



**SOUTH VALLEY WATER RECLAMATION FACILITY  
WEST JORDAN, UTAH**

**2022 VFD REPLACEMENT PROJECT**

**CLIENT PROJECT NO. 201238**

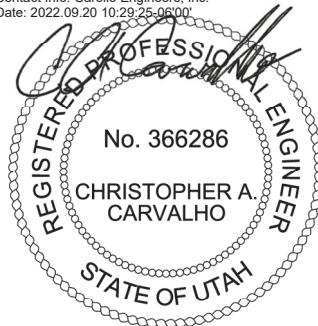
**CONTRACT/TECHNICAL SPECIFICATIONS**

**PROCUREMENT SUBMITTAL**

**VOLUME 1 OF 1**

**SEPTEMBER 2022**

Digitally signed by Christopher Alan Carvalho  
Contact Info: Carollo Engineers, Inc.  
Date: 2022.09.20 10:29:25-06'00'





**SOUTH VALLEY WATER RECLAMATION FACILITY**

**2022 VFD REPLACEMENT PROJECT**

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**DOCUMENT 00101**

**ADVERTISEMENT FOR BIDS AND LEGAL NOTICE - PROCUREMENT**

**SOUTH VALLEY WATER RECLAMATION FACILITY (Owner)**

**7495 SOUTH 1300 WEST**

**WEST JORDAN, UTAH 84084**

For procurement of 2022 VFD Replacement Project VFDs

**MANDATORY PRE-BID CONFERENCE**

A mandatory pre-bid conference will be held and the office of **South Valley Water Reclamation Facility** at 1:00 p.m. local time, September 29, 2022.

**BID OPENING**

Sealed Bids will be received at the office of **South Valley Water Reclamation Facility** until **2:00 p.m.**, local time, **October 6, 2022**, at which time Bids will be publicly opened.

At said place and time, all Bids that have been duly received will be publicly opened and read aloud.

**DESCRIPTION OF THE GOOD AND SERVICES**

The Goods and Services are generally described as follows: The supply of variable frequency drives, manufacturer's services and Owner training as shown in the Procurement Specifications and Procurement Drawings in accordance with the Contract Documents and applicable law.

**BIDDING DOCUMENTS**

All Bids must be in accordance with the Bidding Documents on file with the South Valley Water Reclamation Facility, 7495 South 1300 West, West Jordan, Utah.

There are no charges for electronic Bidding Documents. Hard copies will not be made available.

**BID SECURITY**

The Successful Bidder will be required to furnish a Procurement Performance Bond and a Guaranty Bond as security for the faithful performance of the Contract.

**OWNER'S RIGHTS**

Owner reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, nonresponsive, or conditional Bids, and to reject the Bid of any Bidder if Owner believes that it would not be in the best interest of Owner to make an award to that Bidder. Owner also reserves the right to waive formalities.

If the Contract is to be awarded, Owner will give the Successful Bidder a Notice of Award within the number of days set forth in the Bid Form.

BY ORDER OF

South Valley Water Reclamation Facility

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date

September 20, 2022

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_, 20\_\_

**{OWNER}**

By Taigon Worthen, P.E.

Facility Engineer / Assistant GM

BID OPENING: October 6, 2022

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

END OF DOCUMENT

## **DOCUMENT 00204**

### **INSTRUCTIONS TO BIDDERS- PROCUREMENT**

#### **ARTICLE 1 - DEFINED TERMS**

- 1.01 Terms used in these Instructions to Bidders will have the meanings indicated in Document 00701 - General Conditions - Procurement and Document 00801 - Supplementary Conditions - Procurement. Additional terms used in these Instructions to Bidders have the meanings indicated below.
- A. Issuing Office—The office from which the Procurement Bidding Documents are to be issued and where the bidding procedures are to be administered.

#### **ARTICLE 2 - PROCUREMENT BIDDING DOCUMENTS**

- 2.01 Bidder must use a complete set of the Procurement Bidding Documents in preparing the Bid; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Procurement Bidding Documents.
- 2.02 Buyer and Engineer make copies of Procurement Bidding Documents available on the above terms only for obtaining Bids for furnishing Goods and Special Services, and do not authorize or confer a license for any other use.

#### **ARTICLE 3 - QUALIFICATIONS OF BIDDERS**

- 3.01 Buyer may at any time conduct such investigations as Buyer deems necessary to establish the responsibility, qualifications, and financial ability of Bidder, and after the opening of Bids may require a Bidder to submit documentation of its qualifications, including but not limited to financial data and documentation of previous experience providing goods and services comparable to the specified Goods and Special Services.
- 3.02 Bidder is to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

#### **ARTICLE 4 - SITE VISIT; PRE-BID CONFERENCE**

- 4.01 Buyer requires that Bidder visit the Point of Destination and the site where the Goods are to be installed and Special Services will be provided, taking into account observable local and site conditions that may affect the delivery, cost, progress, and furnishing of the Goods and Special Services. Arrangements for such a visit may be made through Engineer.

- 4.02 A mandatory pre-bid conference will be held at the time and location indicated in the advertisement or invitation to bid.
- A. Attendance at this pre-bid conference is a requirement to be qualified to submit a Bid. Bids will not be accepted from Bidders that do not attend the conference.
  - B. It is the Bidder's responsibility to sign in at the pre-bid conference, under the name in which a Bid is to be submitted, to verify attendance.
- 4.03 Interpretations or clarifications considered necessary by Engineer in response to questions will be issued by Addenda delivered to all parties recorded by Engineer as having received the Procurement Bidding Documents. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid and will not be binding or legally effective.

## **ARTICLE 5 - INTERPRETATIONS AND ADDENDA**

- 5.01 All questions about the meaning or intent of the Procurement Bidding Documents are to be submitted to Engineer by email as follows:
- Chris Carvalho, PE, Project Manager**  
[ccarvalho@carollo.com](mailto:ccarvalho@carollo.com)
- 5.02 Interpretations or clarifications considered necessary by Engineer in response to such written questions will be issued by Addenda mailed or delivered to all parties recorded as having received the Procurement Bidding Documents. Questions received less than 7 days prior to the date for opening of Bids will not be answered. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid and will not be binding or legally effective.
- 5.03 Addenda may be issued to clarify, correct, or change the Procurement Bidding Documents as deemed advisable by Buyer or Engineer.

## **ARTICLE 6 - BID SECURITY**

- 6.01 A Bid must be accompanied by Bid security made payable to Buyer in an amount of 5 percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements.
- A. Issue the Bid bond as specified in Document 00430 - Bid Bond (Penal Sum Form).
- 6.02 The Bid security of the apparent Successful Bidder will be retained until Buyer (Project Owner) awards the Procurement Contract to such Bidder, and such Bidder has executed the Procurement Contract, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released.



- A. If the Successful Bidder fails to execute and deliver the Procurement Contract and furnish the required contract security within 15 days after the Notice of Award, Buyer (Project Owner) may consider Bidder to be in default and annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Buyer's damages in the case of a damages-form bond. Such forfeiture will be Buyer's exclusive remedy if Bidder defaults.
- 6.03 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 Procurement Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 6.04 Bid security of other Bidders that Buyer believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

## **ARTICLE 7 - PROCUREMENT CONTRACT TIMES**

- 7.01 See applicable provisions in the Procurement Agreement.

## **ARTICLE 8 - LIQUIDATED DAMAGES**

- 8.01 Any provisions for liquidated damages, such as those for Seller's failure to attain a specified Milestone such as the delivery of the Goods, are set forth in the Procurement Agreement.

## **ARTICLE 9 - CONFIDENTIALITY OF BID INFORMATION**

- 9.01 Confidential information is information in the Bid, or in documents submitted by Bidder with the Bid or submitted subsequent to the opening of Bids in support of the Bid, that Bidder clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Bids will be opened and accompanying documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.
- 9.02 Bidder shall clearly and prominently mark confidential information with the word "CONFIDENTIAL" on each page or sheet or on the cover of bound documents. Place "CONFIDENTIAL" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.
- 9.03 If Buyer is requested to disclose confidential information, becomes legally compelled to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by these Procurement Bidding Requirements, Buyer will provide Bidder with prompt notice so Bidder may seek a protective order or other appropriate remedy. Bidder will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.

- 9.04 Buyer's obligations with respect to confidential information are nullified by the following exceptions:
- A. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer.
  - B. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer's possession, and not previously marked as confidential, or was otherwise publicly available prior to the date of Bid submittal.
  - C. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information.
  - D. Buyer concludes in good faith that the information is not confidential, or that disclosure is required or justified; or
  - E. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.
- 9.05 Notwithstanding any other provision of the Procurement Bidding Documents, it is stipulated and agreed that by accepting a Bid, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

#### **ARTICLE 10 - "OR EQUAL" ITEMS**

- 10.01 The Procurement Contract, if awarded, will be based on material and equipment specified in the Procurement Bidding Documents without consideration of possible "or-equal" items. Whenever it is specified or described in the Procurement Bidding Documents that an "or-equal" item of material or equipment may be furnished or used by Seller if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Procurement Contract.
- A. The procedure for submittal of any such application by Seller and consideration by Engineer is set forth in Document 00701 - General Conditions - Procurement and may be supplemented in the Procurement Specifications.

#### **ARTICLE 11 - PREPARATION OF BID**

- 11.01 The Bid Form is included with the Procurement Bidding Documents. Additional copies of Procurement Bidding Documents may be obtained from the Issuing Office.
- 11.02 All blanks on the Bid Form must be completed and the Bid Form must be signed by an individual authorized to act on behalf of the Bidder. Alterations must be initialed by an individual authorized to act on behalf of the Bidder. A Bid price must be indicated for each item in the Bid Form. In the case of optional alternates, the words "No Bid" may be entered.
- 11.03 Bidder must acknowledge all Addenda by filling in the number and date of each Addendum in the Bid Form and sign where indicated to verify that the Addenda were

received. A Bid that does not acknowledge receipt of all Addenda may be considered non-responsive.

11.04 Bidder shall:

- A. Sign the Bid Form as indicated in the Bid Form.
- B. Include evidence of authority to sign.
- C. Provide information on the individual to be contacted for any communications regarding the Bid.
- D. Provide evidence of the Bidder's authority and qualification to do business in the locality of the Project, to the extent required, or indicate the ability to obtain such authority and qualification prior to award of the Procurement Contract.

11.05 The responsibilities of each Bidder submitting a Bid are described in the Bidder's representations and certifications set forth in Article 6 of the Bid Form.

## **ARTICLE 12 - BASIS OF BID; COMPARISON OF BIDS**

12.02 Lump Sum

- A. Bidder shall submit a Bid on a lump sum basis as set forth in the Bid Form.
- B. The apparent low Bid will be determined on the basis of the lump sum bid amount.

12.03 Unit Prices

- A. Unit prices may be requested as the basis of an amendment to the contract amount in the event that quantities change. Unit prices will not be used to determine the apparent low Bid.

12.04 Buyer's Contingency Allowance

- A. If Buyer has stipulated a Buyer's Contingency Allowance in the Bid Form, such Buyer's Contingency Allowance is the same for all Bidders and is not a factor in determining the apparent low Bid.

## **ARTICLE 13 - SUBMITTAL OF BID**

13.01 Bidder shall refer to the advertisement or invitation to bid for specific identification of the date, time, and place where Bids are to be submitted.

13.02 Bidder must submit one separate unbound copy of the completed Bid Form, and, if required, the Bid Security and the other documents required to be submitted under the terms of the Bid Form.

13.03 A Bid must be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid. Submit the Bid in an envelope plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted) and the name and address of Bidder. Enclose the Bid security and other documents required to be submitted with the Bid as listed in the Bid Form. 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."

#### **ARTICLE 14 - MODIFICATION OR WITHDRAWAL OF BID**

- 14.01 A Bid may be modified or withdrawn by a document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 14.02 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.

#### **ARTICLE 15 - OPENING OF BIDS**

- 15.02 Bids will be publicly opened at the time and place indicated in the advertisement or invitation to bid and read aloud, unless obviously non-responsive.

#### **ARTICLE 16 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

- 16.01 All Bids will remain subject to acceptance for the period stated in Document 00416 - Bid Form - Procurement, but Buyer may, in its sole discretion, release any Bid and return the bid security prior to the end of this period.

#### **ARTICLE 17 - EVALUATION OF BIDS AND AWARD OF PROCUREMENT CONTRACT**

- 17.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids.
- 17.02 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.
- 17.03 In evaluating Bids, Buyer will consider whether the Bids comply with the prescribed requirements, and such alternatives, unit prices, and other data as may be requested in Document 00416 - Bid Form – Procurement or prior to the Notice of Award.
- 17.04 If Buyer awards the Procurement Contract, such award will be to the responsible Bidder submitting the lowest responsive Bid.

## **ARTICLE 18 - BONDS AND INSURANCE**

18.01 When the Successful Bidder delivers the signed Procurement Agreement to Buyer, it must be accompanied by required such bonds and acceptable evidence of insurance.

## **ARTICLE 19 - SIGNING OF PROCUREMENT AGREEMENT**

19.01 When Buyer issues a Notice of Award to the Successful Bidder, it will be accompanied by 5 unsigned counterparts of the Procurement Agreement along with the other Procurement Contract Documents identified in the Procurement Agreement.

- A. Within 15 days, Successful Bidder must execute and deliver the required number of counterparts of the Procurement Agreement and any bonds and acceptable evidence of insurance, together with printed and electronic copies of the Procurement Contract Documents.
- B. Within 10 days, Buyer will deliver one fully executed counterpart of the Procurement Agreement to Successful Bidder, together with printed and electronic copies of the Procurement Contract Documents.

## **ARTICLE 20 - SALES AND USE TAXES**

20.01 Buyer's tax-exempt status as specified in Document 00801 - Supplementary Conditions - Procurement.

## **ARTICLE 21 - PROCUREMENT CONTRACT TO BE ASSIGNED**

21.01 Bidder's attention is directed to the provisions of Article 5 of the Procurement Agreement which provide for the assignment of the Procurement Contract to a construction contractor designated by the Buyer to construct the 2022 VFD Replacement Project.

- A. Successful Bidder (Seller) will be required to perform the Procurement Contract after it has been assigned to the construction contractor (Contractor Assignee) in accordance with the provisions in the Procurement Contract.
  - 1. The assignment will be as specified in Document 00608 - Assignment of Procurement Contract and Document 00609 - Surety's Agreement to Assignment.
- B. Timing of the assignment is addressed in the Procurement Agreement. Forms documenting the assignment of the Procurement Contract and for the agreement of the Seller's surety to such assignment are included as attachments to the Procurement Agreement.

END OF DOCUMENT



**DOCUMENT 00416**

**BID FORM - PROCUREMENT**

The terms used in this Bid with initial capital letters have the meanings stated in Document 00204 - Instructions to Bidders - Procurement, Document 00701 - General Conditions - Procurement, and Document 00801 - Supplementary Conditions - Procurement.

**ARTICLE 1 - BUYER AND BIDDER**

1.01 This Bid is submitted to:

**South Valley Water Reclamation Facility, 7495 South 1300 West, West Jordan, Utah 84084**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Procurement Contract with Buyer in the form included in the Procurement Bidding Documents, and to furnish the Goods and Special Services as specified or indicated in the Procurement Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Procurement Bidding Documents.

**ARTICLE 2 - BASIS OF BID**

2.01 Lump Sum Bids

A. Bidder will furnish all Goods and Special Services in accordance with the Procurement Contract Documents for the following Procurement Contract Price(s):

1. **Lump Sum Bid Price for complete scope of supply**

<b>Lump Sum Bid Price</b>	<b>\$</b>
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**ARTICLE 3 - TIME OF COMPLETION**

3.01 Bidder agrees that the furnishing of Goods and Special Services and corresponding bid prices will conform to the schedule of Procurement Contract Times set forth in the Procurement Agreement.

3.02 Bidder accepts the provisions of the Procurement Agreement as to liquidated damages.

**ARTICLE 4 - ATTACHMENTS TO THIS BID**

4.01 The following documents are attached to and made a condition of this Bid:

A. Required Bid security in the form prescribed in Document 00204 - Instructions to Bidders - Procurement.

- B. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids.

**ARTICLE 5 - BIDDER’S ACKNOWLEDGMENTS**

- 5.01 Bidder accepts all terms and conditions of Document 00204 - Instructions to Bidders - Procurement. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period that Bidder may agree to in writing upon request of Buyer.
- 5.02 Bidder has examined and carefully studied the Procurement Bidding Documents, the related data identified in the Procurement Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date

**ARTICLE 6 - BIDDER’S REPRESENTATIONS AND CERTIFICATIONS**

- 6.01 Bidder’s Representations
  - A. In submitting this Bid, Bidder represents that:
    1. Bidder has examined and carefully studied the Procurement Contract Documents.
    2. If required by Document 00204 - Instructions to Bidders - Procurement to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Bidder’s judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.
    3. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.
    4. Bidder has carefully studied, considered, and correlated the information known to Bidder with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.
    5. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.



6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.
7. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bidding Requirements, that without exception the Bid (including all Bid prices) is premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

## 6.02 Bidder's Certifications

### A. Bidder certifies that:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Procurement Contract. For the purposes of this Document:
  - a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
  - b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;
  - c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
  - d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.



This Bid is offered by:

Bidder:

\_\_\_\_\_  
*(typed or printed name of organization)*

By:

\_\_\_\_\_  
*(individual's signature)*

Date:

\_\_\_\_\_  
*(date signed)*

Name:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

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

Attest:

\_\_\_\_\_  
*(individual's signature)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Designated Representative:

Name:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Address:

\_\_\_\_\_  
\_\_\_\_\_

Phone:

\_\_\_\_\_

Email:

\_\_\_\_\_

License No.:

\_\_\_\_\_

Classification:

\_\_\_\_\_

Limitation:

\_\_\_\_\_

END OF DOCUMENT



**DOCUMENT 00430**

**BID BOND (PENAL SUM FORM)**

<p><b>Bidder</b> Name Address <i>(principal place of business):</i></p>	<p><b>Surety</b> Name: Address <i>(principal place of business):</i></p>
<p><b>Owner</b> Name Address <i>(principal place of business):</i></p>	<p><b>Bid</b> Project <i>(name and location):</i>  Bid Due Date:</p>
<p><b>Bond</b> Penal Sum: Date of Bond:</p>	
<p>Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.</p>	
<p>Bidder _____</p>	<p>Surety _____</p>
<p align="center"><i>(Full formal name of Bidder)</i></p>	<p align="center"><i>(Full formal name of Surety) (corporate seal)</i></p>
<p>By: _____ <i>(Signature)</i></p>	<p>By: _____ <i>(Signature) (Attach Power of Attorney)</i></p>
<p>Name: _____ <i>(Printed or typed)</i></p>	<p>Name: _____ <i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p>Attest: _____ <i>(Signature)</i></p>	<p>Attest: _____ <i>(Signature)</i></p>
<p>Name: _____ <i>(Printed or typed)</i></p>	<p>Name: _____ <i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p><i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i></p>	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner 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 will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
  - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) 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 Owner.
4. 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 Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
5. 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 Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
6. No suit or action will 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 1 year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must 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 Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will 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. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

END OF DOCUMENT

## DOCUMENT 00526

### AGREEMENT BETWEEN BUYER AND SELLER - PROCUREMENT

This Procurement Agreement is by and between South Valley Water Reclamation Facility ("Buyer") and \_\_\_\_\_ ("Seller").

Terms used in this Procurement Agreement have the meanings stated in Document 00701 - General Conditions - Procurement and Document 00801 - Supplementary Conditions - Procurement.

Buyer and Seller hereby agree as follows:

#### ARTICLE 1 - PROCUREMENT CONTRACT

##### 1.01 Goods and Special Services

- A. Seller shall furnish the Goods and Special Services as specified or indicated in the Procurement Contract Documents. The Goods and Special Services are generally described as follows: variable frequency drives and Owner training.

##### 1.02 The Project

- A. The Project, of which the Goods and Special Services are a part, is generally described as follows: 2022 VFD Replacement Project.

##### 1.03 Engineer

- A. Buyer has retained Carollo Engineers ("Engineer"), to prepare Procurement Contract Documents and act as Buyer's representative. Engineer assumes all duties and responsibilities and has the rights and authority assigned to Engineer in the Procurement Contract Documents in connection with Seller's furnishing of Goods and Special Services.

##### 1.04 Point of Destination:

- A. The Point of Destination is designated as: South Valley Water Reclamation Facility, 7495 South 1300 West, West Jordan, Utah 84084.

#### ARTICLE 2 - PROCUREMENT CONTRACT TIMES

##### 2.01 Time of the Essence

- A. All time limits for Milestones, including the submittal of Shop Drawings and Samples, the delivery of Goods, and the furnishing of Special Services as stated in the Procurement Contract Documents, are of the essence of the Procurement Contract.

## 2.02 Schedule of Procurement Contract Times

A. The following schedule sets forth the Procurement Contract Times:

<b>Milestone</b>	<b>Date or Days</b>	<b>Notes</b>
Submit Shop Drawings	30	After award.
Deliver acceptable Goods to Point of Destination	July 1, 2023	
Commence Special Services for Goods	July 1, 2023	Start of project construction.
Complete Special Services for Goods	October 1, 2023	Completion of project construction.

## 2.03 Shop Drawings and Samples

- A. Submittal of Shop Drawings and Samples: Seller shall submit all Shop Drawings and Samples required by the Procurement Contract Documents to Engineer for its review and approval.
- B. Engineer's Review: It is the intent of the parties that Engineer will conduct its review of Shop Drawings and Samples and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within 14 days after Seller's submittal of such Shop Drawings and Samples, or within such longer period that is needed because of the quantity and quality of such submittals. Resubmittals will be limited whenever possible.

## 2.04 Liquidated Damages

- A. Buyer and Seller recognize that time is of the essence, and that Buyer will suffer financial and other losses if the Goods are not delivered to the Point of Destination and ready for receipt of delivery by Buyer within the time specified in this Document, plus any extensions thereof allowed in accordance with this Procurement Contract.
- B. 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 delivery requirements.
- C. Further, the parties recognize the time, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the loss (whether direct, consequential, or otherwise) suffered by Buyer if complete, acceptable Goods are not delivered on time.
- D. Accordingly, instead of requiring any such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer \$ 500.00 for each day that expires after the time specified in this Document for delivery of acceptable Goods.



**ARTICLE 3 - PROCUREMENT CONTRACT PRICE**

- A. The Procurement Contract Price is the Lump Sum amount set forth in the attached Bid Form.
- B. The Total Price is \$ \_\_\_\_\_. Such Total Price is comprised of the Lump Sum amount (taking into account any accepted alternates), Unit Price Goods and Special Services amount (if any) (subject to final adjustment), and Buyer’s Contingency Allowance (if any) (subject to final adjustment).
  - 1. The final adjustment of Procurement Contract Price with respect to Unit Price Goods and Special Services will be set forth in a Change Order.

3.01 Procurement Contract Price and Total Price—Based on Attached Bid

- A. For furnishing the Goods and Special Services in accordance with the Procurement Contract Documents, Buyer shall pay Seller the prices stated in Seller’s Bid, attached hereto as an exhibit, subject to final adjustments for Unit Price Goods and Special Services and Buyer’s Contingency Allowance, if any, and subject to the following Buyer-accepted alternates

**ARTICLE 4 - PAYMENT PROCEDURES**

4.01 Submittal and Processing of Applications for Payment

- A. Seller shall submit Applications for Payment in accordance with Article 13 of Document 00701 - General Conditions - Procurement and the following paragraphs. Engineer and Buyer will process such Applications for Payment in accordance with said Article 13.

4.02 Progress Payments; Final Payment

- A. Seller may submit an Application for Payment requesting the stated percentage of Procurement Contract Price upon attainment of each of the following Payment Line Items:

Payment Line Item (Lump Sum)	Percentage of Lump Sum
Receipt of Approval of Shop Drawings and Samples	10
Completion of acceptable factory testing	5
Delivery of Goods to Point of Destination in accordance with the Procurement Contract Documents	70
Completion of Special Services in accordance with Procurement Contract Documents	10
Final Payment: Correction of non-conformities, provision of final Operations and Maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents	5

Payment Line Item (Lump Sum)	Percentage of Lump Sum
Total Procurement Contract Price (Lump Sum)	100

- B. Retainage:
1. Progress payment applications shall be based on the approved schedule of values.
  2. Progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
  3. 95percent of the value of the Work completed (with the balance being retainage).
- C. In accordance with Utah Procurement Code, Section 13-8-5, 95 percent of the value of the Work completed (with the balance being retainage).
- D. In accordance with Utah Procurement Code, Section 13-8-5, upon Substantial Completion, Owner will pay an amount sufficient to increase total payments to Supplier to 100 percent of the Work completed, less such amounts set off by Owner in accordance with Document 00701 - General Conditions – Procurement, and less 125 percent of Engineer’s estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.
1. Final Payment:
    - a. Upon completion of installation and final acceptance by Owner of all Goods and Services of the Supplier, final payment and release of retainage may be claimed by Supplier [through the Contractor.
- E. For Unit Price Goods and Special Services, if any, or for payments owed to Seller as a result of authorizations by Buyer under the Buyer’s Contingency Allowance (if any), Seller shall submit a separate Application for Payment, no more frequently than monthly, that states (1) the actual quantities of such Unit Price Goods and Special Services that have been furnished, and the applicable unit prices; and (2) the services or items performed or furnished under the Buyer’s Contingency Allowance, and the amounts owed. If practical, and at Seller’s option, Seller may apply for such unit price and Buyer’s Contingency Allowance payments in a separate section of an Application for Payment submitted for lump sum items.
- F. Buyer shall pay Seller the amount owed under an Application for Payment within 30 days after Engineer’s presentation to Buyer of the Application for Payment and Engineer’s recommendation.

#### 4.03 Interest

- A. All amounts not paid when due will bear interest as the rate of 0 percent per annum.

## ARTICLE 5 - ASSIGNMENT OF PROCUREMENT CONTRACT

### 5.01 Assignment of Contract

- A. Buyer has the right to assign this Procurement Contract for furnishing Goods and Special Services, but only to a person or entity with sufficient and apparent ability to satisfy all of Buyer's obligations under this Procurement Contract, and Seller hereby consents to such assignment. Forms documenting the assignment of the Procurement Contract, and consent of Seller's surety to the assignment, have been executed by Buyer, Seller, and Seller's surety, and are attached as exhibits to this Procurement Agreement.
- B. If so assigned the following provisions apply:
1. The Procurement Contract is initially executed in the name of the entity identified in this Document as Buyer and will be assigned by such Buyer (as assignor) to a construction contractor (Contractor/Assignee) designated by such Buyer. The assignment will occur on the effective date of the construction contract between such Buyer (Project Owner) and the Contractor/Assignee, which is expected to occur on or about December 1, 2022. Commencing on the date of acceptance of assignment by the Contractor/Assignee, all references in the Procurement Contract to "Buyer" shall mean the designated Contractor/Assignee.
  2. The assignment of this Procurement Contract relieves the assignor from all further obligations and liabilities under this Procurement Contract. After assignment, Seller shall become a subcontractor or supplier to the Contractor/Assignee and, except as noted in this Document, all rights, duties, and obligations of Buyer under the Procurement Contract become the rights, duties, and obligations of the Contractor/Assignee.
  3. After assignment:
    - a. The Procurement Drawings and Procurement Specifications, and any modifying Addenda will become "Contract Documents" under the construction contract.
    - b. If the Procurement Drawings or Procurement Specifications, as "Contract Documents" under the construction contract, are duly modified under such construction contract, then Seller and Contractor/Assignee shall enter into a corresponding Change Order under the applicable provisions of this Procurement Contract.
    - c. The Procurement Drawings and Procurement Specifications may not be modified by Seller or Contractor/Assignee, singly or in tandem, except as such Procurement Drawings or Procurement Specifications, as "Contract Documents" under the construction contract, have been duly modified under such construction contract.
    - d. All performance warranties, guarantees, and indemnifications required by the Procurement Contract will continue to run for the benefit of assignor (Project Owner) and, in addition, for the benefit of the Contractor/Assignee. However, if assignor (Project Owner) and Contractor/Assignee make the same warranty or guarantee claim, then Seller shall only be liable once for such claim. Other than its remedies under such warranties, guarantees, and indemnifications, assignor will not retain direct rights under this Procurement Contract, but will have rights and remedies as a party to the construction contract, whose scope of work will encompass the Procurement Drawings, Procurement Specifications, and modifying Addenda; provided, however, that any

- limitations on Seller's liability in this Procurement Contract will continue to bind the original Buyer (assignor) after assignment.
- e. The Contractor/Assignee shall have all the rights of the Buyer under the Performance Bond and Payment Bond.
  - f. Seller shall submit all Applications for Payment directly to Contractor/Assignee.
    - 1) Contractor/Assignee shall review each Application for Payment promptly, determine the amount that Contractor/Assignee approves for payment, and then include the amount approved in the next application for payment submitted to Project Owner (or Engineer) under the construction contract.
    - 2) Contractor/Assignee shall pay Seller within 20 days of receipt of payment from the Project Owner under the construction contract.
    - 3) After assignment Engineer will review, approve, or deny the content of Applications for Payment under the Procurement Contract only to the extent that Contractor/Assignee, as construction contractor, has incorporated such content into payment applications that Engineer reviews under the construction contract.
  - g. The Contractor/Assignee shall have all the rights of the Buyer under any pending Claim by Buyer.
  - h. All Claims and supporting documentation will be submitted directly by the claimant party (either Contractor/Assignee or Seller), to the other party, without submittal to Engineer.
    - 1) The other party will render a response in writing within 30 days of receipt of the last submittal of claimant.
    - 2) If the other party does not render a written response to a Claim within 30 days after receipt of the last submittal of the claimant, the other party shall be deemed to have approved the Claim in its entirety.
    - 3) The other party's written response to a Claim, or the approval of the Claim in its entirety as a function of failure to respond within 30 days, will be final and binding upon Buyer and Seller 30 days after it is issued, unless within such 30 days of issuance either Buyer or Seller appeals the result by initiating the mediation of the Claim in accordance with the dispute resolution procedures.
    - 4) Any Claim by Seller that Contractor/Assignee may choose to submit, present, or forward to Project Owner must be submitted to Buyer within sufficient time for Contractor/Assignee to preserve its rights under the construction contract, notwithstanding any procedures or time limits in this Procurement Contract.
  - i. Seller's recovery of additional cost, time, or both cost and time for any Claim attributable to the Project Owner will be limited to the proportionate recovery by Contractor/Assignee against Project Owner for such Claim. Seller will cooperate and assist Contractor/Assignee in pursuing any Claim by Contractor/Assignee against Project Owner on behalf of Seller, including the timely preparation and delivery of supporting documentation.
  - j. If the pursuit of any claim by Contractor/Assignee against Project Owner on Seller's behalf requires the expenditure by Contractor/Assignee of legal or consulting fees, or results in litigation, arbitration, or any dispute resolution procedures, Seller agrees to pay for a proportionate share of attorneys' fees, consultant fees, and litigation, arbitration, and other resolution costs incurred by Contractor/Assignee in pursuing the claim on behalf of Seller, based upon

- the amount claimed by Seller as compared to the total value of the claim pursued by the Contractor/Assignee.
- k. All rights, duties, and obligations of Engineer to Contractor/Assignee and Seller under this Procurement Contract will cease.
  - l. Subject to the foregoing provisions, all references in the Procurement Contract to submitting items to Engineer, or to Engineer having tasks or obligations, will be read after such an assignment as requiring submittal to Contractor/Assignee, or as Contractor/Assignee having such tasks or obligations (which Contractor/Assignee may delegate when appropriate).
  - m. If the Procurement Contract includes a Buyer's Contingency Allowance, upon assignment such allowance will be automatically reduced to the amount previously authorized by Buyer (Project Owner) and cease to be operational.
- C. No other assignment by a party hereto of any rights under or interests in the Procurement Contract will be binding on another party hereto without the written consent of the party sought to be bound. Specifically, but without limitation, Procurement Contract payments or other money that may become due, and Procurement Contract payments or other money 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 Procurement Contract Documents.

## **ARTICLE 6 - PROCUREMENT CONTRACT DOCUMENTS**

### **6.01 List of Procurement Contract Documents**

- A. The Procurement Contract Documents consist of the following:
- 1. This Procurement Agreement.
  - 2. Document 00701 - General Conditions - Procurement.
  - 3. Document 00801 - Supplementary Conditions - Procurement.
  - 4. Procurement Specifications.
  - 5. Procurement Drawings (not attached but incorporated by reference).
  - 6. Addenda Numbers:.
  - 7. Bonds:
    - a. Performance bond (together with power of attorney).
  - 8. Exhibits to this Procurement Agreement (enumerated as follows):
    - a. Exhibit A, Assignment of Contract, Consent to Assignment, and Acceptance of Assignment.
    - b. Exhibit B, Surety's Consent to Assignment.
    - c. Documentation submitted by Seller.
  - 9. The following which may be delivered or issued on or after the Effective Date of the Procurement Contract and are not attached hereto:
    - a. Change Orders;
    - b. Change Directives; and
    - c. Field Orders.
- B. The documents listed under List of Procurement Contract Documents are attached to this Procurement Agreement (except as expressly noted otherwise above).

- C. There are no Procurement Contract Documents other than those listed above.
- D. The Procurement Contract Documents may only be amended or supplemented as provided in Paragraph 11.01 of Document 00701 - General Conditions - Procurement.

## **ARTICLE 7 - SELLER' S REPRESENTATIONS AND CERTIFICATIONS**

### **7.01 Seller's Representations**

- A. In order to induce Buyer to enter into this Procurement Agreement, Seller makes the following representations:
  - 1. Seller has examined and carefully studied the Procurement Contract Documents.
  - 2. If required by the Instructions to Bidders to visit the Point of Destination and the site where the Goods are to be installed or Special Services will be provided, or if, in Seller's judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.
  - 3. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.
  - 4. Seller has carefully studied, considered, and correlated the information known to Seller with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.
  - 5. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.
  - 6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.
  - 7. Seller's entry into this Procurement Contract constitutes an incontrovertible representation by Seller that without exception all prices in the Procurement Agreement are premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

### **7.02 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 Procurement Contract. For the purposes of this Document:
  - 1. "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Procurement Contract execution;

2. "Fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Procurement 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 Procurement Contract.

## **ARTICLE 8 - CONFIDENTIALITY**

### **8.01 Confidential Information**

- A. Confidential information is information in documents submitted by Seller that Seller clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Such documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.
- B. Seller shall clearly and prominently mark confidential information with the word "CONFIDENTIAL" on each page or sheet or on the cover of bound documents. Place "CONFIDENTIAL" stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.

### **8.02 Disclosure of Confidential Information**

- A. If Buyer is requested to disclose confidential information, or becomes legally compelled (by oral questions, interrogatories, requests for information or documents, subpoena, civil or criminal investigative demand, public information requests, or other requests under Laws and Regulations) to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by the Procurement Contract, Buyer will provide Seller with prompt notice so Seller may seek an appropriate protective order or other remedy. Seller will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.
- B. Buyer's obligations with respect to confidential information are nullified by the following exceptions:
  1. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer;
  2. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer's possession, and not previously marked as confidential, or was otherwise publicly available prior to the Effective Date of the Procurement Contract;

3. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information;
4. Buyer has a good faith belief that disclosure is required or justified; or
5. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.

#### 8.03 Waiver of Immunity

- A. Notwithstanding any other provision of the Procurement Contract, it is stipulated and agreed that by accepting confidential information, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

### **ARTICLE 9 - MUTUAL WAIVER**

#### 9.01 Mutual Waiver of Consequential Damages

- 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 Procurement Contract. If Buyer (Project Owner) assigns this Procurement Contract to a construction contractor (Contractor/Assignee), then the terms of this Paragraph will be binding upon the Contractor/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) liquidated damages, (c) 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, (d) intentional or reckless wrongful conduct, or (e) rights conferred by any bond provided by Seller under this Procurement Contract.



IN WITNESS WHEREOF, Buyer and Seller have signed this Procurement Agreement. Counterparts have been delivered to Buyer and Seller.

The Effective Date of the Procurement Contract is **[date to be inserted at the time of execution]**.

Buyer

Seller

\_\_\_\_\_  
*(typed or printed name of organization)*

\_\_\_\_\_  
*(typed or printed name of organization)*

By: \_\_\_\_\_  
*(individual's signature)*

By: \_\_\_\_\_  
*(individual's signature)*

Date: \_\_\_\_\_  
*(date signed)*

Date: \_\_\_\_\_  
*(date signed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

*(If Seller is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

Attest: \_\_\_\_\_  
*(individual's signature)*

Attest: \_\_\_\_\_  
*(individual's signature)*

Title: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Address for giving notices:

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Designated Representative:

Designated Representative:

Name: \_\_\_\_\_  
*(typed or printed)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Address:

Address:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Email: \_\_\_\_\_

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

END OF DOCUMENT



**DOCUMENT 00608**

**ASSIGNMENT OF PROCUREMENT CONTRACT**

This assignment will be effective on the effective date of the construction contract between Buyer (as "Owner") and Contractor/Assignee (as "Contractor").

The Procurement Contract between South Valley Water Reclamation Facility ("Buyer") and **[insert name of Seller]** ("Seller") for furnishing Goods and Special Services entitled **[insert name/designation of Procurement Contract]** (Procurement Contract) is hereby assigned, transferred, and set over to Contractor/Assignee, as assignee, by Buyer, as assignor. Upon assignment the Contractor/Assignee shall have the duties, rights, and obligations of Buyer under the terms of the Procurement Contract, and will be responsible to Owner under the construction contract for the performance of obligations by Seller, which will become a Subcontractor or Supplier to Contractor/Assignee. Buyer, Seller, and Contractor/Assignee hereby acknowledge and agree to be bound by the terms and conditions of assignment set forth in Article 5 of the Agreement Between Buyer and Seller for Procurement Contract.

This assignment includes the Buyer's tax-exempt status, if any.

This assignment will be effective on the Effective Date of the Contract Agreement between the Owner and the Contractor for the General Construction Work.

**Assignment Made by Buyer**

---

*(typed or printed name of organization)*

By: \_\_\_\_\_ Date: \_\_\_\_\_  
*(individual's signature) (date signed)*

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
*(typed or printed) (typed or printed)*

*If Buyer is a corporation, attach evidence of 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.*

**Assignment Acknowledged and Accepted by Seller**

---

*(typed or printed name of organization)*

By: \_\_\_\_\_ Date: \_\_\_\_\_  
*(individual's signature) (date signed)*

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
*(typed or printed) (typed or printed)*

*If Seller is a corporation, attach evidence of authority to sign.*

**Assignment Accepted by Contractor/Assignee**

---

*(typed or printed name of organization)*

By: \_\_\_\_\_ Date: \_\_\_\_\_  
*(individual's signature) (date signed)*

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
*(typed or printed) (typed or printed)*

*If Contractor/Assignee is a corporation, attach evidence of authority to sign.*

END OF DOCUMENT

**DOCUMENT 00609**

**SURETY'S AGREEMENT TO ASSIGNMENT**

Surety hereby acknowledges, agrees, and consents that the Procurement Contract for furnishing Goods and Special Services entitled **[Name of Procurement Contract]** by and between South Valley Water Reclamation Facility ("Buyer") and **[Name of Seller]** ("Seller") may be assigned, transferred, and set over to **[Name of Contractor/Assignee]** ("Contractor/Assignee"), in accordance with Article 5 and Exhibit A of the Agreement between Buyer and Seller for Procurement Contract.

Surety further agrees that, upon assignment of the Procurement Contract, the Contractor/Assignee shall have all the rights of the Buyer under the Procurement Performance Bond and Procurement Payment Bond.

**Agreement to Assignment Acknowledged and Accepted by Surety**

---

*(typed or printed name of organization)*

By: \_\_\_\_\_ Date: \_\_\_\_\_  
*(individual's signature)* *(date signed)*

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
*(typed or printed)* *(typed or printed)*

*Attach Power of Attorney.*

END OF DOCUMENT



DOCUMENT 00614

PERFORMANCE BOND - PROCUREMENT

<b>Seller</b> Name: Address ( <i>principal place of business</i> ):	<b>Surety</b> Name: Address ( <i>principal place of business</i> ):
<b>Buyer</b> Name: Mailing address ( <i>principal place of business</i> ):	<b>Procurement Contract</b> Description ( <i>name and location</i> ):  Procurement Contract Price: Effective Date of Procurement Contract:
<b>Bond</b> Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Procurement Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See modifications in this Document	
Surety and Seller, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.	
<b>Seller as Principal</b>	<b>Surety</b>
_____ <i>(Full formal name of Seller)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Seller, Surety, Buyer, or other party is considered plural where applicable.</i>	





1. The Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Buyer for the performance of the Procurement Contract, which is incorporated herein by reference.
2. If the Seller performs the Procurement Contract, the Surety and the Seller shall have no obligation under this Bond, except when applicable to participate in a conference as provided in this Document.
3. If there is no Buyer Default under the Procurement Contract, the Surety's obligation under this Bond will arise after:
  - 3.1. The Buyer first provides notice to the Seller and the Surety that the Buyer is considering declaring a Seller Default. Such notice may indicate whether the Buyer is requesting a conference among the Buyer, Seller, and Surety to discuss the Seller's performance. If the Buyer does not request a conference, the Surety may, within 5 business days after receipt of the Buyer's notice, request such a conference. If the Surety timely requests a conference, the Buyer shall attend. Unless the Buyer agrees otherwise, any conference requested under this provision will be held within 10 business days of the Surety's receipt of the Buyer's notice. If the Buyer, the Seller, and the Surety agree, the Seller shall be allowed a reasonable time to perform the Procurement Contract, but such an agreement does not waive the Buyer's right, if any, subsequently to declare a Seller Default;
  - 3.2. The Buyer declares a Seller Default, terminates the Procurement Contract, and notifies the Surety; and
  - 3.3. The Buyer has agreed to pay the Balance of the Procurement Contract Price in accordance with the terms of the Procurement Contract to the Surety or to a seller selected to perform the Procurement Contract.
4. Failure on the part of the Buyer to comply with the notice requirement in Document does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Buyer has satisfied the conditions specified in this Document, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 5.1. Arrange for the Seller, with the consent of the Buyer, to perform and complete the Procurement Contract;
  - 5.2. Undertake to perform and complete the Procurement Contract itself, through its agents or independent contractors;
  - 5.3. Obtain bids or negotiated proposals from qualified sellers acceptable to the Buyer for a contract for performance and completion of the Procurement Contract, arrange for a contract to be prepared for execution by the Buyer and a seller selected with the Buyer's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Procurement Contract, and pay to the Buyer the amount of damages as specified in this Document in excess of the Balance of the Procurement Contract Price incurred by the Buyer as a result of the Seller Default; or

- 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new seller, and with reasonable promptness under the circumstances:
  - 5.4.1 After investigation, determine the amount for which Surety may be liable to the Buyer and, as soon as practicable after the amount is determined, make payment to the Buyer; or
  - 5.4.2 Deny liability in whole or in part and notify the Buyer, citing the reasons for denial.
6. If the Surety does not proceed as specified in this Document with reasonable promptness, the Surety shall be deemed to be in default on this Bond 7 days after receipt of an additional written notice from the Buyer to the Surety demanding that the Surety perform its obligations under this Bond, and the Buyer shall be entitled to enforce any remedy available to the Buyer. If the Surety proceeds as specified in this Document and the Buyer refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Buyer shall be entitled to enforce any remedy available to the Buyer.
7. If the Surety elects to act, then the responsibilities of the Surety to the Buyer will not be greater than those of the Seller under the Procurement Contract, and the responsibilities of the Buyer to the Surety will not be greater than those of the Buyer under the Procurement Contract. Subject to the commitment by the Buyer to pay the Balance of the Procurement Contract Price, the Surety is obligated, without duplication for:
  - 7.1. the responsibilities of the Seller for correction of defective or non-conforming Goods and Special Services, and completion of the Procurement Contract;
  - 7.2. additional legal, design professional, and delay costs resulting from the Seller's Default, and resulting from the actions or failure to act of the Surety; and
  - 7.3. liquidated damages, or if no liquidated damages are specified in the Procurement Contract, actual damages caused by delayed performance or non-performance of the Seller.
8. If the Surety elects to act, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Buyer or others for obligations of the Seller that are unrelated to the Procurement Contract, and the Balance of the Procurement Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Buyer or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Procurement Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction where the Point of Destination is located and must be instituted within 2 years after a declaration of Seller Default, or within 2 years after the Seller ceased working, or within 2 years after the 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 periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice to the Surety, the Buyer, or the Seller must be mailed or delivered to the address shown on the page on which their signature appears.
13. 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 will be deemed deleted from this Bond and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. Balance of the Procurement Contract Price—The total amount payable by the Buyer to the Seller under the Procurement Contract after all proper adjustments have been made including allowance for the Seller for any amounts received or to be received by the Buyer in settlement of insurance or other claims for damages to which the Seller is entitled, reduced by all valid and proper payments made to or on behalf of the Seller under the Procurement Contract.
- 14.2. Buyer Default—Failure of the Buyer, which has not been remedied or waived, to pay the Seller as required under the Procurement Contract or to perform and complete or comply with the other material terms of the Procurement Contract.
- 14.3. Goods and Special Services—The full scope of materials, equipment, other items, and services to be furnished by Seller, as defined in the Procurement Contract.
- 14.4. Point of Destination—The location where delivery of the Goods shall be made, as stated in the Procurement Contract.
- 14.5. Procurement Contract—The contractual agreement between the Buyer and Seller identified on the cover page, including all Procurement Contract Documents and changes made to the Procurement Contract.
- 14.6. Seller Default—Failure of the Seller, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Procurement Contract.
- 14.7. Procurement Contract Documents—All the documents that comprise the contractual agreement between the Buyer and Seller.

15. Modifications to this Bond are as follows: None

END OF DOCUMENT



DOCUMENT 00617

PAYMENT BOND - PROCUREMENT

<b>Seller</b> Name: Address ( <i>principal place of business</i> ):	<b>Surety</b> Name: Address ( <i>principal place of business</i> ):
<b>Buyer</b> Name: Mailing address ( <i>principal place of business</i> ):	<b>Procurement Contract</b> Description ( <i>name and location</i> ):  Procurement Contract Price: Effective Date of Procurement Contract:
<b>Bond</b> Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Procurement Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See modifications as specified in this Document	
Surety and Seller, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.	
<b>Seller as Principal</b>	<b>Surety</b>
_____ <i>(Full formal name of Seller)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Seller, Surety, Buyer, or other party is considered plural where applicable.</i>	



1. The Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Buyer to pay for labor, materials, and equipment furnished for use in the performance of the Procurement Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Seller promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Buyer from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Procurement Contract, then the Surety and the Seller shall have no obligation under this Bond.
3. If there is no Buyer Default under the Procurement Contract, the Surety's obligation to the Buyer under this Bond will arise after the Buyer has promptly notified the Seller and the Surety of claims, demands, liens, or suits against the Buyer or the Buyer's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Procurement Contract, and tendered defense of such claims, demands, liens, or suits to the Seller and the Surety.
4. When the Buyer has satisfied the conditions of notification, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Buyer against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
  - 5.1. Claimants who do not have a direct contract with the Seller
    - 5.1.1 have furnished a written notice of non-payment to the Seller, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within 90 days after having last performed labor or last furnished materials or equipment included in the Claim; and
    - 5.1.2 have sent a Claim to the Surety.
  - 5.2. Claimants who are employed by or have a direct contract with the Seller have sent a Claim to the Surety.
6. If a notice of non-payment is given by the Buyer to the Seller, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment.
7. When a Claimant has satisfied the specified conditions, the Surety shall promptly and at the Surety's expense take the following actions:
  - 7.1. Send an answer to the Claimant, with a copy to the Buyer, within 60 days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
  - 7.2. Pay or arrange for payment of any undisputed amounts.
  - 7.3. The Surety's failure to discharge its obligations will not be deemed to constitute a waiver of defenses the Surety or Seller may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Buyer to the Seller under the Procurement Contract will be used for the performance of the Procurement Contract and to satisfy claims, if any, under any procurement performance bond. By the Seller furnishing and the Buyer accepting this Bond, they agree that all funds earned by the Seller in the performance of the Procurement Contract are dedicated to satisfying obligations of the Seller and Surety under this Bond, subject to the Buyer's priority to use the funds for the completion of the Goods and Special Services.
10. The Surety shall not be liable to the Buyer, Claimants, or others for obligations of the Seller that are unrelated to the Procurement Contract. The Buyer shall not be liable for the payment of any costs or expenses of any Claimant under this Bond and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Procurement Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the Point of Destination is located or after the expiration of 1 year from the date (1) on which the Claimant sent a Claim to the Surety pursuant 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 Procurement 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 will be applicable.
13. Notice and Claims to the Surety, the Buyer, or the Seller must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement where the Point of Destination is located, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted from this Bond and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Seller and Buyer shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
  - 16.1. Buyer Default—Failure of the Buyer, which has not been remedied or waived, to pay the Seller as required under the Procurement Contract or to perform and complete or comply with the other material terms of the Procurement Contract.
  - 16.2. Claim—A written statement by the Claimant including at a minimum:
    - 16.2.1 The name of the Claimant;
    - 16.2.2 The name of the person for whom the labor was done, or materials or equipment furnished;



- 16.2.3 A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Procurement Contract;
  - 16.2.4 A brief description of the labor, materials, or equipment furnished;
  - 16.2.5 The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Procurement Contract;
  - 16.2.6 The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
  - 16.2.7 The total amount of previous payments received by the Claimant; and
  - 16.2.8 The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.3. Claimant—An individual or entity having a direct contract with the Seller or with a subcontractor of the Seller to furnish labor, materials, or equipment for use in the performance of the Procurement Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Point of Destination is located or where the Goods and Special Services are to be installed or furnished. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Procurement Contract, architectural and engineering services required for performance of the work of the Seller and the 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.
- 16.4. Goods and Special Services—The full scope of materials, equipment, other items, and services to be furnished by Seller, as defined in the Procurement Contract.
- 16.5. Point of Destination—The location where delivery of the Goods shall be made, as stated in the Procurement Contract.
- 16.6. Procurement Contract—The contractual agreement between the Buyer and Seller identified on the cover page, including all Procurement Contract Documents and all changes made to the Procurement Contract.
- 16.7. Procurement Contract Documents—All the documents that comprise the contractual agreement between the Buyer and Seller.
17. Modifications to this Bond are as follows: None

END OF DOCUMENT



**DOCUMENT 00646**

**BUYER'S ACKNOWLEDGEMENT OF RECEIPT OF GOODS - PROCUREMENT**

Buyer: South  
Valley Water  
Reclamation  
Facility

Engineer: Carollo  
Engineers, Inc.

Seller:

Project: SVWRF  
VFD Replacement

Contract Name:  
SVWRF VFD  
Replacement

Buyer's Project No.:

Engineer's Project No.:  
201238

Seller's Project No.:

This Buyer's Acknowledgment of Receipt of Goods (Acknowledgment) applies to:

- All Goods       The following specified portions of the Goods:

Date of delivery of the Goods to the Point of Destination:

Date of Buyer's visual inspection of the Goods:

Date of this Acknowledgment:

Buyer acknowledges:

1. The Goods to which this notice applies have been delivered to the Point of Destination.
2. Buyer has visually inspected such Goods pursuant to Paragraph 9.02.B.1 of Document 00701 - General Conditions - Procurement.
3. Based on the visual inspection, such Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, subject to any exceptions and limitations in this Acknowledgment.
4. Such Goods are deemed received for purposes of Paragraph 9.02.B.2 of Document 00701 - General Conditions - Procurement.
5. Seller may submit its Application for Payment for the delivered Goods, subject to the terms of the Procurement Agreement.

Exceptions (if any) to this Acknowledgment:  None       As follows:

The responsibilities between Buyer and Seller for securing and storing the Goods, maintaining the Goods during storage, and for furnishing the Special Services, shall be as provided in the Procurement Contract.

The following documents are attached to and made a part of this Acknowledgement:

This Acknowledgment does not constitute an acceptance of any Goods not in conformance with the Procurement Contract Documents, nor is it a release of Seller's obligation to furnish all Goods and Special Services in accordance with the Procurement Contract.

	<b>Buyer</b>	<b>Engineer, on behalf of Buyer</b>
By (signature):	_____	_____
Name (Printed):	_____	_____
Title:	_____	_____
Date:	_____	_____

END OF DOCUMENT

**DOCUMENT 00647**

**BUYER'S NOTICE REGARDING CONFORMITY OF GOODS AND SPECIAL SERVICES -  
PROCUREMENT**

Buyer: South  
Valley Water  
Reclamation  
Facility

Buyer's Project No.:

Engineer:  
Carollo  
Engineers

Engineer's Project No.:

Seller:

Seller's Project No.:

Project:

Contract  
Name:

Notice Date:

Effective Date of the Procurement Contract:

Buyer hereby gives notice to Seller that, to the best of Buyer's knowledge, information, and belief, the Goods and Special Services:

- Are in conformance with the Procurement Contract Documents. Upon Seller's submittal of its final Application for Payment in accordance with the Procurement Contract Documents, Seller will be eligible for final payment, except as expressly indicated in the Procurement Contract.
- Are nonconforming with the Procurement Contract Documents for the following reason(s):
  - 1.

Seller's Special Services were completed on:

Buyer has consulted with and received Engineer's recommendation on conformity of the Goods and Special Services.

This Buyer's Notice Regarding Conformity of Goods and Special Services (Notice) is made expressly subject to the following terms and conditions to which all who receive and rely on said Notice agree:

1. This Notice is expressly subject to the terms and conditions set forth in the Procurement Contract.
2. This Notice is not a guarantee or warranty of Seller's performance under the Procurement Contract, an acceptance of Goods and Special Services that are not in accordance with the related Procurement Contract Documents, including but not limited to nonconforming Goods and Special Services discovered after final inspection, nor an assumption of responsibility for any failure of Seller to furnish the Goods and Special Services thereunder in accordance with the Procurement Contract, or to otherwise comply with the Procurement Contract Documents or the terms of any special guarantees specified.

3. This Notice does not relieve Seller of any surviving obligations under the Procurement Contract and is subject to Buyer's reservations of rights with respect to completion and final payment.

**Buyer**

By (signature): \_\_\_\_\_ Name (Printed): \_\_\_\_\_

Date: \_\_\_\_\_ Title: \_\_\_\_\_

END OF DOCUMENT

DOCUMENT 00701

GENERAL CONDITIONS – PROCUREMENT

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## ARTICLE 1 - DEFINITIONS

### 1.01 Defined Terms

- A. Wherever used in these Procurement General Conditions or in the other Procurement Documents and printed with initial capital letters, the following terms have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Procurement 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 documents or the Procurement Documents.
  2. Application for Payment—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.
  3. Bid--An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the price(s) for furnishing the Goods and Services.
  4. Bidder—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.
  5. Buyer—The individual or entity purchasing the Goods and Special Services.
  6. Change Directive—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.
  7. Change Order--A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.
  8. Claim—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.
  9. Contractor/Assignee—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.
  10. Effective Date of the Procurement Contract—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.
  11. Electronic Document—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
  12. Electronic Means—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the

- use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
13. Engineer-- The individual or entity designated as such in the Procurement Agreement.
  14. 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 Procurement Contract Price or Procurement Contract Times.
  15. Goods--The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.
  16. 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.
  17. Laws and Regulations; Laws or Regulations—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
  18. Milestone--A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.
  19. Notice of Award-- The written notice, by Buyer to a Bidder, of Buyer's acceptance of the Bid.
  20. Point of Destination-- The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.
  21. Procurement Agreement--The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.
  22. Procurement Bidding Documents-- The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).
  23. Procurement Bidding Requirements—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.
  24. Procurement Contract—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.
  25. Procurement Contract Documents—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.
  26. Procurement Contract Price—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.
  27. Procurement Contract Times—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.

28. Procurement Drawings—That part of the Procurement 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 Procurement Drawings as so defined.
29. Procurement Specifications—That part of the Procurement 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.
30. Project--The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.
31. Project Owner—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.
32. 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.
33. Schedule of Submittals—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer’s review of the Submittals.
34. Seller—The individual or entity furnishing the Goods and Special Services.
35. 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. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.
36. Special Services—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.
37. Submittal—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
38. Successful Bidder—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.
39. Supplementary Conditions--The part of the Procurement Documents that amends or supplements these General Conditions.

40. Unit Price Goods and Special Services—Goods and Special Services to be paid for on the basis of unit prices (if any).

## 1.02 Terminology

- A. The words and terms are not defined but have the indicated meanings when used in the Bidding Requirements or Procurement Contract Documents.
- B. Intent of Certain Terms or Adjectives
1. The Procurement 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 Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will 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 Procurement 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 are unsatisfactory, faulty, or deficient in that they:
    - a. do not conform to or comply with the requirements of the Procurement Contract Documents;
    - b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or
    - c. in the case of Special Services, have not been completed.
  3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer.
  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 means 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 Procurement Contract Documents.
- C. Procurement Contract Price or Procurement Contract Times: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.

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

## **ARTICLE 2 - PRELIMINARY MATTERS**

### **2.01 Delivery of Bonds & Insurance Certificates**

- A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer the performance bond and payment bond (if the Procurement Contract requires Seller to furnish such bonds).
- B. Evidence of Seller's Insurance: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with bonds and insurance. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.
- C. Evidence of Buyer's Insurance: After receipt of the signed counterparts of the Procurement Agreement and all required bonds and insurance documentation, Buyer shall promptly deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

### **2.02 Copies of Documents**

- A. Buyer shall furnish to Seller four printed copies of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

### **2.03 Electronic Transmittals**

- A. Except as otherwise stated elsewhere in the Procurement Contract, the Buyer, Seller, and Engineer may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Procurement Contract does not establish protocols for Electronic Means, then Buyer, Seller, and Engineer shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

## 2.04 Preliminary Schedules

- A. Within 15 days after the Effective Date of the Procurement Contract, Seller shall submit to Buyer and Engineer for timely review:
  - 1. a progress schedule of activities, consistent with the Procurement Contract Times, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Procurement Contract Documents.
    - a. 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 of the Procurement Contract Times.
    - b. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of Seller's performance of its obligations under the Procurement Contract, nor interfere with or relieve Seller from Seller's full responsibility therefor.
    - c. Such acceptance will not be deemed as an acknowledgment of the reasonableness and attainability of the schedule.
  - 2. a preliminary schedule of Submittals.
- B. No progress payment will be made to Seller until an acceptable progress schedule and acceptable schedule of Submittals are submitted to Buyer and Engineer (and other conditions applicable to progress payments are met).

## 2.05 Preliminary Conference

- A. Within 20 days after the Procurement 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 schedules, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

## 2.06 Safety

- A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.
- B. 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.
- C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

## ARTICLE 3 - PROCUREMENT CONTRACT DOCUMENTS

### 3.01 Intent

- A. The Procurement 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 Procurement 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. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.
- D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents.
- F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

### 3.02 Reference Standards

- 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, means 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 Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.
- B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer 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 part of the Procurement Contract Documents prepared by or for Engineer.

### 3.03 Reporting and Resolving Discrepancies

- A. Reporting Discrepancies
  - 1. Seller's Review of Procurement Contract Documents: If, before or during the performance of Seller's obligations, Seller discovers any conflict, error,



ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.

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

- B. Resolving Discrepancies: Except as may be otherwise specifically stated in the Procurement Contract Documents, the provisions of the Procurement Contract Documents will take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Procurement Contract Documents and:
1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Procurement 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 Procurement Contract Documents would result in violation of such Law or Regulation).

### 3.04 Requirements of the Procurement Drawings and Procurement Specifications

- A. During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.
1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.
- B. Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment.

- C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

### 3.05 Reuse of Documents

- A. Seller and its subcontractors and suppliers shall not:
  - 1. have or acquire any title to or ownership rights in any of the Procurement Drawings, Procurement Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Procurement Drawings, Procurement Specifications, other documents, or copies thereof, on extensions of the Project or any other project, without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer; or
  - 2. have or acquire any title or ownership rights in any other Procurement Contract Documents, reuse any such Procurement Contract Documents for any purpose without Buyer's express written consent, or violate any copyrights pertaining to such Procurement Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Procurement Contract. Nothing herein precludes Seller from retaining copies of the Procurement Contract Documents for record purposes.

## ARTICLE 4 - COMMENCEMENT AND SCHEDULE

### 4.01 Commencement of Procurement Contract Times

- A. The Procurement Contract Times will commence to run on the Effective Date of the Procurement Contract.

### 4.02 Continuing Performance

- A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered, and the Special Services furnished within the Procurement Contract Times.
- 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 will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

### 4.03 Adjustments to Progress Schedule

- A. The progress schedule may be adjusted from time to time as provided below.
  - 1. Seller shall submit to Buyer for acceptance proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such

adjustments will comply with any applicable provisions of the Procurement Specifications.

2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

#### 4.04 Delays

- A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.
- B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.
- C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:
  1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  2. abnormal weather conditions;
  3. inspection delays by governmental authorities, and custom delays;
  4. international shipping delays;
  5. acts or failures to act of third-party entities; and
  6. acts of war or terrorism.
- D. Adjustments of Procurement Contract Times or Procurement Contract Price—  
General Provisions: Seller's entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:
  1. Seller's entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller's obligations, as of the time of the delay, disruption, or interference.
  2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.
  3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.
- E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the

requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller's progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller's progress; (4) the number of days' increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

## **ARTICLE 5 - BONDS AND INSURANCE**

### **5.01 Performance, Payment, and Other Bonds**

- A. Seller shall furnish a performance bond and a payment bond, each in an amount at least equal to the Procurement Contract Price, as security for the faithful performance and payment of Seller's obligations under the Procurement Contract. These bonds must remain in effect until 1 year after the date when final payment becomes due or until completion of the correction period, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Procurement Contract.
- B. Seller shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Procurement Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Buyer prior to execution of the Procurement Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond 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 must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- D. Seller shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Seller is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then 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 bond and surety requirements of this Procurement Contract.
- F. If Seller has failed to obtain a required bond, Buyer may exercise Buyer's termination rights.

- G. Upon request to Buyer from any subcontractor, supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of Seller's obligations, Buyer shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Seller from any subcontractor, supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of Seller's obligations, Seller shall provide a copy of the payment bond to such person or entity.

## 5.02 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 will not be construed as a waiver of Seller's obligation to maintain such insurance.
- C. Upon assignment of this Procurement Contract, Seller shall name the Contractor/Assignee as an additional insured and comply with the written request of Contractor/Assignee to provide evidence of insurance.
- D. Buyer does not represent that insurance coverage and limits established in this Procurement Contract necessarily will be adequate to protect Seller.
- E. The insurance and insurance limits required herein will not be deemed as a limitation on Seller's liability under the indemnities and other rights granted to Buyer in the Procurement Contract.

## 5.03 Surety or Insurance Companies

- A. All bonds and insurance required by the Procurement 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 must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

# ARTICLE 6 - LICENSES AND FEES

## 6.01 Intellectual Property and License Fees

- A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.

- B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.
- C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights, or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.
- D. 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 Procurement Contract Documents.

## 6.02 Seller's Infringement

- A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, 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 patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.
- B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.
- C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.
  - 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, 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 the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

## 6.03 Buyer's Infringement

- A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications,

and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.

- B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.
- C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.
  - 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, Seller shall be barred from any remedy against Buyer for such suit or claim.

## **ARTICLE 7 - SELLER'S RESPONSIBILITIES**

### 7.01 Performance of Obligations

- A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.
- B. 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 Procurement Contract Documents.
- C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

### 7.02 Labor, Materials and Equipment

- A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Procurement Contract.
- B. All Goods, and all equipment and material incorporated into the Goods, must be as specified, and unless specified otherwise in the Procurement Contract Documents, must 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.

### 7.03 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 Procurement 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 will not be Seller's responsibility to make certain that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement 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.

### 7.04 "Or Equals"

- A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Procurement Contract Documents by using the names of one or more proprietary items or specific suppliers or manufacturers, 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 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 (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement 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 7.04.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 Procurement 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.

#### 7.05 Taxes

- A. Seller shall pay all taxes and duties arising out of the sale of the Goods and the performance of Special Services. All taxes and duties are included in the Procurement Contract Price, except as noted in the Supplementary Conditions.

#### 7.06 Submittals

- A. Shop Drawing and Sample Requirements
  - 1. Before submitting a Shop Drawing or Sample, Seller shall:
    - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;
    - b. determine and verify:
      - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and
      - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.
    - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
  - 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.
  - 3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

- B. Submittal Procedures for Shop Drawings and Samples: Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. Shop Drawings
    - a. Seller shall submit the number of copies required in the Procurement Specifications.
    - b. Data shown on the Shop Drawings must 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, and to enable Engineer to review the information for the limited purposes required.
  2. Samples
    - a. Seller shall submit the number of Samples required in the Procurement Specifications.
    - b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required.
  3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.
- C. Engineer's Review of Shop Drawings and Samples
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.
  5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.
8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

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 revisions other than the corrections called for by Engineer on previous Submittals.
  1. Seller shall furnish required Shop Drawing and Sample Submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges.
  2. If Seller requests a change of a previously approved Shop Drawing or Sample, Seller shall be responsible for Engineer's charges to Buyer for its review time, and Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges, unless the need for such change is beyond the control of Seller.

E. Submittals Other than Shop Drawings and Samples

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:
  - a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.
  - b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.
  - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.
  - d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance and resubmit an acceptable document.
2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

## 7.07 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, 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 Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused 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, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their 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 7.07.A will 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.

## 7.08 Concerning Subcontractors and Suppliers

- A. Seller may retain subcontractors and suppliers for the performance of parts of the furnishing of the Goods and Special Services. The Seller's retention of a subcontractor or supplier will not relieve Seller's obligation to Buyer to perform and complete the furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

## ARTICLE 8 - SHIPPING AND DELIVERY

### 8.01 Shipping

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

### 8.02 Delivery

- A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.

- B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must 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 at the time established for delivery, or on another date agreed to by Buyer and Seller.
- E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.
- F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

### 8.03 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 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will 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.

## ARTICLE 9 - BUYER'S RIGHTS

### 9.01 Seller's Warranties and Guarantees

- A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will 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 Procurement 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 Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.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;

2. excessive corrosion or chemical attack, unless corrosive or chemically damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement 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 Procurement Contract Documents will 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 Procurement Contract Documents:
1. observations by Buyer, Engineer, or Project Owner;
  2. recommendation by Engineer or payment by Buyer of any progress or final payment;
  3. use of the Goods by Buyer or Project Owner;
  4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;
  5. the end of the correction period established in Paragraph 9.04;
  6. the issuance of a notice of acceptance;
  7. any inspection, test or approval by others; or
  8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.
- E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.

## 9.02 Inspections and Testing

### A. General Provisions

1. The Procurement 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 Procurement 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 re-inspection or retesting.
3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 9.03); 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 Procurement 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, and a representative of Seller will attend such tests, inspections, and approvals.
6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of 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 9.03.
7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

**B. Visual Inspection on Delivery**

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. 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. If, on the basis of the visual inspection specified in this Document, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of 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 required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.
2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.
3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

**9.03 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 this Document, 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 Procurement Contract Times, remove and replace the rejected Goods.
2. Seller shall bear all costs, losses and damages attributable to the removal, replacement, reinspection, and retesting of the non-conforming Goods.
  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. Buyer's Rejection of Non-Conforming Special Services
1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.
  2. Seller shall promptly provide conforming Special Services acceptable to Buyer.
  3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.
- D. Remedying Non-Conforming Goods: If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.
- E. 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.
- F. Seller Obligations: 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 will 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.
- G. 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.



#### 9.04 Correction Period

- A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of 1 year after the acceptance of the Goods and Special Services.
- B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of 1 year after such correction or removal and replacement has been satisfactorily completed.
- C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

### **ARTICLE 10 - ENGINEER'S STATUS**

#### 10.01 Engineer's Role Defined

- A. Engineer will be Buyer's representative until assignment (if any) of the Procurement Contract.
- B. The duties and responsibilities and the limitations of authority of Engineer prior to assignment, if any, of the Procurement Contract, are set forth in the Procurement Contract Documents.
- C. Engineer's responsibilities, if any, after an assignment (if any) of the Procurement Contract, are set forth in the Procurement Agreement.

#### 10.02 Duties and Responsibilities; Authority; Limitations

- A. Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.
- B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services, whether or not the Goods are fabricated or installed, or the Special Services are completed.
- C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations, or 2) a Field Order.
- D. Engineer will review Claims, and render decisions on Claims.
- E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show

partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.

- F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

## **ARTICLE 11 - CHANGES**

### 11.01 Amending and Supplementing the Procurement Contract

- A. The Procurement Contract may be amended or supplemented by a Change Order, a Change Directive, or a Field Order.
- B. If an amendment or supplement to the Procurement Contract includes a change in the Procurement Contract Price or the Procurement Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Procurement Contract that involve (1) the conformance or acceptability of the Goods and Special Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Buyer and Seller may amend other terms and conditions of the Procurement Contract without the recommendation of the Engineer.

### 11.02 Change Orders

- A. Buyer and Seller shall execute appropriate Change Orders covering:
  - 1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;
  - 2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;
  - 3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.

- B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

#### 11.03 Change Directives

- A. A Change Directive will not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modification ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Change Directive's effect, if any, on the Procurement Contract Price and Procurement Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Procurement Contract Documents governing adjustments, expressly including Paragraph 11.08 regarding change of Procurement Contract Price.
- B. If Buyer has issued a Change Directive and Buyer or Seller believes that an adjustment in Procurement Contract Times or Procurement Contract Price is necessary, then such party shall submit a Claim seeking such an adjustment no later than 30 days after the completion of the Goods and Services set out in the Change Directive.

#### 11.04 Field Orders

- A. Engineer may authorize minor changes in the Goods and Services if the changes do not involve an adjustment in the Procurement Contract Price or the Procurement Contract Times and are compatible with the design concept as indicated by the Procurement Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Buyer and also on Seller, which shall perform the Goods and Special Services involved promptly.
- B. If Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, then before proceeding with the Goods and Special Services at issue, Seller shall submit a Claim as provided in this Document.

#### 11.05 Buyer-Authorized Changes in the Goods and Special Services

- A. Without invalidating the Procurement Contract and without notice to any surety, Buyer may, at any time or from time to time, order additions, deletions, or revisions in the Goods and Special Services. Changes involving the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Goods and Special Services may be accomplished by a Change Order, if Buyer and Seller have agreed as to the effect, if any, of the changes on Procurement Contract Times or Procurement Contract Price; or by a Change Directive. Upon receipt of any such document, Seller shall promptly proceed with the Goods and Special Services involved; or, in the case of a deletion in the Goods and Special Services, promptly cease activities with respect to such deletion.

Added or revised Goods and Special Services must be performed under the applicable conditions of the Procurement Contract Documents.

#### 11.06 Buyer's Contingency Allowance

- A. The Buyer's Contingency Allowance, if any such is set forth in the Procurement Agreement, is for the sole use of Buyer to cover unanticipated costs.
- B. If Buyer exercises its unilateral right to use all or a portion of the Buyer's Contingency Allowance, Buyer will issue a written directive that documents the costs to which the allowance is applied, Seller's entitlement to compensation, and the consequent reduction in such allowance.
- C. Prior to final payment, the Total Price, as set forth in the Procurement Agreement, will be duly adjusted to account for any unused portion of the Buyer's Contingency Allowance.
- D. The Procurement Agreement addresses the impact on Buyer's Contingency Allowance of an assignment of the Procurement Contract.

#### 11.07 Unauthorized Changes in the Goods and Special Services

- A. Seller shall not be entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to any work performed that is not required by the Procurement Contract Documents, as amended, modified, or supplemented.

#### 11.08 Change of Procurement Contract Price

- A. The Procurement Contract Price may only be changed by a Change Order. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Procurement Contract Price will be determined as follows:
  - 1. For changes in Unit Price Goods and Special Services, by application of the unit prices to the quantities of the items involved;
  - 2. To the extent the cost of the change is not covered by unit prices, then by a mutually agreed lump sum; or
  - 3. To the extent the cost of the change is not covered by unit prices and the parties do not reach mutual agreement to a lump sum, then on the basis of documented costs plus a Seller's fee for overhead and profit of 15 percent.

#### 11.09 Change of Procurement Contract Times

- A. The Procurement Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 12.

#### 11.10 Notification to Surety

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Goods and Special Services or the provisions of the Procurement Contract (including, but not limited to, Procurement Contract Price or Procurement Contract Times), the giving of any such notice will be Seller's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

### **ARTICLE 12 - CLAIMS, DISPUTES, AND DISPUTE RESOLUTION**

#### 12.01 Claims

- A. 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 Claims process, including the time periods established in this Document; if so, a written record of such mutual agreement should be made and jointly executed.
- B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.
- C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.
- D. 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.
- E. If Engineer does not render a formal written decision on a Claim within the time stated in this Document., 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.
- F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.
- G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications,

Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in this Document.

- H. 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 12.01, 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 this Document.
- I. If Article 12 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 in this Document, 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.
- J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.
- K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement.

## 12.02 Dispute Resolution Method

- A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final inspection of the Goods and Services. 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 Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.
- B. Mediation is a condition precedent to seeking final dispute resolution. Buyer and Seller shall participate in the mediation process in good faith. The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.
- C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:

1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or
2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or
3. if no final 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 or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

## **ARTICLE 13 - PAYMENT**

### 13.01 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 Procurement Contract Documents and also as Buyer or Engineer may reasonably require.
- B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.
- C. Any Application for Payment that is based in whole or in part on the delivery of Goods must 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.
- D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

### 13.02 Review of Applications for Progress Payments

- A. Review of Applications
  1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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.
  2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
    - a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;
    - b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and
    - c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer or entitle Buyer to withhold payment to Seller.
4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or
  - b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or
  - c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or
  - d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or
  - e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:
  - a. the Goods and Services are non-conforming, requiring correction or replacement;
  - b. the Procurement Contract Price has been reduced by Change Orders;
  - c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or
  - d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

### 13.03 Basis and Amount of Progress Payments

- A. The basis and amounts of the progress payments will be as provided in the Procurement Agreement, subject to the provisions of this Article 13 regarding reductions in payment.



#### 13.04 Suspension of or Reduction in Payment

- A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, 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 Procurement 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 Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.
  3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:
    - a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
    - b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;
    - c. Seller has failed to provide and maintain required bonds or insurance;
    - d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
    - e. the Goods and Special Services are non-conforming, requiring correction or replacement;
    - f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;
    - g. the Procurement Contract Price has been reduced by Change Orders;
    - h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;
    - i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or
    - j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.
- 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.

### 13.05 Final Payment

- A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.
- B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.
- C. 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 Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.
- D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.
- E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.
- F. If the final Application for Payment 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, pursuant to the provisions of Paragraph 13.04.
- G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

### 13.06 Waiver of Claims

- A. By making final payment, Buyer waives its claim or right to liquidated damages or other damages for late completion by Seller, except as set forth in an outstanding Claim, appeal, set-off, or express reservation of rights by Buyer. Buyer reserves all other claims or rights after final payment.
- B. The acceptance of final payment by Seller will constitute a waiver by Seller of all claims and rights against Buyer other than those pending matters that have been duly submitted or appealed under the provisions of Article 12.

## ARTICLE 14 - CANCELLATION, SUSPENSION, AND TERMINATION

### 14.01 Cancellation

- A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph will 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 Procurement Contract Price of such Goods.

### 14.02 Suspension of Performance by Buyer

- A. Buyer has the right to suspend performance of the Procurement Contract for up to 90 days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Procurement Contract Times and Procurement Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

### 14.03 Suspension of Performance by Seller

- A. 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 Procurement Contract; and
  - 2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Procurement Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

### 14.04 Breach and Termination

- A. Buyer's Breach
  - 1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.
  - 2. If Seller believes Buyer is in breach of its obligations under the Procurement 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 7 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. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, 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 7 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.
3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

## **ARTICLE 15 - MISCELLANEOUS**

### 15.01 Giving Notice

- A. Whenever any provision of the Procurement Documents requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:
  1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
  2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
  3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

### 15.02 Controlling Law

- A. This Procurement Contract is to be governed by the law of the state in which the Goods are to be installed.
- B. In the case of any conflict between the express terms of this Procurement 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 Procurement Contract will apply.

### 15.03 Computation of Time

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

### 15.04 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 Procurement Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Procurement Contract in connection with each particular duty, obligation, right, and remedy to which they apply.

#### 15.05 Survival of Obligations

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

#### 15.06 Entire Agreement

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

#### 15.07 No Waiver

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Procurement Contract.

#### 15.08 Headings

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

#### 15.09 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 Procurement Contract.

END OF DOCUMENT



## DOCUMENT 00801

### SUPPLEMENTARY CONDITIONS - PROCUREMENT

Scope: These Supplementary Conditions amend or supplement Document 00701 – General Conditions – Procurement and other provisions of the Procurement Documents as indicated in this Document. All provisions which are not so amended or supplemented remain in full force and effect.

#### ARTICLE 1 — DEFINITIONS

##### 1.01 Defined Terms

SC-1.01 Defined Terms: Add the following definitions immediately after 1.01.40:

41. "Or Equal" — Alternate product that does not affect Contract Time, Contract Price, or Contract Scope.
42. Submittals — Shop Drawings, catalog cuts, samples, operating and maintenance instructions, progress payments, requests, and other documents and items specified to be delivered to Owner or Owner's representative.
43. Substitution - Alternate product that requires a Change Order to adjust the Contract Time, Contract Price, or Contract Scope.

#### ARTICLE 2 — PRELIMINARY MATTERS

##### 2.04 Preliminary Schedules

2.04 Add the following new paragraph immediately after Paragraph 2.04.A.2:

3. a preliminary Schedule of Values.

#### ARTICLE 3 — PROCUREMENT CONTRACT DOCUMENTS (NOT USED)

#### ARTICLE 4 — COMMENCEMENT AND SCHEDULE (NOT USED)

#### ARTICLE 5 — BONDS AND INSURANCE

##### 5.01 Performance, Payment, and Other Bonds

SC-5.01 Add the following paragraphs immediately after Paragraph 5.01.A:

1. Required Performance Bond Form: The performance bond that Seller furnishes will be in the form of Document 00614 - Performance Bond - Procurement.
2. Required Payment Bond Form: The performance bond that Seller furnishes will be in the form of Document 00617 - Payment Bond - Procurement.

SC-5.01 ADD THE FOLLOWING PARAGRAPHS IMMEDIATELY AFTER PARAGRAPH 5.01.H:

- I. Supplier shall furnish a fully executed warranty bond.
  1. Bond shall be issued in the form of Document 00612 - Warranty Bond prior to or with the final application for payment, and in any event no later than 11 months after Substantial Completion.

2. The warranty bond must be in a bond amount of 100 percent of the final Contract Price.
3. The warranty bond period will extend to the end of the correction period, as specified in SC 9.04.A.
4. The warranty bond must be issued by the same surety that issues the performance bond.

## 5.02 Insurance

SC-5.02 Add the following new paragraphs immediately after Paragraph 5.02.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 Procurement 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: (a) by any person as a result of an offense directly or indirectly related to the employment of such person by Seller, or (b) 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
  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 5.02 to be purchased and maintained must:
  1. with respect to insurance required by Paragraphs SC-5.02.F.3 through SC-5.02.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, their consultants, and all of whom must 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 must 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 Paragraph 7.07;
  5. contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder will provide a copy of the notice to the other party, each other insured, and Engineer;
  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 9.03 and 9.04; and
  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).
- H. The limits of liability for the insurance required by Paragraph SC-5.02.F must 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-5.02.F.1 and F.2:

<b>Workers' Compensation</b>	
State	Statutory
Applicable Federal (e.g. USHL&H)	Statutory
Employer's Liability	\$1,000,000
<b>Comprehensive or Commercial General Liability</b>	
<b>Combined Single Limit:</b>	
a. Premises/operations	
Each occurrence	\$1,000,000
Annual Aggregate	\$2,000,000
b. Products/completed operations	
Each occurrence	\$1,000,000
Annual Aggregate	\$2,000,000
c. Personal injury	
Each occurrence	\$1,000,000
Annual Aggregate	\$2,000,000

- d. Policies shall include premises/operations, products, completed operations, independent contractors, owners' and contractors' protective, explosion, collapse, underground hazards,

broad form contractual, personal injury with employment contractual exclusions deleted, and broad form property damage.

- e. If policies are written on a Commercial General Liability form, the General Aggregate shall be at least two times the each occurrence limit or be written on a "per project" basis.
- f. All policies shall be written on an occurrence basis. If the CONTRACTOR would like to substitute any "claims made" liability policies, then these must be pre-approved in writing according to the terms and conditions they may impose.
- g. If policies are written for split limits, limits shall be equal for bodily injury and property damage liability.

#### **Comprehensive Automobile Liability (including owned, hired, and non-owned vehicles)**

##### **Combined Single Limit:**

- a. Bodily Injury and Property Damage: \$2,000,000 each accident.
- b. If policies are written for split limits, limits shall be equal for bodily injury per person, bodily injury per accident and property damage.

##### **Excess Liability Insurance**

- a. \$4,000,000 over all underlying coverage lines.

##### **Builder's Risk Insurance**

- a. In an amount equal to the replacement cost of the completed value of the project or \$4,000,000 whichever is greater.
- b. Any deductibles of self-insured retentions shall be as agreed to by the OWNER and CONTRACTOR.
- c. The CONTRACTOR shall include flood and earthquake coverage in the Builder's Risk Insurance requirements under Paragraph 5.02.B.5 of the General Conditions, with a minimum limit of \$4,000,000 per event or occurrence.
  - 2. Here list additional types and amounts of insurance that may be required by Buyer: None.
  - 3. Transportation Insurance: Transportation insurance shall be of the "all risks" type and shall protect Supplier and Owner from all insurable risks of physical loss or damage to equipment and materials in transit to the designated location. The coverage amount shall be not less than the full value of items exposed to risk in transit at any one time.
    - a. Transportation insurance shall provide for losses to be payable to Supplier and Owner as their interests may appear and shall contain a waiver of subrogation rights against the insured parties. For insurance purposes, the risk of loss to equipment and materials shall remain with Supplier until the equipment and materials are accepted by the assignee general construction contractor at the designated location.
    - b. Supplier shall submit a copy of the transportation insurance policy to Owner at least 30 days before the scheduled shipping date. The policy shall quote the insuring agreement, shall list all exclusions, and shall state that 30 days' written notice will be given Owner before the policy is changed or canceled.

- I. All policies shall provide that the CONTRACTOR agrees to waive all rights of subrogation against the OWNER, the ENGINEER, and their subconsultants, employees, officers and directors, for WORK performed under the Agreement. Endorsements shall be provided with certificates of insurance.
- J. All policies shall also specify that the insurance provided by the CONTRACTOR will be considered primary and not contributory to another insurance available to the OWNER or ENGINEER.
- K. All policies except Workers' Compensation and Builders Risk shall name the OWNER, including their officers, directors or board members, employees agents or any others associated with the management or operations of South Valley Water Reclamation Facility; Engineer, their consultants, subconsultants, shall be additional insureds on the Auto Liability and Commercial General Liability policies. The Builders Risk insurance shall name the CONTRACTOR, OWNER, and ENGINEER as named insureds and subcontractors and additional insureds. The Workers' Compensation policy shall name the OWNER as additional insured by means of an alternative employer endorsement, with respect to the employer's liability coverage only.
- L. All policies shall provide for 60 days notice prior to any cancellation, reduction in coverage or nonrenewal.
- M. The deductible or self-insured retention on Comprehensive or Commercial General Liability shall not be greater than \$25,000. All deductibles are the responsibility of the CONTRACTOR.
- N. 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.

## **ARTICLE 6 — LICENSES AND FEES (NOT USED)**

## **ARTICLE 7 — SELLER'S RESPONSIBILITIES**

### 7.05 Taxes

## **ARTICLE 8 — SHIPPING AND DELIVERY (NOT USED)**

## **ARTICLE 9 — BUYER'S RIGHTS**

### 9.04 Correction Period

### 9.05 Limitation of Seller's Liability

SC-9.05 Add the following new paragraph after Paragraph 9.04:

### 9.05 Limitation of Seller's Liability

- A. Buyer and Seller agree that the total liability of Seller to Buyer for claims, costs, losses, and damages arising from this Procurement Contract will be limited to the amount established in the Procurement Agreement as the Procurement Contract Price.

- B. Upon assignment the terms of this Paragraph 9.05 will be binding upon both the assignor and assignee with respect to Seller's liability, The terms of this limitation do not apply to or limit any claim by Buyer against Seller 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.

## **ARTICLE 10 — ENGINEER'S STATUS (NOT USED)**

## **ARTICLE 11 — CHANGES**

### **11.02 Change Orders**

SC-11.02 Insert the following new subparagraphs immediately following Paragraph 11.02.A.4:

5. In signing a Change Order, the Owner and Contractor acknowledge and agree that:
  - a. the stipulated compensation (Contract Price or Contract Times, or both) set forth in the Change Order includes not only all direct costs of Contractor such as labor, material, job overhead, and profit markup, but also includes any costs for modifications or changes in sequence of work to be performed, delays, rescheduling, disruptions, extended direct overhead or general overhead, acceleration, material or other escalation which includes wages and other impact costs. This Document will become a supplement to the Contract and all Contract provisions will apply hereto. It is understood that this Change Order shall be effective on the date approved by the Owner's Representative;
  - b. the Change Order constitutes full mutual accord and satisfaction for the change to the Work;
  - c. no reservation of rights to pursue subsequent claims on the Change Order will be made by either party; and
  - d. no subsequent claim or amendment of the Contract Documents will arise out of or as a result of the Change Order.

## **ARTICLE 12 — CLAIMS, DISPUTES, AND DISPUTE RESOLUTION (NOT USED)**

## **ARTICLE 13 — PAYMENT (NOT USED)**

## **ARTICLE 14 — CANCELLATION, SUSPENSION, AND TERMINATION (NOT USED)**

## **ARTICLE 15 — MISCELLANEOUS [(NOT USED)]**

END OF DOCUMENT

**SECTION 00810  
SUPPLEMENTARY GENERAL CONDITIONS (UTAH)**

SGC-18 UTAH STATE REQUIREMENTS

- A. Retainage of Compensation to CONTRACTOR: Pursuant to Utah Code Ann. 13-8-5, any retainage of CONTRACTOR's compensation hereunder shall be placed in an interest-bearing escrow account and the interest which accrues thereon shall do so for the benefit of CONTRACTOR and Subcontractors. Release of the retainage shall be as contemplated by the General Conditions and Supplementary General Conditions, Article 14 – Payments to Contractor, Liquidated Damages and Completion. Any interest which has accrued on the retainage and which is released to the CONTRACTOR shall be promptly disbursed by CONTRACTOR to itself and/or to Subcontractors on a pro rata basis.
- B. Certification of Change Orders: Pursuant to Utah Code Ann. Section 63G-6-602, no change order shall be authorized without a written certification, signed by an official representative of the OWNER responsible for monitoring and reporting the status of the costs of the total Project or the contract budget, stating that funds are available for the subject change order.
- C. Adjustments in Price: Pursuant to Utah Code Ann. Section 63G-6-601, any adjustment in compensation due CONTRACTOR under this agreement shall be computed in one or more of the following ways:
1. By agreement on a fixed-price adjustment before commencement of the pertinent performance or as soon as practicable;
  2. By unit prices specified in the contract or subsequently agreed upon;
  3. By the costs attributable to the events or situations with adjustment of profit or fee, all as specified in the contract or subsequently agreed upon;
  4. In any other manner as OWNER and CONTRACTOR may mutually agree;
  5. In the absence of agreement between CONTRACTOR and OWNER, by a unilateral determination by OWNER of the costs attributable to the events or situations with adjustment of profit or fee, all as computed by the OWNER in accordance with Utah Code Ann. Section 63G-6-415 and/or the rules and regulations promulgated thereunder.
- D. Cost Principles: CONTRACTOR shall comply in all respects with applicable provisions of Utah Code Ann. Section 63G-6-415, and the rules and regulations promulgated thereunder. To the extent that such provisions are inconsistent with the other terms and conditions of this agreement, the former shall prevail. OWNER may, at reasonable times and places, audit the books and records of CONTRACTOR, any Subcontractor, or any other person who has submitted cost or pricing data pursuant to said section. The books and records of CONTRACTOR shall be maintained for 3 years following the end of the fiscal year in which final payment is made under the Contract. The books and records of the Subcontractor and all other persons shall be maintained for 3 years following the end of the fiscal year in which final payment is made under the subcontract and/or to the person, unless a shorter period is otherwise authorized in writing.

- E. Project Safety: CONTRACTOR shall comply in all respects with the Utah Occupational Safety and Health Act, Utah Code Ann. Sections 34A-6-101 et seq., and the rules, regulations and standards promulgated thereunder by the Utah State Industrial Commission, as such act, rules, regulations or standards now exist or may be amended during the term of this agreement. Specifically, but not in limitation, CONTRACTOR shall comply with Construction Standards, Rules and Regulations, promulgated by the Utah Occupation and Safety and Health Division, Utah State Industrial Commission.
- F. Protection of Underground Utility Facilities: CONTRACTOR shall comply in all respects with Utah Code Ann. Section 54 Chapter 8a et seq. and the rules and regulations promulgated thereunder, as it now exists or may be amended during the term of this agreement, with regard to the protection of underground utility facilities. Specifically, but not in limitation, CONTRACTOR shall notify the appropriate public utility(s) when making an excavation with power equipment. CONTRACTOR shall further refrain from proceeding with excavation until such time as the appropriate public utility(s) have advised CONTRACTOR of the location of any underground facilities in the area proposed for excavation by marking such facilities with stakes, paint, or other customary way, indicating horizontal location within 24 inches of the outside dimensions of both sides of the underground facility.
- G. Review of Construction by OWNER: OWNER may, at its option, assign a field representative to review the construction of the Project in progress. Said representative will cooperate with the ENGINEER/OWNER in attempting to note deviations from, or necessary adjustments to, the Contract Documents or deficiencies or defects in the construction. Said representative's presence on the Project, however, shall in no way relieve CONTRACTOR of its primary responsibility for construction of the Project in accordance with the Contract Documents.
- H. OWNER Inspection: Pursuant to Utah Code Ann. Section 63G-6-418, OWNER may, at reasonable times, inspect the plant or place of business of the CONTRACTOR or any Subcontractor which is related to the performance of this contract or any subcontract entered into hereunder.
- I. Code Requirements: The provisions of the latest editions of the International Building Code, National Electric Code, and Utah Plumbing Code, as adopted or followed in Utah, including standards adopted in relation thereto, as supplemented or amended, shall apply to the Project except as specific variances may be expressly authorized by the OWNER. If the Contract Documents fail to meet the minimum standards of the referenced codes, CONTRACTOR shall be responsible to bring such information to the attention of the architect/OWNER associated with the Project. Subcontractors shall also inform CONTRACTOR of any infractions of the above-referenced codes regarding their own particular trades. In the event that workmanship or incidental materials are not specified or indicated, they shall at least conform to the above-referenced codes and shall be incorporated into the Work without any additional cost to the OWNER. If the Contract Documents call for items or workmanship which exceed code requirements, the Contract Documents shall take precedence over such requirements.
- J. Workers Compensation: CONTRACTOR shall comply in all respects with Utah Code Ann. Section 34A-2-101, et seq. and the rules and regulations promulgated thereunder by the Utah State Industrial Commission, as such law, rules or regulations now exist or may be amended during the term of this agreement.

- K. Archaeological, Anthropological, or Paleontological Findings: CONTRACTOR shall comply with Utah Code Ann. Section 9-8-301 et seq., with respect to the discovery of archaeological, anthropological, or paleontological findings at or on the Project site. Specifically, but not in limitation, CONTRACTOR shall promptly notify the Utah Division of State History of any such findings.
- L. Nondiscrimination Equal Employment Opportunity: CONTRACTOR shall comply in all respects with the Utah Anti-Discrimination Act of 1965, Utah Code Ann. Section 34A-5-101 et seq., and the rules and regulations promulgated thereunder by the Utah State Industrial Commission and/or its Anti-Discrimination Division, as such act, rules or regulations now exist or may be amended during the term of this agreement, specifically:
1. CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, color, sex, religion, ancestry or national origin.
  2. In all solicitations or advertisements for employees, CONTRACTOR shall state that all qualified applicants shall receive consideration without regard to race, color, sex, religion, ancestry or national origin.
  3. CONTRACTOR shall send to each labor union or worker's representative notices to be provided, stating the CONTRACTOR's responsibilities under the statute.
  4. CONTRACTOR shall furnish such information or reports as are requested by the Utah State Industrial Commission and/or its Anti-Discrimination Division, for the purpose of determining compliance with the statute.
  5. CONTRACTOR shall include the provisions of paragraphs 1 through 4 above in all subcontracts for this Project.
  6. Failure of the CONTRACTOR to comply with the statute, the rules and regulations promulgated thereunder, and this provision, shall be deemed a breach of contract entitling OWNER, in its discretion, to cancel, terminate, or suspend this agreement in whole or in part.
- M. Affirmative Action: CONTRACTOR shall take affirmative action to insure 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 shall not be limited to: employment; upgrading; demotion or transfer; recruitment or recruitment advertising; layout or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- At its discretion, OWNER may perform a compliance review at CONTRACTOR's place of business and/or the Project site to verify CONTRACTOR's compliance with this provision. Such compliance verifications may be conducted with such frequency as is needed to assure CONTRACTOR's compliance with this provision.
- N. Citizens Preferred: Pursuant to Utah Code Ann. Section 34-30-1, CONTRACTOR shall give preference in hiring to citizens of the United States or those having declared their intention to become citizens; failure to comply may render this contract null and void at the discretion of OWNER.

- O. Veterans' Preference: Pursuant to Utah Code Ann. Section 71-10-2, CONTRACTOR shall give preference in hiring to honorable discharged veterans who have served in the Armed Forces of the United States during a period of conflict, war, or other national emergencies as defined by Congress, and to any un-remarried surviving spouse of an honorably discharged veteran, if they possess qualifications for that employment and if the honorably discharged veteran is or, if deceased, was a resident of the State of Utah.
- P. Specific OWNER Requirements: CONTRACTOR shall comply with the specific rules and regulations promulgated by OWNER pursuant to authority granted or retained under the Utah Procurement Code, Utah Code Ann. Section 63G-6-101, et seq.

-END OF SECTION-



## SECTION 01030

### SPECIAL PROJECT CONSTRAINTS

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Work involved with existing plant:
  - 1. The Work shall be executed while the existing wastewater treatment plant is in operation. Operation of the existing plant shall not be jeopardized, nor shall the efficiency of wastewater treatment be reduced as a result of the execution of the Work.
  - 2. Critical events in the sequence of construction are described in this Section and shall be utilized by the Contractor as a guideline. The construction constraints presented are to allow the Seller understand the project sequence and the number of field service visits.

##### 1.02 COMPLIANCE WITH UPDES PERMIT

- A. Operations by the Contractor shall not impair in anyway the Owner's responsibility to comply with the facility's UPDES permit requirements.

##### 1.03 OUTAGE PLANS

- A. It is the Contractor's responsibility to coordinate and plan their construction activities in detail and provide such to the Owner on an as needed or as requested basis by the Owner or the Engineer. Outage plans shall be complete, concise, and provided two weeks in advance to the Owner for review.

##### 1.04 SCHEDULE CONSTRAINTS

- A. It is the Contractor's responsibility to coordinate and plan the construction activities to integrate each schedule constraint into performance of the overall Work.

##### 1.05 CONSTRUCTION SEQUENCING

- A. Replacement of Headworks Influent Pump Variable Frequency Drives:
  - 1. A minimum of four pumps must be always kept in operation including automatic control except when HW-MCC-B is being modified for pumps P-2 and P-3. Complete operability of the pumps at each stage of construction shall be demonstrated to the Owner before beginning work on the next stage of construction.
  - 2. The following is a proposed sequence of construction. It does not include all steps. Refer to the Demolition Drawings for additional information.
    - a. Demolish VFD-HW-7 and the associated control section.
    - b. Pumps in service HW-P-2, HW-P-3, HW-P-4, HW-P-5, HW-P-6.
    - c. Install the new HW-VFD-7 and control section.
    - d. Make all power and control connections and return HW-P-7 to service.

- e. Demolish VFD-HW-6.
  - f. Pumps in service HW-P-2, HW-P-3, HW-P-4, HW-P-5, HW-P-7.
  - g. Install the new HW-VFD-6 and control section.
  - h. Make all power and control connections and return HW-P-6 to service.
  - i. Demolish VFD-HW-5.
  - j. Pumps in service HW-P-2, HW-P-3, HW-P-4, HW-P-6, HW-P-7.
  - k. Install the new HW-VFD-5 and control section.
  - l. Make all power and control connections and return HW-P-5 to service.
  - m. Demolish VFD-HW-4.
  - n. Pumps in service HW-P-2, HW-P-3, HW-P-5, HW-P-6, HW-P-7.
  - o. Install the new HW-VFD-4 and control section.
  - p. Make all power and control connections and return HW-P-4 to service.
  - q. Provide a temporary generator to power HW-MCC-C while HW-MCC-B is being modified. The work on HW-MCC-B shall not start until the temporary generator is installed and in operation.
  - r. Make the modifications to HW-MCC-B. Separate P-2 and P-3 from common bussing and install the new feeder breakers.
  - s. Pumps in service HW-P-4, HW-P-6, HW-P-7.
  - t. Perform acceptance testing on HW-MCC-B and return to service.
  - u. Remove the temporary generator powering HW-MCC-C and remake the feed from HW-MCC-C.
  - v. Pump in service HW-P-4, HW-P-5, HW-P-6, HW-P-7.
  - w. Demolish HW-VFD-2 and HW-VFD-3.
  - x. Install the new HW-VFD-3 and control section.
  - y. Make all power and control connections and return HW-P-3 to service.
  - z. Install the new HW-VFD-2 and control section.
  - aa. Make all power and control connections and return HW-P-2 to service.
  - bb. All pumps in service.
- B. RAS/WAS Pump Station No. 1 replacement of variable frequency drives.
1. All valve changes to isolate pumps from the process will be done by the Owner. The Contractor may choose either the north side or south side to begin the work.
  2. Complete operability of the pumps at each stage of construction shall be demonstrated to the Owner before beginning work on the next stage of construction.
  3. North side RAS pumps, PMP-1401, PMP-1402, PMP-1403 and WAS pumps.
    - a. General:
      - 1) At least one WAS pump shall be in service at any time unless otherwise noted.
      - 2) RAS Pumps PMP-1401, PMP-1402 and PMP-1403 can removed from service.
    - b. Demolition:
      - 1) Demolish the existing VFDs for PMP-1401 and PMP-1402.
      - 2) Demolish MCC sections RW-MCC-A-D and RW-MCC-A-E.
      - 3) WAS pump PMP-1603 is in service.
    - c. Install new MCC section RW-MCC-A-F.
    - d. Install the new VFDs for:
      - 1) PMP-1401.
      - 2) PMP-1402.
      - 3) PMP-1403.

- 4) PMP-1601.
  - 5) PMP-1602.
  - 6) PMP-1601.
  - e. Make all power and control connections for pumps:
    - 1) PMP-1401.
    - 2) PMP-1402.
    - 3) PMP-1601.
    - 4) PMP-1602.
  - f. Furnish a temporary generator and connect it to MCC section RW-MCC-A-F and power the following:
    - 1) PMP-1601.
    - 2) PMP-1602.
    - 3) RAS pump 1401 and/or 1402 could be powered by the portable generator if needed.
  - g. Demolish the existing RAS pump starter in section RW-MCC-A-C.
  - h. Install the new feeder breaker in section RW-MCC-A-C.
  - i. Make all power and control connections for PMP-1403.
  - j. Disconnect the temporary generator and make the power connection to section RW-MCC-A-F.
  - k. Make final power and control connections for the VFD for PMP-1603 and PMP-1603.
4. South side RAS pumps PMP-1404, PMP-1405, PMP-1406.
- a. Demolish one of the existing RAS pump VFD.
  - b. Install one new RAS pump VFD. Either PMP-1404 or PMP-1406.
  - c. Make all power and control connections for the RAS pump and new RAS pump VFD.
  - d. Demolish the second VFD.
  - e. Install the two new RAS pump VFDs.
  - f. Make all power and control connections for the RAS pump and new RAS pump VFD that replace an existing VFD. Either PMP-1404 or PMP-1406.
  - g. Make the modifications to RW-MCC-B.
  - h. Make all power and control connections for the remaining RAS pump PMP-1405.
- C. RAS/WAS Pump Station No. 2 replacement of variable frequency drives and PCM-section RW-MCC-A-C1500:
- 1. All valve changes to isolate pumps from the process will be done by the Owner.
    - a. Complete operability of the pumps at each stage of construction shall be demonstrated to the Owner before beginning work on the next stage of construction.
      - 1) Insert a new communications module in existing PCM-1500 to support ProfNet communications with the new VFD.
      - 2) Select the first RAS VFD to be demolished and coordinate with the Owner to isolate the pump.
      - 3) The Contractor may select either VFD as the starting point.
      - 4) Demolish the existing VFD and install the new VFD.
      - 5) Make all power and control connections and return the RAS pump to service.
      - 6) Install the new VFD for PMP-1502.
      - 7) Disconnect PMP-1502 from the full voltage starter in RW-MCC-C

- 8) Make all power and control connections and return the RAS pump to service.
- 9) Demolish the remaining VFD.
- 10) Install the new VFD for the third RAS pump.
- 11) Make all power and control connections and return the RAS pump to service.
- 12) Demolish and replace the existing WAS pump VFDs one at a time.
- 13) Demolish and replace PCM-1500. Coordinate with the Owner who will operate the RAS 2 Pump Station manually.
- 14) Perform testing and commissioning on PCM-1500.

D. Solids Building.

1. Replace both Solids Building at the same time.
2. Insure the exhaust fan EXF-1002 does not run without the supply fan running to prevent damage to the duct work.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION

## SECTION 01300

### SELLER SUBMITTALS

#### PART 1 GENERAL

##### 1.01 GENERAL

- A. Supplier "Submittals" may be Shop Drawings, schedules, surveys, reports, samples, plans, lists, drawings, documents, findings, programs, manuals, data, or any other item or information required by the Contract Documents to be submitted or offered by the Supplier in accomplishing the Work.
- B. Wherever Submittals are required hereunder, all such documents shall be furnished to the Owner.
- C. The Supplier shall be responsible for the accuracy, completeness, and coordination of all Submittals. The Supplier shall not delegate this responsibility in whole or in part to any Subcontractor. Submittals may be prepared by the Supplier, Subcontractor, but the Supplier shall ascertain that each Submittal meets the requirements of the Contract and the Project.

##### 1.02 SHOP DRAWINGS

- A. Wherever called for in the Proposal Documents, or where required by the Owner, the Supplier shall furnish to the Owner for review, 5 copies of each shop drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication, and installation drawings, erection drawings, list, graphs, catalog sheets, data sheets, and similar items. Whenever the Supplier is required to submit design calculations as part of a submittal, such calculations shall bear the signature and seal of an engineer registered in the appropriate branch and in the state wherein the project is to be built, unless otherwise directed.
- B. Except as may otherwise be indicated herein, the Owner will return prints of each submittal to the Supplier with its comments noted thereon, within 20 working days following their receipt by the Owner. It is considered reasonable that the Supplier shall make a complete and acceptable submittal to the Owner by the second submission of a submittal item. The Owner reserves the right to withhold monies due to the Supplier to cover additional costs of the Owner's review beyond the second submittal.
- C. If a submittal is returned to the Supplier marked "NO EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.
- D. If a submittal is returned to the Supplier marked "MAKE CORRECTIONS NOTED," formal revision and resubmission of said submittal will not be required.

- E. If a submittal is returned to the Supplier marked "AMEND-RESUBMIT," the Supplier shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the Owner.
- F. If a submittal is returned to the Supplier marked "REJECTED-RESUBMIT," the Supplier shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the Owner.
- G. Fabrication of an item shall be commenced only after the Owner has reviewed the pertinent submittals and returned copies to the Supplier marked either "NO EXCEPTIONS TAKEN" or MAKE CORRECTIONS NOTED." Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Proposal Documents and shall not be taken as the basis for changes to the proposal requirements.
- H. All Supplier shop drawings submittals shall be carefully reviewed by an authorized representative of the Supplier, prior to submission to the Owner. Each submittal shall be dated, signed, and certified by the Supplier, as being correct and in strict conformance with the Proposal Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the Owner of any Supplier submittals will be made for any items that have not been so certified by the Supplier. All non-certified submittals will be returned to the Supplier without action taken by the Owner, and any delays caused thereby shall be the total responsibility of the Supplier.
- I. The Owner's review of Supplier shop drawings submittals shall not relieve the Supplier of the entire responsibility for the correctness of details and dimensions. The Supplier shall assume all responsibility and risk for any misfits due to any errors in Supplier submittals. The Supplier shall be responsible for the dimensions and the design of adequate connections and details.

### **1.03 OWNER'S MANUAL**

- A. The Supplier shall submit technical operation and maintenance information for each item of mechanical, electrical and instrumentation equipment in an organized manner in the Owner's Manual. It shall be written so that it can be used and understood by the Owner's operation and maintenance staff.
- B. The Owner's Manual shall be subdivided first by specification section number; second, by equipment item; and last, by "Part." "Parts" shall conform to the following (as applicable):
  - 1. Part 1 - Equipment Summary:
    - a. Summary: A summary table shall indicate the equipment name, equipment number, and process area in which the equipment is installed.
    - b. Form: The Owner will supply an Equipment Summary Form for each item of mechanical, electrical and instrumentation equipment in the WORK. The Supplier shall fill in the relevant information on the form and include it in Part 1.

2. Part 2 - Operational Procedures:
    - a. Procedures: Supplier-recommended procedures on the following shall be included in Part 2:
      - 1) Installation
      - 2) Adjustment
      - 3) Startup
      - 4) Location of controls, special tools, equipment required, or related instrumentation needed for operation
      - 5) Operation procedures
      - 6) Load changes
      - 7) Calibration
      - 8) Shutdown
      - 9) Troubleshooting
      - 10) Disassembly
      - 11) Reassembly
      - 12) Realignment
      - 13) Testing to determine performance efficiency
      - 14) Tabulation of proper settings for all pressure relief valves, low and high pressure switches, and other protection devices
      - 15) List of all electrical relay settings including alarm and contact settings
  3. Part 3 - Preventive Maintenance Procedures:
    - a. Procedures: Preventive maintenance procedures shall include all Supplier-recommended procedures to be performed on a periodic basis, both by removing and replacing the equipment or component, and by leaving the equipment in place.
    - b. Schedules: Recommended frequency of preventive maintenance procedures shall be included. Lubrication schedules, including lubricant SAE grade, type, and temperature ranges, shall be covered.
  4. Part 4 - Parts List:
    - a. Parts List: A complete parts list shall be furnished, including a generic description and Supplier's and original manufacturer's identification numbers for each part. Addresses and telephone numbers of the nearest Supplier and parts warehouse shall be included.
    - b. Drawings: Cross-sectional or exploded view drawings shall accompany the parts list.
  5. Part 5 - Wiring Diagrams:
    - a. Diagrams: Part 5 shall include complete internal and connection wiring diagrams for electrical equipment items.
  6. Part 6 - Shop Drawings:
    - a. Drawings: This part shall include approved shop or fabrication drawings, complete with dimensions.
  7. Part 7 - Safety:
    - a. Procedures: This part describes the safety precautions to be taken when operating and maintaining the equipment or working near it.
  8. Part 8 - Documentation:
    - a. All equipment warranties, affidavits, and certifications required by the Technical Specifications shall be placed in this part.
- C. The Supplier shall furnish to the Owner 3 identical Owner's Manuals. Each set shall consist of one or more volumes, each of which shall be bound in a ITOYA spring-post binder, 3-post, loose-leaf, vinyl plastic hard cover binder suitable for

bookshelf storage. Binder paper capacity shall not exceed 4 inches. Multiple binders may be required to form a set. Binders shall be sized appropriately. A table of contents indicating all equipment in the manuals shall be prepared.

- D. Owner's Manuals shall be submitted in final form to the Owner not later than the date of the shipment of the first VFD to the site. The Supplier shall correct all discrepancies found by the Owner in the technical manuals within 30 days from the date of written notification by the Owner.
- E. Incomplete or unacceptable Owner's Manuals shall constitute sufficient justification to withhold 5-percent of the total price of the equipment due to the Supplier until the Owner's Manual is completed.

#### **1.04 SPARE PARTS LIST**

- A. The Supplier shall furnish to the Owner 3 identical sets of spare parts information for all mechanical, electrical, and instrumentation equipment. The spare parts list shall include the current list price of each spare part. The spare parts list shall be limited to those spare parts which each Supplier recommends be maintained by the Owner in inventory at the plant site. Each Supplier shall indicate the name, address, and telephone number of its nearest outlet of spare parts to facilitate the Owner in ordering. The Supplier shall cross-reference all spare parts lists to the equipment numbers designated in the Proposal Documents and shall include the original manufacturer's. The spare parts lists shall be bound in the Owner's Manual.

#### **1.05 REQUESTS FOR INFORMATION**

- A. In the event that the Supplier, determines that some portion of the drawings, specifications, or other Contract Documents requires clarification or interpretation by the Owner, the Supplier shall submit a Request for Information in writing to the Owner. Requests for Information may only be submitted by the Supplier and shall only be submitted on the Request for Information form provided by the Owner. The Supplier shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed from the Owner. In the Request for Information the Supplier shall set forth their own interpretation or understanding of the requirement along with reasons why they have reached such an understanding.
- B. The Owner will review all Requests for Information to determine whether they are Requests for Information within the meaning of this term. If the Owner determines that the document is not a Request for Information it will be returned to the Supplier, unreviewed as to content, for resubmittal on the proper form and in the proper manner.
- C. Responses from the Owner will not change any requirement of the Contract Documents unless so noted by the Owner in the response to the Request for Information. In the event the Supplier believes that a response to a Request for Information will cause a change to the requirements of the Contract Documents the Supplier shall immediately give written notice to the Owner stating that the Supplier considers the response to be a Change Order. Failure to give such written notice



immediately shall waive the Supplier's right to seek additional time or cost under the Contract.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION



**SECTION 01450**  
**QUALITY CONTROL**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes:
  - 1. Quality control and control of installation.
  - 2. Tolerances.
  - 3. References.
  - 4. Mock-up requirements.
  - 5. Authority and duties of Owner's representative or inspector.
  - 6. Sampling and testing.
  - 7. Testing and inspection services.
  - 8. Contractor's responsibilities.

**1.02 QUALITY CONTROL AND CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. When manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- H. When specified, products will be tested and inspected either at point of origin or at Work site:
  - 1. Notify Engineer in writing well in advance of when products will be ready for testing and inspection at point of origin.
  - 2. Do not construe that satisfactory tests and inspections at point of origin is final acceptance of products. Satisfactory tests or inspections at point of origin do not preclude retesting or re-inspection at Work site.
- I. Do not ship products which require testing and inspection at point of origin prior to testing and inspection.

### **1.03 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. When Manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### **1.04 REFERENCES**

- A. ASTM International (ASTM):
  - 1. E329 - Standard for Agencies Engaged in Construction Inspection, Testing or Special Inspection.
- B. National Institute of Standards and Technology (NIST).

### **1.05 PRODUCT REQUIREMENTS**

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. When specified reference standards conflict with Contract Documents, request clarification from Engineer before proceeding.

### **1.06 AUTHORITY AND DUTIES OF OWNER'S REPRESENTATIVE OR INSPECTOR**

- A. Owner's Project Representative employed or retained by Owner is authorized to inspect the Work.
- B. Inspections may extend to entire or part of the Work and to preparation, fabrication, and manufacture of products for the Work.
- C. Deficiencies or defects in the Work which have been observed will be called to Contractor's attention.
- D. Inspector will not:
  - 1. Alter or waive provisions of Contract Documents.
  - 2. Inspect Contractor's means, methods, techniques, sequences, or procedures for construction.
  - 3. Accept portions of the Work, issue instructions contrary to intent of Contract Documents, or act as foreman for Contractor. Supervise, control, or direct Contractor's safety precautions or programs; or inspect for safety conditions

on Work site, or of persons thereon, whether Contractor's employees or others.

- E. Inspector will:
  - 1. Conduct on-site observations of the Work in progress to assist Engineer in determining when the Work is, in general, proceeding in accordance with Contract Documents.
  - 2. Report to Engineer whenever Inspector believes that Work is faulty, defective, does not conform to Contract Documents, or has been damaged; or whenever there is defective material or equipment; or whenever Inspector believes the Work should be uncovered for observation or requires special procedures.

#### **1.07 TESTING AND INSPECTION SERVICES**

- A. Contractor will employ and pay for specified services of an independent firm to perform Contractor quality control testing as required in the technical specifications for various work and materials.

#### **1.08 CONTRACTOR'S RESPONSIBILITIES**

- A. Submit product test reports electronically.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION



**SECTION 01600**  
**PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Section includes: Requirements for tangible materials, raw or manufactured, that become part of the project.

**1.02 DEFINITIONS**

- A. Certificates: Documents that the work is in accordance with the Contract Documents.
- B. Extra stock materials: Extra stock materials provided for the Owner's use in facility operation and maintenance.
- C. Manufacturer's instructions:
  - 1. Stipulations, directions, and/or recommendations issued form by the manufacturer of the product addressing handling, installation, erection, and/or application of the product.
- D. Products:
  - 1. Raw materials, finished goods, equipment, systems, and shop fabrications.
- E. Product data:
  - 1. Public information about the product which is found in the manufacturer's catalogs or on their web site including catalog pages, data sheets, bulletins, layout drawings, exploded views, and brochures.
- F. Samples:
  - 1. As defined in the General Conditions and Supplementary Conditions.
  - 2. Full-size actual products or pieces of products intended to illustrate the products to be incorporated into the project. Sample submittals are often necessary for such characteristics as colors, textures, and other appearance issues.
- G. Schedules:
  - 1. Product parts and materials lists.
- H. Shop drawings:
  - 1. As defined in the General Conditions and Supplementary Conditions.
  - 2. Shop drawings are prepared specifically for the project to illustrate details, dimensions, and other data necessary for satisfactory fabrication or construction that are not shown in the contract documents. Shop drawings could include graphic line-type drawings and single-line diagrams.

- I. Spare parts:
  - 1. Duplicate parts necessary to replace a damaged or worn part of the product.
  - 2. Consumables such as operating fluids.
  
- J. Special tools:
  - 1. Special wrenches, gauges, circuit setters, and other similar devices required for the proper operation or maintenance of a system that would not normally be in the Owner's tool kit and that have been specifically made for use on a product for assembly, disassembly, repair, or maintenance.
  
- K. Submittals:
  - 1. As defined in the General Conditions and Supplementary Conditions.
  - 2. Samples, product data, shop drawings, and others that demonstrate how Contractor intends to conform to the Contract Documents.

### **1.03 SUBMITTALS (NOT USED)**

## **PART 2 PRODUCTS**

### **2.01 GENERAL REQUIREMENTS**

- A. Provide products by same manufacturer when products are of similar nature, unless otherwise specified.
  
- B. Provide like parts of duplicate units that are interchangeable.
  
- C. Provide equipment or product that has not been in service prior to delivery, except as required by tests.
  
- D. Provide products produced by manufacturers regularly engaged in the production of these products.
  
- E. Provide products that bear approvals and labels as specified.

### **2.02 MATERIAL**

- A. Dissimilar metals:
  - 1. Separate contacting surfaces with dielectric material.
  - 2. Neoprene, bituminous impregnated felt, heavy bituminous coatings, nonmetallic separators or washers, or other materials as specified.
  
- B. Edge grinding:
  - 1. Sharp projections of cut or sheared edges of ferrous metals which are not to be welded shall be ground to a radius required to ensure satisfactory paint adherence.
  
- C. Use anti-galling compound on threads of stainless steel fasteners during factory assembly.



- D. Provide anti-galling compound with stainless steel fasteners shipped for field assembly.
- E. Aluminum in contact with concrete or masonry: Apply epoxy mastic as specified in Section 09960 - High-Performance Coatings, coating system EPX-M-5.

### **2.03 PRODUCT SELECTION**

- A. Provide products with Engineer approved submittals.
- B. When products are specified by standard or specification designations of technical societies, organizations, or associations only, provide products that meet or exceed reference standard and Specifications.
- C. When products are specified with names of manufacturers but no model numbers or catalog designations, provide Products by one of named manufacturers that meet or exceed Specifications.

### **2.04 SHIPMENT**

- A. Requirements prior to shipment of equipment:
  - 1. Engineer approved shop drawings.
  - 2. Engineer approved Manufacturer's Certificate of Source Testing as specified in the Technical Sections.
  - 3. Draft operations and maintenance manuals, as specified in Section 01782 - Operation and Maintenance Manuals, when required by specifications.
- B. Prepare products for shipment by:
  - 1. Tagging or marking to agree with delivery schedule or shop drawings.
  - 2. Including complete packing lists and bills of material with each shipment.
  - 3. Packaging products to facilitate handling and protection against damage during transit, handling, and storage.
  - 4. Securely attach special instructions for proper field handling, storage, and installation to each piece of equipment before packaging and shipment.
- C. Transport products by methods that avoid product damage.
- D. Deliver products in undamaged condition in manufacturer's unopened containers or packaging.

### **2.05 SPARE PARTS, MAINTENANCE PRODUCTS, AND SPECIAL TOOLS**

- A. Provide spare parts and maintenance products as required by Technical Sections.
  - 1. Submit completed Attachment A - Spare Parts, Maintenance Products, and Special Tools Inventory List.
- B. Provide one set of special tools required to install or service the equipment.

- C. Box, tag, and clearly mark items.
- D. Contractor is responsible for spare parts, maintenance products, and special tools until acceptance by Owner.

## **PART 3 EXECUTION**

### **3.01 DELIVERY AND HANDLING**

- A. Handle equipment in accordance with manufacturer's instructions.
- B. Provide construction equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Upon delivery, promptly inspect shipments:
  - 1. Verify compliance with Contract Documents, correct quantities, and undamaged condition of products.
  - 2. Acceptance of shipment does not constitute final acceptance of equipment.
- D. Spare parts, maintenance products, special tools.
  - 1. Immediately store in accordance with the manufacturer's instructions.
  - 2. Store spare parts, maintenance products, and special tools in enclosed, weather-proof, and lighted facility during the construction period.
    - a. Protect parts subject to deterioration, such as ferrous metal items and electrical components with appropriate lubricants, desiccants, or hermetic sealing.
  - 3. With Owner's written request for advanced delivery of spare parts, maintenance products, and special tools.
    - a. Deliver requested items and deduct them from the inventory list.
    - b. Provide transmittal documentation.
  - 4. Store large items individually:
    - a. Weight: Greater than 50 pounds.
    - b. Size: Greater than 24 inches wide by 18 inches high by 36 inches long.
    - c. Clearly labeled:
      - 1) Equipment tag number.
      - 2) Equipment manufacturer.
      - 3) Subassembly component, if appropriate.
      - 4) Store smaller items in spare parts box:
    - d. Weight: Less than 50 pounds.
    - e. Size: Less than 24 inches wide by 18 inches high by 36 inches long.
    - f. Clearly labeled:
      - 1) Equipment tag number.
      - 2) Equipment manufacturer.
      - 3) Subassembly component, if appropriate.
      - 4) Spare parts and special tools box:
    - g. Box material: Waterproof, corrosion resistant.
    - h. Hinged cover:
      - 1) Locking hasp.
    - i. Spare parts inventory list taped to underside of cover.

- j. Clearly labeled:
  - 1) The words "Spare Parts and/or Special Tools".
  - 2) Equipment tag number.
  - 3) Equipment manufacturer.
  - 4) Subassembly component, if appropriate.

### **3.02 STORAGE AND PROTECTION**

- A. Immediately store and protect products until installed in Work.
- B. Furnish covered, weather-protected storage structures providing a clean, dry, noncorrosive environment for mechanical equipment, valves, architectural items, electrical and instrumentation equipment and special equipment to be incorporated into this project.
  - 1. Storage of equipment shall be in strict accordance with the "instructions for storage" provided by the manufacturer.
    - a. Including connection of heaters, lubrication, rotating shafts, etc.
  - 2. The Contractor shall furnish a copy of the manufacturer's instructions for storage to the Engineer prior to storage of equipment and materials.
- C. Store products with seals and legible labels intact.
- D. Protect painted or coated surfaces against impact, abrasion, discoloration, and damage.
  - 1. Repaint or recoat damaged painted or coated surfaces.
- E. Exterior storage of fabricated products:
  - 1. Place on aboveground supports that allow for drainage.
  - 2. Cover products subject to deterioration with impervious sheet covering.
  - 3. Provide ventilation to prevent condensation under covering.
- F. Store moisture sensitive products in watertight enclosures.
- G. Store loose granular materials on solid surfaces in well-drained area.
  - 1. Prevent materials mixing with foreign matter.
  - 2. Provide access for inspection.
- H. Payment will not be made for equipment and materials improperly stored or stored without providing Engineer with the manufacturer's instructions for storage.
- I. Provide an equipment log and stored products log with monthly pay applications.
  - 1. Data includes as a minimum: The storage location, equipment or product identification, date stored, date of inspection/maintenance, date removed from storage, copy of manufacturer's recommended storage guidelines, description of inspection/maintenance activities performed, and signature of party performing inspection/maintenance.

### **3.03 INSTALLATION**

- A. Inspect hardware or fittings prior to product installation.

- B. Use anti-galling compound on stainless steel threads used for field assembly.

### **3.04 PROTECTION AFTER INSTALLATION**

- A. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations.
  - 1. Remove covering when no longer needed.
  - 2. Replace corroded, damaged, or deteriorated equipment, product, or parts before acceptance of the project.
  
- B. Update equipment log with monthly pay applications.
  - 1. Data includes as a minimum: Description of maintenance activities performed in accordance with the manufacturer's recommendation and industry standards and signature of party performing maintenance.

END OF SECTION

**ATTACHMENT B - SPARE PARTS, MAINTENANCE PRODUCTS,  
AND SPECIAL TOOLS INVENTORY LIST**



## SPARE PARTS, MAINTENANCE PRODUCTS, AND SPECIAL TOOLS INVENTORY LIST

**Owner:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
**Contractor:** \_\_\_\_\_ **Project No.:** \_\_\_\_\_  
**Project Name:** \_\_\_\_\_

Inventory List				
Spec Number: _____		Spec Title _____		
Equipment Tag No.: _____		Equipment Manufacturer: _____		
Quantity	Subassembly Component	Description	Manufacturer's Part Number	Storage Location





## SECTION 01612

### SEISMIC DESIGN CRITERIA

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section includes: Seismic design criteria for the following:
1. Anchorage of mechanical and electrical equipment.
  2. Seismic design and design of anchorage for small tanks fabricated off site and shipped to the Project site.
  3. Other structures or items as specified or indicated on the Drawings.

##### 1.02 REFERENCES

- A. American Society of Civil Engineers (ASCE):
1. 7-22 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

##### 1.03 SYSTEM DESCRIPTION

- A. Design in accordance with the requirements of the building code as specified in Section 01410 - Regulatory Requirements.
- B. Design spectral acceleration at short period,  $S_{DS}$ : 0.918.
- C. Design of non-structural components and their connections to structures:
1. Component amplification factor,  $a_p$ : In accordance with ASCE 7-22.
  2. Component response modification factor,  $R_p$ : In accordance with ASCE 7-22..
  3. Component importance factor,  $I_p$ :

<b>Component</b>	<b>Description</b>	<b><math>I_p</math></b>
Electrical	Equipment and appurtenances provided and installed under Division 16.	1.5
All Other Equipment	Equipment and appurtenances provided and installed under any other Divisions.	Per ASCE 7-22,

- D. Seismic Design Category (SDC):
1. Seismic Design Category (SDC) for certification of mechanical and electrical equipment as required by ASCE 7-22: Seismic Design Category D.
- E. Design requirements: Anchorage of equipment to structures.
1. Do not use friction to resist sliding due to seismic forces. Do not design or provide connections that use friction to resist seismic loads. Resist seismic forces through direct tension and/or shear on anchors and fasteners.

2. Anchoring and fastening to concrete and masonry:
  - a. Provide anchors specified in Section 03055 - Adhesive-Bonded Reinforcing Bars and All Thread Rods.

#### **1.04 SUBMITTALS**

- A. Shop drawings and calculations: Complete shop drawings and seismic calculations.
- B. Calculations shall be signed and stamped by a civil or structural engineer licensed in the state of Utah.

#### **PART 2 PRODUCTS (NOT USED)**

#### **PART 3 EXECUTION (NOT USED)**

END OF SECTION

## SECTION 01756

### COMMISSIONING

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section includes: Commissioning.
- B. Schedule:
  - 1. Perform Owner's Training before startup and commissioning of the first VFD.
  - 2. Due to the construction sequence, several trips are required to complete the manufacturer's requirements for commissioning. Refer to Section 01010 - Summary of Work.

##### 1.02 DEFINITIONS

- A. Component: A part of a system that does not have an electrical connection or internal electronics. Examples: Piping and pressure gauges.
- B. Device: A part of a system that has electrical connections or internal electronics. Examples: level transmitter or pressure transmitter.
- C. Equipment: A factory or field assembled apparatus that performs an identifiable function. Examples: pumps, motors, VFDs, MCCs.
- D. Functional Testing: Testing performed on a completed subsystem or system to demonstrate that the system meets the specified requirements. Example systems: backwash system, dewatering system.
- E. Installation Verification: Testing to demonstrate that equipment or system and associated components or devices have been properly installed. Example equipment: pumps, meters, and blowers with associated piping.
- F. Manufacturer's Certificate of Functional Compliance: The form completed by the manufacturer to confirm that testing of the installed equipment or system has been performed and the results conform to the specified performance. The form is provided in Attachment D provided at the end of this Section.
- G. Manufacturer's Certificate of Installation Verification: The form completed by the manufacturer to confirm that the equipment or system is installed in conformance with the Contract. The form is provided in Attachment C at the end of this Section.
- H. Manufacturer's Certificate of Source Testing: The form completed by the manufacturer to confirm that the specified source tests have been performed and

the results conform to the specified requirements. The form is provided in Attachment B at the end of this Section.

- I. Owner Training: The Owner's staff is trained by the VFD manufacturer, to operate and maintain the completed Work. This is sometimes referred to as Vendor Specific Training.

### 1.03 SUBMITTALS

#### A. Qualifications:

1. Manufacturer's representative's qualifications.
  - a. Submit to Engineer no later than 30 days in advance of required services.
  - b. Representative's name, phone, and e-mail address:
    - 1) May use 2 representatives: 1 for field testing and 1 for Owner Training.
    - 2) Provide resume stating instructor's technical expertise and instructional technology skills and experience.

#### B. Schedules:

1. Owner Training Schedule: In the form of an itinerary with dates, times and topics.

#### C. Certificates:

1. Manufacturer's Certificate of Source Testing.
2. Manufacturer's Certificate of Installation Verification.
3. Manufacturer's Certificate of Functional Compliance.

#### D. Manufacturer's representatives field notes and data.

#### E. Owner Training:

1. Prior to the training session:
  - a. Training instructor qualifications.
  - b. Training course materials: Due 30 calendar days prior to initial training session.
    - 1) If Owner requires Continuing Education Units (CEUs), submit training materials to state regulatory agency in sufficient time to obtain approval for training prior to the training.
    - 2) Drafts of training agenda, lesson plan, presentation, handouts, and list of audio-visual aids.
    - 3) Format: 1 electronic copy in pdf format.
2. Post training session:
  - a. Training course materials: Due 14 calendar days after class completion.
    - 1) Recordings.
    - 2) Class attendance sheet.
    - 3) Final version of training agenda, final lesson plan, presentation, handouts, and audio-visual aids.
    - 4) Format: 1 electronic copy in pdf format and 2 hard copies organized in notebooks.

- b. Provide materials for all sessions of the class in a single transmittal.
- c. If the Owner requires training CEUs, issue training CEU certificates approved by the state regulatory agency to Owner's staff who successfully completed the training.

#### **1.04 MANUFACTURER'S REPRESENTATIVES**

- A. Qualifications: as specified below and in the Technical Sections:
  - 1. For Installation and Functional Testing:
    - a. Factory trained and experienced in the technical applications, installation, operation, and maintenance of respective equipment/system with full authority by the equipment/system manufacturer to issue the certifications required of the manufacturer.
  - 2. Training instructor qualifications:
    - a. Provide resume stating instructor's technical preparation and instructional technology skills and experience.
    - b. CEUs are required, the operator training instructors must comply with state regulatory.
    - c. Knowledgeable in the equipment/system for which they are training.
    - d. Experienced in conducting classes.
    - e. Sales representatives are not qualified instructors unless they possess the detailed operating and maintenance knowledge required for proper class instruction.
  - 3. Representatives to be approved by Owner and Engineer.
  - 4. No substitute representatives without written approval by Owner and Engineer.
- B. Duties:
  - 1. Determine if additional time and/or trips (beyond those specified in the Technical Sections) is required to perform the specified services.
  - 2. Coordinate services in accordance with the Contractor's project schedule up to and including making multiple trips to project site when there are separate milestones associated with installation of each occurrence of manufacturer's equipment.
  - 3. Perform on-site services as specified in the Technical Sections:
  - 4. Provide weekly copies of manufacturer's representatives field notes and data to Contractor.

#### **1.05 TESTING AND TRAINING PHASE**

- A. Source Testing:
  - 1. As specified in the Technical Section.
  - 2. Source Test Plan:
    - a. Engineer approval of Source Test Plan required prior to testing.
  - 3. Source testing is complete after successful testing, submittal of test report, and Manufacturer's Certificate of Source Testing.
  - 4. Engineer approval of Source Testing Report is required.
- B. Installation Verification:
  - 1. Overview:
    - a. Verifying the installation of equipment to be in accordance with Manufacturer's Instructions.

2. Prerequisite:
    - a. Engineer approval of Source Testing Report.
  3. Perform checks:
    - a. Structural anchorage check.
    - b. Electrical energization check.
      - 1) As specified in the flowchart shown in Attachment A.
    - c. Health and safety check.
  4. Submit Manufacturer's Certificate of Installation Verification.
  5. Engineer approval of Manufacturer's Certificate of Installation Verification is required.
- C. Owner Training:
1. Train Owner's staff on the operation and maintenance of the equipment/system.
    - a. Provide Owner staff with state regulatory agency approved training CEUs.
  2. Train on each topic of the approved Operation and Maintenance Manual.
    - a. Include classroom instruction and field demonstration with all necessary tools and test equipment.
    - b. Include training on the VFD programming software including connection of a laptop to the VFD, setting and saving VFD parameters and downloading settings to other VFDs.
  3. Training tailored to the skills and job classifications of the staff attending the classes (e.g., plant superintendent, treatment plant operator, maintenance technician, electrician, etc.).
  4. Training outcomes:
    - a. Owner's staff can safely operate, maintain, and repair the equipment/systems provided as recommended by the manufacturer.
  5. Training plan:
    - a. Meet with Engineer and Owner's to develop list of personnel to be trained and to establish expected training outcomes and objectives at least 30 calendar days prior to commissioning of equipment/system.
    - b. Coordinate and arrange for manufacturer's representatives to provide both classroom-based learning and field (hands-on) training, based on training module content and stated learning objectives.
    - c. Conduct classroom training at location designated by Owner.
    - d. Scope and sequence:
      - 1) Plan and schedule training in the correct sequence to provide prerequisite knowledge and skills to trainees.
        - a) Describe recommended procedures to check/test equipment/system following a corrective maintenance repair.
      - 2) If multiple classes are needed to meet the training objectives, they shall be included in the training plan.
  6. Owner Training Schedule:
    - a. Schedule Owner's staff training within the constraints of their workloads.
      - 1) Those who will participate in this training have existing full-time work assignments, and training is an additional assigned work task, therefore, scheduling is imperative.
      - 2) Owner staff work schedules regularly shift, as treatment facilities are typically operated on an around-the-clock basis.
      - 3) Maximum training hours per week: 4.

- 4) Days available for training:
    - a) Monday to Thursday.
  - b. Training scheduling coordination:
    - 1) CC is responsible for the following:
      - a) Coordinate schedule for training periods with the Owner's personnel and manufacturer's representatives (instructors).
    - 2) Complete Owner Training no sooner than two calendar days prior to Startup/Functional Testing of each system.
  - c. Class logistics:
    - 1) Delivery time minimum: 2 hours.
    - 2) Delivery time maximum: 4 hours.
    - 3) Class agenda:
      - a) Schedule refreshment breaks and meal breaks to meet the class needs and Owner work rules.
    - 4) Schedule specific sessions:
      - a) Minimum of 10 days in advance to allow Owner staffing arrangements to take place.
      - b) At the times requested by the Owner, within the period 7 a.m. to 4 p.m. Monday through Thursday.
        - (1) Times scheduled will be at Owner's discretion.
      - c) Owner approval and confirmation required for session schedules.
      - d) Provide minimum of 2 sessions for each class unless otherwise noted.
        - (1) The purpose of having multiple sessions on each class is to accommodate the attendance of as many Owner personnel working different shifts as possible.
      - e) A maximum of 1 session per day for each class.
  - d. Number of students:
    - 1) Estimated class size maximum: 10 staff.
    - 2) Engineer will confirm the headcount 1 week prior to the class, so that the instructor can provide the correct number of training aids for students.
7. Submittals:
- a. Submit Training Plan Schedule 30 calendar days before the first scheduled training session, including but not limited to lesson plans, participant materials, instructor's resumes, and training delivery schedules.
  - b. Submit training documentation including the following:
    - 1) Training plan:
      - a) Training modules.
      - b) Scope and sequence statement.
      - c) Contact information for manufacturer's instructors including name, phone, and e-mail address.
      - d) Instructor qualifications.
    - 2) Training program schedule:
      - a) Format: Bar chart:
        - (1) Include in the Project Progress Schedule.
      - b) Contents:
        - (1) Training modules and classes.

8. Lesson plans:
  - a. Divide training into discrete modules appropriate for the equipment and trades.
  - b. State performance-based learning objectives in terms of what the trainees will be able to do at the end of the lesson.
  - c. Define student conditions of performance and criteria for evaluating instructional success.
  - d. Minimum requirements:
    - 1) Hands-on demonstrations planned for the instructions.
    - 2) Cross-reference training aids.
    - 3) Planned training strategies such as whiteboard work, instructor questions, and discussion points or other planned classroom or field strategies.
    - 4) Attach handouts cross-referenced by section or topic in the lesson plan.
    - 5) Indicate duration of outlined training segments.
  - e. Provide instruction lesson plans for each trade:
    - 1) Detailed component description:
      - a) Identify each component function and describe in detail.
      - b) Identify equipment's mechanical, electrical, and electronic components and features.
      - c) Where applicable, group relative components into subsystems.
      - d) Identify and describe in detail equipment safety features, permissive and controls interlocks.
    - 2) Equipment operation:
      - a) Describe equipment's operating (process) function and system theory.
      - b) Describe equipment's fundamental operating principles and dynamics.
      - c) Identify support equipment associated with the operation of subject equipment.
      - d) Detail the relationship of each piece of equipment or component to the subsystems, systems, and process.
      - e) Cite hazards associated with the operations, exposure to chemicals associated with the component, or the waste stream handled by the component.
      - f) Specify appropriate safety precautions, equipment, and procedures to eliminate, reduce, or overcome hazards.
    - 3) Define Preventative Maintenance (PM) inspection procedures required on equipment in operation, spot potential trouble symptoms (anticipate breakdowns), and forecast maintenance requirements (predictive maintenance).
      - a) Review preventive maintenance frequency and task analysis table.
    - 4) Define equipment Corrective Maintenance (CM) troubleshooting:
      - a) Describe recommended equipment preparation requirements as they relate to specific craft problems.
      - b) Identify and describe the use of any special tools required for maintenance of the equipment as they relate to specific craft problems.



- c) Provide component specific troubleshooting checklists as they relate to specific craft problems.
    - d) Describe component removal/installation and disassembly/assembly procedures for specific craft repairs.
    - e) Perform at least 2 hands-on demonstrations of common corrective maintenance repairs.
  - 5) Describe recommended measuring instruments and procedures, and provide instruction on interpreting alignment measurements, as appropriate.
- 9. Training instruction format:
  - a. The training for operations and maintenance personnel shall be provided as 1 entity.
  - b. Instructors shall apply adult education best practices, emphasizing learner participation and activity.
  - c. Lecturing should be less than 30 percent of class time.
  - d. Training delivery may include problem solving, question/answer, hands-on instruction, practice, evaluation/feedback tools, and lecture to support training objectives.
  - e. Conduct hands-on instruction according to the following descriptions:
    - 1) Present hands-on demonstrations of at least the following tasks:
      - a) Proper start-up, shutdown, and normal and alternative operating strategies.
      - b) Common corrective maintenance repairs for each group.
      - c) Recommended procedures to check/test equipment/system following a corrective maintenance repair.
      - d) Preventative maintenance points.
      - e) Calibration, if applicable.
    - 2) Use tools and equipment provided by manufacturer to conduct the demonstrations.
      - a) Submit requests for supplemental assistance and facilities with the Contractor's proposed lesson plans.
    - 3) Contractor remains responsible for equipment disassembly or assembly during hands-on training situations involving equipment disassembly or assembly by Owner's personnel.
  - f. Training aids:
    - 1) Instructors shall provide needed audio-visual devices such equipment (televisions, video recorder/player, computer, projectors, screens, easels, etc.), models, charts, etc. for each class.
    - 2) Instructor to confirm with Engineer in advance of each class that the classroom will be appropriate for the types of audiovisual equipment to be employed.
- 10. Training sessions:
  - a. Provide training sessions for equipment/system as specified in the individual equipment/system section.
  - b. Include the following information in the agenda:
    - 1) Instructor name.
    - 2) Listing of subjects to be discussed.
    - 3) Time estimated for each subject.
    - 4) Allocation of time for Owner staff to ask questions and discuss the subject matter.
    - 5) List of documentation to be used or provided to support training.

- c. Owner may request that particular subjects be emphasized, and the agenda be adjusted to accommodate these requests.
  - d. Distribute copies of the agenda to each student at the beginning of each training class.
  - e. Trainees will keep training materials and documentation after the session.
  - f. Distribute Training Evaluation Form following each training session.
    - 1) Training Evaluation Form is included in this Section.
    - 2) Return completed Training Evaluation Forms to Owner's designated training coordinator immediately after session is completed.
    - 3) Revise training sessions judged "Unsatisfactory" by a majority of attendees.
      - a) Conduct training sessions again until a satisfactory rating is achieved.
11. Engineer approval of Owner Training is required.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

END OF SECTION

**ATTACHMENT A - MANUFACTURER'S CERTIFICATE OF SOURCE TESTING**

**MANUFACTURER'S CERTIFICATE OF SOURCE TESTING**

OWNER \_\_\_\_\_ EQPT/SYSTEM \_\_\_\_\_  
PROJECT NAME \_\_\_\_\_ EQPT TAG NO. \_\_\_\_\_  
PROJECT NO. \_\_\_\_\_ EQPT SERIAL NO. \_\_\_\_\_  
SPECIFICATION NO. \_\_\_\_\_  
SPECIFICATION TITLE \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I hereby certify Source Testing has been performed on the above-referenced equipment/system as defined in the Contract, and results conform to the Contract Document requirements. Testing data is attached.

Date of Execution: \_\_\_\_\_, 20\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer's Authorized Representative Name (*print*): \_\_\_\_\_

\_\_\_\_\_  
(Authorized Signature)

If applicable, Witness Name (*print*): \_\_\_\_\_

\_\_\_\_\_  
(Witness Signature)



**ATTACHMENT B - MANUFACTURER'S CERTIFICATE OF INSTALLATION VERIFICATION**

**MANUFACTURER'S CERTIFICATE OF INSTALLATION VERIFICATION**

OWNER \_\_\_\_\_ EQPT/SYSTEM \_\_\_\_\_  
PROJECT NAME \_\_\_\_\_ EQPT TAG NO. \_\_\_\_\_  
PROJECT NO. \_\_\_\_\_ EQPT SERIAL NO. \_\_\_\_\_  
SPECIFICATION NO. \_\_\_\_\_  
SPECIFICATION TITLE \_\_\_\_\_

I hereby certify the installation of the above-referenced equipment/system as defined in the Contract Documents.

**NOTES:**

Attach written certification report prepared by and signed by the electrical and/or instrumentation subcontractor.

Comments: \_\_\_\_\_

I, the undersigned manufacturer's representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and operate this equipment/system, and (iii) authorized to make recommendations required to ensure that the equipment/system furnished by the manufacturer is complete and operational, except as may be otherwise indicated herein. I further certify that all information contained herein is true and accurate.

Date: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer's Authorized Representative Name (*print*): \_\_\_\_\_

By Manufacturer's Authorized Representative: \_\_\_\_\_  
(Authorized Signature)





**ATTACHMENT C - MANUFACTURER'S CERTIFICATE OF FUNCTIONAL COMPLIANCE**

**MANUFACTURER'S CERTIFICATE OF FUNCTIONAL COMPLIANCE**

OWNER \_\_\_\_\_ EQPT/SYSTEM \_\_\_\_\_  
PROJECT NAME \_\_\_\_\_ EQPT TAG NO. \_\_\_\_\_  
PROJECT NO. \_\_\_\_\_ EQPT SERIAL NO. \_\_\_\_\_  
SPECIFICATION NO. \_\_\_\_\_  
SPECIFICATION TITLE \_\_\_\_\_

I hereby certify the Functional Testing of the above-referenced equipment/system as defined in the Contract Documents.

NOTES:  
Attach test results with collected data and test report.

Attach written certification report prepared by and signed by the electrical and/or instrumentation subcontractor.

Comments: \_\_\_\_\_

I, the undersigned manufacturer's representative, hereby certify that I am (i) a duly authorized representative of the manufacturer, (ii) empowered by the manufacturer to inspect, approve, and operate this equipment/system, and (iii) authorized to make recommendations required to ensure that the equipment/system furnished by the manufacturer is complete and operational, except as may be otherwise indicated herein. I further certify that all information contained herein is true and accurate.

Date: \_\_\_\_\_

Manufacturer: \_\_\_\_\_

Manufacturer's Authorized Representative Name (*print*): \_\_\_\_\_

By Manufacturer's Authorized Representative: \_\_\_\_\_  
(Authorized Signature)

**WITNESSES**

By Owner's Authorized Representative: \_\_\_\_\_  
(Authorized Signature)

By Engineer's Authorized Representative: \_\_\_\_\_  
(Authorized Signature)



## ATTACHMENT D - TRAINING EVALUATION FORM

### TRAINING EVALUATION FORM

EQUIPMENT/SYSTEM ITEM: \_\_\_\_\_

VENDOR/MANUFACTURER: \_\_\_\_\_

DATE: \_\_\_\_\_ NAME OF REPRESENTATIVE: \_\_\_\_\_

- |  |            |              |    |     |
|--|------------|--------------|----|-----|
| 1. Was representative prepared?  | Acceptable | Unacceptable | or | N/A |
| 2. Was an overview description presented?  | Acceptable | Unacceptable | or | N/A |
| 3. Were specific details presented for system components?                              | Acceptable | Unacceptable | or | N/A |
| 4. Were alarm and shutdown conditions clearly presented?                               | Acceptable | Unacceptable | or | N/A |
| 5. Were step-by-step procedures for starting, stopping, and troubleshooting presented? | Acceptable | Unacceptable | or | N/A |
| 6. Were routine/preventative maintenance items clearly identified?                     | Acceptable | Unacceptable | or | N/A |
| 7. Was the lubrication schedule (if any) discussed?                                    | Acceptable | Unacceptable | or | N/A |
| 8. Was the representative able to answer all questions?                                | Acceptable | Unacceptable | or | N/A |
| 9. Did the representative agree to research and answer unanswered questions?           | Acceptable | Unacceptable | or | N/A |

10. Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

11. Overall Rating: Satisfactory Unsatisfactory

**Note:**  
 Sessions judged "Unsatisfactory" by a majority of attendees shall be revised and conducted again until a satisfactory rating is achieved.



## SECTION 16050

### COMMON WORK RESULTS FOR ELECTRICAL

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section includes:
  - 1. Requirements for electrical:
    - a. Basic design and performance criteria.
    - b. Prescriptive requirements for common components.
    - c. Installation.
- B. Contract Drawings:
  - 1. Schematic diagrams:
    - a. Controls are shown as de-energized.
    - b. Add relays, where required, to provide all necessary contacts for the control system or where needed to function as interposing relays for control voltage coordination, equipment coordination, or control system voltage drop considerations.
    - c. Mount devices shown on motor controller schematic diagrams in the controller compartment enclosure, unless otherwise noted.
  - 2. Plan drawings:
    - a. The Electrical Drawings show desired locations, arrangements, and components of the electrical work in a diagrammatic manner.
    - b. Locations and sizes of equipment are approximate only.

##### 1.02 REFERENCES

- A. Abbreviations:
  - 1. FAT: Factory acceptance test that is also referred to as source test.
  - 2. ICSC: Instrumentation and controls subcontractor.
  - 3. PCIS: Process control and instrumentation system.
- B. Definitions:
  - 1. LCP: Local control panel: Operator interface panel that may contain pilot type control devices, operator interface devices, control relays, etc. and does not contain a PLC or RIO.
  - 2. PCM: Process control module: An enclosure containing any of the following devices: PLC, RTU, or RIO.
  - 3. RS-232: RS-232 is also known as TIA-232 or EIA-232, is a standard for serial communication transmission of data.
  - 4. RS-485: RS-485 is also known as TIA-485 or EIA-485, is a standard defining the electrical characteristics of drivers and receivers for use in serial communications system.
  - 5. RTU: Remote telemetry unit: A controller typically consisting of a PLC, and a means for remote communications.

6. Space: That portion of the switchgear, motor control center, panelboard, switchboard, or control panel that does not physically contain a device but is capable of accepting a device with no modifications to the equipment, i.e., provide standoffs, bus, and hardware, as part of the space.
7. Spare: That portion of the switchgear, motor control center, panelboard, switchboard, or control panel that physically contains a device with no load connections to be made.
8. Unequipped space: That portion of the switchgear, motor control center, panelboard, switchboard, or control panel that does not physically contain a device, standoff, bus, hardware, or other equipment.
9. USB: Universal Serial Bus is an industry standard that establishes specifications for cables, connectors, and protocols for connection, communication, and power supply interfacing between computer, peripherals, and other computers.

C. Standards:

1. National Electrical Manufacturers Association (NEMA):
  - a. 250 - Enclosures for Electrical Equipment (1000 V Maximum).
2. National Fire Protection Association (NFPA):
  - a. 70 - National Electrical Code (NEC).
3. Underwriters' Laboratories, Inc. (UL).

### **1.03 SUBMITTALS (NOT USED)**

### **1.04 QUALITY ASSURANCE**

A. General:

1. Furnish equipment listed by and bearing the label of UL or of an independent testing laboratory acceptable to the Engineer and the Authority Having Jurisdiction.

### **1.05 DELIVERY, STORAGE, AND HANDLING**

A. Shipping precautions:

1. After completion of shop assembly and successful factory testing, pack all equipment in protective crates, and enclose in heavy duty polyethylene envelopes or secured sheeting to provide complete protection from damage, dust, and moisture.
2. Place dehumidifiers, when required, inside the polyethylene coverings.
3. Skid-mount the equipment for final transport.
4. Provide lifting rings for moving without removing protective covering.
5. Display boxed weight on shipping tags together with instructions for unloading, transporting, storing, and handling at the job site.

### **1.06 PROJECT OR SITE CONDITIONS**

- A. As specified in Section 01850 - Design Criteria.



## **1.07 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Loop drawings:
    - a. Provide electrical information required in the preparation of loop drawings including, but not limited to:
      - 1) Conduit numbers and associated signal(s) contained within each conduit.
      - 2) Wire numbers.
      - 3) Equipment terminal numbers.
      - 4) Junction boxes and signal(s) contained within each junction box.
      - 5) Equipment power sources, and associated circuit numbers.
      - 6) As-built drawings detailing wiring.
- B. Meetings:
  - 1. As specified in Section 01312 - Project Meetings.

## **PART 2 PRODUCTS**

### **2.01 GENERAL (NOT USED)**

### **2.02 DESIGN AND PERFORMANCE CRITERIA**

- A. Provide all field wiring and terminations.
- B. Equipment mounting and anchoring:
  - 1. Design equipment anchorage, supports, and connections for dead load, running loads, loads during start-up, seismic load specified in Section 01850 - Design Criteria, and other loads as required for proper operation of equipment.
    - a. For equipment with an operating weight of 400 pounds or greater and all equipment that is supported higher than 4 feet above the floor, provide calculations for:
      - 1) The operating weight and location of the centroid of mass for the equipment.
      - 2) Forces and overturning moments.
      - 3) Shear and tension forces in equipment anchorages, supports, and connections.
      - 4) The design of equipment anchorage, supports, and connections based on calculated shear and tension forces.
  - 2. Anchorage of equipment to concrete or masonry:
    - a. Perform calculations and determine number, size, type, strength, and location of anchor bolts or other connections.
    - b. Unless otherwise indicated on the Drawings, select and provide anchors from the types specified in Section 05190 - Mechanical Anchoring and Fastening to Concrete and Masonry.
    - c. Provide bolt sleeves around cast-in anchor bolts for 400 pounds or greater equipment.
      - 1) Adjust bolts to final location and secure the sleeve.

3. Anchorage of equipment to metal supports:
  - a. Perform calculations and determine number, size, type, strength, and location of bolts used to connect equipment to metal supports.

### 2.03 MANUFACTURERS (NOT USED)

### 2.04 MATERIALS

- A. Enclosures:
  1. Provide enclosures for electrical, instrumentation and control equipment, regardless of supplier or subcontractor furnishing the equipment, that meet the requirements of NEMA Standard 250.
- B. Plant area electrical Work requirements:
  1. Provide electrical materials in accordance with the following table, unless otherwise specifically indicated on the Drawings:

<b>Table 1. Electrical Material Requirements</b>				
<b>PLANT AREA</b>	<b>ENVIRONMENT W = WET D = DAMP C = CLEAN/DRY X = CORROSIVE H = HAZARDOUS</b>	<b>NEMA ENCLOSURE TYPE</b>	<b>EXPOSED CONDUIT TYPE (as specified in Section 16130 - Conduits)</b>	<b>SUPPORT MATERIALS</b>
Headworks Pump Station	C	12	GRC	GRC
RAS/WAS Buildings	C	12	GRC	GRC

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Portions of this Project involve installation in existing facilities and interfaces to existing circuits, power systems, controls, and equipment:
  1. Perform and document comprehensive and detailed field investigations of existing conditions (circuits, power systems, controls, equipment, etc.) before starting any Work.
  2. Determine information necessary to document, interface with, modify, upgrade, or replace existing circuits, power systems, controls, and equipment.
  3. Provide and document interface with, modifications to, upgrades, or replacement of existing circuits, power systems, controls, and equipment.

### 3.02 PREPARATION (NOT USED)

### **3.03 INSTALLATION**

- A. VFD installation is by others.

### **3.04 COMMISSIONING**

- A. General:
  - 1. As specified in Section 01756 - Commissioning and Technical Sections.
  - 2. Provide onsite assistance for troubleshooting and correcting electrical issues discovered during commissioning.
- B. Functional Testing
  - 1. Inspection activities conducted during construction do not satisfy inspection or acceptance testing requirements.

### **3.05 FIELD QUALITY CONTROL**

- A. Workmanship:
  - 1. Leave wiring in panels, manholes, boxes, and other locations neat, clean, and organized:
    - a. Neatly coil and label spare wiring lengths.
    - b. Shorten, re-terminate, and re-label excessive used, as well as spare, wire and cable lengths, as directed by the Engineer.

### **3.06 ADJUSTING (NOT USED)**

### **3.07 CLEANING**

- A. General:
  - 1. Clean and vacuum all enclosures to remove all metal filings, surplus insulation and any visible dirt, dust, or other matter before energization of the equipment or system start-up:
    - a. Use of compressors or air blowers for cleaning is not acceptable.
  - 2. Clean luminaries in the areas affected by the construction.

END OF SECTION



## SECTION 16262

### VARIABLE FREQUENCY DRIVES 0.50 - 50 HORSEPOWER

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section includes:
  - 1. Variable frequency drives (VFD) 0.5 to 50 horsepower for control of NEMA Design B squirrel cage induction motors.

##### 1.02 REFERENCES

- A. As specified in Section 16050 - Common Work Results for Electrical.
- B. International Organization for Standardization (ISO):
  - 1. 9001 - Quality Management Systems - Requirements.
- C. National Electrical Manufacturers Association (NEMA):
  - 1. MGI, Part 31 - Motors with higher peak voltage capability.
- D. Underwriters' Laboratories (UL):
  - 1. 508A - Standard for Safety for Industrial Control Panels.
  - 2. 508C - Standard for Power Conversion Equipment.

##### 1.03 DEFINITIONS

- A. As specified in Section 16050 - Common Work Results for Electrical.
- B. Point of common coupling: the point of common coupling for all harmonic calculation and field measurements for both voltage and current distortions is defined as the closest directly connected bus supplying power to the VFD.

##### 1.04 SYSTEM DESCRIPTION

- A. Design requirements:
  - 1. Each VFD system consists of all components required to meet the performance, protection, safety, testing, and certification criteria of this Section.
  - 2. The VFD system:
    - a. Is a fully integrated package.
    - b. Includes all material necessary to interconnect all VFD system elements, even if shipped separately.
- B. Any modifications to a standard product necessary to meet this Section shall be made only by the VFD manufacturer:
  - 1. Each VFD shall be completely factory pre-wired, assembled, and then tested as a complete system by the VFD manufacturer to ensure a properly coordinated, fully integrated drive system.

2. The VFD shall be capable of operating standard NEMA Design B motors. It is the responsibility of the VFD manufacturer to ensure that the drive will not damage motor insulation due to high carrier frequency, reflected wave, dv/dt or other drive electrical characteristics based upon the installed conditions:
    - a. Provide equipment necessary to mitigate potential damage to motor insulation.
- C. Performance:
1. Operating envelope:
    - a. Speed and torque requirements:
      - 1) Provide a variable torque or constant torque VFD as required by the driven load.
      - 2) The VFD shall be capable of producing a variable alternating voltage/frequency output to provide continuous operation over the 40 to 200 percent (25 to 120 hertz) speed range.
    - b. Current requirements:
      - 1) Full rated current output on a continuous basis.
      - 2) Variable torque VFD:
        - a) Minimum 110 percent current overload for 1 minute.
      - 3) Constant torque VFD:
        - a) Minimum 150 percent current overload for 1 minute.
  2. Minimum VFD system efficiency:
    - a. 96 percent when operating at the rated kW output.
    - a. VFD system efficiency shall be calculated as follows:
 
$$\text{Efficiency (\%)} = \frac{\text{Power (Load)}}{\text{Power (Supply)}} \times 100$$

Power (Load) is the total power measured at the output terminals of the drive system, including VFD, output filters, or transformers. Power (Supply) is the total power measured at the input terminals of the VFD including input filters, line reactors, isolation transformers, harmonic distortion attenuation equipment and auxiliary equipment (e.g., controls, fans) for complete system operation.
  3. Total power factor:
    - a. Minimum of 0.96 lagging across the entire speed range.
    - b. At no speed shall the VFD have a leading power factor.
  4. Frequency accuracy:
    - a. Minimum of within 0.01 percent.
  5. Speed regulation:
    - a. Minimum of within 0.5 percent across the entire speed range.

## 1.05 SUBMITTALS

- A. Furnish submittals as specified in Sections 01300 - Contractor Submittals:
  1. Custom prepared by the VFD manufacturer and specific for the equipment furnished.
- B. Product data:
  1. Manufacturer of the VFD.
  2. Manufacturer of all components of the VFD.

3. Dimensions:
    - a. Height.
    - b. Width.
    - c. Depth.
    - d. Weight.
  4. Nameplate schedule.
  5. Bill of material.
  6. Ratings:
    - a. Voltage.
    - b. Phase.
    - c. Input current.
    - d. Output current.
    - e. Interrupting rating.
    - f. Momentary current rating.
  7. List of recommended spare parts.
  8. Catalog cutsheets for major components.
  9. Design data:
    - a. Efficiency and power factor values.
    - b. Certification that the drive is sized for the full nameplate motor horsepower and current of the driven load at the installed altitude and ambient temperature.
    - c. Certification that based upon VFD design, cable length to motor, and motor dielectric insulation level that the VFD will not damage motor insulation due to carrier frequency, reflected wave, dv/dt, or other VFD produced characteristics.
    - d. Certification that all electronic circuits and printed circuit boards are conformally coated.
  10. For equipment installed in structures designated as seismic design category C, D, E, or F submit the following as specified in Section 01612 - Seismic Design Criteria:
    - a. Manufacturer's statement of seismic qualification with substantiating test data.
    - b. Manufacturer's special seismic certification with substantiating test data.
- C. Shop drawings:
1. Complete plan and elevation drawings showing:
    - a. All dimensions.
    - b. Panel, sub-panel, and component layout indexed to the bill of material.
    - c. Conduit connections.
  2. Block diagram showing the basic control and protection systems specifying the protection, control, trip and alarm functions, the reference signals and commands and the auxiliary devices.
  3. Complete schematic, wiring and interconnection diagrams showing connections to both internal and external devices:
    - a. Include terminal number and wire numbers.
  4. Complete single-line and 3-line diagrams including, but not limited to, circuit breakers, motor circuit protectors, contactors, instrument transformers, meters, relays, timers, control devices, and other equipment comprising the complete system:
    - a. Clearly indicate device electrical ratings on the drawings.

- D. Installation instructions:
  - 1. Detail the complete installation of the equipment including rigging, moving, and setting into place.
  - 2. For equipment installed in structures designated as seismic design category C, D, E, or F:
    - a. Provide project-specific installation instructions and anchoring details based on support conditions and requirements to resist seismic loads as specified in Section 01612 - Seismic Design Criteria.
    - b. Submit anchoring drawings with supporting calculations.
    - c. Drawings and calculations shall be stamped by a professional engineer registered in the state where the Project is being constructed.
  
- E. Furnish commissioning submittals listed below and specified in this Section as specified in Section 01756 - Commissioning:
  - 1. Manufacturer's representative qualifications.
  - 2. Owner training.
  
- F. Operation and maintenance manuals:
  - 1. Spare parts list with supplier names and part numbers.
  - 2. Startup and commissioning instructions and data.
  - 3. Operating manuals:
    - a. Submit operating instructions and a maintenance manual presenting full details for care and maintenance of each model of VFD provided under this Contract.
  - 4. Operating instructions:
    - a. Written descriptions detailing the operational functions of all controls on the front panel.
  - 5. Maintenance manual:
    - a. Furnish maintenance manuals with instructions covering all details pertaining to care and maintenance of all equipment as well as identifying all parts.
    - b. Manuals shall include, but are not limited to the following:
      - 1) Adjustment and test instructions covering the steps involved in the initial test, adjustment, and start-up procedures.
      - 2) Detailed control instructions which outline the purpose and operation of every control device used in normal operation.
      - 3) All schematic wiring and external diagrams:
        - a) Furnish drawings in a reduced 11-inch by 17-inch format that are fully legible at that size.
  
- G. Test forms and reports:
  - 1. Submit complete factory acceptance test procedures and all forms used during the test.
  
- H. Manufacturer's field reports:
  - 1. Report listing the setting of all VFD adjustable parameters and their values after start-up.
  
- I. Record Documents:
  - 1. Certified Record Documents of equipment with information listed above.



## **1.06 QUALITY ASSURANCE**

- A. Qualifications:
  - 1. Any third-party certification, safety or protection requirements shall be applied to the VFD system as a whole. Certification or protection of system elements or individual components by themselves is not acceptable.
  - 2. VFDs shall be UL 508C listed and labeled.
  - 3. Variable frequency drives shall be manufactured by the VFD manufacturer at its own facility which shall have a quality assurance program that is certified in conformance with ISO 9001.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Ship the VFDs and associated equipment to the job site on a dedicated air ride vehicle that will allow the Contractor to utilize on site off-loading equipment:
  - 1. VFDs shall be delivered to the site preassembled and wired.
- B. Furnish temporary equipment heaters within the VFD to prevent condensation from forming.

## **1.08 PROJECT OR SITE CONDITIONS**

- A. As specified in Section 01850 - Design Criteria.

## **1.09 SEQUENCING**

- A. Conduct factory acceptance test and submit certified test results for Engineer's review.
- B. Ship equipment to project site after successful completion of factory acceptance test.
- C. Assemble equipment in the field.
- D. Conduct field acceptance test and submit results for Engineer's review.
- E. Submit manufacturer's certification that equipment has been properly installed and is fully functional for Engineer's review.
- F. Conduct Owner's training sessions.

## **1.10 SCHEDULING (NOT USED)**

## **1.11 SYSTEM START-UP**

- A. The VFD manufacturer shall be responsible for start-up of the VFDs in the presence of the equipment suppliers, Contractor, Engineer, and Owner.

## **1.12 OWNERS INSTRUCTIONS (NOT USED)**

## **1.13 MAINTENANCE**

- A. Spare parts:
  - 1. The following spare parts shall be furnished:
    - a. 1 complete VFD of each size furnished.
    - b. Any special dedicated tools for emergency service and troubleshooting.
    - c. All hardware and software required for configuration, maintenance, troubleshooting, and inquiry of all drive parameters.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. One of the following or equal:
  - 1. ABB.
  - 2. Allen-Bradley.
  - 3. Schneider-Electric.

### **2.02 EXISTING PRODUCTS (NOT USED)**

### **2.03 MATERIALS (NOT USED)**

### **2.04 MANUFACTURED UNITS (NOT USED)**

### **2.05 EQUIPMENT**

- A. General:
  - 1. Sinusoidal pulse width modulated (PWM) type drive.
    - a. 6-pulse insulated gate bipolar transistor (IGBT) power section.
    - b. Microprocessor based controls.
    - c. Line and load reactors.
- B. Ratings:
  - 1. Voltage:
    - a. Input voltage as indicated on the Drawings.
- C. Operational features:
  - 1. Protective features:
    - a. Provide the following minimum protective features:
      - 1) Motor overload protection.
      - 2) Instantaneous overcurrent.
      - 3) Instantaneous overvoltage.
      - 4) Undervoltage.
      - 5) Power unit overtemperature.
      - 6) Phase loss.
      - 7) VFD output short circuit.
  - 2. Control mode:
    - a. Operation in either a constant volts/hertz or sensorless vector mode:
      - 1) The control mode selectable using the programming keypad.

3. Frequency control:
  - a. Minimum of 3 selectable skip frequencies with adjustable bandwidths.
  - b. Programmable minimum frequency.
  - c. Programmable maximum frequency.
4. Acceleration/deceleration:
  - a. Separately adjustable acceleration and deceleration rates:
    - 1) Each rate adjustable from 0.01 to 1,800 seconds.
5. Spinning load:
  - a. The VFD shall be capable of determining the speed and direction of a spinning load, "catch" the load and accelerate or decelerate it without damage to the load.
6. Programmable loss of signal:
  - a. Upon loss of speed reference, the VFD shall be programmable to either:
    - 1) Stop.
    - 2) Maintain current speed.
    - 3) Default to pre-selected speed.
7. Power interrupt ride-through:
  - a. The VFD shall be capable of continuous operation in the event of a power loss of 5 cycles or less.
8. Inputs/Outputs:
  - a. Manufacturer's standard number the following:
    - 1) Analog inputs:
      - a) Configurable as either 0 to 10 volts or 4 to 20 milliamperes.
    - 2) Analog outputs:
      - a) Programmable 4 to 20 milliamperes isolated.
    - 3) Discrete inputs:
      - a) Programmable.
    - 4) Discrete outputs:
      - a) Programmable.
      - b) Form C relay contacts.
    - 5) Potentiometer 3-wire input.
  - b. Provide additional inputs/outputs as required to meet the control functions indicated on the Drawings.
9. Communications:
  - a. Provide each VFD with a ProfiNet communications interface module.
  - b. The use of gateways is not acceptable.
  - c. All protocols shall be certified by the governing authority.
10. Diagnostics:
  - a. Store a minimum of 4 fault conditions in non-volatile memory on a first in-first out basis.
  - b. Operational parameters stored at the time of the fault:
    - 1) Operating frequency.
    - 2) Drive status.
    - 3) Power mode.
  - c. Fault memory accessible via RS-232, RS-422, or RS-485.
11. Automatic restart:
  - a. User selectable automatic restart feature allowing the VFD to restart following a momentary power failure or other VFD fault:
    - 1) Programmable for up to 9 restart attempts.
    - 2) Adjustable time delay between restart attempts.

## 2.06 COMPONENTS

- A. Enclosure:
  - 1. NEMA Type 12.
  - 2. Provide cooling devices required to maintain the VFD within the manufacturer's specified temperature limits for the Project conditions:
    - a. Provide cooling device failure alarm.
- B. Power disconnect:
  - 1. Flange-mounted thermal magnetic circuit breaker.
  - 2. Lockable in the OFF position.
- C. Input Reactor:
  - 1. 3 percent input line reactor.
- D. Output Device:
  - 1. 3 percent output load reactor.
- E. Keypad:
  - 1. Provide each VFD with a keypad for programming and control.
  - 2. Keypad requirements:
    - a. Password security to protect drive parameters.
    - b. Mounted on the door of the VFD enclosure.
    - c. Back-lit LCD:
      - 1) Minimum of 2 lines with a minimum of 16 characters per line.
    - d. Programming and display features language: English.
    - e. Capable of displaying the following parameters:
      - 1) Speed (percent).
      - 2) Output current (amperes).
      - 3) Output frequency (hertz).
      - 4) Input voltage.
      - 5) Output voltage.
      - 6) Total 3-phase kilowatt.
      - 7) Kilowatt-hour meter.
      - 8) Elapsed run time meter.
      - 9) Revolutions per minute.
      - 10) Direct current bus voltage.
  - 3. In addition to all keys required for programming, provide the following controls on the keypad:
    - a. Auto/manual selector.
    - b. Start pushbutton.
    - c. Stop pushbutton.
    - d. Jog pushbutton.
    - e. Speed increment.
    - f. Speed decrement.
    - g. Forward/reverse selector.
    - h. Run LED indicator.
    - i. Program LED indicator.
    - j. Fault LED indicator.
  - 4. Provide the VFD with the hardwired controls as indicated on the Drawings.

- F. Control power transformer:
  - 1. Furnish a control power transformer mounted and wired inside the VFD enclosure.
  - 2. With primary and secondary fusing.
  - 3. Sized to power all VFD controls and options as well as any external devices indicated on the Drawings including the motor winding heater.

## **2.07 ACCESSORIES**

- A. Metal oxide varistors:
  - 1. Provide protection for the VFD against:
    - a. Line transients: 5,000-volt peak minimum.
    - b. Line to ground transients: 7,000 peak minimum.
- B. Conformal coating:
  - 1. Provide conformal coating material applied to electronic circuitry and printed circuit boards to act as a protection against moisture, dust, temperature extremes, and chemicals such as H<sub>2</sub>S and chlorine.

## **2.08 MIXES (NOT USED)**

## **2.09 FABRICATION (NOT USED)**

## **2.10 FINISHES**

- A. Enclosure finish shall be manufacturer's standard gray.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION (NOT USED)**

### **3.02 PREPARATION (NOT USED)**

### **3.03 INSTALLATION**

- A. Install the equipment in accordance with the accepted installation instructions and anchorage details to meet the seismic load requirements at the Project site.
- B. General:
  - 1. Furnish all cables, conduit, lugs, bolts, expansion anchors, sealants, and other accessories needed to complete the installation of the VFD.
  - 2. Assemble and install the VFD in the locations and with the layouts indicated on the Drawings.
  - 3. Perform work in accordance with manufacturer's instructions and shop drawings.
  - 4. Furnish components and equipment as required to complete the installation.
  - 5. Replace any hardware lost or damaged during the installation or handling to provide a complete installation.

6. Provide openings in top or bottom of the VFD (free-standing or within motor control center) enclosure for conduit only, no additional openings will be allowed:
  - a. Improperly cut holes will require that the entire panel be replaced:
    - 1) No hole closers or patches will be allowed.
7. Bundle circuits together and terminate in each unit:
  - a. Tie with nylon wire ties.
  - b. Label all wires at each end with wire numbers shown on the approved control drawings.
  - c. All connections to and from the VFD enclosure must be made via terminal blocks.

### **3.04 ERECTION, INSTALLATION, APPLICATION, CONSTRUCTION (NOT USED)**

### **3.05 REPAIR/RESTORATION (NOT USED)**

### **3.06 RE-INSTALLATION (NOT USED)**

### **3.07 COMMISSIONING**

- A. As specified in Section 01756 - Commissioning.
- B. Source testing (Factory Acceptance Tests):
  1. Not witnessed.
  2. General:
    - a. Incoming inspection of components and raw materials based on strategic supplier base and experience.
    - b. All VFDs furnished under this Section shall be tested and inspected as specified below. Testing of VFDs based on sampling plans is not allowed.
    - c. The testing procedures specified are the minimum acceptable requirements. The manufacturer may perform additional tests at its discretion.
  3. Failure of any component during testing requires repair of the faulted component and complete retest.
  4. Perform manufacturer's standard factory acceptance tests.
  5. Furnish test reports and Manufacturer's Certificate of Source Testing.
- C. Installation Verification:
  1. Furnish Manufacturer's Certificate of Installation Verification
- D. Functional Testing:
  1. As specified in Section 16950(26\_08\_50) - Field Electrical Acceptance Tests.
  2. Furnish Manufacturer's Certificate of Functional Compliance.
- E. Owner Training:
  1. Perform Owner training as specified in Section 01756 - Commissioning.
  2. Number of sessions: 1.

### **3.08 FIELD QUALITY CONTROL**

- A. Provide the services of a VFD manufacturer representative for startup assistance and training:
  - 1. Inspection and field adjustment:
    - a. Supervise the following and submit written certification that the equipment and controls have been properly installed, aligned, adjusted, and readied for operation.
  - 2. Startup field testing:
    - a. Provide technical direction for testing, checkout, and startup of the VFD equipment in the field.
    - b. Under no circumstances are any portions of the drive system to be energized without authorization from the manufacturer's representative.

### **3.09 ADJUSTING**

- A. Make all adjustments as necessary and recommended by the manufacturer, Engineer, or testing firm.
- B. Provide the services of a VFD manufacturer factory technician to make all drive parameters and protective device settings:
  - 1. Protective device settings provided by the VFD manufacturer in accordance with the manufacturer of the driven equipment requirements.
  - 2. Provide documentation of VFD settings including but not limited to:
    - a. Minimum speed.
    - b. Maximum speed.
    - c. Skip speeds.
    - d. Current limit.
    - e. Acceleration time.
    - f. Deceleration time.
    - g. Carrier frequency.

END OF SECTION





## SECTION 16265

### REDUCED HARMONIC VARIABLE FREQUENCY DRIVES

#### PART 1 GENERAL

##### 1.01 SUMMARY

- A. Section includes:
  - 1. Reduced harmonic non-regenerative active front end, variable frequency drives (VFD), 60 to 500 horsepower for control of standard NEMA Design B squirrel cage induction motors.

##### 1.02 REFERENCES

- A. As specified in Section 16050 - Common Work Results for Electrical.
- B. Underwriters' Laboratories (UL):
  - 1. 50 - Standards for Enclosures for Electrical Equipment.
  - 2. 508A - Standard for Safety for Industrial Control Panels.

##### 1.03 DEFINITIONS

- A. As specified in Section 16050 - Common Work Results for Electrical.
- B. Point of common coupling: the point of common coupling for all harmonic calculation and field measurements for both voltage and current distortions is defined as the closest directly connected bus supplying power to the VFD.
- C. Abbreviations:
  - 1. VFD: Variable Frequency Drive.
  - 2. AFE: Active Front End.
  - 3. IGBT: Insulated Gate Bipolar Transistor.

##### 1.04 SYSTEM DESCRIPTION

- A. Design requirements:
  - 1. Each VFD system shall consist of all components required to meet the performance, protection, safety, testing and certification criteria of this Section.
  - 2. The VFD system:
    - a. Is a fully integrated package.
    - b. Includes all material necessary to interconnect VFD system elements, even if shipped separately.
  - 3. Any modifications to a standard product necessary to meet this Section shall be made only by the VFD manufacturer.
  - 4. Each VFD shall be completely factory pre-wired, assembled and then tested as a complete package by the VFD manufacturer to ensure a properly coordinated, fully integrated drive system.

5. The VFD shall be capable of operating standard NEMA Design B motors. It is the responsibility of the VFD manufacturer to ensure that the drive will not damage motor insulation due to high carrier frequency, reflected wave, dv/dt or other drive electrical characteristics:
  - a. The VFD manufacturer shall furnish equipment necessary to mitigate potential damage to motor insulation.

B. Performance:

1. Operating envelope:
  - a. Speed and torque requirements:
    - 1) Provide a variable torque or constant torque VFD as required by the driven load.
    - 2) The VFD shall be capable of producing a variable alternating voltage/frequency output to provide continuous operation over the 40 to 110 percent (25 to 66 hertz) speed range.
  - b. Current requirements:
    - 1) Provide 100 percent of rated output current on a continuous basis.
    - 2) Variable torque VFD:
      - a) Minimum 110 percent current overload for 1 minute.
2. Harmonics:
  - a. The VFD shall meet the following distortion limits at 2 percent line voltage unbalance measured at the input terminals of the VFD:
    - 1) Voltage harmonics: The maximum allowable total harmonic distortion, THD, for each VFD shall not exceed 5 percent.
    - 2) Current harmonics: The maximum allowable total harmonic current distortion limit, TDD, for each VFD shall not exceed 5 percent as measured at the input terminals of the VFD system.
3. Efficiency:
  - a. VFD system minimum efficiency shall be 93 percent at rated kilowatt output of the VFD. VFD system efficiency shall be calculated as follows:

$$\text{Efficiency (\%)} = \frac{\text{Power (Load)}}{\text{Power (Supply)}} \times 100$$

- b. Power:
  - 1) Load power is the total 3-phase power measured at the output terminals of the drive system, including the output filter.
  - 2) Supply power is the total power measured at the input terminals of the VFD including phase shifting transformer or active front end components and auxiliary equipment (e.g., controls, fans) for complete system operation.
4. Total power factor:
  - a. Minimum of 0.96 lagging across the entire speed range.
  - b. Under no operating conditions shall the VFD have a leading power factor.
5. Frequency accuracy:
  - a. Minimum of within 0.01 percent.
6. Speed regulation:
  - a. Minimum of within 0.5 percent across the entire speed range.
7. Capable of working with all available power sources (utility and onsite generation) and with all new and existing VFDs.

## 1.05 SUBMITTALS

- A. Furnish submittals as specified in Section 01300 - Contractor Submittals:
  - 1. Custom prepared by the VFD manufacturer and specific for the equipment furnished.
  
- B. Product data:
  - 1. Manufacturer of the VFD.
  - 2. Manufacturer of all components of the VFD.
  - 3. Dimensions:
    - a. Height.
    - b. Width.
    - c. Depth.
  - 4. Weight.
  - 5. Nameplate schedule.
  - 6. Bill of material.
  - 7. Ratings:
    - a. Voltage.
    - b. Phase.
    - c. Input current.
    - d. Output current.
    - e. Interrupting rating.
    - f. Momentary current rating.
  - 8. Catalog cutsheets for major components.
  - 9. Surge protection data.
  - 10. Design data:
    - a. Efficiency and power factor values.
    - b. Certification that the drive is sized for the full nameplate motor horsepower and current (at rated RPM) of the driven load at the installed altitude.
    - c. Certification that based upon VFD design, cable length to motor, and motor dielectric insulation level that the VFD will not damage motor insulation due to carrier frequency, reflected wave, dv/dt, or other VFD produced characteristics.
    - d. Certification that all electronic circuits and printed circuit boards are conformably coated.
    - e. Certification that the VFD will operate with all power sources (including alternate utilities and onsite generation when applicable).
  - 11. List of recommended spare parts.
  - 12. For equipment installed in structures designated as seismic design category C, D, E, or F submit the following as specified in Section 01612 - Seismic Design Criteria:
    - a. Manufacturer's statement of seismic qualification with substantiating test data.
    - b. Manufacturer's special seismic certification with substantiating test data.
  
- C. Shop drawings:
  - 1. Complete plan and elevation drawings showing:
    - a. All dimensions.
    - b. Panel, sub-panel and component layout indexed to the bill of material.

- c. Conduit connections.
  - d. Required clearance around equipment.
  - 2. Block diagram showing the basic control and protection systems identifying the protection, control, trip and alarm functions, the reference signals and commands and the auxiliary devices.
  - 3. Complete schematic, wiring and interconnection diagrams showing connections to both internal and external devices:
    - a. Wiring diagrams shall include terminal number and wire numbers.
  - 4. Complete 1-line and 3-line diagrams including, but not limited to, circuit breakers, motor circuit protectors, contactors, instrument transformers, meters, relays, timers, control devices, and other equipment comprising the complete system:
    - a. Device electrical ratings shall be clearly indicated on the Drawings.
- D. Certifications:
- 1. Certification letter from the VFD manufacturer stating that the VFD(s) are capable of operating with all new and existing sources (utility sources and onsite generation in possible operating configurations).
    - a. The headworks influent pump VFDs powered from motor control centers HW-MCC-A and HW-MCC-B are backed up by standby diesel generators.
  - 2. Certification letter from the VFD manufacturer stating that the VFD(s) are capable of operating with all new and existing VFDs in the existing and new distribution system.
- E. Installation instructions:
- 1. Detail the complete installation of the equipment including rigging, moving, and setting into place.
  - 2. For equipment installed in structures designated as seismic design category C, D, E, or F:
    - a. Provide project-specific installation instructions and anchoring details based on support conditions and requirements to resist seismic loads as specified in Section 01612 - Seismic Design Criteria.
    - b. Submit anchoring drawings with supporting calculations.
    - c. Drawings and calculations shall be stamped by a professional engineer registered in the state where the Project is being constructed.
- F. Calculations:
- 1. Harmonic study:
    - a. A preliminary harmonic analysis shall be performed. A power system short circuit ratio of 20 shall be used. All VFDs shall be assumed to be operating at maximum speed and maximum load. The short circuit current (ISC) utilized for the harmonic analysis calculations is defined as:
      - 1)  $ISC = 20 * (\text{Sum Total Full Load Amps of all VFDs})$ .
    - b. A separate harmonic analysis shall be performed based on the standby generator system. Coordinate with the generator manufacturer and the VFD manufacturer so the actual characteristics for the generator supplied, or existing, for this Project are used in the harmonic analysis.
  - 2. Detailed calculations or details of the actual physical testing performed on the VFD to prove the VFD is suitable for the seismic conditions at the Project Site.

- G. Test forms and reports:
  - 1. Submit complete factory acceptance test procedures and all forms used during the test.
    - a. For VFD units 250 horsepower and larger, provide certified test results for the actual VFD being furnished.
    - b. Provide the following certified test reports:
      - 1) Efficiency at rated power output and output frequency of 60 hertz.
      - 2) Power factor at 0 percent, 25 percent, 50 percent, 75 percent, and 100 percent speed.
      - 3) Harmonics at the input terminals of the VFD at 100 percent speed and 100 percent load.
        - a) Voltage distortion: Measure individual harmonics up to and including the 50th harmonic and total harmonic distortion.
        - b) Current distortion: Measure individual harmonics up to and including the 50th harmonic and total demand distortion.
  - 2. Submit complete field acceptance test procedures and all forms used during the test:
    - a. Testing performed by independent organization as specified in Section 16950 - Field Electrical Acceptance Tests.
- H. Record documents:
  - 1. Certified record documents of all equipment with information listed above.
- I. Manufacturer's field reports:
  - 1. Report listing the setting of all VFD adjustable parameters and their values after start-up.
  - 2. Certification letter from the VFD manufacturer stating that the VFD(s) are programmed to avoid system resonances when connected to the standby generator and will not conflict with generator system voltage regulator.
- J. Furnish commissioning submittals listed below and specified in this Section as specified in Section 01756 - Commissioning:
  - 1. Manufacturer's representative qualifications.
  - 2. Owner training.
- K. Operation and maintenance manuals:
  - 1. Spare parts list with supplier names and part numbers.
  - 2. Start-up and commissioning instructions and data.
  - 3. Complete bill of material indexed to the drawings, identifying the catalog or part numbers, manufacturer, and quantities of components of the VFD system.
  - 4. Operating manuals:
    - a. Submit operating instructions and a maintenance manual presenting full details for care and maintenance of each model of VFD provided under this Contract.
  - 5. Operating instructions:
    - a. The written descriptions shall detail the operational functions of all controls on the front panel including keypad functions and parameters.
  - 6. Maintenance manual:
    - a. Furnish maintenance manuals with instructions covering all details pertaining to care and maintenance of all equipment as well as identifying all parts.

- b. Manuals shall include but are not limited to the following:
  - 1) Adjustment and test instructions covering the steps involved in the initial test, adjustment and start-up procedures.
  - 2) Detailed control instructions that outline the purpose and operation of every control device used in normal operation.
  - 3) All schematic wiring and external diagrams:
    - a) Furnish drawings in a fully legible reduced 11-inch by 17-inch format.

## **1.06 QUALITY ASSURANCE**

- A. Qualifications:
  - 1. Any third-party certification, safety or protection requirements shall be applied to the VFD system as a whole. Certification or protection of system elements or individual components by themselves is not acceptable.
  - 2. VFDs shall be UL 508C listed and labeled.
  - 3. VFDs shall be manufactured by the VFD manufacturer at its own facility, which shall have a quality assurance program that is certified in accordance with ISO 9001.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Ship VFDs to the job site on a dedicated air ride vehicle that will allow the Contractor to utilize on site off-loading equipment:
  - 1. VFDs shall be delivered to the site pre-assembled and wired.
  - 2. Ship each VFD with 2 tamperproof accelerometers that record the maximum shock and vibration experienced by the VFD during shipping and handling.
- B. Furnish temporary equipment heaters within the VFD to prevent condensation from forming.

## **1.08 PROJECT OR SITE CONDITIONS**

- A. As specified in Section 01850 - Design Criteria.

## **1.09 SEQUENCING**

- A. Conduct factory acceptance test and submit certified test results for Engineer's review.
- B. Ship equipment to Project Site after successful completion of factory acceptance test.
- C. Assemble equipment in the field.
- D. Conduct field acceptance tests including harmonic testing and submit results for Engineer's review.
  - 1. All utility power sources and onsite generation shall be installed and operable for field test.

- E. Submit manufacturer's certification that equipment has been properly installed and is fully functional for Engineer's review.
- F. Conduct Owner's training sessions.

#### **1.10 SCHEDULING (NOT USED)**

#### **1.11 WARRANTY**

- A. As specified in Section 01783 - Warranties and Bonds.

#### **1.12 SYSTEM START-UP**

- A. The VFD manufacturer shall be responsible for start-up of the VFDs in the presence of the equipment suppliers, Contractor, Engineer, and Owner.

#### **1.13 OWNERS INSTRUCTIONS (NOT USED)**

#### **1.14 MAINTENANCE**

- A. Maintenance service: Manufacturer shall describe the field service system available to support the proposed VFD system. As a minimum describe:
  - 1. Type of technical support available (e.g., system engineering and technician).
  - 2. Location of field service personnel.
  - 3. Field service daily rates in dollars per hour and dollars per day.
  - 4. Guaranteed response times to service requests.
- B. Spare parts:
  - 1. The following spare parts shall be furnished:
    - a. 1 spare fan for each VFD unit.
    - b. 2 sets of ventilation filters for each VFD unit (if applicable in VFD cabinet louvers).
    - c. 3 power input module of each sized furnished.
    - d. 3 power output module of each size furnished.
    - e. Any special dedicated tools for emergency service and troubleshooting.
    - f. All hardware and software required for configuration, maintenance, troubleshooting and inquiry of all drive parameters.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. One of the following or equal:
  - 1. ABB.
  - 2. Allen-Bradley.
  - 3. Schneider-Electric.

#### **2.02 EXISTING PRODUCTS (NOT USED)**

#### **2.03 MATERIALS (NOT USED)**

## 2.04 MANUFACTURED UNITS (NOT USED)

## 2.05 EQUIPMENT

### A. General:

1. Sinusoidal pulse width modulated, (PWM), voltage source type drive shall consist of the following:
  - a. Rectifier section.
  - b. Direct current link with capacitors.
  - c. Insulated gate bipolar transistor (IGBT), inverter section.
  - d. Microprocessor based controls.
  - e. Output filter.
2. Active front end rectifier:
  - a. IGBT based converter module.
    - 1) Six IGBTs minimum.
  - b. Inductor/capacitor/inductor, LCL, harmonic filter.
    - 1) Low pass filter.
    - 2) The filter shall be disconnected from the line when the VFD is not running or powered off.
    - 3) Installed within same enclosure as VFD.

### B. Ratings:

1. Voltage:
  - a. Input voltage: 480 Volts plus or minus 10 percent, 3-phase, 3-wire, 60 hertz.
  - b. Solidly grounded.
2. Short-circuit rating:
  - a. 65 kA RMS symmetrical.

### C. Operational features:

1. Protective features:
  - a. Annunciated at the keypad and available via network connection.
  - b. Include the following protective features:
    - 1) Motor overload protection.
    - 2) Instantaneous overcurrent.
    - 3) Instantaneous overvoltage.
    - 4) Undervoltage.
    - 5) Power unit overtemperature.
    - 6) Phase loss.
    - 7) VFD output short circuit.
    - 8) VFD output ground fault.
    - 9) Blown fuse with blown fuse indication.
    - 10) IGBT protection.
    - 11) Cooling fan failure.
    - 12) Component failure.
2. Control mode:
  - a. The VFD shall operate in either a constant volts/hertz or sensorless vector mode. Selectable using the programming keypad.
3. Frequency control:
  - a. Minimum of 3 selectable skip frequencies with adjustable bandwidths.



- b. Programmable minimum frequency.
- c. Programmable maximum frequency.
- 4. Acceleration/Deceleration:
  - a. Separately adjustable acceleration and deceleration rates.
  - b. Each rate shall be adjustable from 0.01 to 1,800 seconds.
- 5. Spinning load:
  - a. Capable of determining the speed and direction of a spinning load, “catch” the load and accelerate or decelerate it without damage to the load.
- 6. Programmable loss of signal:
  - a. Upon loss of reference speed signal, the VFD shall be programmable to either stop, maintain current speed, or default to preselected speed.
- 7. Power interrupt ride through:
  - a. Capable of continuous operation in the event of a power loss of 5 cycles or less.
- 8. Hardwired inputs and outputs:
  - a. Manufacturer’s standard number the following:
    - 1) Analog inputs:
      - a) Configurable as either 0 to 10 volts or 4 to 20 milliamperes.
    - 2) Analog outputs:
      - a) Programmable 4 to 20 milliamperes isolated.
    - 3) Discrete inputs:
      - a) Programmable.
    - 4) Discrete outputs:
      - a) Programmable.
      - b) Form C relay contacts.
    - 5) Potentiometer 3-wire input.
  - b. Provide additional inputs and outputs as required to meet the control functions indicated on the Drawings.
- 9. Communications:
  - a. Provide each VFD with a ProfiNet communications interface module.
  - b. The use of gateways is not acceptable.
  - c. All protocols shall be certified by the governing authority.
- 10. Real-time clock:
  - a. Capable of providing time-stamped events.
  - b. Set locally or via a remote controller.
  - c. Programmable for day, month, year, local time zones in hours, minutes and seconds.
- 11. Diagnostics:
  - a. Minimum of 4 fault conditions in memory on a first in - first out basis.
  - b. Time stamped.
  - c. Operating frequency, drive status and power mode shall also be stored at the time of the fault.
  - d. Fault memory shall be maintained in the event of a power outage.
  - e. The fault memory shall be accessible via a network port.
- 12. Automatic restart:
  - a. User selectable, automatic restart feature allowing the VFD to restart following a momentary power failure or other VFD fault:
    - 1) Programmable for up to 9 automatic restart attempts with an adjustable time delay between restart attempts.

## 2.06 COMPONENTS

- A. Enclosure:
  - 1. NEMA Type 12.
  - 2. Provide cooling devices required to maintain the VFD within the manufacturer's specified temperature limits for the Project conditions:
    - a. Provide cooling device alarm.
- B. Power disconnect:
  - 1. Flange mounted thermal magnetic circuit breaker:
    - a. Lockable in the OFF position.
- C. Output filter:
  - 1. 3 percent load reactor.
- D. Keypad:
  - 1. Furnished with a keypad for programming and control.
  - 2. Password security to protect drive parameters.
  - 3. Mounted on the door of the VFD.
  - 4. Back-lit LCD with a minimum of 2 lines of a minimum of 16 characters each.
  - 5. Programming and display features language: English.
  - 6. Capable of displaying the following parameters:
    - a. Speed (percent).
    - b. Input current (amperes).
    - c. Output current (amperes).
    - d. Output frequency (hertz).
    - e. Input voltage.
    - f. Output voltage.
    - g. Total 3-phase kilowatt.
    - h. Kilowatt hour meter.
    - i. Elapsed run time meter.
    - j. Revolutions per minute.
    - k. Direct current bus voltage.
  - 7. In addition to all keys required for programming, the keypad shall have the following:
    - a. Automatic/Manual selector.
    - b. Start pushbutton.
    - c. Stop pushbutton.
    - d. Jog pushbutton.
    - e. Speed increment.
    - f. Speed decrement.
    - g. Forward/Reverse selector.
    - h. RUN indicator.
    - i. PROGRAM indicator.
    - j. FAULT indicator.
    - k. DRIVE READY indicator.
    - l. Diagnostics.
  - 8. Provide the VFD with the hardwired controls indicated on the Drawings.

- E. Control power transformer:
  - 1. Furnish a control power transformer mounted and wired inside the drive enclosure:
    - a. Primary and secondary fusing.
  - 2. Size the transformer to supply power to all VFD controls and options as well as any external devices indicated on the Drawings including the motor winding heater.
  
- F. Line side tuning for AFE VFDs:
  - 1. Provide 2 sets of line side tuning parameters: One for the normal utility supply, another for the alternate (generator) supply.
  - 2. Line side tuning parameters shall be selectable via the communications network or a digital input from a contact enclosure at the automatic transfer equipment or PCIS.

## **2.07 ACCESSORIES**

- A. Surge protection:
  - 1. Metal oxide varistors:
    - a. Provide protection for the VFD against:
      - 1) Line transients: 5,000-volt peak minimum.
      - 2) Line to ground transients: 7,000 peak minimum.
  
- B. Conformal coating:
  - 1. Provide conformal coating material applied to electronic circuitry and printed circuit boards to act as protection against moisture, dust, temperature extremes, and chemicals such as H<sub>2</sub>S and chlorine.
  
- C. Air filters:
  - 1. Mounted on the outside of the VFD enclosure:
    - a. Replaceable without requiring that the VFD be turned off or the door opened.
  - 2. Located on the front or top of the VFD enclosure.
    - a. Side or rear mounted air filters are not acceptable.

## **2.08 MIXES (NOT USED)**

## **2.09 FABRICATION (NOT USED)**

## **2.10 FINISHES**

- A. Enclosure finish shall be manufacturer's standard gray.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION (NOT USED)**

### **3.02 PREPARATION (NOT USED)**

### 3.03 INSTALLATION

- A. Install the equipment in accordance with the accepted installation instructions and anchorage details to meet the seismic load requirements at the Project site.
- B. General:
  - 1. Furnish all cables, conduit, lugs, bolts, expansion anchors, sealants, and other accessories needed to complete installation of the VFD (free-standing or within motor control center).
  - 2. Assemble and install the VFD in the locations and with the layouts indicated on the Drawings.
  - 3. Perform Work in accordance with the manufacturer's instructions and shop drawings.
  - 4. Furnish components, and equipment as required to complete the installation.
  - 5. Replace any hardware lost or damaged during the installation or handling to provide a complete installation.
  - 6. Provide openings in top or bottom of the VFD (free-standing or within motor control center) enclosure for conduit only, no additional openings will be allowed:
    - a. Improperly cut holes will require that the entire panel be replaced:
      - 1) No hole closers or patches will be allowed.
  - 7. Bundle circuits together and terminate in each unit:
    - a. Tie with nylon wire ties.
    - b. Label all wires at each end with wire numbers shown on the approved Control Drawings.
    - c. All connections to and from the VFD enclosure must be made via terminal blocks.

### 3.04 COMMISSIONING

- A. As specified in Section 01756 - Commissioning.
- B. Source testing (Factory Acceptance Tests):
  - 1. Not-witnessed.
  - 2. General:
    - a. Incoming inspection of components and raw materials based on strategic supplier base and experience.
    - b. All VFDs furnished under this Section shall be tested and inspected as specified below. Testing of VFDs based on sampling plans is not allowed.
    - c. The testing procedures specified are the minimum acceptable requirements. The manufacturer may perform additional tests at its discretion.
  - 3. Failure of any component during testing requires repair of the faulted component and complete retest.
  - 4. Perform manufacturer's standard factory acceptance tests.
  - 5. Full load testing:
    - a. Test each VFD and all control logic with a representative motor or dynamometer load to simulate field operation conditions at 25 percent, 50 percent, and 100 percent full load current.
    - b. Tests shall be conducted in a manner in which the inverter (IGBT) section supplies all the output power (kw) of the VFD system. Control strategies

using a contactor or other means of bypassing the VFD when operating at the line frequency shall not be permitted.

- c. Tests shall be conducted using a minimum output frequency of 60 hertz, and a minimum switching frequency of 2.5 kHz.
6. Furnish test reports and Manufacturer's Certificate of Source Testing.

C. Installation Verification:

1. Furnish Manufacturer's Certificate of Installation Verification

D. Functional Testing:

1. As specified in Section 16950 - Field Electrical Acceptance Tests.
2. Furnish Manufacturer's Certificate of Functional Compliance.

E. Owner Training:

1. Perform Owner training as specified in Section 01756 - Commissioning.
2. Number of sessions: 1.

### 3.05 FIELD QUALITY CONTROL

A. Provide the services of a VFD manufacturer representative for start-up assistance and training:

1. Inspection and field adjustment:
  - a. Supervise the following and submit written certification that the equipment and controls have been properly installed, aligned, adjusted, and readied for operation.
  - b. Configure AFE drives for all new and existing sources (utility sources and onsite generation in possible operating configurations).
2. Start-up field testing:
  - a. Provide technical direction for testing, checkout, and startup of the VFD equipment in the field.
  - b. Under no circumstances are any portions of the drive system to be energized without authorization from the manufacturer's representative.
  - c. Compliance with the following specified parameters shall be verified by the VFD manufacturer:
    - 1) Motor terminal voltage:
      - a) Make field measurements at the motor connection box.
      - b) Make measurements of the full speed range of the VFD.
      - c) Make measurements with a recording type oscilloscope.
    - 2) Harmonics:
      - a) Make field measurements at the input terminals of the VFD with and without the VFD in operation.
      - b) Harmonic testing shall include utility power as well as generator standby power.
      - c) Make measurements with a recording type harmonic analyzer displaying individual and total harmonic currents and voltages:
        - (1) Record currents and voltages for a minimum of 10 minutes.
        - (2) Analyzers using snapshots are not acceptable.
  - d. All utility sources and onsite generation shall be operational for start-up field testing.

### **3.06 ADJUSTING**

- A. Make all adjustments as necessary and recommended by the manufacturer, Engineer, or testing firm.
  
- B. Provide the services of a VFD manufacturer factory technician to make all drive parameter and protective device settings:
  - 1. Protective device settings provided by the VFD manufacturer in accordance with the manufacturer of the driven equipment requirements.
  - 2. Provide documentation of VFD settings including but not limited to:
    - a. Minimum speed.
    - b. Maximum speed.
    - c. Skip speeds.
    - d. Current limit.
    - e. Acceleration time.
    - f. Deceleration time.
    - g. Carrier frequency.

END OF SECTION