): Statutory

c. Employer's Liability: \$1,000,000

2. Seller's General Liability under Paragraphs SC-4.02.F.3 through F.6 which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody, and control of Seller:

a. General Aggregate: \$2,000,000

b. Products - Completed

1) Operations Aggregate: \$2,000,000

c. Personal and Advertising

1) Injury: \$1,000,000

2) Each Occurrence: \$1,000,000 (Bodily Injury and Property Damage)

- d. Property Damage liability insurance will provide Explosion, Collapse, and Underground coverages where applicable.
- e. Excess or Umbrella Liability

1) General Aggregate: \$5,000,000

2) Each Occurrence: \$5,000,000

- 3. Automobile Liability under paragraph SC-4.02.F.6:
 - a. Bodily Injury:

1) Each Person \$1,000,000

2) Each Accident \$1,000,000

b. Property Damage:

1) Each Accident: \$1,000,000

2) Combined Single Limit of: \$1,000,000

- Seller shall deliver to Buyer, with copies to each additional insured identified in these Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Buyer or any other additional insured) which Seller is required to purchase and maintain.
- J. If Buyer has any objection to the coverage afforded by or other provisions of the insurance required to be purchased and maintained on the basis of non-conformance with the Contract Documents, Buyer shall notify Seller in writing within 10 days after receipt of the certificates

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or other evidence required by Paragraph SC-4.02.I. Seller shall provide such additional information in respect to insurance as Buyer shall reasonably request.

ARTICLE 5 - SELLER'S RESPONSIBILITIES

SC-5.04 Or Equals

SC-5.04.A Add the following subparagraph immediately after Subparagraph 5.04.A.2.b:

c. Seller provides a line-by-line comparison of the proposed product to the specified product. Line-by-line comparison shall not only include all specified features, but shall also include all other design and/or manufacturing differences between the proposed product and the specified product. Line-by-line comparison shall show no significant design or manufacturing differences that, in the Engineer's opinion, could result in lesser quality, performance, or reliability of the proposed product compared to the specified product.

SC-5.04.B. Add the following subparagraph after Paragraph 5.04.B of the General Conditions:

In order to aid Engineer in determining the equality of a proposed 'or equal' item (when compared to the item actually specified), Seller shall arrange for the performance of any tests requested by Engineer. The nature, extent, tester and supervisions of such tests including engineering costs, shall be borne by Seller. Certified test results shall be mailed directly to Engineer for all tests requested.

SC-5.05 Taxes

SC-5.05 Delete Paragraph 5.05.A in its entirety and insert the following in its place:

A. Seller shall be responsible for all taxes and duties arising out of the sale of the Goods and the furnishing of Special Services. All taxes shall be included in the Contract Price.

SC-5.06 Shop Drawings and Samples

SC-5.06 Delete the first sentence of Paragraph 5.06.A in its entirety and insert the following in its place:

A. Seller shall submit Shop Drawings and Samples to Buyer for Engineer's review and approval in accordance with the schedule set forth in the Agreement.

SC-5.06.D Delete Paragraph 5.06.D.1 in its entirety and insert the following in its place:

1. Review times by Engineer shall be in accordance with Specification 01300 Submittals.

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.E:

F. Seller shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than two submittals. Engineer will record Engineer's time for reviewing subsequent submittals of Shop Drawings, samples, or other items requiring approval and Seller shall reimburse Buyer for Engineer's charges for such time.

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G. In the event that Seller requests a change of a previously approved item, Seller shall reimburse Buyer for Engineer's charges for its review time unless the need for such change is beyond the control of Seller.

SC-5.07 Continuing Performance

- SC-5.07 Delete Paragraph 5.07.A in its entirety and insert the following in its place:
 - A. The Goods shall be delivered and the Special Services furnished within the Contract Times specified in the Agreement.
- SC-5.07 Delete Paragraph 5.07.B in its entirety and insert the following in its place:
 - B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the Contract Times specified in the Agreement during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraphs 11.03 or 11.04, or as Buyer and Seller may otherwise agree in writing

ARTICLE 6 - SHIPPING AND DELIVERY

SC-6.02 Delivery

- SC-6.02 Delete Paragraph 6.02.C in its entirety and insert the following in its place:
 - C. Seller shall not be responsible or bear any costs for unloading the Goods from the carrier.
- SC-6.02 Delete Paragraph 6.02.D in its entirety and insert the following in its place:
 - D. Seller shall not be responsible for assuring that adequate facilities are available to receive delivery of the Goods during the Contract Times for delivery set forth in the Agreement, or another date agreed by Buyer and Seller.

ARTICLE 7 - CHANGES: SCHEDULE AND DELAY

(No Amendments to General Conditions.)

ARTICLE 8 - BUYER'S RIGHTS

(No Amendments to General Conditions.)

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ARTICLE 9 - ROLE OF ENGINEER

SC-9.07 Add the following new paragraph immediately after Paragraph 9.06:

SC-9.07 Determinations of Unit Price Quantities

- A. Engineer will determine the actual quantities and classifications of Unit Price Goods and Special Services furnished by Seller, and the written decisions of Engineer on such matters will be final and binding upon Buyer and Seller (except as modified by Engineer to reflect changed factual conditions or more accurate data), subject to the provisions of Paragraph 9.06.
- B. The Seller shall not furnish Unit Price Goods and Special Services without prior authorization by the Engineer.

ARTICLE 10 - PAYMENT

SC-10.08 Add the following new paragraph immediately after Paragraph 10.07:

SC-10.08 Unit Price Goods and Special Services

- A. Where the Contract Documents provide that all or part of the furnishing of the Goods and Special Services is to be paid for with unit prices, initially the Contract Price will be deemed to include, for all Unit Price Goods and Special Services, an amount equal to the sum of the products resulting from multiplication of the unit price for each separately identified item of Unit Price Goods and Special Services by the estimated quantity of each such item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Goods and Special Services are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Goods and Special Services furnished by Seller will be made by Engineer subject to the provisions of Paragraph SC- 9.07.
- C. Each unit price will be deemed to include an amount considered by Seller to be adequate to cover Seller's overhead and profit for each separately identified item.
- D. Buyer or Seller may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 9.06 if:
 - the quantity of any item of Unit Price Goods and Special Services furnished by Seller differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Unit Price Goods and Special Services; and
 - Seller believes that Seller is entitled to an increase in Contract Price as a result of having incurred additional expense or Buyer believes that Buyer is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

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ARTICLE 11 - CANCELLATION, SUSPENSION AND TERMINATION

(No Amendments to General Conditions.)

ARTICLE 12 – LICENSES AND FEES

SC-12.05 Electronic Data

SC-12.05.A Replace Paragraph SC-12.05.A in its entirety with the following:

A. Unless otherwise stated in the Supplementary Conditions, copies of data furnished by Buyer or Engineer to Seller, or by Seller to Buyer or Engineer that may be relied upon include both printed copies (also known as hard copies) and files in electronic media format (text, data, graphics, or other types). If electronic files and hard copies are furnished, and there is a discrepancy between the electronic files and the hard copies, the hard copies govern.

ARTICLE 13 - DISPUTE RESOLUTION

(No Amendments to General Conditions.)

ARTICLE 14 - MISCELLANEOUS

SC-14.01 Giving Notice

SC-14.01 Add the following sentence at the end of Paragraph SC-14.01.A:

A. Written notice will also be deemed to have been validly given if emailed to the email address provided by the Bidder on the Bid Form.

SC-14.02 Controlling Law

SC-14.02 Replace Paragraph SC-14.02.A in its entirety with the following:

A. The Contract shall be interpreted in accordance with the laws of the State of Delaware. Any suit to enforce the terms hereof or for damages or other remedy for breach hereof shall be brought exclusively in the courts of the State of Delaware for Sussex County and the parties expressly consent to the jurisdiction thereof, acknowledge that jurisdiction and venue are proper therein, and waive any right that they may otherwise have to bring such action in or transfer or remove such suit to the courts of any other jurisdiction.

SC-14-07 Add the following new paragraphs immediately after Paragraph 14.06:

SC-14.07 Legal Requirements

A. Seller shall abide by all regulations and laws that relate to labor that may affect the Furnishing of Goods and Special Services of this Contract, including Federal, State, County, and City regulations.

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- B. The project will be financed through the Delaware Water Pollution Control Revolving Loan Fund, Department of Natural Resources and Environmental Control, State of Delaware and all provisions shall apply. The conditions of the CWSRF loan govern the requirements for this contract. The applicable conditions include compliance with the American Iron and Steel (AIS) requirements and Disadvantaged Business Enterprises (DBE), which are included within the Bidding Documents. Other program requirements not applicable to the contract will not be required.
- C. The Seller shall keep himself fully informed of all laws of the State (in which the Project is located) and of the United States of America, and of all municipal laws and ordinances in any manner affecting the Goods and Special Services of this Contract, and of all orders or decrees of any body or tribunal having any jurisdiction or authority in any manner affecting such Goods and Special Services, and shall be responsible for strict compliance therewith. If any clause of this Contract does not conform to any such law, such clause shall be void insofar as it conflicts with such law, and such law shall be operative in lieu thereof.
- D. Each and every provision of law and clause required by law to be inserted in this Contract should be, is and is deemed to be inserted herein, and if through a mistake or otherwise any such provision is not inserted, or it is not correctly inserted, then upon the application of either party the Contract shall forthwith be amended physically to make such insertion.
- E. If any provision herein shall be as to destroy the mutuality of this Contract or to render it invalid or illegal, then if such provision shall not appear to have been so material that without it the Contract would not have been made by the parties, it shall not be deemed to form part thereof but the balance of the Contract shall remain in full force and effect.

END OF SUPPLEMENTARY CONDITIONS

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SUBMITTALS

PART 1	GENERAL
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1.	01.	SECTION INCLUDES	ò

- Submittal procedures.
- B. Review of submittals.
- C. Shop Drawings.
- D. Manufacturer's instructions.

1.02. SUBMITTAL PROCEDURES

- A. Transmit each required submittal using Engineer accepted form.
- B. Number the submittals as follows:
 - 1. First: Specification section number.
 - 2. Submittal number within the Specification section.
 - 3. Review cycle number.
 - 4. Title of submittal.
 - 5. For example:
 - a. 15073-01-01 Field lock gaskets for DIP (first review cycle)
 - b. 15073-01-02 Field lock gaskets for DIP (second review cycle)
 - c. 15073-02-01 Flange pipe and fittings (first review cycle)
 - d. 15073-02-02 Flange pipe and fittings (second review cycle)
 - e. 15073-02-03 Flange pipe and fittings (third review cycle)
- C. Identify Project, equipment manufacturer, and applicable Specification sections.
- D. Provide signed or initialed certification required by General Condition Article 5.06.C.3. At a minimum, certification shall include the following information:

1.	Submittal Number			
2.	Deviations: None		; As Listed	
2	Deference Cresifie	otion Cootion	 -	

3. Reference Specification Section _

4. Representation is made to Buyer and Engineer that Seller has satisfied the requirements of General Conditions Article 5.06.C.1.a through b, and that the Seller hereby approves this submittal.

Seller	
Signature _	
Date	_

- E. Identify deviations from Contract Documents in accordance with General Conditions Article 5.06.C.4.
- F. Identify product and/or system limitations which may be detrimental to successful performance of the Goods.
- G. Revise and resubmit in accordance with General Conditions Article 5.06.E within 14 days of receipt of review comments from Engineer. Identify all changes made since previous submittal in a cover letter or memorandum.
- H. Items shall not be fabricated or delivered without fully approved Shop Drawings.
- I. Fabrication prior to receiving an "Approved" or "Approved as Corrected No Resubmittal Required" is at Seller's risk.

1.03. REVIEW OF SUBMITTALS

- A. Review of submittals will be in accordance with General Conditions Article 5.06.D.
- B. Review times:
 - 1. Engineer shall be allowed up to 21 days for review of submittals and resubmittals unless otherwise specified in the Contract Documents.
- C. Review Codes:
 - Approved (Seller can commence manufacturing, fabrication, assembly)
 - 2. Approved as Corrected No Resubmittal Required (Seller can commence manufacturing, fabrication, assembly in accordance with the corrections)
 - 3. Approved as Corrected Resubmit Written Responses and Requested Information (Seller can only commence manufacturing, fabrication, assembly of components that are specifically noted as being "Approved" or "Approved as Corrected No Resubmittal Required")
 - 4. Revise and Resubmit (Seller cannot commence manufacturing, fabrication, assembly)
 - 5. Not Approved (Seller cannot commence manufacturing, fabrication, assembly)

1.04. SHOP DRAWINGS

- A. Provide information in accordance with General Conditions Article 5.06 as supplemented herein and as required by individual Specification sections.
- B. Shop Drawing submittals shall include all descriptive data, performance characteristics, material specifications, spare parts list, drawings, piping diagrams, wiring schematics, and shall be complete and accurate to indicate item-by-item compliance with the Contract Documents.

- C. All catalog cuts, manufacturer's specifications, drawings, and verbal descriptions shall be clearly marked to allow identification of the specific products used.
- D. If the submittal deviates from the requirements of the Specifications in any way, it shall be clearly marked in the submittal with the justifying reason stated for evaluation by Engineer.
- E. Electrical and control submittals shall include a verbal description of the functions, metering equipment, alarm points, alarm sequences, and any other specific features provided.
- F. Electric motor submittals shall be in accordance with Section 15170, Motors.
- G. Submit each Shop Drawing in electronic format to the Engineer.

1.05. MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual Specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.
- B. Submit each set of Manufacturer's Instructions in electronic format to the Engineer.
- C. Identify conflicts between manufacturers' instructions and Contract Documents.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 01640

EQUIPMENT - GENERAL

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Submittals.
- B. Performance affidavits.
- C. Equipment design.
- D. Spare parts.
- E. Shop tests.
- F. Services of manufacturer's representative.
- G. Operation and maintenance manuals.
- H. Guarantees.

1.02. SUBMITTALS

- A. Submit Shop Drawings in accordance with Section 01300, Submittals.
- B. Submit performance affidavits with first Shop Drawing submittal.
- C. Installation Certificates.
- D. Certification of Equipment Compliance.
- E. Operation and Maintenance Manuals.
- F. Training Plans:
 - 1. Submit no less than 30 days prior to proposed date for training in accordance with procedures identified in Section 01300, Submittals.
 - 2. Training plan must be approved by Engineer prior to scheduling actual date for training.
 - 3. Provide syllabus with sufficient detail to establish content of training, duration of each topic, and demonstrate adequate content to train Buyer's staff on proper operation and maintenance of equipment.
- G. Written training reports.
- H. Guarantees.

1.03. PERFORMANCE AFFIDAVITS

- A. Provide performance affidavits for items as required in the individual Specifications sections.
- B. Performance affidavits shall certify to Engineer and Buyer, jointly, that manufacturer has examined the Contract Documents and that the equipment, apparatus, process, or system will meet the performance requirements set forth in the Contract Documents in every way. Equipment design, manufacturing, and assembly specifications are an integral part of the performance requirements.
- C. Shop Drawings will not be approved prior to receipt by Engineer of an acceptable performance affidavit.
- D. The performance affidavit shall be signed by an officer (vice president or higher) of the basic corporation, partnership or company manufacturing the equipment, and witnessed by a notary public.
- E. Performance affidavits shall be in the following format:

Addressed to:	(Engineer) and (Buyer)
Reference:	Contract No
(Project)	
Text	"(manufacturer's name) has examined the Contract Documents and
	certifies that the equipment, component, or system proposed meets or
	exceeds contract specifications, is suitable for its intended purpose and
	installation, and will provide satisfactory performance at the design criteria
	specified."
Signature:	Corporate officers shall be vice president or higher (unless statement
	authorizing signature is attached).
Notary:	Signature(s) must be notarized.

1.04. EQUIPMENT DESIGN

- A. Equipment and appurtenances shall be designed in conformity with ANSI, ASME, IEEE, NEMA and other generally accepted applicable standards.
- B. Equipment and appurtenances shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, shipping, handling, installation, all conditions of operation, and as required by the Contract Documents.
- C. All bearings and moving parts shall be adequately protected by bushings or other approved means against wear, and provisions shall be made for adequate lubrication by readily accessible devices.
- D. Details shall be designed for appearance as well as function. Protruding members, joints, corners, gear covers, etc., shall be finished in appearance. All exposed welds on machinery shall be ground smooth and the corners of structural shapes shall be rounded or chamfered.
- E. Machinery parts shall conform within allowable tolerances to the dimensions shown on the Shop Drawings. The corresponding parts of identical machines shall be made interchangeable.
- F. All machinery and equipment shall be safeguarded in accordance with the safety codes of the ANSI, OSHA, and local Laws and Regulations. All rotating shafts, couplings, and other moving parts of equipment shall be provided with suitable protective guards of sheet metal or

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- wire mesh neatly and rigidly supported. Guards shall be removable to provide access for repairs.
- G. Details promoting maintenance, ease of replacing parts, and lubrication shall be a prime consideration in design.
- H. Products shall be designed for corrosion resistance and shall not be constructed of materials which may prohibit ease of maintenance due to corrosion. All fasteners on areas requiring access for maintenance and lubrication shall be Type 316 stainless steel unless otherwise specified. Zinc or cadmium plated fasteners for these areas shall not be used.

1.05. SPARE PARTS

- A. Provide spare parts as required by individual Specification sections.
- Provide spare parts that are identical and interchangeable with original parts.
- For each part (or group of small parts), provide a tag indicating the following:
 - 1. Name and associated tag number(s) of equipment.
 - Name of the part.
 - Manufacturer's name and the date of manufacture.
 - 4. Identification number of the part.

1.06. SHOP TESTS

- A. Conduct shop tests of the equipment indicated in the individual Specification sections.
- B. Engineer reserves the right to witness all Shop Tests. Provide written notice of all Shop Testing at least 2 weeks before it is to be performed.
- C. Demonstrate equipment characteristics, including any specified pressure, duty, capacity, rating, efficiency, performance, function, and other special requirements, comply fully with the requirements of the Contract Documents and that the item will operate in the manner specified.
- D. Submit certified copies of the manufacturer's test data and interpreted results in accordance with the procedures identified for Shop Drawings in Section 01300, Submittals.

1.07. SERVICES OF MANUFACTURER'S REPRESENTATIVE

- A. The equipment manufacturer shall furnish the services of a qualified representative where specified in the individual Specification sections.
- B. Manufacturer's representative shall assist and supervise the Construction Contractor during installation, testing, and operation of equipment where specified in the individual Specification sections.
- C. Provide all certificates specified in the individual Specification sections.

- Installation Certificate: Submit one copy to both Buyer and Engineer of manufacturer's certification of installation indicating that equipment has been installed properly, aligned, lubricated, and is ready for operation.
- Certification of Equipment Compliance: Submit one copy of manufacturer's written
 certification to both Buyer and Engineer that equipment supplied or manufactured by
 their organization has been installed and tested to their satisfaction, and that all final
 adjustments thereto have been made. Certification shall include date of Functional
 Test, as well as a listing of all persons present during testing.

D. Training:

- 1. Manufacturer shall provide services of qualified, factory trained, operation and maintenance personnel to instruct Buyer personnel in proper care, operation, and maintenance of equipment. At a minimum, training shall include:
 - a. Theory of operation.
 - b. Actual operation.
 - c. Mechanical maintenance.
 - d. Electrical maintenance.
 - e. Instrumentation and alarms.
 - f. Optimization of operation.
 - g. Safe operating and working practices and operation of safety devices
 - h. Troubleshooting.
 - i. Demonstration of equipment startup procedures, operation, and shutdown procedures using equipment installed under this Contract.
- 2. Training sessions shall be conducted at the Rehoboth Beach WWTP on weekdays between the hours of 10:00 a.m. and 3:00 p.m. Actual times, locations, and durations of training sessions shall be approved by Buyer.
- 3. Trainer shall provide up to 6 copies of all materials and training manuals required for training.
- 4. Trainer shall develop a written report for each training session. At a minimum, reports shall summarize training sessions, indicate any problems that may have been encountered during operation of equipment, and include a sign-in sheet identifying all attendees. Seller shall submit each training report to Engineer in electronic format.

1.08. OPERATION AND MAINTENANCE MANUALS

A. General:

 Submit operation and maintenance manuals as required by the individual Specification sections in accordance with the procedures identified in Section 01300, Submittals.

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- Draft operation and maintenance manuals must be delivered prior to, or at the same time as delivery of Goods to the Point of Destination. Draft operation and maintenance manuals may be submitted in electronic format.
- 3. All comments generated by Engineer during review of draft operation and maintenance manuals must be adequately addressed prior to submission of final operation and maintenance manuals.
- 4. Prior to final payment, provide three printed copies and one electronic copy of the final operation and maintenance manual. The final operation and maintenance manual shall include all required operation and maintenance information consolidated into one manual with multiple volumes. The final operation and maintenance manual shall include testing and Startup results where applicable.
- B. Manual Preparation: Manuals shall include operation and maintenance information on all systems and items of equipment. The data shall consist of catalogs, brochures, bulletins, charts, schedules, approved Shop Drawings corrected to as-built conditions and assembly drawings and wiring diagrams describing location, operation, maintenance, lubrication, operating weight, lubrication charts and schedules showing manufacturer's recommended lubricants for each rotating or reciprocating unit, and other information necessary for Seller to establish effective operating and maintenance programs. The following shall also be included:
 - Title page giving name and location of facility, and Specification section where described.
 - 2. Equipment cover sheet listing the supplied equipment manufacturer's name, brand name, model numbers, serial numbers, equipment installer (provide contact name, address, phone and fax numbers, and e-mail address), equipment Supplier (provide contact name, address, phone and fax numbers, and e-mail address), and equipment manufacturer (provide contact name, address, phone and fax numbers, e-mail address, and website address).
 - Approved Shop Drawings of each piece of equipment.
 - 4. Manufacturer's cut sheets and dimensional drawings of each piece of equipment, and details of all replacement parts.
 - 5. Manufacturer's erection, operation, and maintenance instructions for all equipment and apparatus, and complete listing of nameplate data.
 - 6. Complete electrical and control schematics with labeled terminations for all individual pieces of equipment and systems including one line diagrams, schematic or elementary diagrams, and interconnection and terminal board identification diagrams.
 - 7. Complete piping and interconnecting drawings.
 - 8. Complete parts list with parts assembly drawings (preferably by exploded view), names and addresses of spare parts suppliers, recommended list of spare parts to be kept "in stock" and sample order forms. Lead time requirements for ordering parts shall be estimated.
 - 9. Instructions with easily understood schematics or diagrams for disassembling and assembling equipment for overhaul and repair.
 - 10. Shop testing results where applicable.

- 11. Manufacturer's Installation Certificate.
- 12. Manufacturer's Certification of Equipment Compliance.
- 13. Field testing/performance reports where applicable.
- 14. Manufacturer's Special Guarantee.
- 15. Information not applicable to a specific piece of equipment installed on this Project shall be removed from or crossed out on the submissions.
- 16. Illegible data due to any cause, including poor copy quality or reduction, will not be accepted. Manuals with illegible data will be rejected and returned for correction.
- C. Organization: O&M Manuals shall be organized as follows:
 - All instructions shall be bound into a series of identical three or four inch, heavy-duty, three ring binders, all black covers with transparent exterior leaves for inserting cover pages. Where necessary, more than one binder may be used to assemble the data. When two or more binders are used, each book or volume shall be titled to indicate its particular book or volume number and the total number of volumes per set (i.e., Volume 2 of 12). The Seller shall plan manual content and shall "break" the data between volumes at reasonable locations so no loss in continuity of data presentation occurs.
 - 2. Sections shall be listed in a Table of Contents at the front of each volume.
 - 3. Binders shall be Vernon Line Royal No. R-6372 or R-372, Sparco Brand Slanted Ring Presentation Binder 68140, Universal D-Ring View Binder 20747, K&M Division VS11-40, or equal. Page weight shall be at least 24 grams per square meter.
 - 4. Shop Drawings 24-inches by 36-inches in size shall be folded to approximately 12-inches by 9-inches with drawing title box exposed along either edge. Shop Drawings descriptive of a single item of equipment shall be grouped together. All Shop Drawings shall be placed in accordion-type folders, and fully indexed on the outside of the folders in a neat and uniform manner.
 - All Shop Drawings included in the binders and/or folders shall be those previously submitted for review and approval and shall include the Engineer's review comment sheet.
 - 6. Electronic manual files shall be submitted in Adobe Acrobat Reader (.PDF) format. Any CDs and covers furnished by the Seller shall be labeled with the Project name, Supplier, equipment identification, and Specification section. CDs shall be provided in individual hard plastic cases.

1.09. GUARANTEES

A. Special Guarantees: Provide both Buyer and Engineer one copy of special guarantees required in individual Specification sections. Special guarantees shall be made out to the City of Rehoboth Beach.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

END OF SECTION

SECTION 11380

CLOTH DISC FILTRATION EQUIPMENT

PART 1 GENERAL

1.01. DESCRIPTION OF WORK

- A. Furnish two cloth disc filters complete with tank, support frame, drive mechanism, backwash cleaning system with pumps, automatic control system and all other required accessories in accordance with the Contract Documents.
- B. The cloth disc filtration equipment shall be installed by a Construction Contractor in the two existing concrete tanks in Building B-2.

1.02. NOMENCLATURE

- A. Nameplates, Shop Drawings, operations and maintenance manuals and all other Project documentation shall conform to Project nomenclature as follows:
 - 1. Cloth Disc Filter 1
 - Cloth Disc Filter Control Panel 1
 - b. Cloth Disc Filter Drive 1
 - c. Type A units:
 - 1) Backwash Pump 1
 - d. Type B units:
 - 1) Backwash/Waste Pump 1-1
 - 2) Backwash/Waste Pump 1-2
 - 2. Cloth Disc Filter 2
 - a. Cloth Disc Filter Control Panel 2
 - b. Cloth Disc Filter Drive 2
 - c. Type A units:
 - 1) Backwash Pump 2
 - d. Type B units:
 - 1) Backwash/Waste Pump 2-1
 - 2) Backwash/Waste Pump 2-2

1.03. PERFORMANCE REQUIREMENTS

- A. The two cloth disc filters shall satisfy the specified performance requirements without upstream flow controls. Flow distribution will be controlled by the effluent weirs provided in each cloth disc filter.
- B. The two cloth disc filters shall have a combined capacity sufficient for the following design influent flows:
 - 1. Current average winter flow: 0.7 MGD
 - 2. Design maximum month flow: 3.4 MGD
 - Peak flow: 7.2 MGD.
- C. Maximum hydraulic loading rate on the filter cloth: 5 gpm per square foot of effective media surface at a flow of 3.6 MGD per unit.
- D. The cloth disc filters shall meet the specified effluent quality criteria based on the design influent loading criteria:
 - Peak influent Total Suspended Solids (TSS): 45 mg/L
 - 2. Average influent TSS: 30 mg/L
 - 3. Average daily effluent TSS: Less than 15 mg/L (monthly average)
 - 4. Maximum daily effluent TSS: Less than 23 mg/L
- E. The cloth disc filters shall fit within the plant's hydraulic profile:
 - 1. Cloth Disc Filter effluent weir elevation: 10.20 EL
 - 2. Maximum water surface elevation in the influent chambers of the cloth disc filters, at peak flow, with no bypass: Less than or equal to 12.10 EL
 - 3. Maximum water surface elevation in the influent chambers of the cloth disc filters, at peak flow, with 100% bypass at the upstream external bypass weir (the equipment shall be designed to accommodate this water surface elevation without internal bypass, overtopping, or submergence of any equipment): 0.7 feet above the maximum water surface elevation in the influent chambers of the cloth disc filters, at peak flow, with no bypass.
- F. Backwash waste flow from each cloth disc filter shall be no greater than 151 gpm.

1.04. SUBMITTALS

- A. Provide in accordance with Section 01300, Submittals; Section 01640, Equipment General; and as supplemented herein. Submittals shall include, but not be limited to, the following:
 - 1. Equipment Shop Drawings (additional requirements):
 - a. Bill of Materials
 - b. Process and Instrumentation Diagram

- c. General arrangement for recommended installation configuration in the existing concrete tanks, including:
 - 1) Elevation level for the top of the equipment pads to be constructed in the existing tanks to accommodate the cloth disc filters.
 - Extents and elevations of the access platforms recommended for access to the cloth disc filters.
- d. Hydraulic diagram showing all weir elevations and water surface elevations for all design flows listed in the Performance Requirements. Include the water surface elevation for 100% bypass of peak flow at the upstream external bypass weir.
- e. Design criteria including number of discs, disc diameter, effective filter area per disc, hydraulic loading rates for design influent flows, and solids loading rates for design influent flows and influent loading criteria.
- 2. Control System Shop Drawings (additional requirements):
 - a. Submittals for equipment and materials shall be clearly marked or noted with specific features, standard options, and wiring diagrams to indicate compliance with Contract Documents. Terminal board wiring diagrams including terminal numbers and conductor color codes shall be indicated.
 - Submittals shall include verification that panels shall be fabricated to UL 508A standards and labeled as such. Submit short circuit current ratings (SCCR) for each individual control panel assembly.
 - c. Control panel assembly drawings detailing panel cut-out locations and sizes, back panel and device layout and locations.
 - d. Provide the following drawings for each control panel. Label all components with manufacturer and complete model numbers on the drawings. Typical drawings are not acceptable.
 - 1) Scaled enclosure layout drawings in 11-inch by 17 inch format, detailing locations of all components on the subpanel, door, and all other enclosure faces. Label each view as "Enclosure Door". "Enclosure Subpanel", "Enclosure Side", etc. Drawing shall display layout of completed assemblies, including, but not limited to, PLC backplane, PLC I/O modules, empty slots, UPS, Ethernet switches, terminal blocks, installed spare equipment, power supplies, power line isolators, surge suppression, grounding lugs, wireway, disconnect switches, fuses, control relays, acceptable regions for conduit penetrations of both AC and DC wiring separately, and external power. Illustrate handles, hasps, hinges, and dimensions of exterior mounted devices. Identify equipment manufacturer and model numbers by placing a number next to the piece of equipment on the drawing and cross-referencing with the Bill of Materials. In addition to the Bill of Materials cross-reference labeling, label PLC I/O modules on the drawing with the manufacturers complete model numbers.
 - 2) Elementary diagram drawings in 11-inch by 17-inch format, detailing all enclosure electrical components including, but not limited to,

surge suppression, power supplies, fuses, indicating lights, switches, and control relays. Diagrams shall include terminal point designations, line reference numbers, and wire numbers. All wires shall maintain the same wire number for the entire contiguous segment of wire. Diagrams shall illustrate all network cabling and DC and AC electrical distribution. Drawing shall illustrate all available instrument terminations, both used and unused, and be labeled with the manufacturer's terminal point label as shall be found on the installed instrument. Provide a legend on this sheet for all symbols and general notes used on this sheet and on the PLC I/O module detail drawings.

- e. Provide PLC submittals, where applicable, including:
 - 1) Memory map of data registers used in transferring data to the plant process control system (PCS).
 - Catalog cuts and user's manuals for all PLC system components.
 - 3) Screen captures of all HMI displays.
 - Detailed operating description.
 - 5) Other materials, as required, to fully describe the control panel operation.
 - 6) Updated hard and soft copies of all program files shall be submitted to the buyer for inclusion with record document submittals.
 - a) Comment PLC source listing with description of the function of each rung of ladder logic.
- f. Bill of Materials for all equipment and accessories.
- g. Manufacturer's catalog information for all components and accessories.
- h. Detailed "sequence of operation" controls narrative which completely describes the operation of the control system. Written narrative shall be provided with sufficient detail to demonstrate complete operation of the system. Controls narrative shall be specific to this Project. (Generic descriptions from catalog and/or O&M data is not acceptable) Controls narrative shall include the following as a minimum:
 - 1) System Manual Operation including speed control adjustments (if applicable).
 - 2) System Automatic Operation
 - 3) Control Sequencing, Lead/Lag Operation
 - 4) Alternation and Failover Sequencing
 - 5) System Alarm Monitoring
 - 6) System Alarm/Acknowledge/Reset Procedures
 - 7) Power Outage Shutdown and Power Restoration Sequencing

- 8) System Diagnostics
- 3. Performance Affidavits.
- 4. Shop test results.
- 5. Manufacturer's Instructions to instruct Buyer in required maintenance activities to maintain goods in operating condition during storage and Manufacturer's Instructions for installation.
- 6. Manufacturer's Installation Certificate.
- 7. Certification of Equipment Compliance.
- 8. Special guarantees.
- 9. Operations and maintenance manuals.

1.05. SPARE PARTS

- A. Furnish the following spare parts in accordance with the Section 01640, Equipment General, in clearly identified dust-proof containers:
 - 1. 8 backwash spray nozzles (Typa A units).
 - 2. 8 backwash shoes (Type B units).
 - 3. Filter panels for replacement of 50% of the filter panels in one of the furnished cloth disc filters.
 - 4. Non-disc drum-blinding units for blinding of 25% of the filter panel connections in one of the furnished cloth disc filters.

1.06. EQUIPMENT WARRANTIES AND SPECIAL GUARANTEES

A. The equipment manufacturer shall sign and submit the special guarantee attached to the end of this Section in accordance with Section 01640, Equipment - General.

PART 2 PRODUCTS

2.01. MANUFACTURERS

- A. Aqua-Aerobic Systems, Inc. AquaDisk
- B. Evoqua Water Technologies Forty-X Disc Filter
- C. Kruger, Inc. Hydrotech Discfilter

2.02. EQUIPMENT DESIGN

- A. General
 - 1. Cloth Disc Filter shall be one of the following types:
 - a. Type A: Partially Submerged, Inside-to-Outside Flow, Cloth Disc Filter

- b. Type B: Submerged Outside-to-Inside Cloth Disc Filter
- 2. All fabricated metal shall be minimum grade AISI 304 stainless steel, unless otherwise stated in this specification.
- The disc filtration units shall be fully preassembled and factory inspected prior to shipping the filtration units. Drive motor and backwash pump are to be installed at factory and provided integral to filtration unit. Pumps may be shipped separately for Type B units.
- 4. Flange connections to be furnished with AISI 304 stainless steel pipe and weld neck type flanges.
 - a. Influent Connection Pipe Size: 20" diameter
 - b. Effluent Connection Pipe Size: 20" diameter
- 5. One unit shall be designed for left hand side maintenance access. The second unit shall be designed for right hand side maintenance access.

B. Center Drum

- 1. The center drum shall be a water-tight, one piece, welded, structural AISI 304 stainless steel fabrication, open at one end to allow the influent water to enter (Type A), or exit (Type B), and having openings to the filter discs.
- 2. Lubrication of the center drum shall have appurtenances to allow lubrication to be completed from outside of the unit and without draining of the unit.
- 3. The center drum shall be sealed to prevent influent water from passing through the unit without being filtered.

C. Disc Assembly

- The filter assembly shall be composed of modular and removable discs. Each disc shall consist of disc segments that can be easily mounted or dismounted as required. Each disc shall be assembled and secured to the center drum using conventional stainless steel hardware and gaskets.
- 2. The disc filter assembly shall be designed such that less than a full complement of discs may be provided, and that unused disc locations on the central drum may be blinded by a non-disc drum-blinding arrangement. Each disc shall be easily mounted or dismounted, or added to replace a non-disc drum-blinding arrangement, as required. Each disc assembly shall be secured to the center drum using conventional stainless steel hardware and gaskets which are not shared by any other disc.
- 3. Filter media shall be mounted on both sides of the disc segments.
- 4. Nominal media pore size shall be 10 to 15 microns.
- 5. The replacement of filter media must be possible from outside the filter tank.
- D. Support Frame with Enclosed Tank and Cover
 - The support frame and tank shall be one piece, welded, structural 304 stainless steel.
 Onto the support frame shall be welded 304 stainless steel mounting structures for all appurtenances, including the back-wash pump, drive gear box, trough end supports

- and center drum bearings. Tank thickness shall be a minimum of 1/8" thickness. Carbon steel construction shall not be accepted.
- The cloth disc filter unit shall include a cover that provides complete coverage of the tank. The cover shall incorporate hinged, sliding or removable sections that may be manually opened by plant operators without the aid of lifting equipment, tools or mechanisms that are not integral to the unit. The openings shall allow operator access to all of the discs (all units) and backwash nozzles (Type A units only), and be sufficient for all inspection, operation and maintenance activities recommended by the manufacturer. Covers shall hold themselves closed by their own weight. The cover and openable sections shall be constructed of 304 stainless steel or fiber reinforced plastic. Rails in which covers slide shall be low-friction UHMW polyethylene. Hinged lids shall include an assembly that provides the following: mechanical advantage to assist personnel in lifting the lid, full support of the lid when in the open position, and mechanical resistance/support when lowering the lid.
- 3. A portion of the tank may be covered by flat 304 stainless steel checkerplate, suitable for supporting maintenance workers and equipment, if this portion does not cover any of the discs or backwash nozzles, and is not required to be opened for any of the inspection, operation and maintenance activities recommended by the manufacturer. The checkerplate shall be designed for a live load of at least 100 PSF.
- 4. The tank shall be furnished with a manually operated, brass, ball-type, drain valve designed to allow complete tank drainage. Each unit shall also be furnished with fittings as necessary to drain the center drum, influent chambers and effluent chambers into the tank.

E. Backwash Cleaning System

1. The cloth disc filter shall be equipped with a non-motorized system for backwashing the filter media on both sides of each disc as the center drum rotates.

2. Type A:

- a. The backwash system shall comprise of 304 stainless steel piping, and nozzles from Spraying Systems Co., Bex, Quick TeeJet or approved equal. Each nozzle shall consist of a tip, mounting base for quick removal, body and seals. A ball valve and pressure gauge shall be installed in the backwash header piping downstream of the backwash pump to enable regulation to the desired nozzle pressure. The pressure gauge shall be installed with a snubber and a spring loaded ball valve.
- b. The cloth disc filter shall be equipped with a backwash-collecting trough for removing backwash water and filtered solids. The trough shall be constructed of 304 stainless steel. The trough length shall be sufficient to capture backwash water and filtered solids from all filter discs. The trough shall be elevated to prevent contact with the influent stream. The backwash water and filtered solids shall leave the collecting trough by gravity via a backwash outlet connection. Piping from the trough to the outlet connection shall be 304 stainless steel. The backwash outlet connection shall be a 6" flanged end.
- c. Each cloth disc filter shall have a factory-installed, low-pressure Grundfos backwash pump to provide pressurized water to the backwash nozzles, with pressure delivered to the nozzles greater than 100 psi. The backwash pump shall be a stainless steel multi-stage centrifugal pump with its suction located in the filtrate chamber and the motor mounted directly to the top of the pump. The pump discharge chamber, motor stool and pump shaft coupling shall be

constructed of cast iron. The impellers, pump shaft, diffuser chambers, outer discharge sleeve and impeller seal rings or seal ring retainers shall be constructed of stainless steel. The impellers shall be secured directly to the pump shaft by means of a splined shaft arrangement. Pump shall be equipped with an O-ring, fixed seal driver mechanical seal assembly with Cemented Tungsten Carbide/Cemented Tungsten Carbide seal faces and FKM rubber O-rings mounted in stainless steel components. The motor shall be supplied by the pump manufacturer integral with the pump. Filtered water shall be discharged from the pump to the backwash header constructed of 304 stainless steel.

d. The backwash cleaning system shall enable maintenance and replacement of spray nozzles to be completed from outside of the tank without disassembly of the manifold or headers.

Type B:

- a. The backwash cleaning system shall incorporate backwash/waste pumps that draws filter effluent through the cloth as the media rotates past fixed backwash shoes, thereby removing accumulated solids from the cloth surface. Each disk shall be cleaned by a minimum of two backwash shoes, one on each side. The backwash shoes shall remain in a fixed position. Springs shall be used to maintain the proper tensioning of the backwash shoe against the media surface.
- b. The backwash shoes shall be in direct contact with the cloth to ensure effective media cleaning.
- c. The backwash system shall include 304 stainless steel backwash shoe supports with UHMW backwash shoes, 316 stainless steel springs reinforced PVC flexible hose with stainless steel hose clamps, 304 stainless steel backwash manifolds.
- d. Each cloth disc filter shall be furnished with a backwash/waste pump assembly that shall include at least backwash/waste pumps, valves and gauges as follows. The backwash/waste pumps, valves and gauges shall be furnished by the Seller and shipped loose for installation by the Construction Contractor:
 - The backwash/waste pumps shall be Gorman Rupp model 12B20-B, externally mounted centrifugal pumps. Backwashing shall be initiated by tank water level, timer, or manually through the operator interface. Operator shall have the ability to specify backwash time interval elapses through the operator interface. Seller shall furnish at least one backwash/waste pump for every four (4) filter discs. No more than four (4) filter discs may be connected to any one backwash/waste pump.
 - Each backwash/waste pump shall be furnished with two (2) manually operated ball valves for isolation purposes. Ball valves shall be threaded, two-piece, full port, with brass body. Valves and shall be Nibco or approved equal.
 - 3) Each cloth disc filter shall be furnished with two (2) recirculation ball valves. Ball valves shall be threaded, two-piece, full port, with brass body. Valves and shall be Nibco or approved equal.

- 4) Each backwash/waste pump shall be furnished with one vacuum gauge. The vacuum gauges shall have a minimum 2.5" dial with all stainless steel welded construction, 0-30" Hg vacuum range, liquid filled, 1/4" NPT process connection, 316 stainless steel bourdon tube and tip material, and bronze socket material, Ashcroft or approved equal.
- 5) Each backwash/waste pump shall be furnished with one (1) pressure gauge. The pressure gauges shall have a 2.5" dial with a black painted steel case, 0-15 psi, heat resistant polycarbonate window, 1/4" NPT process connection, "C" shaped bronze bourdon tube, and brass socket material, Ashcroft or approved equal. The pressure gauge shall be installed with a snubber and a spring loaded ball valve.
- 6) Each cloth disc filter shall be furnished with four (4) 2" backwash valve(s). Valve(s) shall be 3 piece, grooved end, ASTM A351 Grade CF8M stainless steel body, 316 stainless steel ball and stem, fullport, installed with painted cast iron Victaulic couplings, with a 115 volt, single phase, 60 Hz, open / close service electric actuator. Valve / actuator combination shall be TCI / RCI (RCI, a division of Rotork), Nibco, or equal. Valve actuator shall include a compartment heater and limit switch feedback to the microprocessor in both the open and closed positions.
- 7) Each cloth disc filter shall be furnished with one (1) 2" solids waste valve. Valve shall be 3 piece, grooved end, ASTM A351 Grade CF8M stainless steel body, 316 stainless steel ball and stem, fullport, "installed with" painted cast iron Victaulic couplings, with a 115 volt, single phase, 60 Hz, open / close service electric actuator. Valve / actuator combination shall be TCI / RCI (RCI, a division of Rotork), Nibco, or equal. Valve actuator shall include a compartment heater and limit switch feedback to the microprocessor in both the open and closed positions.
- e. Each cloth disc filter shall be furnished with a solids waste removal system in the floor of the filter tank. The manifold shall be designed to siphon settled solids waste for discharge through the backwash/waste pumps. The operation of the solids waste removal system shall be automatic with user adjustable intervals and duration through the operator interface.

F. Drive Mechanism

- 1. A drive assembly shall be incorporated to rotate the center drum and disc assembly during backwash cycles.
- 2. The drive assembly shall be SEW Eurodrive worm gear or equal and shall consist of a gear motor, nylon and stainless steel chain and non-metallic sprockets.
- 3. Reducer design end rating shall equal or exceed AGMA requirements. Speed reducers shall be selected for not more than AGMA class 1 service.
- The drive chain shall be suitable for operation in a partially submerged condition and in a wetted environment.

2.03. ACCESSORIES

- 1. Acid cleaning system (Type A)
 - a. Provide the manufacturers standard acid cleaning system unit designed for use with the backwash cleaning system.

2.04. MOTORS AND DRIVES

A. Motors and drives shall be furnished by the equipment manufacturer and shall be designed specifically for use with the equipment provided.

B. Motor Parameters:

ITEM No.	MOTOR PARAMETERS	CLOTH DISC FILTER DRIVE	BACKWASH PUMP – TYPE A	BACKWASH/WASTE PUMP – TYPE B
1.	Maximum Allowable Motor Horsepower	2 hp	20 hp	2 hp
2.	Motor Selection Type	Horizontal	Vertical Immersion	Horizontal
	Special Applications	Inverter Duty (if VFD provided)	None	None
3.	Maximum Motor Speed	1800	3600	1800
4.	Minimum Allowable Motor Efficiency at full speed	85.5%	90.0%	85.5%
5.	NEMA Design	В	В	В
6.	Duty	Continuous	Continuous	Continuous
7.	Insulation	Class F	Class F	Class F
8.	Voltage, Phase, and Hertz	460V, 3 Phase, 60 Hz	460V, 3 Phase, 60 Hz	460V, 3 Phase, 60 Hz
9.	Service Factor	1.0	1.15	1.15
10.	Motor Enclosure	TEFC	TEFC	TEFC
11.	Protection	Integral Motor Winding Temperature Switch (minimum one per phase winding)	Integral Motor Winding Temperature Switch (minimum one per phase winding)	Integral Motor Winding Temperature Switch (minimum one per phase winding)

ITEM	MOTOR PARAMETERS	CLOTH DISC	BACKWASH	BACKWASH/WASTE	
No.		FILTER DRIVE	PUMP - TYPE A	PUMP – TYPE B	
12.	Maximum starts per hour	12, evenly spaced	12, evenly spaced	12, evenly spaced	

Legend:

TEFC - Totally Enclosed Fan Cooled

2.05. CONTROLS

- A. The cloth disc filter operation of each disc filter shall be managed by a PLC-based automated control system. The system supplier shall furnish control panels, instrumentation, and all other equipment, devices, and components required to carry out automated control of the disc filter system, manual control of each individual piece of equipment, monitoring of the disc filter system and to make the system completely operational. All field wiring and connections to the control panels, junction boxes, and disc filter equipment shall be the responsibility of the Construction Contractor. The control panel, equipment, devices, and components shall be built to the standards of the manufacturer's typical offering with the exception of the following requirements:
 - 1. Furnish two control panels, one for each filter. It is not acceptable to combine controls for both filters in one enclosure. Each control panel shall be a maximum of 36" wide.
 - 2. All control panels shall be fully assembled, wired, and programmed in a UL Listed panel shop and shall bear the UL 508A mark verifying such.
 - 3. All equipment, devices, and components shall be Listed by an OSHA recognized Nationally Recognized Testing Laboratory (NRTL) such as UL, CSA, or ETL.
 - 4. Short Circuit Current Rating (SCCR) of all control panels shall be 14,000 RMS symmetrical amperes minimum at 480 VAC maximum. SCCR rating shall be indicated on the control panel.
 - 5. Power feed to the control panels shall be 480VAC, 60 Hz, 3-phase. Control voltage shall be 120 VAC, 60 Hz, 3-phase via a control power transformer installed in the control panel.
 - 6. The automatic control shall be based on a Siemens S7-1200, Allen Bradley MicroLogix 1400, or approved equal programmable logic controller. Furnish and install I/O expansion modules as required to provide signals to the plant PLC listed herein. Furnish and install Ethernet communications module as required to facilitate Ethernet communications to the plant PLC.
 - 7. Each control panel shall be furnished with a UL Listed operator interface with a 9" minimum touch screen display installed on the control panel door. Operator interface shall be rated NEMA 12, 13, or 4X. The operator interface shall provide plant operators with the capability to adjust all set points, view tank level, view time since last backwash, view time since last sludge removal, view elapsed run time of pump motors, initiate a backwash, and control all electrically operated valves. The operator interface shall display current alarms and alarm history with time, date, and description of the alarms. The operator interface shall be an Allen Bradley Panelview Plus 7, or equal.

- 8. The control panels will be located remotely from the disc filters in the electrical room, a dry location. The enclosure shall be rated NEMA 12. Contractor shall submit documentation showing that suitable ventilation and/or cooling is furnished and installed to maintain a temperature within the control panel enclosure which is within the allowable limits of all equipment, devices, and components mounted inside the control panel enclosure. Enclosure shall be by Hoffman, Saginaw, or equal.
- 9. Control panels shall be furnished with a main circuit breaker installed in each control panel. Furnish and install a flange mounted main circuit breaker operator that is lockable in the open position.
- 10. Circuit breakers shall be furnished and installed in the control panel for all power circuits to motors, instruments, and other external equipment and devices.
- 11. Power line surge protective device (SPD) shall be furnished and installed in the control panels to protect equipment from transients on the control panel main incoming AC power line. SPD shall meet the requirements of ANSI/IEEE C62.41 and shall be UL 1449 Listed. SPD shall be of the type required to protect equipment installed in an industrial environment. SPDs shall be by Square-D, SPDee, or equal.
- 12. Full voltage motor starters shall be NEMA rated.
- 13. VFDs, if provided to drive the filter drum motor, shall be Square-D Altivar 312,or approved equal. VFD keypad shall be accessible without opening the control panel enclosure door.
- 14. Each control panel shall be furnished with 30mm size external HOA selector switches installed on the control panel door for each piece of motorized equipment controlled by the control panel. HAND position of selector switch shall be wired such that equipment is capable of being started in HAND mode without use of the PLC. Control system shall allow for continuous back washing in HAND mode.
- 15. The control panel shall be furnished with external LED pilot lights mounted on the control panel door indicating run status and fault status of all motorized equipment controlled by the control panel, and status of high level alarm, low level alarm, and common alarm. Provide a separate pilot light for each run status, fault status and alarm signal. The pilot lights shall be 120VAC, 30mm size, with push-to-test feature. Color coding shall be as follows:
 - a. Amber Alarm active, caution
 - b. Red Valve open, motor running
 - Green Valve closed, motor stopped
 - d. White Information
- 16. The system supplier shall provide two NEMA 4X stainless steel junction boxes mounted to each of the Disc Filter Units. The junction boxes shall be provided with insulated terminal blocks installed to facilitate connection of power, control, monitoring, and instrumentation circuits. Of the two junction boxes provided for each unit, one shall be for connection of AC power, control and monitoring circuits, the other shall be for connection of DC instrumentation, control, and monitoring circuits.
- 17. Each cloth disc filter unit shall be equipped with level sensing instrumentation that is used for automatic control of the equipment. At a minimum, the level sensing instrumentation shall be used to control backwash cycles, alert of low water level for

backwash pump protection, and to alert of high water level. Signals shall be wired to inputs located in the cloth disc filter control panel. The high level and low level states are activated when the water level reaches the programmed set points of water in the influent chamber. When the level is reached, it shall activate a relay inside the control panel and a pilot light on the front of the panel shall illuminate. The pilot lights shall be labeled "Cloth Disc Filter Low Level" and "Cloth Disc Filter High Level". The high and low level relays shall have a spare set of normally open, dry contacts available for monitoring. When the low level alarm is activated, it shall activate a relay inside the control panel to prevent running the backwash pump.

- 18. The system supplier shall furnish and install a high level float switch as a back-up to the primary level system provided to control the system. The float switch shall be wired to terminal blocks in the appropriate junction box specified in this Section. When float switch is activated on a high level, the backwash pump shall run continuously until the level goes down and float switch deactivates. Furnish and install a relay in the control panel to facilitate wiring of the float switch to the plant PLC without the use of the disc filter PLC. Provide a timer as required to prevent the backwash pump from cycling at a frequency that is more than that the pump manufacturer allows.
- 19. Communication with plant PCS
 - a. Each control panel shall be capable of communicating with the plant PLC via Ethernet and via hard wired signals.
 - Each control panel shall be provided with an Ethernet switch installed to facilitate communications between the Filter System PLC and operator interface, as well as the plant PLC. Ethernet switch shall be by Hirschmann, Moxa Technologies, or equal.
 - c. Furnish and install a protocol converter in each control panel to facilitate communications between PLCs which communicate using different Ethernet protocols including, but not limited to, Ethernet IP, Profinet, and TCP/IP. Provide protocol converter with CompactFlash card option. Protocol converter shall be Red Lion Data Station Plus, Model DSPLE000.
 - d. Each control panel shall be equipped with SCADA signals (dry contacts) for the following signals. The listed signals shall be wired to terminals located inside the disc filter Control Panel:
 - 1) Cloth disc filter auto status
 - 2) Cloth disc filter motor run status
 - 3) Cloth disc filter motor fault status
 - 4) Backwash pump run status
 - 5) Backwash pump fault status
 - 6) Backwash pump auto status
 - 7) High water level alarm
 - 8) Backup float high water level alarm.
 - 9) Low water level alarm

- 10) Continuous 4-20 mA level signal if applicable
- 11) Common alarm status
- e. The control panel shall include capability to receive a dry contract general interlock from the plant PLC. The general interlock shall prevent equipment from operating when the dry contact is closed.
- 20. System shall automatically restart after a power outage without human intervention.

21. Control panel identification

- a. Control panels and enclosures shall be provided with nameplates installed on the exterior of each enclosure identifying the application function of the equipment enclosed such as "Cloth Disc Filter Control Panel 1".
- b. In addition, for selector switches and/or pushbuttons, a factory installed legend plate shall be furnished and installed to indicate the function each device performs, such as "On" or "Off." Nameplates shall be mounted directly above equipment.
- c. Interior mounted components and equipment shall be provided with nameplates. Nameplates shall be installed adjacent to, but not on, the given device and visibility shall not be obstructed by wire bundles or other equipment. Nameplates shall include device identification number as well as descriptive name.
- d. Enclosures shall be provided with instruction plaques indicating any warnings or special instructions required by the component manufacturers. Warning plaques shall be red with white lettering.
- e. Control panels that contain wiring fed from multiple external power sources shall be provided with a warning nameplate installed on the front of the enclosure indicating:

"WARNING - THIS PANEL IS FED BY MULTIPLE POWER SOURCES"

f. All wires shall be clearly marked with an identification number consistent with the wiring schematic drawing. Wire markers shall be a thermal transfer printable type. The material shall be a self-laminating vinyl. Labels shall be Brady THT-9-427-10 or approved equal.

2.06. FABRICATION REQUIREMENTS

- A. Shop coat per manufacturer's standard finish system and color.
- B. All bolts, nuts, washers, and other fasteners shall be Type 316 stainless steel unless otherwise noted.
- C. Welds shall be continuous unless noted otherwise.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

- E. Furnish nameplates for each piece of equipment.
 - Equipment nameplates of stainless steel shall be engraved or stamped and securely fastened to the equipment in an accessible location with No. 4 or larger oval head stainless steel screws or drive pins.
 - 2. Nameplates shall contain the manufacturer's name, year of manufacture, model, serial number, size, characteristics, and appropriate data describing the equipment performance ratings.

2.07. SHOP TESTING

- A. The following equipment shall be tested in the manufacturer's shop in accordance with the requirements of Section 01640, Equipment General, and as specified herein.
 - Control Panel Testing
 - a. All Control panels shall be UL certified. Shop Testing shall be completed prior to releasing for shipment. The manufacturer shall submit a Shop Test report to the Engineer for approval for all control panel testing. Testing shall consist of the following:
 - 1) Point to point testing of all wiring prior to application of power
 - 2) Intended supply voltage shall be applied to the enclosure
 - 3) All components shall be tested for proper operation and calibration
 - 4) The PLC and operator interface program shall be loaded and functionally checked
 - 5) Enclosure shall be inspected for defects and repaired if necessary
 - 6) All components shall be checked to confirm proper mounting specifications have been followed
 - All labeling of wires and devices are correct, properly installed and clean
 - b. Upon the successful completion of the control testing of the enclosure assembly, all applicable documentation (i.e. finalized drawing set, signed control checklist cover page, device data sheets, etc.) shall be placed in the drawing pocket of the enclosure. A copy shall be submitted to the Engineer.

PART 3 EXECUTION

3.01. DELIVERY

- A. Transport by methods to avoid damage.
- B. Goods shall be delivered in containers suitable for outdoor storage. Storage containers shall provide for easy access for required maintenance activities. Identifying labels shall be intact and legible.
- Provide equipment and personnel for handling to prevent soiling and damage.

D. Protect sensitive equipment and finishes against impact, abrasion and other damage.

3.02. EQUIPMENT INSTALLATION

A. Goods furnished under this section will be installed by a Construction Contractor separately procured by the Buyer.

3.03. TESTING AND STARTUP

- A. The equipment manufacturer shall provide support to the Construction Contractor responsible for completing Testing and Startup for the Goods. Testing and Startup to be completed by the Construction Contractor will include:
 - 1. Preliminary Field Testing: Field test to demonstrate that equipment is properly installed and ready for operation
 - Functional Testing: Field test to demonstrate successful operation and performance of equipment in all intended modes of operation, including operation from remote devices and the Plant Control System
 - 3. Startup: Continuous successful online operation of a System in its entirety utilizing actual process fluid and at actual service conditions for seven (7) consecutive days prior to delivery of that System to the Owner.
- B. The equipment manufacturer shall be present and provide support during all phases of Testing and Startup as directed by the Engineer.
- C. Support during testing and startup shall be Unit Price Special Services.
- D. The manufacturer shall correct any defects in performance, materials or workmanship identified during testing and startup at their expense.

3.04. SERVICES OF MANUFACTURER'S REPRESENTATIVE

- A. The equipment manufacturer shall provide the following Special Services in accordance with Section 01640, Equipment General and as specified herein. These Special Services shall be Unit Price Special Services.
 - 1. Training
 - 2. Testing and Startup Support

MANUFACTURER'S SPECIAL GUARANTEE

To: The City of Rehoboth Beach,
(the manufacturer) guarantees for a period of three years starting at th time of equipment delivery to the job site that the Cloth Disc Filtration Equipment supplied for Rehoboth Beach WWTP is free from defects in materials or workmanship and will meet the specified performance requirements when stored, installed and operated in accordance with the manufacturer's recommendations. The manufacturer shall correct any breach in this warranty at their expense.
MANUFACTURER
By: Name
Title
Date

END OF SECTION

SECTION 15170

MOTORS

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. All electric motors supplied under these Contract Documents shall conform to this specification as minimum requirements unless otherwise specified in individual Specification sections.
- B. All electric motors shall conform to ANSI Standards for Rotating Electrical Machinery (Designation C50) and to NEMA Standards MG-1 for Motors and Generators (NEMA Standard Publication latest revision) and to NEC, Article 430.
- C. The rating of the motors offered shall in no case be less than the horsepower required in the Contract Documents.
- D. Motors shall operate without an undue noise or vibration and shall show no signs of electrical unbalance. Provide vibration isolation as necessary to meet vibration requirements for each piece of equipment.
- E. Motor efficiency shall be a prime consideration in selection of all motors. Unless otherwise specified in the individual Specification sections, motors shall meet the efficiency requirements specified herein.

1.02. SUBMITTALS

- A. Provide in accordance with Section 01300, Submittals; Section 01640, Equipment General; and as supplemented herein.
- B. Shop Drawings shall include the following, at a minimum:
 - Electric characteristics
 - 2. Design characteristics
 - Mechanical construction
 - Manufacturer's name
 - 5. Manufacturer's type
 - 6. Pertinent specifications for the use intended
 - 7. Name of the equipment to be driven
 - 8. The following information for each motor in tabulated form:

Motor manufacturer	Nameplate horsepower
Model	Motor rpm, full load nameplate
Frame number	Insulation class
Type of enclosure	Service factor

Volts	Maximum ambient temperature
Hertz	Maximum temperature rise
Phase	Shop painting
NEMA design	Nominal efficiency
Code letter	Guaranteed minimum efficiency at 50, 75 and 100% full load
Locked rotor amps	Minimum power factor at 50, 75 and 100% load
Locked rotor torque	Resistance temperature device information (if applicable)

1.03. INSULATION

- A. Minimum NEMA Class B insulation unless otherwise noted in the individual equipment Specifications.
- B. Provide Class F insulation if required by the manufacturer to meet specified energy efficiency.
- C. Use Class F or H insulation where ambient temperatures exceed 104 degrees F (40 degrees C) as shown on the Contract Drawings or elsewhere in the Specifications.
- D. Where motors are to be used with variable frequency drives (VFDs), insulation systems shall be "inverter duty" with Class F thermostats. Insulation system shall meet NEMA MG 1 30 standards.

1.04. RATINGS AND DESIGN

- A. Furnish with adequate ratings to accelerate and drive connected equipment under all normal operating conditions without exceeding nameplate ratings.
- B. Provide with service factors in accordance with NEMA standards as follows unless otherwise noted in individual equipment specifications.

TYPE OF MACHINE	MINIMUM SERVICE FACTOR (SF)
Mill and chemical duty	1.15
Open drip-proof	1.15
Totally enclosed fan cooled	1.15
Submersible	1.15
Inverter duty	1.0
All others	1.0

- C. Motors shall operate successfully under running conditions at rated load and frequency with a voltage variation up to 10 percent; at rated load and voltage with a frequency variation up to 5 percent; and at rated load with a combined variation in voltage and frequency not more than 10 percent above or below the rated voltage and frequency provided that the frequency variation does not exceed 5 percent.
- D. Assume voltage unbalance to be 1 percent.
- E. Assume ambient temperatures to be 40 degrees C for motors in air and 25 degrees C for submersible motors.

F. Motor winding temperature rise shall be as follows:

	CLASS OF INSULATION			
	В	F	Н	
Open, drip-proof motors	80°C	105°C	125°C	
Totally enclosed fan-cooled motors	80°C	105°C	125°C	
Totally enclosed non-ventilated motors	85°C	110°C	135°C	
Explosion proof motors	80°C	105°C	125°C	
All other motors with 1.15 SF or higher	90°C	115°C		

- G. Use the applicable paragraphs of NEMA MG1 12.42 in making design selections.
- H. Unless otherwise specified, all three phase motors shall be constant speed, squirrel cage induction type.
 - 1. Seller shall provide multi-speed (multiple windings or consequent poles single winding, wound rotor, etc.) where required as specified in individual equipment Specifications.

I. Motor Voltages

- 1. Motors of 3/4 HP and larger squirrel cage induction type designed for 3 phase, 60 cycle, 230/460 volt operation unless otherwise specified.
- 2. Motors smaller than 3/4 HP capacitor type designed for single phase, 60 cycle, 120 volt operation unless otherwise specified.
- 3. Motors indicated on the Contract Drawings and/or specified in the Specifications as 208 volt shall be specially wound for voltage indicated and/or specified.
- 4. Dual-rated motors (i.e., 208/230 volts) are not acceptable for operation on 208 volts.
- J. Motors intended for inverter duty (those controlled through variable speed drives), shall be specifically manufactured for inverter duty.
- K. Variable speed motors shall be certified to meet UL requirements for operation over the motors entire speed range in conjunction with the VFD used.
- L. Unless otherwise specified, all single-phase motors shall be NEMA design letter M or N, designed to withstand full voltage starting in accordance with MG12.32.
 - Motors shall comply with NEMA Standards for Definite Purpose Motors (paragraphs 18.001 18.717).
- M. In general, capacitor start induction run or split phase type motors shall not be used unless otherwise approved by the Engineer.
- N. Shaded pole motors larger than 1/8 HP will not be allowed.
- O. Thermal overload protectors and any auxiliary components necessary to provide required starting characteristics including capacitors, resistors and automatic switching devices shall be furnished and mounted integrally unless motor starters with overload protection are provided.

1.05. MECHANICAL CONSTRUCTION

- A. Unless otherwise specified, electric motors shall be of the following types of construction according to the degree of mechanical protection:
 - 1. Totally Enclosed, Explosion proof Motors When located in areas designated as hazardous locations (explosion proof or NEC locations Class I, Divisions 1 or 2).
 - a. See the Contract Drawings for other hazardous area classifications.
 - 2. Totally Enclosed, Fan Cooled (TEFC) Motors When located outdoors or indoors in wet areas such as wash-down areas or elsewhere if specified.
 - a. Winding heaters shall be provided when specified.
 - Mill and Chemical Duty or Severe Duty Suitable for use in corrosive areas unless otherwise specified in individual equipment Specifications.
 - 4. Submersible Motors for submerged applications.
 - 5. In all other cases, motors shall be open drip proof.
- B. Where encapsulated windings are specified, encapsulation shall be Contour Mold Everseal by U.S. Motors; Costum Polyseal by General Electric; or equal. An additional "dip and bake" will not be acceptable.
- C. Provide motor winding thermal protection in motors 1 HP and larger, unless otherwise specified.
- D. Bearings
 - 1. Unless otherwise specified or required, motors rated above 2 HP shall have grease lubricated, anti-friction ball type bearings with conveniently located grease fittings.
 - 2. Provide a means of preventing bearings from becoming over greased (such as double shields on bearings or pressure sensitive relief fittings).
 - Unless otherwise specified, bearings shall be rated at a minimum B-10 life of 20,000 hours under axial loads.
 - 4. Unless otherwise specified, submersible motors shall have bearings rated of an L-10 or B-10 life of minimum of 30,000 hours.
- E. For vertical shaft construction, the motors shall have adequate thrust bearings to carry all motor loads and any other operating equipment loads.
 - 1. Grease slingers to be provided.
- F. For horizontal shaft construction coupled to fluid pumps, the motors shall either have adequate thrust bearings or they shall have the couplings end play and rotor float coordinated to prevent damage to rotor bearings.
- G. Rotors (including non-reverse ratchets on hollow shaft motors)
 - 1. Rotors shall be statically and dynamically balanced.
 - a. 25 hp and smaller: manufacturer's standard balance.

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- b. Greater than 25 hp: special precision balance to achieve no more than 0.08 inches per second peak vibration.
- 2. Rotors shall have secondary bars of heavy copper silver brazed to one piece end rings or shall have rotor windings of one piece cast aluminum.
- 3. Where applicable, construct with integral fans.
- H. Inverter duty motors shall have enhanced rotor and stator designs.
- Non-reversing ratchets shall be provided where specified in the individual equipment specifications.
- J. Nameplates stainless steel furnished with all motors, with markings in accordance with NEMA MG1, latest revision, MG1 10.38.

K. Terminal Boxes

- 1. Sized in accordance with NEC, Article 430 12, and of sufficient size to accommodate conduits and conductor sizes as shown on Contract Drawings.
- Furnish rubber gasketed terminal boxes with splash proof and totally enclosed motors.
- 3. Horizontal motors locate on the left hand side, when viewing the motor from the drive shaft ends and design such that conduit entrance can be made from above, below or either side of the terminal box.
- 4. Include grounding lug in terminal box.
- 5. Oversize terminal boxes in the following applications:
 - a. Motors 7-1/2 HP and larger operating at 208 or 230 volts.
 - b. Motors 20 HP and larger operating at 460 volts.
- 6. Inverter duty motors shall have a minimum of two conduit penetrations. One penetration shall be used for the motor power feeder conductors, sized to accommodate VFD type cable and the other shall be used for auxiliary device wiring (i.e. motor winding thermostats, space heaters, etc.).
- L. Motors used with belt drives shall have grease slingers on the sheave end and sliding bases to provide for belt take up.
- M. All motors shall be cast iron construction when available for the application.

1.06. MOTOR POWER FACTORS

- A. Provide when called for on the Contract Drawings.
- B. Provide for all three phase motors, 7 1/2 HP or larger, 1200, 1800, and 3600 rpm (nominal), 60 Hertz, constant single speed (not VFD controlled), squirrel cage induction type, which do not have a minimum power factor of 85 percent. Motors which cannot meet this criteria shall have power factor correction capacitors, switched integrally with the motors (unless otherwise required by either the motor or starter manufacturer), which will bring the power factor up to a minimum of 90 percent.

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- C. Furnish and install, at no additional cost to the Buyer, the capacitors and provide all necessary wiring to connect them to the motor terminals or motor controller terminals.
 - Properly size fused switch or circuit breaker to serve as a disconnect for the capacitor.

D. Capacitor and Disconnect Enclosure

Indoors mounting (non-hazardous)	NEMA 12 wall mounted
Indoor wet areas	NEMA 4 wall mounted
Outdoors mounting	NEMA 4 wall, pad, or mounting stand mounted
Explosion proof areas	NEMA 7 wall mounted (DS only)*
Corrosive areas	NEMA 4X wall mounted*

^{*}Locate capacitor outside the hazardous or corrosive area.

- E. Size capacitors so they do not increase the self-excitation voltage above the motor nameplate rating.
- F. Do not use capacitors on motors controlled by variable frequency drives.
- G. When used with solid-state starters, energize only after bypass or full speed bypass contactor is energized. Verify connection requirements with starter manufacturer and follow them.

1.07. MOTOR EFFICIENCY

- A. All single speed, three phase, squirrel cage induction-type motors 1 HP or larger, 60 Hertz, shall have nominal efficiencies in accordance with the attached Table 1, unless specifically otherwise specified in the respective equipment section.
 - 1. Determine efficiencies by using IEEE Test Procedure 112, Test Method B using segregated losses. Motors shall be listed by their manufacturers and be nameplated with words such as "High Efficiency," "Premium Efficient," and "Energy Saver."
 - 2. List guaranteed minimum efficiencies on motor nameplate. Adhere to the latest nominal efficiencies eligible for a rebate published by the local utility where rebates are available. Those efficiencies may be higher than those listed in Table 1 included herein.

1.08. FIELD TESTING

- A. All three phase electric motors 1/2 HP and larger and all single phase electric motors 1 HP and larger shall be field tested by others.
- B. Seller shall correct any defects in performance, materials or workmanship identified during field testing at their expense.

1.09. MOTOR SHOP TESTS

- A. Perform motor shop tests in accordance with the IEEE Code for polyphase induction machines. Use NEMA report of test forms and submit results to the Engineer, in five copies, for approval.
- B. Test each motor and submit report: for power factor and efficiency at 50, 75 and 100 percent of its rated horsepower; for insulation resistance and dielectric strength; for heating; and for compliance with all specific performance requirements.

C. For motors less than 50 HP, provide guaranteed performance data based on previous testing of the motor design. For motors of 50 HP or larger, make complete tests of each motor and furnish certified test data sheets.

1.10. VERTICAL HOLLOWSHAFT MOTORS

- A. Where specified, design vertical hollowshaft motors to carry the motors, pumps, and associated equipment's full thrust. Equip motors with oil lubricated spherical roller thrust bearings and lower grease lubricated radial guide bearings. Provide motors with visual oil level indicators and sufficient oil to fill the motor.
- B. Vertical adjustment shall be possible by means of a lockable nut at the top of the shaft.
- C. Non-reversing ratchets shall be provided where specified in the individual equipment specifications and where suitable for continuous operation at any speed between 50 percent and 100 percent of rated speed. Non-reversing ratchet shall be dynamically balanced as specified for rotors under the Mechanical Construction article of this Specification section.

1.11. TWO-SPEED MOTORS

A. Motors 1/2 HP and larger specified as two-speed motors shall be provided with two windings unless otherwise noted. Motors less than 1/2 HP will be permitted with single windings. Speeds of the motors shall be as specified. Two-speed motors shall be tested at the higher speed.

1.12. PAINTING

A. All motors shall have a manufacturer's standard rust resisting shop priming coat. Finish coat, either shop or field applied, shall be in accordance with manufacturer's standard coating system.

1.13. HAZARDOUS OR EXPLOSION PROOF AREAS

- A. All areas noted as hazardous or explosion proof (as defined in the latest edition of the National Electrical Code) shall have all work done in accordance with the requirements of the National Electrical Code (NEC) for that particular "class" and "division" and all equipment enclosures (for motors, starters, switches, capacitors, etc.), fittings, conduits and appurtenances shall be of a type approved for the area.
- B. Unless otherwise shown, all hazardous or explosion proof areas shall be Class I, Division 1 (Groups C and D); locations and all equipment enclosures, fittings, conduits and appurtenances shall be NEMA Type 7 and approved for use in Class I, Division 1, Groups C and D atmospheres.
- C. All wiring in these areas shall be done in accordance with the applicable NEC provisions.

 $\frac{\text{TABLE 1}}{\text{NOMINAL EFFICIENCIES FOR "NEMA PREMIUM"}} \text{ INDUCTION MOTORS} \\ \text{RATED 600 VOLTS OR LESS (RANDOM WOUND)}$

	OPEN DRIP-PROOF*			TOTALLY ENCLOSED FAN-COOLED*				
HP	900	1200	1800	3600	900	1200	1800	3600
1	74.0	82.5	85.5	77.0	74.0	82.5	85.5	77.0
1.5	75.5	86.5	86.5	84.0	77.0	87.5	86.5	84.0
2	85.5	87.5	86.5	85.5	82.5	88.5	86.5	85.5
3	86.5	88.5	89.5	85.5	84.0	89.5	89.5	86.5
5	87.5	89.5	89.5	86.5	85.5	89.5	89.5	88.5
7.5	88.5	90.2	91.0	88.5	85.5	91.0	91.7	89.5
10	89.5	91.7	91.7	89.5	88.5	91.0	91.7	90.2
15	89.5	91.7	93.0	90.2	88.5	91.7	92.4	91.0
20	90.2	92.4	93.0	91.0	89.5	91.7	93.0	91.0
25	90.2	93.0	93.6	91.7	89.5	93.0	93.6	91.7
30	91.0	93.6	94.1	91.7	91.0	93.0	93.6	91.7
40	91.0	94.1	94.1	92.4	91.0	94.1	94.1	92.4
50	91.7	94.1	94.5	93.0	91.7	94.1	94.5	93.0
60	92.4	94.5	95.0	93.6	91.7	94.5	95.0	93.6
75	93.6	94.5	95.0	93.6	93.0	94.5	95.4	93.6
100	93.6	95.0	95.4	93.6	93.0	95.0	95.4	94.1
125	93.6	95.0	95.4	94.1	93.6	95.0	95.4	95.0
150	93.6	95.4	95.8	94.1	93.6	95.8	95.8	95.0
200	93.6	95.4	95.8	95.0	94.1	95.8	96.2	95.4
250	94.5	95.4	95.8	95.0	94.5	95.8	96.2	95.8
300		95.4	95.8	95.4		95.8	96.2	95.8
350		95.4	95.8	95.4		95.8	96.2	95.8
400		95.8	95.8	95.8		95.8	96.2	95.8
450		96.2	96.2	95.8		95.8	92.2	95.8
500		96.2	96.2	95.8		95.8	96.2	95.8

^{*}Nominal speed; for two-speed motors, the efficiency applies to the highest speed.

For submersible motors, other motor horsepowers, speeds, and for Design C and D motors, the efficiencies shall be in accordance with the applicable equipment specification sections.

MOTOR TEST REPORT

Equipment Description	Equipment No								
Equipment Loc.									
Drawing Nos. and Rev.									
MCC/Panel No.	Section/CKT. No								
Control CKT. No									
NAMEDIATE DATA									
NAMEPLATE DATA									
Motor Mfr.	_ HP Rpm S.F								
Motor Mfr Phase F.L. Amp _	KVA Code O Rise								
Serial No Other									
Serial No Other Efficiency									
D 4 404 4	5 .								
Prestart Checks	Date								
Lubrication Checked (Motor and Driven Equipment)									
Motor Rotates Freely									
Overload Heater Size/Setting (locat Control Circuit Tested	ed at starter)								
Breaker Size (Frame Size/Trip Element Rating)									
Motor Insulation Resistance (Megger)									
Test Volts(500V for up to 250V motors and 1	1000V for up to 600V motors)								
Test Duration - 1 minute	1000 v for up to 000 v filotors)								
163t Baration - 1 minute									
Phase A to Gnd Phase B to Gnd	Phase C to Gnd								
Phase A to Gnd Phase B to Gnd Phase A to B Phase B to C	Phase C to A								
UNCOUPLE	ED DATA								
(Provide this only when motor is shipped, uncoup									
(,								
Bus Voltage Inrush Current Amps	Sec Run in Time								
Bus Voltage Inrush CurrentAmps Average Running CurrentAB	C Rotation *								
Rpm									
Performed by	Date								
Approved by	Date								
Test Engineer									
COUPLED	<u>) DATA</u>								
Bus Voltage Inrush CurrentAmps	Sec Run in Time								
Average Running Current A B	C Rotation *								
Rpm System Lineup/Conditions									
Test Equipment Central Nee									
Test Equipment Control Nos.									
Remarks:									
Performed by	Date								
Approved by	Date								
Test Engineer									
*As viewed from motor outboard end. EQUIPMENT	NO								

END OF SECTION

APPENDIX 1

REHOBOTH BEACH WWTP DESIGN DRAWINGS Issued for Review - Dated May 1984

