



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

MCC REPLACEMENT PROJECT

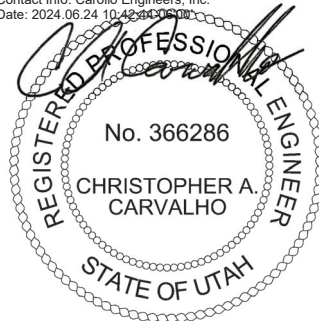
CLIENT PROJECT NO. 202633

EQUIPMENT PROCUREMENT SPECIFICATIONS

VOLUME 1 OF 2

JUNE 2024

Digitally signed by Christopher Alan Carvalho
Contact Info: Carollo Engineers, Inc.
Date: 2024.06.24 10:42:00-0600



SOUTH VALLEY WATER RECLAMATION FACILITY

MCC 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 MCC Replacement Project (Project)

MANDATORY PRE-BID CONFERENCE

A mandatory pre-bid conference will be held and the office of South Valley Water Reclamation Facility at 10:00 a.m. local time, July 22, 2024.

BID OPENING

Sealed Bids will be received at the office of South Valley Water Reclamation Facility until 2:00 p.m., local time, August 13, 2024.

At said place and time, and promptly thereafter, 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 motor control centers, manufacturer's services and Owner training as shown in the Procurement Specifications and Procurement Documents 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 Bid 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

Date _____, 2024

South Valley Water Reclamation Facility

By _____

Taigon Worthen, P.E.

Assistant General Manager / Facility Engineer

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.
- 3.03 All bidders are required to be a manufacturer's authorized distributor for one of the motor control center manufacturers listed in 16444-2.03.A and to be in compliance with paragraph 4.02.

ARTICLE 4 - SITE VISIT; PRE-BID CONFERENCE

- 4.01 Buyer recommends 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 Owner.

- 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, P.E.
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 10 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

12.01 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.

12.02 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.

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

15.01 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 also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services.
- 17.03 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.
- 17.04 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.
- 17.05 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 MCC 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 the 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

Lump Sum Bid Price	\$
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ARTICLE 3 - TIME OF COMPLETION

3.01 Bidder agrees that the furnishing of Goods and Special Services 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>Bidder Name: _____ Address <i>(principal place of business)</i>: _____</p>	<p>Surety Name: _____ Address <i>(principal place of business)</i>: _____</p>
<p>Owner Name: _____ Address <i>(principal place of business)</i>: _____</p>	<p>Bid Project <i>(name and location)</i>: _____ Bid Due Date: _____</p>
<p>Bond 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>_____</p> <p><i>(Full formal name of Bidder)</i></p>	<p>_____</p> <p><i>(Full formal name of Surety) (corporate seal)</i></p>
<p>By: _____</p> <p style="text-align: center;"><i>(Signature)</i></p>	<p>By: _____</p> <p style="text-align: center;"><i>(Signature) (Attach Power of Attorney)</i></p>
<p>Name: _____</p> <p style="text-align: center;"><i>(Printed or typed)</i></p>	<p>Name: _____</p> <p style="text-align: center;"><i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p>Attest: _____</p> <p style="text-align: center;"><i>(Signature)</i></p>	<p>Attest: _____</p> <p style="text-align: center;"><i>(Signature)</i></p>
<p>Name: _____</p> <p style="text-align: center;"><i>(Printed or typed)</i></p>	<p>Name: _____</p> <p style="text-align: center;"><i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p><u>Notes:</u> (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.</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.
 - 3.3. Or Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. 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

This Procurement Agreement is by and between South Valley Water Reclamation Facility ("Buyer") and **[formal name of entity]** ("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: Motor control centers, manufacturers services 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: MCC 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:

Milestone	Date or Days	Notes
Submit Shop Drawings	30	After award
Deliver acceptable Goods to Point of Destination	June 30, 2025	Delivery may be made in the 15-day period before delivery date
Commence Special Services for Goods	July 14, 2025	Start of project construction
Complete Special Services for Goods	February 27, 2026	Completion of project construction

2.03 Shop Drawings

- A. Submittal of Shop Drawings: Seller shall submit all Shop Drawings 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 issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within 30 days after Seller's submittal of such Shop Drawings, 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 the amount shown below for each day that expires after the time indicated below.

<u>Item</u>	<u>Liquidated Damages, per day</u>
Initial receipt by Engineer of Shop Drawings, data and samples	\$ 500.00
Completion of delivery of Goods to the Point of Delivery	\$ 500.00

1. Liquidated damages will be allowed to accrue for a maximum of 60 days.

ARTICLE 3 - PROCUREMENT CONTRACT PRICE

- A. The Procurement Contract Price is comprised of the Lump Sum amounts set forth in the attached Bid Form.
- B. The Total Price is \$_____. Such Total Price is comprised of the Lump Sum amount, 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.

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 (if any)	5
Delivery of Goods to Point of Destination in accordance with the Procurement Contract Documents	70

Payment Line Item (Lump Sum)	Percentage of Lump Sum
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
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. In accordance with Utah Procurement Code, Section 13-8-5, 95 percent of the value of the Work completed (with the balance being retainage).

C. 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.

D. 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. In accordance with Utah Code 13-8-5.

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 July 15, 2025. 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 **[list those Addenda that are Procurement Contract Documents]**.
 - 7. Bonds:
 - a. Performance bond (together with power of attorney).
 - b. Payment 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 noncompetitive 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
South Valley Water Reclamation Facility
(typed or printed name of organization)

By: _____
(individual's signature)

Date: _____
(date signed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

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: _____
(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.)

Seller

(typed or printed name of organization)

By: _____
(individual's signature)

Date: _____
(date signed)

Name: _____
(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)

Title: _____
(typed or printed)

Address for giving notices:

Designated Representative:
Name: _____
(typed or printed)
Title: _____
(typed or printed)

Address:

Phone: _____

Email: _____

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 [insert name of original Buyer] ("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 **[Name of Buyer]** ("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

<p>Seller Name: [Full formal name of Seller] Address <i>(principal place of business)</i>: [Address of Seller's principal place of business]</p>	<p>Surety Name: [Full formal name of Surety] Address <i>(principal place of business)</i>: [Address of Surety's principal place of business]</p>
<p>Buyer Name: South Valley Water Reclamation Facility Mailing address <i>(principal place of business)</i>: South Valley Water Reclamation Facility 7495 South 1300 West, West Jordan, Utah 84084</p>	<p>Procurement Contract Description <i>(name and location)</i>: MCC Replacement Project 7495 South 1300 West, West Jordan, Utah 84084 Procurement Contract Price: [Amount, from Proc. Contract] Effective Date of Procurement Contract: [Date, from Proc. Contract]</p>
<p>Bond Bond Amount: [Amount] Date of Bond: [Date] <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</p>	
<p>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.</p>	
<p>Seller as Principal</p>	<p>Surety</p>
<p>By: _____ <i>(Full formal name of Seller)</i> _____ <i>(Signature)</i></p>	<p>By: _____ <i>(Full formal name of Surety) (corporate seal)</i> _____ <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>

Name: _____
(Printed or typed)

Name: _____
(Printed or typed)

Title: _____

Title: _____

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.

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

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DOCUMENT 00617

PAYMENT BOND – PROCUREMENT

<p>Seller Name: [Full formal name of Seller] Address <i>(principal place of business)</i>: [Address of Seller’s principal place of business]</p>	<p>Surety Name: [Full formal name of Surety] Address <i>(principal place of business)</i>: [Address of Surety’s principal place of business]</p>
<p>Buyer Name: South Valley Water Reclamation Facility Mailing address <i>(principal place of business)</i>: South Valley Water Reclamation Facility 7495 South 1300 West, West Jordan, Utah 84084</p>	<p>Procurement Contract Description <i>(name and location)</i>: South Valley Water Reclamation Facility MCC Replacement Project 7495 South 1300 West, West Jordan, Utah 84084 Procurement [Amount, from Proc. Contract Price: Contract] Effective Date of [Date, from Proc. Procurement Contract: Contract]</p>
<p>Bond Bond Amount: [Amount] Date of Bond: [Date] <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.</p>	
<p>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.</p>	
<p>Seller as Principal</p>	<p>Surety</p>
<p>_____ <i>(Full formal name of Seller)</i></p>	<p>_____ <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>

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

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DOCUMENT 00646

BUYER'S ACKNOWLEDGEMENT OF RECEIPT OF GOODS – PROCUREMENT

Buyer: South Valley Water Reclamation Facility
Buyer's Project No.:
Engineer: Carollo Engineers
Engineer's Project No.: 202633
Seller:
Seller's Project No.:
Project: MCC Replacement Project
Contract Name:

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

All Goods The following specified portions of the Goods: **[Specify]**

Date of delivery of the Goods to the Point of Destination: **[Date]**

Date of Buyer's visual inspection of the Goods: **[Date]**

Date of this Acknowledgment: **[Date]**

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 Acknowledgment: None.

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.

Buyer

Engineer, on behalf of Buyer

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, Inc. **Engineer's Project No.:**
Seller: **Seller's Project No.:**
Project: MCC Replacement 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. **[List reason(s) and clearly cite contractual provisions and factual circumstances of each]**

Seller's Special Services were completed on: **[fill in date]**

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: **[Edit the following to suit the specific procurement]**

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

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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

SC-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.

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, 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 3 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 2 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 1 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:

Workers' Compensation and Related Policies	Policy limits of not less than
Workers' Compensation	
State	Statutory
Applicable Federal	Statutory
Foreign Voluntary Workers' Compensation (employer's responsibility coverage), if applicable	Statutory
Employer's Liability	\$1,000,000
Comprehensive or Commercial General Liability Combined Single Limit:	
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

- a. 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.
- b. If policies are written on a Commercial General Liability form, the General Aggregate shall be at least two times the occurrence limit or be written on a "per project" basis.
- c. All policies shall be written on an occurrence basis. If the Seller 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.
- d. If policies are written for split limits, limits shall be equal for bodily injury and property damage liability.

2. Automobile Liability under Paragraph SC-5.02.F.6:

Automobile Liability	Policy limits of not less than
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	\$2,000,000

a. If policies are written for split limits, limits shall be equal for bodily injury per person, bodily injury per accident and property coverage.

3. Excess Liability Insurance:

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

4. Builders 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 Seller.

c. The Seller 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.

5. Transportation Insurance: Transportation insurance shall be of the "all risks" type and shall protect Seller and Buyer 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 Seller and Buyer 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 Seller 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 Buyer 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 Buyer before the policy is changed or canceled.

I. All policies shall provide that the Seller agrees to waive all rights of subrogation against the Buyer, 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 Seller will be considered primary and not contributory to another insurance available to the Buyer or Engineer.

K. All policies except Workers' Compensation and Builders Risk shall name the Buyer, 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 Seller, Buyer, and Engineer as named insureds and subcontractors and additional insureds. The Workers' Compensation policy shall name the Buyer 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 Seller.
- 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

SC-7.05 Delete Paragraph 7.05.A in its entirety and insert the following in its place:

- A. Buyer is exempt from payment of sales and compensating use taxes of the State of Utah and of cities and counties thereof on all materials and equipment to be incorporated into the Project facilities.
 - 1. Buyer will furnish the required certificates of tax exemption to Seller with respect to materials and equipment to be incorporated into the Project facilities.
 - 2. Buyer's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Seller, or to supplies or materials not incorporated into the Project facilities.
 - 3. The Procurement Contract Price does not include the cost of sales or compensating use taxes to the extent such are exempted by this paragraph.

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 heading and subsequent paragraphs 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

UTAH STATE SUPPLEMENTARY CONDITIONS

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 Electrical 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 any way 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 as needed or as requested basis by the Owner or the Engineer. Outage plans shall be complete, concise, and provided a minimum of 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.
- B. Unless approved by the Owner, work may only be done in one facility at a time.
- C. Temporary heat will be required 24 hours a day, 7 days a week in buildings where existing heating facilities are inoperable during construction once low temperatures as expected to be below 40 degrees Fahrenheit.

1.05 CONSTRUCTION SEQUENCING

- A. RAS/WAS Pump Station No. 2:
 - 1. Construction work shall begin in RAS/WAS Pump Station No. 2.
 - 2. All valve and equipment changes to allow work will to be done in RAS/WAS Pump Station No. 2 will be done by the Owner. RAS/WAS Pump Station No. 2 can be taken completely off-line.
 - 3. Provide a temporary generator to power the 37.5 KVA transformer and lighting panel.

4. Demolish RW-MCC-C and RW-MCC-E2. Reserve the MCC and components to be used for temporary connections in other buildings.
 5. Install the new RW-MCC-C RW-MCC-E2.
 6. Submit Manufacturer's Certificate of Installation.
 7. Perform field electrical acceptance testing.
 8. Make all power and control connections, perform functional testing and put the new motor control centers into service.
 9. Remove the temporary generator.
- B. Chemical Building:
1. Provide a temporary generator to power the PCM (480VAC), 10 kVA transformer, 75 KVA transformer and 37.5 KVA transformer. The work on CB-MCC shall not start until the temporary generator is installed and in operation.
 2. Demolish CB-MCC. Reserve the MCC and components to be used for temporary connections in the Solids Building.
 3. Install the new CB-MCC.
 4. Submit Manufacturer's Certificate of Installation.
 5. Perform field electrical acceptance testing.
 6. Make all power connections and put the new CB-MCC into service.
 7. Remove the temporary generator.
- C. Utility Water Pump Station.
1. Work in RAS/WAS Pump Station No. 2 shall be complete before work begins in the Utility Water Pump Station.
 2. One of the Utility Water Pump Station motor control centers and 3 utility water pumps must be always in operation.
 3. Before beginning work on CC-MCC-B, provide a temporary generator to power one of the 75 horsepower utility water pump VFDs powered from CC-MCC-B.
 - a. Utilize MCC components from RAS/WAS Pump Station No. 2 as required.
 4. Demolish the automatic transfer switch in CC-MCC-B.
 5. Make power connections.
 6. Perform field electrical acceptance testing and functional testing.
 7. Restore CC-MCC-B to service.
 8. Restore the utility water pump on generator power to CC-MCC-B.
 9. Provide a temporary generator to power the 10 KVA transformer and lighting panel.
 10. Before beginning work on CC-MCC-A, provide a temporary generator to power one of the 75 horsepower utility water pump VFDs powered from CC-MCC-A.
 - a. Utilize MCC components from RAS/WAS Pump Station No. 2 as required.
 11. Demolish CC-MCC-A.
 12. Install the new CC-MCC-A.
 13. Submit Manufacturer's Certificate of Installation.
 14. Perform field electrical acceptance testing.
 15. Make all power and control connections, perform and functional testing and put the new CB-MCC into service.
 16. Restore the utility water pump on generator power to CC-MCC-A.
 17. Remove the temporary generator.

- D. Headworks:
1. HW-MCC-A powers influent pumps HW-P-4, HW-P-6 and HW-P-7, Boilers BL-0161, BL-0171 and HW-MCC-D. HW-MCC-B powers influent pumps HW-P-2, HW-P-3, and HW-P-5.
 2. Provide a temporary generator to power Boilers BL-0161, BL-0171 and HW-MCC-D if the expected low temperatures are expected to be below 40 degrees Fahrenheit.
 3. Three influent pumps shall be connected to utility power at all times.
 - a. Provide a temporary generator to power one influent pump, when the MCC that feeds it is off-line. Coordinate the influent pump that will be connected to the generator with the Owner.
 4. Coordinate with the Owner on the order of MCC Work.
 5. Install the temporary generator and connect it to the selected influent pump VFD for demolition of HW-MCC-A.
 6. Provide a temporary generator to power the 25 kVA transformer and panelboard LHW-2A.
 7. Demolish HW-MCC-A.
 8. Install the new HW-MCC-A.
 9. Submit Manufacturer's Certificate of Installation.
 10. Perform field electrical acceptance testing.
 11. Make all power and control connections, perform functional testing, and put the new HW-MCC-A into service.
 12. Place two influent pumps into operation before disconnecting the temporary generator and placing the third influent pump back into service on HW-MCC-A.
 13. Provide a second temporary generator to power HW-MCC-C while HW-MCC-B is being replaced.
 - a. Due to space constraints at the site, the temporary generator used to power HW-MCC-C cannot be the same generator used to power an influent pump.
 - b. The work on HW-MCC-B shall not start until the temporary generators are installed and in operation.
 14. Install the temporary generator and connect it to the selected influent pump VFD for demolition of HW-MCC-B.
 15. Provide a temporary generator to power the 25 kVA transformer and panelboards LHW-2, LHW-2A.
 16. Demolish HW-MCC-B.
 17. Install the new HW-MCC-B.
 18. Submit Manufacturer's Certificate of Installation.
 19. Perform field electrical acceptance testing.
 20. Make all power and control connections, perform functional testing, and put the new HW-MCC-B into service.
 21. Place 2 influent pumps into operation before disconnecting the temporary generator and placing the third influent pump back into service on HW-MCC-B.
 22. Remove all temporary generators.
- E. RAS/WAS Pump Station No. 1:
1. All valve and equipment changes to allow work will to be done in RAS/WAS Pump Station No. 1 will be done by the Owner.

2. One of the following groups of equipment shall remain in service at all times:
 - a. Clarifiers CLR-701, CLR-702. One Scum Pump PMPA-721 or PMPB-721. One WAS pump PMP-1601, PMP-1602 or PMP-1603. Two of three RAS pumps PMP-1401, PMP-1402, PMP-1403. Clarifiers CLR-703, CLR-704, One Scum Pump PMPA-722 or PMPB-722. One WAS pump PMP-1601, PMP-1602 or PMP-1603. Two of three RAS pumps PMP-1404, PMP-1405, PMP-1406.
 3. Demolish RW-MCC-B and RW-MCC-EA.
 4. Demolish the existing wiring between RW-MCC-B and Scum Mixer RW-MX-2 (SCMX-722).
 5. Demolish the existing wiring between RW-MCC-EA and Scum Pump RW-P-12 (PMPA-722) and RW-P-13 (PMPB-722).
 6. Demolish the wiring between RW-MCC-E and Clarifiers FC-ME-3 (CLR-703) and FC-ME-4 (CLR-704).
 7. Install the new RW-MCC-B.
 8. Submit Manufacturer's Certificate of Installation.
 9. Perform field electrical acceptance testing.
 10. Make all power and control connections, perform functional testing, and put the new RW-MCC-B into service.
 11. Install the new RW-MCC-EA.
 12. Submit Manufacturer's Certificate of Installation.
 13. Perform field electrical acceptance testing and functional testing.
 14. Provide temporary wiring between RW-MCC-EA and clarifiers CLR-703, CLR-704 Scum Pump PMPA-722.
 15. Provide a temporary generator to power the new RW-MCC-EA.
 16. Provide a temporary generator to power RW-MCC-A-F. Only the WAS pumps need to be powered.
 17. Provide a temporary generator to power the 50 KVA transformer and lighting panel.
 18. Demolish RW-MCC-A and RW-MCC-E.
 19. Install the new RW-MCC-A and RW-MCC-E.
 20. Submit Manufacturer's Certificate of Installation.
 21. Make all power and control connections, perform functional testing, and put the new RW-MCC-A and RW-MCC-E into service.
 22. Remove the temporary wiring from RW-MCC-EA to clarifiers CLR-703, CLR-704 and Scum Pump PMPA-722.
 23. Install the permanent wiring between RW-MCC-EA and clarifiers CLR-703, CLR-704 and Scum Pump PMPA-722 and RW-MCC-E to RW-MCC-EA.
 24. Remove all temporary generators.
- F. Solids Building.
1. Provide a temporary generator to power the 30 KVA transformer and lighting panel LP-SP-3, the 37.5 KVA transformer and lighting panel SPLP and one polymer mix feed unit.
 - a. Utilize MCC components from RAS/WAS Pump Station No. 2 as required.
 2. Demolish SP-MCC-B.
 3. Install the new SP-MCC-B.
 4. Perform field electrical acceptance testing.
 5. Make all power and control connections and put the new SP-MCC-B into service.

6. Provide a temporary generator, starters and other electrical equipment to power the following:
 - a. CV-1742 - Flat Belt Conveyor.
 - b. CV-1741 - North Screw Conveyor.
 - c. SP-B-1 - Air Compressor.
 - d. 15 KVA transformer and lighting panel SP1A.
 - e. EMV-1741 - Slide Gate.
 - f. The Contractor may use previously demolished motor control centers, relocated to the Solids Building for this equipment.
7. Demolish SP-MCC-A and SP-MCC-E.
8. Install the new SP-MCC-A and SP-MCC-B.
9. Perform field electrical acceptance testing.
10. Make all power and control connections and put the new SP-MCC-A and SP-MCC-E into service.

G. Dispose of all demolished motor control centers.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01322

WEB-BASED CONSTRUCTION DOCUMENT MANAGEMENT

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Requirements for web-based construction document management.

1.02 REQUIREMENTS

- A. Owner, Engineer, and Contractor shall utilize the specified Autodesk Build, web-based construction management software, for submission of data and documents.
 - 1. Web-based construction management software is available at no cost to Contractor's personnel, subcontractor personnel, Suppliers, consultants, Owner, and Engineer.
 - 2. Joint use of this system is to facilitate electronic exchange of information, automation of key processes, and overall management of Contract Documentation.
 - 3. Web based construction management software shall be the primary means of project information submission and management.

1.03 USER ACCESS LIMITATIONS

- A. Provide a list of Seller's and Contractor's key web based construction management software personnel for the Engineer's acceptance.
- B. Engineer reserves the right to perform a security check on potential users.
 - 1. Contractor will be allowed to add additional personnel and subcontractors to the web-based construction management software.
 - 2. Contractor is responsible for adding and removing users from the system after the initial setup by the Engineer.
- C. Engineer will grant initial access to the web-based construction management software by creating user profiles to accepted Contractor personnel.
 - 1. User profiles will define levels of access into the system; determine assigned function based authorizations and user privileges.

1.04 JOINT OWNERSHIP OF DATA

- A. Data entered in a collaborative mode (entered with the intent to share as determined by permissions and workflows within the web-based construction management software system) by Engineer and Contractor will be jointly owned.

1.05 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

- A. Review comments made (or lack thereof) by Owner on Contractor submitted documentation shall not relieve Contractor from compliance with requirements of the Contract Documents.
- B. Contractor is responsible for managing, tracking, and documenting the Work to comply with the requirements of the Contract Documents.
- C. Owner's acceptance via automated system notifications or audit logs extends only to the face value of the submitted documentation and does not constitute validation of the Contractor's submitted information.

1.06 COMPUTER REQUIREMENTS

- A. Seller/Contractor shall use computer hardware and software that meets the requirements of the web-based construction management software system as recommended by the web-based construction management software to access and utilize the web-based construction management software.
- B. As recommendations are modified by the web-based construction management software, Seller/Contractor will upgrade their system(s) to meet or exceed the recommendations.
 - 1. Upgrading of Contractor's computer systems will not be justification for a cost or time modification to the Contract.
- C. Ensure that connectivity to the web-based construction management software system is accomplished through DSL, cable, T-1, or wireless communications systems.
 - 1. Minimum bandwidth requirement for using the system is 5 Mbps. It is recommended a faster connection be used when uploading pictures and files into the system.
- D. Web-based construction management software supports the current version of Chrome (preferred), Mozilla's Firefox, Microsoft Edge, and Apple's Safari on a rolling basis.
 - 1. Each time a new version of one of these browsers is released, the web-based construction management software will begin supporting the update and stop supporting the fourth-oldest version.

1.07 CONTRACTOR RESPONSIBILITY

- A. Responsible for the validity of their information placed in the web-based construction management software and for the abilities of their personnel.
- B. Entry of information exchanged and transferred between the Seller/Contractor and its subcontractors and suppliers on the web-based construction management software shall be the responsibility of the Contractor.
- C. Accepted users shall be knowledgeable in the use of computers, including Internet browsers, email programs, CAD drawing applications, and Adobe Portable Document Format (PDF) document distribution program.

- D. Utilize the existing forms in the web-based construction management software to the maximum extent possible. If a form does not exist in the web-based construction management software, Seller/Contractor must include a form of their own or provided by the Engineer as an attachment to a Submittal.
- E. Adobe PDF documents will be created through electronic conversion rather than optically scanned whenever possible. Contractor is responsible for the training of their personnel in the use of the web-based construction management software (outside what is provided by the Owner) and the other programs indicated above as needed.

1.08 TRAINING

- A. Owner has arranged and paid for web-based training on using web-based construction management software for the Contractor.
- B. Contractor shall arrange and pay for the facilities and hardware/software required to facilitate Contractor's training.

PART 2 PRODUCTS

2.01 DESCRIPTION

- A. Web-based construction management software provided by Autodesk Build.

PART 3 EXECUTION

3.01 WEB-BASED CONSTRUCTION MANAGEMENT SOFTWARE UTILIZATION

- A. Web-based construction management software shall be utilized in connection with all document and information management required by these Contract Documents.

3.02 SUBMITTALS

- A. Use the web-based construction management software feature for Master Submittals List.
 - 1. Select from the predefined submittals list.
- B. Content: As specified in Section 01330 - Submittal Procedures.
- C. Format: As specified in Section 01330 - Submittal Procedures.
- D. Submit Portable Document Format (PDF) documents to the web-based construction management software submittal workflow process and forms.
 - 1. Consolidate electronic format submittals with multiple pages into a single file.
- E. Samples:
 - 1. Enter Submittal data information into the web-based construction management software.
 - 2. Attach a copy of the submittal form(s) to the sample.

- F. Record and Closeout Submittals:
 - 1. Operation and maintenance data as specified in Section 01782 - Operation and Maintenance Manuals.
 - 2. Extra materials, spare parts, etc.

3.03 REQUESTS FOR INFORMATION/INTERPRETATION (RFI)

- A. Use web-based construction management software for RFIs as specified in Section 01260 - Contract Modification Procedures.

3.04 OFFICIAL CORRESPONDENCE

- A. Use web-based construction management software for memos, notices, change proposals, or any official correspondence.

3.05 INSPECTION REQUESTS

- A. Use web-based construction management software to request inspection for a portion of Work that is ready for inspection and prior to covering up the Work.

3.06 FINANCIAL SUBMITTALS

- A. Use web-based construction management software for financial submittals as specified in Section 01330 - Submittal Procedures.

3.07 OTHER

- A. Use web-based construction management software for daily reports, meeting agendas and minutes, and other construction documents.

END OF SECTION

SECTION 01330
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Requirements and procedures for Submittals to confirm compliance with Contract Documents.

1.02 GENERAL INSTRUCTIONS

- A. Supplier/Contractor is responsible to determine and verify field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and check and coordinate each item with other applicable approved Shop Drawings and Contract Document requirements.
- B. Provide Submittals:
 - 1. That are specified or reasonably required for construction, operation, and maintenance of the Work.
 - 2. That demonstrate compliance with the Contract Documents.
- C. Where multiple Submittals are required, provide a separate Submittal for each Specification section.
 - 1. In order to expedite construction, the Supplier may make more than 1 Submittal per Specification section, but a single Submittal may not cover more than one Specification section:
 - a. The only exception to this requirement is when one Specification section covers the requirements for a component of equipment specified in another section.
 - b. For example, circuit breakers are a component of switchgear. The switchgear Submittal must also contain data for the associated circuit breakers, even though they are covered in a different Specification section.
- D. Prepare Submittals in the English language. Do not include information in other languages.
- E. Present measurements in customary American units (feet, inches, pounds, etc.).
- F. Must be clear and legible, and of sufficient size for presentation of information.
- G. Page size, other than drawings:
 - 1. Minimum: 8 1/2 inches by 11 inches.
 - 2. Maximum: 11 inches by 17 inches.

- H. Drawing sheet size:
 - 1. Maximum: 22 inches by 34 inches.
 - a. Minimum plan scale: 1/8 inch equals 1 foot-0 inches.
 - b. Minimum font size: 1/8-inch.
 - 2. 11-inch by 17-inch sheet:
 - a. Minimum plan scale: 1/8 inch equals 1 foot-0 inches.
 - b. Minimum font size: 1/8-inch.
- I. Show dimensions, construction details, wiring diagrams, controls, manufacturers, catalog numbers, and all other pertinent details.
- J. Provide Submittal information from only one manufacturer for a specified product. Submittals with multiple manufacturers for one product will be rejected without review.

1.03 SUBMITTAL ORGANIZATION

- A. Organize Submittals in exactly the same order as the items are referenced, listed, and/or organized in the Specification section.
- B. For Submittals that cover multiple devices used in different areas under the same Specification section, the Submittal for the individual devices must list the area where the device is used.
- C. Bookmarks:
 - 1. Bookmarks shall match the table of contents.
 - 2. Bookmark each section (tab) and heading.
 - 3. Drawings: Bookmark at a minimum, each discipline, area designation, or appropriate division.
 - 4. At file opening, display all levels of bookmarks as expanded.
- D. Where applicable (i.e., except for Drawings, figures, etc.), Submittal content shall be electronically searchable utilizing the PDF file as submitted.
- E. Thumbnails optimized for fast web viewing.
- F. Sequentially number pages within the tabbed sections:
 - 1. Submittals that are not fully indexed and tabbed with sequentially numbered pages, or are otherwise unacceptable, will be returned without review.
- G. Attachments:
 - 1. Include with each Submittal a copy of the relevant Specification section.
 - a. Indicate in the left margin, next to each pertinent paragraph, either compliance with a check (√) or deviation with a consecutive number (1, 2, 3).
 - b. Provide a list of all numbered deviations with a clear explanation and reason for the deviation.
 - 2. Include with each Submittal a copy of the relevant Drawing, including relevant addendum updates.
 - a. Indicate either compliance with a check (√) or deviation with a consecutive number (1, 2, 3).

- b. Provide a list of all numbered deviations with a clear explanation and reason for the deviation.
 - c. Provide field dimensions and relationship to adjacent or critical features of the Work or materials.

- H. Supplier: Prepare Submittal information in sufficient detail to show compliance with specified requirements.
 - 1. Determine and verify quantities, field dimensions, product dimensions, specified design and performance criteria, materials, catalog numbers, and similar data.
 - 2. Coordinate Submittal with other Submittals and with the requirements of the Contract Documents.
 - 3. Check, verify, and revise Submittals as necessary to bring them into conformance with Contract Documents and actual field conditions.

- I. Supplier: Prepare "Or Equal" Submittal information.
 - 1. Provide standard Submittal requirements.
 - a. In addition, provide in sufficient detail to show reason for variance from specified product and impacts.
 - 2. Provide reason the specified product is not being provided.
 - 3. Explain the benefits to the Owner for accepting the "Or Equal".
 - 4. Itemized comparison of the proposed "Or Equal" with product specified including a list of significant variations:
 - a. Design features.
 - b. Design dimensions.
 - c. Installation requirements.
 - d. Operations and maintenance requirements.
 - e. Availability of maintenance services and sources of replacement materials.
 - 5. Reference projects where the product has been successfully used:
 - a. Name and address of project.
 - b. Year of installation.
 - c. Year placed in operation.
 - d. Name of product installed.
 - e. Point of contact: Name and phone number.
 - 6. Define impacts:
 - a. Impacts to other contracts.
 - b. Impacts to other work or products.
 - 7. Supplier represents the following:
 - a. Supplier bears the burden of proof of the equivalency of the proposed "Or Equal".
 - b. Proposed "Or Equal" is equal or superior to the specified product.
 - c. Supplier will provide the warranties or bonds that would be provided on the specified product on the proposed "Or Equal", unless Owner requires a Special Warranty.
 - d. Supplier will coordinate installation of accepted "Or Equal" into the Work and will be responsible for the costs to make changes as required to the Work.
 - e. Supplier waives rights to claim additional costs caused by proposed "Or Equal" which may subsequently become apparent.

- J. Supplier: Prepare substitution Submittal information.
1. Provide standard Submittal requirements.
 - a. In addition, provide in sufficient detail to show reason for variance from specified product and impacts.
 2. Provide reason the specified product is not being provided.
 3. Explain the benefits to the Owner for accepting the substitution.
 4. Itemized comparison of the proposed substitution with product specified including a list of significant variations:
 - a. Design features.
 - b. Design dimensions.
 - c. Installation requirements.
 - d. Operations and maintenance requirements.
 - e. Availability of maintenance services and sources of replacement materials.
 5. Reference projects where the product has been successfully used:
 - a. Name and address of project.
 - b. Year of installation.
 - c. Year placed in operation.
 - d. Name of product installed.
 - e. Point of contact: Name and phone number.
 6. Define impacts:
 - a. Impacts to Contract Price.
 - 1) Required license fees or royalties.
 - 2) Do not include costs under separate contracts.
 - 3) Do not include Engineer's costs for redesign or revision of Contract Documents.
 - b. Impacts to Contract Time.
 - c. Impacts to Contract Scope.
 - d. Impacts to other contracts.
 - e. Impacts to other work or products.
 7. Supplier represents the following:
 - a. Supplier shall pay associated costs for the Engineer to evaluate the substitution.
 - b. Supplier bears the burden of proof of the equivalency of the proposed substitution.
 - c. Proposed substitution does not change the design intent and will have equal performance to the specified product.
 - d. Proposed substitution is equal or superior to the specified product.
 - e. Supplier will provide the warranties or bonds that would be provided on the specified product on the proposed substitution, unless Owner requires a Special Warranty.
 - f. Supplier will coordinate installation of accepted substitution into the Work and will be responsible for the costs to make changes as required to the Work.
 - g. Supplier waives rights to claim additional costs caused by proposed substitution which may subsequently become apparent.

1.04 SUBMITTAL IDENTIFICATION NUMBERING

A. Number each Submittal using the format defined in the table below:

	Spec Section Number	Dash	Initial Submittal - Sequential Number	Decimal Point	Subsequent Submittal Revisions Sequential Number
<i>Example 1 Description</i>	<i>Motor Starters</i>		<i>8th initial Submittal</i>		
	16422	-	0008		
<i>Example 2 Description</i>	<i>Motor Starters</i>		<i>8th initial Submittal</i>		<i>First revision to the 8th initial Submittal</i>
	16422	-	0008	.	1

1.05 SUBMITTALS IN ELECTRONIC MEDIA FORMAT

- A. General: Provide all information in PC-compatible format using Windows® operating system as utilized by the Owner and Engineer.
- B. Text: Provide text documents and manufacturer's literature in Portable Document Format (PDF).
- C. Graphics: Provide graphic Submittals (Drawings, diagrams, figures, etc.) utilizing Portable Document Format (PDF).

1.06 SUBMITTAL PROCEDURE

- A. Engineer: Review Submittal and provide response:
 - 1. Review description:
 - a. Engineer will be entitled to rely upon the accuracy or completeness of designs, calculations, or certifications made by licensed professionals accompanying a particular Submittal whether or not a stamp or seal is required by Contract Documents or Laws and Regulations.
 - b. Engineer's review of Submittals shall not release the Supplier from Supplier's responsibility for performance of requirements of Contract Documents. Neither shall the Engineer's review release the Supplier from fulfilling purpose of installation nor from the Supplier's liability to replace defective work.
 - c. Engineer's review of Shop Drawings, samples, or test procedures will be only for conformance with design concepts and for compliance with information given in Contract Documents.
 - d. Engineer's review does not extend to:
 - 1) Accuracy of dimensions, quantities, or performance of equipment and systems designed by the Supplier.
 - 2) Supplier's means, methods, techniques, sequences, or procedures, except when specified, indicated on the Drawings, or required by Contract Documents.

- 3) Safety precautions or programs related to safety which shall remain the sole responsibility of the Supplier.
 - e. Engineer can Approve or Not Approve any exception at their sole discretion.
2. Review timeframe:
 - a. Except as may be provided in technical Specifications, a Submittal will be returned within 30 days.
 - b. When a Submittal cannot be returned within the specified period, Engineer will, within a reasonable time after receipt of the Submittal, give notice of the date by which that Submittal will be returned.
 - c. Engineer's acceptance of progress schedule containing Submittal review times less than those specified or agreed to in writing by the Engineer will not constitute Engineer's acceptance of review times.
 - d. Critical Submittals:
 - 1) Supplier will notify Engineer in writing that timely review of a Submittal is critical to the progress of Work.
3. Schedule delays:
 - a. No adjustment of Contract Times or Contract Price will be allowed due to Engineer's review of Submittals unless all of the following criteria are met:
 - 1) Engineer has failed to review and return first submission within the agreed upon time frame.
 - 2) Supplier demonstrates that delay in progress of Work is directly attributable to Engineer's failure to return Submittal within time indicated and accepted by Engineer.
4. Review response will be returned to the Supplier with one of the following dispositions:
 - a. Approved:
 - 1) No Exceptions:
 - a) There are no notations or comments on the Submittal and the Supplier may release the equipment for production.
 - 2) Make Corrections Noted - See Comments:
 - a) The Supplier may proceed with the Work, however, all notations and comments must be incorporated into the final product.
 - b) Resubmittal not required.
 - 3) Make Corrections Noted - Confirm:
 - a) The Supplier may proceed with the Work, however, all notations and comments must be incorporated into the final product.
 - b) Submit confirmation specifically addressing each notation or comment to the Engineer within 15 calendar days of the date of the Engineer's transmittal requiring the confirmation.
 - b. Not Approved:
 - 1) Correct and Resubmit:
 - a) Supplier may not proceed with the Work described in the Submittal.
 - b) Supplier assumes responsibility for proceeding without approval.
 - c) Resubmittal of complete Submittal package is required within 30 calendar days of the date of the Engineer's Submittal review response.
 - 2) Rejected - See Remarks:
 - a) Supplier may not proceed with the Work described in the Submittal.

- b) The Submittal does not meet the intent of the Contract Documents. Resubmittal of complete Submittal package is required with materials, equipment, methods, etc., that meet the requirements of the Contract Documents.
 - c. Receipt Acknowledged:
 - 1) Filed for Record:
 - a) This is used in acknowledging receipt of informational Submittals that address means and methods of construction such as schedules and work plans, conformance test reports, health and safety plans, etc.
 - 2) With Comments - Resubmit:
 - a) This is used in acknowledging receipt of informational Submittals that address means and methods of construction such as s and work plans, conformance test reports, health and safety plans, etc. Feedback regarding missing information, conflicting information, or other information that makes it incomplete can be made with comments.
- B. Supplier: Prepare resubmittal, if applicable:
- 1. Clearly identify each correction or change made.
 - 2. Include a response in writing to each of the Engineer's comments or questions for Submittal packages that are resubmitted in the order that the comments or questions were presented from the first and subsequent Submittals and numbered consistent with the Engineer's numbering.
 - a. Acceptable responses to Engineer's comments are listed below:
 - 1) "Incorporated" - Engineer's comment or change is accepted and appropriate changes are made.
 - 2) "Response" - Engineer's comment not incorporated. Explain why comment is not accepted or requested change is not made. Explain how requirement will be satisfied in lieu of comment or change requested by the Engineer.
 - b. Reviews and resubmittals:
 - 1) Supplier shall provide resubmittals which include responses to all Submittal review comments separately and at a level of detail commensurate with each comment.
 - 2) Supplier responses shall indicate how the Supplier resolved the issue pertaining to each review comment
 - a) Responses such as "acknowledged" or "noted" are not acceptable.
 - 3) Resubmittals which do not comply with this requirement may be rejected and returned without review.
 - 4) Supplier shall be allowed no extensions of any kind to any part of their contract due to the rejection of non-compliant Submittals.
 - 5) Submittal review comments not addressed by the Supplier in resubmittals shall continue to apply whether restated or not in subsequent reviews until adequately addressed by the Supplier to the satisfaction of the reviewing and approving authority.
 - c. Any resubmittal that does not contain responses to the Engineer's previous comments shall be returned for revision and resubmittal. No further review by the Engineer will be performed until a response for previous comments has been received.

3. Resubmittal timeframe:
 - a. Supplier shall provide resubmittal within 15 days.
 - b. When a resubmittal cannot be returned within the specified period, Supplier shall notify the Engineer in writing.
4. Review costs:
 - a. Costs incurred by the Owner as a result of additional reviews of a particular Submittal after the second time it has been reviewed shall be borne by the Supplier.
 - b. Reimbursement to the Owner will be made by deducting such costs from the Supplier's subsequent progress payments.

1.07 PRODUCT DATA

- A. Edit Submittals so that the Submittal specifically applies to only the product furnished.
- B. Neatly cross out all extraneous text, options, models, etc., that do not apply to the product being furnished so that the information remaining is only applicable to the product being furnished.

1.08 SHOP DRAWINGS

- A. Supplier to field verify elevation, coordinates, and pipe material for pipe tie-in to pipeline or structure prior to the preparation of Shop Drawings.
- B. Indicate Project-designated equipment tag numbers for Submittal of devices, equipment, and assemblies.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

ATTACHMENT A - SUPPLIER SUBMITTAL TRANSMITTAL FORM

SUPPLIER SUBMITTAL TRANSMITTAL FORM

Owner:	Click here to enter text.	Date:	MM/DD/YYYY
Supplier:	Click here to enter text.	Project No.:	XXXXX.XX
Project Name:	Click here to enter text.	Submittal Number:	000
Submittal Title:	Click here to enter text.		
To:	Click here to enter text.		
From:	Click here to enter text.	Click here to enter text.	
	Click here to enter text.	Click here to enter text.	

Specification No. and Subject of Submittal/Equipment Supplier			
Spec ##:	Spec ##.	Subject:	Click here to enter text.
Authored By:	Click here to enter text.	Date Submitted:	XX/XX/XXXX

Submittal Certification	
Check Either (A) or (B):	
<input type="checkbox"/>	(A) We have verified that the equipment or material contained in this Submittal meets all the requirements specified in the project manual or shown on the Contract Drawings with no exceptions.
<input type="checkbox"/>	(B) We have verified that the equipment or material contained in this Submittal meets all the requirements specified in the project manual or shown on the Contract Drawings, except for the deviations listed.
Certification Statement: By this Submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and I have checked and coordinated each item with other applicable approved Shop Drawings and all Contract requirements.	
Supplier's Reviewer's Signature:	
Printed Name:	
In the event Supplier believes the Submittal response does or will cause a change to the requirements of the Contract, Supplier shall immediately give written notice stating that Supplier considers the response to be a Change Order.	
Firm: Click here to enter text.	Signature:
Date Returned: XX/XX/XXXX	

PM/CM Office Use	
Date Received GC to PM/CM:	
Date Received PM/CM to Reviewer:	
Date Received Reviewer to PM/CM:	
Date Sent PM/CM to GC:	

SECTION 01450
QUALITY CONTROL

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. General requirements for Quality Control.

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. Work shall be performed by qualified persons qualified.
- F. Verify field measurements are as indicated on the 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 in the Technical Sections, products shall be tested and inspected either at the point of origin or at the 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.
- 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 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.

1.06 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.

1.07 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:
1. Requirements for products.

1.02 TERMINOLOGY

- A. The words and terms listed below, are not defined terms that require initial capital letters, but, when this Section is referenced in other Specifications, have the indicated meaning.
1. Manufacturer's instructions:
 - a. Stipulations, directions, and/or recommendations issued by the manufacturer of the product addressing handling, storage, installation, protection, erection, and/or application of the product.
 2. Product data:
 - a. Information about the product, typically found in the manufacturer's catalogs specifications or other resources, including data sheets, bulletins, and brochures.
 3. Spare parts and maintenance products:
 - a. Duplicate parts necessary to replace a damaged or worn part of the product.
 - b. Consumables such as operating fluids.
 4. Special tools:
 - a. Special wrenches, gauges, circuit setters, and other similar devices required for the proper operation or maintenance of a product 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.

1.03 SHIPMENT

- A. Requirements prior to shipment of equipment:
1. Engineer approved Submittals or other written documentation allowed by the Contract Documents.
 2. Engineer approved Manufacturer's Certificate of Source Testing.
 3. Operations and maintenance manuals as specified in Section 01782 - Operation and Maintenance Manuals and the Technical Sections.
- B. Transport products by methods that avoid product damage.
- C. Deliver products in undamaged condition in the manufacturer's unopened packaging.

1.04 DELIVERY AND HANDLING

- A. Handle products in accordance with the manufacturer's instructions.
- B. Deliver products in undamaged condition in the manufacturer's unopened packaging.
- C. Provide construction equipment and personnel to handle products by methods in accordance with the manufacturer's instructions.
- D. Upon delivery, promptly inspect shipments:
 - 1. Verify compliance with the Contract Documents, correct quantities, and undamaged condition of products.
 - 2. Acceptance of shipment does not constitute final acceptance of products.

1.05 STORAGE

- A. Immediately store and protect products until installed in the Work.
- B. Store products with seals and legible labels intact.
- C. Protect painted or coated surfaces against impact, abrasion, discoloration, and damage.
- D. Storage of equipment in accordance with the manufacturer's instructions.
 - 1. Furnish a copy of the manufacturer's instructions for storage to the Engineer prior to storage of equipment and materials.
- E. Furnish covered, weather-protected storage structures providing a clean, dry, noncorrosive environment.
- F. Payment will not be made for products improperly stored or stored without providing the Engineer with the manufacturer's instructions for storage.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Provide products by the same manufacturer when units are of similar nature, unless otherwise specified.
- B. Provide like parts of duplicate units that are interchangeable.
- C. Provide equipment or products that have not been in service prior to delivery, except as required by tests.
- D. 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.
 - 1. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.

- E. Provide products produced by manufacturers regularly engaged in the production of these products.
- F. Provide products that bear approvals and labels as specified such as Factory Mutual (FM), Underwriters Laboratory (UL), or National Sanitation Foundation (NSF International) that are acceptable to the Authority Having Jurisdiction.

2.02 PRODUCT SELECTION

- A. When products are specified without named manufacturers, provide products that meet or exceed the Specifications.
- B. When products are specified with names of manufacturers but no model numbers or catalog designations, provide products by one of the named manufacturers that meet or exceed specifications.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Inspect equipment or products prior to installation.
- B. Repaint or recoat damaged painted or coated surfaces after installation.
- C. Use anti-galling compound on stainless steel threads used for field assembly.

3.02 PROTECTION AFTER INSTALLATION

- A. Provide coverings as necessary to protect installed products from damage.
 - 1. Remove covering when no longer needed.
 - 2. Replace corroded, damaged, or deteriorated products 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 A - 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 01756

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ATTACHMENT A - MANUFACTURER’S CERTIFICATE OF SOURCE TESTING

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ATTACHMENT C - MANUFACTURER’S CERTIFICATE OF FUNCTIONAL COMPLIANCE

ATTACHMENT D - TRAINING EVALUATION FORM

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Commissioning.
- B. Schedule:
 - 1. Perform Owner's Training before startup and commissioning of the first MCC.
 - 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. Equipment: A factory or field assembled apparatus that performs an identifiable function. Examples: Pumps, motors, VFDs, MCCs.
- B. 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.
- C. 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 the attachments at the end of this Section.
- D. 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 the attachments at the end of this Section.
- E. 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 the attachments at the end of this Section.
- F. Owner Training: The Owner's staff is trained by the Contractor, with assistance from manufacturer, to operate and maintain the completed Work. This is sometimes referred to as Vendor Specific Training.
- G. Source Testing: Test equipment or products for performance at point of manufacture or assembly for the requirements specified in the Contract Documents. Also referred to as factory testing and factory acceptance testing (FAT).

1.03 SUBMITTALS

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

- B. Certificates:
 - 1. Manufacturer's Certificate of Source Testing.
 - 2. Manufacturer's Certificate of Installation Verification.
 - 3. Manufacturer's Certificate of Functional Compliance.

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

- D. Test Reports:
 - 1. Submit final Test Report a maximum of 30 calendar days after testing.

- E. Manufacturer's representatives field notes and data.

- F. 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 the format specified by the Owner.
 - 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. If 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 the time and/or trips (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 the 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 daily copies of manufacturer's representatives field notes and data to the Contractor.
- 5. Source Test (Factory Acceptance Test) Plans:
 - a. As specified in this Section and other Technical Sections.
 - b. Based on approved Shop Drawings.
 - c. Prepared by the Seller.
 - d. Include the following items for each test:
 - 1) Purpose of the test.
 - 2) Identification of each item of equipment/system to be tested, including system designation, location, tag number, control loop identifier, etc.
 - 3) Description of the pass/fail criteria that will be used.
 - 4) Listing of pertinent reference documents (Contract and industry standards or sections applicable to the testing).
 - a) Credentials of test personnel.
 - 5) Test equipment:
 - a) Include Product Data for the test equipment.
 - b) Appropriate calibration records.
 - (1) Drawings or photographs of test stands and/or test apparatus.
 - 6) Duration: Determine test durations with Owner's input.
 - 7) Detailed step-by-step test procedures.
 - a) Level of detail shall be sufficient for the witness to follow the steps.

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. Witnessed in person:
 - a. As specified in the Technical Section.

- b. Seller is responsible for trip costs associated with Owner's and Engineer's representatives.
 - 1) Transportation:
 - a) Commercial airline costs to and from Project Site airport, including related fees.
 - b) Rental car to and from arrival airport, hotel, and test site, including related fees.
 - 2) Hotel/Meals:
 - a) Hotel with an American Automobile Association 3 Diamond rating or higher equivalent for single occupancy room per person per day.
 - b) Meal allowance based on state government per diem guidelines per test site location.

When factory is located outside of the United States, Seller is responsible for costs associated with additional security of Owner's and Engineer's representatives, including armed escorts, as determined appropriate by the Owner and/or Engineer.

- 4. If the Source Test is not ready on the scheduled date or if the Source Test fails:
 - a. Seller is responsible for associated costs:
 - 1) First test costs that are non-refundable, if applicable.
 - 2) Repeat test costs:
 - a) Trip costs, if applicable.
- 5. Source Testing is complete after successful testing, submittal of test report, and Manufacturer's Certificate of Source Testing.
- 6. 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.
 - 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.
- 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. 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.
 - b. Conduct classroom training at location designated by Owner.
 - c. 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 15 calendar days prior to 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. Training for operations and maintenance personnel shall be provided as one 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 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:

1. 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:

- 1. Attach test results with collected data and test report.
- 2. 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 01782

OPERATION AND MAINTENANCE MANUALS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Preparation and submittal of manual with requirements to operate and maintain the equipment.

1.02 PREPARATION

- A. General requirements:
 - 1. Provide dimensions in English units.
 - 2. Assemble material, where possible, in the same order within each volume.
 - 3. Reduce drawings and diagrams to 8 1/2- by 11-inch size, if possible unless otherwise specified.
 - 4. Complete forms on computer, handwriting not acceptable.
 - 5. Delete items or options not provided in the supplied equipment or system.
- B. Electronic requirements:
 - 1. File format:
 - a. Entire manual in PDF format.
 - 1) Include text and drawing information.
 - 2) Provide a single PDF file even if the hard copy version is broken into separate binders due to being large.
 - 3) Create PDF from the native format of the document (Microsoft Word, graphics programs, drawing programs, etc.).
 - a) If material is not available in native format and only available in paper format, remove smudges, fingerprints, and other extraneous marks before scanning to PDF format.
 - b) Hard copy record drawing requirements:
 - (1) Provide a single multipage PDF file of each set of the scanned drawings.
 - (2) Page 1 shall be the cover of the drawing set.
 - c) At file opening, display the entire cover.
 - (1) Scan drawings at 200 to 300 dots per inch (DPI), black and white, Group IV Compression, unless otherwise specified.
 - (2) Scan drawings with photos in the background at 400 dots per inch (DPI), black and white, Group IV Compression.
 - 4) Pagination and appearance to match hard copy.
 - 5) Searchable.
 - 6) Scanned images are not acceptable.
 - 7) Bookmarks:
 - a) Bookmarks shall match the table of contents.
 - b) Bookmark each section (tab) and heading.

- c) Drawings: Bookmark at a minimum, each discipline, area designation, or appropriate division.
 - d) At file opening, display all levels of bookmarks as expanded.
 - 8) Thumbnails optimized for fast web viewing.
- b. Drawing requirements:
 - 1) Provide additional copy of drawings in most current version of AutoCAD format.
 - 2) Drawings shall have a white background.
 - 3) Drawing shapes shall not degrade when closely zoomed.
 - 4) Screening effects intended to de-emphasize detail in a drawing must be preserved.
 - 5) Delete items or options not provided in the supplied equipment or system.
- 2. Media:
 - a. USB flash drive.
 - b. Secure File Transfer Protocol (SFTP).
- 3. Label media with the following information:
 - a. Operation and Maintenance Manual.
 - b. Equipment name.
 - c. Specification Section Number
 - d. Equipment tag number.
 - e. Owner's name.
 - f. Project number and name.
 - g. Date.
- 4. If multiple submittals are made together, each submittal must have its own subdirectory that is named and numbered based on the submittal number.

1.03 CONTENTS

- A. Table of Contents: General description of information provided within each tab section.
- B. Complete Attachment A - Equipment Summary Form.
- C. Description of system and components.
- D. Description of equipment function, normal operating characteristics, and limiting conditions.
- E. Online resources.
- F. Telephone resources.
- G. Approved submittals.
 - 1. Markup with any field changes.
 - 2. Final programming.
- H. Start-up procedures: Recommendations for installation, adjustment, calibration, and troubleshooting.

- I. Operating procedures:
 - 1. Step-by-step instructions including but not limited to the following:
 - a. Safety precautions and applicable Safety Data Sheets.
 - b. Guidelines.
 - c. Other information as needed for safe system operation and maintenance.
- J. Preventative maintenance procedures:
 - 1. Recommended steps and schedules for maintaining equipment.
 - 2. Troubleshooting.
- K. Lubrication information: Required lubricants and lubrication schedules.
- L. Overhaul instructions: Directions for disassembly, inspection, repair and reassembly of the equipment; safety precautions; and recommended tolerances, critical bolt torques, and special tools that are required.
- M. Manufacturer's technical reference manuals.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

ATTACHMENT A - EQUIPMENT SUMMARY FORM

EQUIPMENT SUMMARY FORM

1. EQUIPMENT ITEM _____
2. MANUFACTURER _____
3. EQUIPMENT TAG NUMBER(S) _____
4. LOCATION OF EQUIPMENT _____
5. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS) _____

6. NAMEPLATE DATA -
 - Horsepower _____
 - Amperage _____
 - Voltage _____
 - Service Factor (S.F.) _____
 - Speed _____
 - ENC Type _____
 - Capacity _____
 - Other _____

7. MANUFACTURER'S LOCAL REPRESENTATIVE
 - Name _____
 - Address _____
 - Telephone Number _____

8. MAINTENANCE REQUIREMENTS:

Maintenance Operation	Frequency	Lubricant (if applicable)	Comments
(List each operation required. Refer to specific information in Manufacturer's Manual, if applicable)	(List required frequency of each maintenance operation)	(Refer by symbol to lubricant list as required)	

9. LUBRICANT LIST:

Reference Symbol	Conoco Phillips	Exxon/Mobil	BP/Amoco	Other (List)
(Symbols used in Item 7 above)	(List equivalent lubricants, as distributed by each manufacturer for the specific use recommended)			

10. SPARE PARTS (recommendations) _____

11. COMMENTS _____

12. GENERAL INFORMATION:

Date Accepted*: _____
 Expected Life*: _____
 Project Name & Number: _____
 Design Engineer: _____

13. WARRANTY:

Start Date: _____
 Expiration Date: _____
 Prorated: _____

SECTION 01783

WARRANTIES AND BONDS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Warranty and bonds requirements.

1.02 SUBMITTALS

- A. For each item of material or equipment furnished under the Contract:
 - 1. Submit manufacturer's warranty prior to fabrication and shipment of the item from the manufacturer's facility.
 - 2. Submit manufacturer's special warranty when specified.
- B. Provide consolidated warranties and bonds within 15 calendar days of Substantial Completion.
 - 1. Contents:
 - a. Organize warranty and bond documents:
 - 1) Include Table of Contents organized by Specification Section number and the name of the product or work item.
 - b. Include each required warranty and bond in proper form, with full information, certified by manufacturer as required, and properly executed by Contractor, or subcontractor, supplier, or manufacturer.
 - c. Provide name, address, phone number, and point of contact of manufacturer, supplier, and installer, as applicable.
 - 2. Hardcopy format:
 - a. Submit 2 copies.
 - b. Assemble in 3 D-side ring binders with durable cover.
 - c. Identify each binder on the front and spine with typed or printed title "Warranties and Bonds"; Project Name or Title, and the Name Address and Telephone Number of the Contractor.
 - 3. Electronic copy in PDF format:
 - a. Submit 1 copy.

1.03 OWNER'S RIGHTS

- A. Owner reserves the right to reject warranties.
- B. Owner reserves the right to refuse to accept Work for the project if the required warranties have not been provided.

1.04 RELATIONSHIP TO GENERAL WARRANTY AND CORRECTION PERIOD

- A. Warranties specified for materials and equipment shall be in addition to, and run concurrent with, both Contractor's general warranty and the correction period requirements.
- B. Disclaimers and limitations in specific materials and equipment warranties do not limit Contractor's general warranty, nor does such affect or limit Contractor's performance obligations under the correction period.

1.05 MANUFACTURER'S 1 YEAR WARRANTY MINIMUM REQUIREMENTS

- A. Written warranty issued by item's manufacturer.
- B. Project-specific information, properly executed by product manufacturer, and expressly states that its provisions are for the benefit of the Contractor or Owner.
- C. Covers all costs associated with the correction of the defect, including, but not limited to, removal of defective parts, new parts, labor, and shipping.
- D. Provides a timely response to correct the defect.
 - 1. Manufacturer shall provide, in a timely fashion, temporary equipment as necessary to replace warranted items requiring repair or replacement, when warranted items are in use and are critical to the treatment process, as defined by Owner.
- E. Warranty commence running on the date of acceptance.
 - 1. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit warranty within 10 calendar days after acceptance, listing date of acceptance as beginning of warranty period.
- F. Duration of warranty: 1 year.

1.06 MANUFACTURER'S SPECIAL WARRANTY

- A. Manufacturer's special warranty is a written warranty published by the manufacturer which includes the requirements as specified in the Technical Section.
 - 1. Project-specific information and requirements.
 - 2. Properly executed by product manufacturer.
 - 3. Expressly states that its provisions are for the benefit of the Contractor or Owner.
 - 4. Manufacturer's special warranties commence on the date that the associated item is certified by Engineer as substantially complete.

1.07 WARRANTY WORK

- A. Contractor's responsibilities:
 - 1. Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the work that incorporates the product, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with Contractor.

- B. Replacement cost:
 - 1. Upon determination that work covered by warranty has failed, replace, or rebuild the work to an acceptable condition complying with requirement of the Contract Documents.
 - a. Contractor is responsible for the cost of replacing or rebuilding defective work regardless of whether Owner has benefited from the use of the work through a portion of its anticipated useful service life.
- C. Related damages and losses:
 - 1. When correcting warranted work that has failed, remove and replace other work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted work.
- D. Owner's recourse:
 - 1. Written warranties are in addition to implied warranties, and shall not limit the duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitation on time in which Owner can enforce such other duties, obligations, rights, or remedies.
- E. Reinstatement of warranty:
 - 1. When work covered by a warranty has failed and has been corrected by replacement or rebuilding, reinstate the warranty by written endorsement.
 - a. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

1.08 IMPLIED WARRANTIES

- A. Warranty of title and intellectual rights:
 - 1. Except as may be otherwise indicated in the Contract Documents, implied warranty of title required by Laws and Regulations is applicable to the Work and to materials and equipment incorporated therein.
 - 2. Provisions on intellectual rights, including patent fees and royalties, are in the General Conditions, as may be modified by the Supplementary Conditions.
- B. Implied warranties: Duration in accordance with Laws and Regulations.

1.09 BONDS

- A. Equipment bond and other bond requirements as specified in the Technical Sections.
- B. Bonds commence running on the date of substantial completion.
 - 1. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit warranty within 10 calendar days after acceptance, listing date of acceptance as beginning of bond period.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01850
DESIGN CRITERIA

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Design criteria for use in the selection of equipment and appurtenances specified in Technical Sections of these Specifications and indicated on the Drawings.
 - 2. Criteria for design of systems, components and equipment fabricated off site and shipped to the Work for installation.
 - 3. Criteria for design of anchors to connect equipment and appurtenances to supports and structures.

- B. The criteria in this Section apply throughout the Work, unless additional criteria, or more restrictive criteria, are indicated.
 - 1. Additional criteria and requirements relevant to specific locations, specific materials, and specific equipment are indicated on the Drawings, and in the Technical Sections.

1.02 REFERENCES

- A. American Society of Civil Engineers (ASCE):
 - 1. 7-16 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures. (ASCE 7).

- B. International Code Council (ICC):
 - 1. International Energy Conservation Code (IECC).
 - 2. International Plumbing Code (IPC).

PART 2 PRODUCTS

2.01 DESIGN CRITERIA - SITE INFORMATION

- A. Site name: South Valley Water Reclamation Facility.
 - 1. Street address: 7495 S 1300 W, West Jordan, UT 84084.
 - a. Coordinates (approximate): Latitude 40.615612; Longitude -111.924623.
 - 2. Site elevation (approximate):
 - a. 4304.4 feet above mean sea level.

2.02 DESIGN CRITERIA - REGULATORY REQUIREMENTS

- A. Requirements of authorities having jurisdiction over the Project are included in Section 01410 - Regulatory Requirements.

2.03 DESIGN CRITERIA - STRUCTURAL

A. General:

1. Criteria for structural design of:
 - a. Equipment at locations subject to seismic events.
 - b. Equipment exposed to outdoor environments.
 - c. Equipment supports and bracing, and anchorage of such items to building and non-building structures.
 - d. Structures provided for the Work through Delegated Design.
 - e. Manufactured and prefabricated structures, and anchorage of such structures to foundations or other supporting elements.
2. Structural design criteria used by the Engineer of record and required by the building code to be indicated on the Drawings herein.

B. Delegated Design:

1. As specified in Section 01357 - Delegated Design Procedures.
2. Structural engineering design shall be performed by a Civil or Structural Engineer licensed in the State of Utah.

C. Structure risk category:

1. Develop design loads and provide detailing in accordance with the provisions of ASCE 7 and the building code specified in Section 01410 - Regulatory Requirements, based on the Structure Risk Category indicated in Table: Project Structures - Risk Category and Seismic Design Information.

D. Seismic loads:

1. Seismic design parameters: Basic parameters - ASCE 7:
 - a. Ground motion MCE_R , 5 percent damped:
 - 1) Short periods, $S_s = 1.5 g$.
 - 2) 1 second period, $S_1 = 0.5 g$.
 - b. Mapped long-period transition period:
 - 1) $TL = 8$ seconds.
2. Structures - General:
 - a. Seismic Design Category (SDC): As indicated in the following Table: Project Structures - Risk Category and Seismic Design Information.

Table: Project Structures - Risk Category and Seismic Design Information						
Description: Wastewater Treatment Facility						
Area	Description	Risk Category	Site Class	S_{DS}	S_{D1}	Seismic Design Category⁽¹⁾
1	Headworks	III	D	1.01	0.73	D
2	Chemical Building	III	D	1.01	0.73	D
3	Utility Water Pump Station	III	D	1.01	0.73	D
4	RAS/WAS Buildings 1 and 2	III	D	1.01	0.73	D
5	Solids Handling Building	III	D	1.01	0.73	D

Notes:

(1) Seismic Design Category for Delegated Design, and for seismic certification of electrical and mechanical equipment as required by ASCE 7.

- b. Structure response modification coefficient, R:
 - 1) In accordance with ASCE 7 and the requirements of the Technical Sections.
- 3. Non-structural components - General:
 - a. Includes:
 - 1) Mechanical and electrical equipment; anchorage of equipment to structures or supports; design of supports; and anchorage of supports to structures or foundations.
 - 2) Distribution systems associated with mechanical and electrical equipment such as piping, ductwork, conduits, cable trays, raceways, bus ducts, and similar items; anchorage of such systems to supports and structures; and bracing or such systems.
 - b. Seismic design requirements for non-structural components are based on the Seismic Design Category (SDC) of the structure or facility where the equipment is installed.
 - c. Design components, component anchorage, and component connections to piping and utilities in accordance with the requirements of ASCE 7, Table 13.2-1.
 - d. Component amplification factor (a_p), response factor (R_p), and overstrength factor for anchorage to concrete (Ω_o):
 - 1) Mechanical and electrical components and systems: In accordance with ASCE 7, Table 13.6-1, unless otherwise indicated in the Technical Sections for these items.
 - 2) Architectural components and systems: In accordance with ASCE 7, Table 13.6-1, unless otherwise indicated in the Technical Sections for these items.
 - e. Component importance factor, I_p :
 - 1) In accordance with the following Table: Component Importance Factor for Seismic Design, I_p .
 - 2) For items not listed in Table: Component Importance Factor for Seismic Design, I_p , designate importance factor in accordance with the provisions of ASCE 7, Chapter 13, and submit to the Engineer for review prior to developing calculations and details related to that component.

Table: Component Importance Factor for Seismic Design, I_p

Structure Seismic Design Category	Components	I_p
All	Electrical: Items and distribution system components specified in Division 16 - Electrical.	1.5
All	Process Control and Instrumentation Systems: Components and distribution systems specified in Division 17 - Instrumentation and Controls.	1.5
All	Other equipment not listed above.	1.0

- E. Operational loads:
 - 1. Loads may include equipment vibration, torque, thermal effects, effects of internal contents (weight and sloshing), surge or “water hammer,” and other load conditions.
 - 2. Design for loads indicated by the equipment manufacturer.
Design for loads indicated in the Technical Sections for equipment and appurtenances.

PART 3 EXECUTION

3.01 GENERAL

- A. Design approach and criteria in accordance with:
 - 1. Regulatory requirements, including but not limited to the building code specified in Section 01410 - Regulatory Requirements.
 - 2. Reference standards and project-specific design criteria listed in this Section.
 - 3. Specific requirements for individual elements and components of the Work as specified in subsequent Technical Sections.
- B. In the event of conflicts between design criteria, contact Engineer for interpretation.
- C. Where Owner-Delegated Design is required by the Specifications, prepare and submit designs as specified in Section 01357 - Delegated Design Procedures.

3.02 DELEGATED DESIGN

- A. Where Delegated Design is required by the Technical Sections, prepare and submit designs as specified in Section 01357 - Delegated Design Procedures.
- B. Calculations:
 - 1. Where submittal of calculations is required:
 - a. Provide complete calculations, including sketches to illustrate the design concepts being evaluated, and details to fully describe proposed construction.
 - 2. Requirements for seismic design calculations will be waived for the following:
 - a. Furniture and storage racks 6 feet in height or less.
 - b. Moveable equipment.
 - c. Mechanical and electrical equipment and components located in structures designated as Seismic Design Category A or B.
 - d. Mechanical and electrical equipment and components located in structures designated as Seismic Design Category C and where the component importance factor, I_p , is equal to 1.0.
 - 3. Requirements for wind design calculations will be waived for the following:
 - a. Equipment and components located inside structures, and away from the effects of wind loads.
- C. Shop Drawings:
 - 1. Describing components and manufacturer’s requirements for connections.
 - a. Include details for connections of components to structures and supports.
 - b. Include details for anchoring bracing to structures where required.

3.03 DESIGN - ANCHORS FOR EQUIPMENT, COMPONENTS, AND BRACING

A. General:

1. Engineer's approval of anchor designs is required before placement of construction that supports or provides bracing for anchored equipment and components.
 - a. Prepare anchor designs after Engineer's approval of the products and layout, and before placement of concrete or masonry that supports them.
2. Adjust equipment pad sizes and add additional anchor confinement reinforcing to provide required strength at anchorage points between equipment and pad, and between pad and structure.
3. Supports and bracing:
 - a. Design and install braces and anchors to transfer forces from equipment and components to the lateral force resisting system of the surrounding structure.
 - b. Anchor and brace piping, ductwork, and electrical distribution components so that lateral or vertical displacement does not result in damage to or failure of essential architectural, mechanical, or electrical equipment.
 - 1) Provide supplementary framing where required to transfer forces.
 - 2) Detail and locate braces and anchors to minimize differential movements between components and structure.

B. Preparation:

1. Obtain manufacturer's information:
 - a. Weight and dimensions of components.
 - b. Layout and location of anchors that connect to equipment base plates, sole plates, skids, or pads.
 - c. Sizes of holes for anchors that will be provided in equipment bases or support frames.

C. Analysis and design:

1. Perform and submit calculations to determine anchor designs at locations where equipment and equipment supports are connected to the supporting structure.
 - a. Indicate number, size, type, and material for anchors.
2. In determining forces at locations where equipment is anchored to structures, include effects of:
 - a. Equipment self-weight and operating weight.
 - b. Location of equipment center of mass.
 - c. Forces from equipment operation including, but not limited to:
 - 1) Effects of internal contents including weight and sloshing.
 - 2) Effects of thrust, surge, and water hammer where specified.
 - 3) Equipment reactions and operating torque.
 - 4) Equipment vibration.
 - 5) Thermal effects from equipment and from distribution systems connected to the equipment (piping, ducts, and electrical).
 - 6) Other load or displacement inducing conditions.
 - d. Forces on equipment from loads specified in this Section.
 - 1) Include effects of wind, snow, and icing loads where applicable.
 - 2) Design for load combinations indicated in ASCE 7, unless otherwise specified or indicated on the Drawings.

3. Determine forces and overturning moments at equipment supports and at locations where supports are anchored to structures.
 - a. Indicate shear force and associated axial force at each anchor.
4. Do not use friction to resist sliding resulting from seismic or wind forces.
 - a. Resist sliding only by direct application of sliding loads to fasteners as bearing, shear, tension, or compression forces.
5. Using combined shears and axial forces at each anchor, design anchors and anchor groups for ductile failure.
 - a. Ductile failure: Anchor yield before failure of base material, typically concrete or masonry, at the anchor.
6. Determine number, size, layout, and minimum effective embedment for anchors.
 - a. Layout includes anchor spacing and required distance(s) from anchor to edge(s) of supporting concrete or masonry.
 - b. Anchors in concrete: Design based on minimum specified 28-day compressive strength, f'_c , as indicated on the Drawings for the Work area.
 - c. Anchors in masonry: Design based on minimum specified compressive strength, f'_m , as indicated on the Drawings for the Work area.
7. Prepare Drawings showing construction details of anchor designs.
8. Submit design calculations and drawings prior to placement of anchors, and of the structural elements to which they will connect.

END OF SECTION

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 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. 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. Standards:
 - 1. American National Standards Institute (ANSI).
 - 2. National Electrical Manufacturers Association (NEMA):
 - a. 250 - Enclosures for Electrical Equipment (1,000 V Maximum).
 - 3. National Fire Protection Association (NFPA):
 - a. 70 - National Electrical Code (NEC).
 - 4. Underwriters Laboratories, Inc. (UL).

1.03 TERMINOLOGY

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
 - 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. Space: Portion of a motor control center that does not physically contain a device but is capable of accepting a device with no modifications to the equipment.
 - a. Furnish hardware to accommodate installation of future circuit breakers, instruments, relays, and controls.
 - b. Wire relay and circuit breaker control power and network connections to the compartment and provide terminations.
 - c. Space for future devices shall include:
 - 1) All necessary bus.
 - 2) Device supports and mounting equipment.
 - 3) Device connections to bus work.
 - 4) Wire troughs or raceway space.
4. Spare: Portion of a motor control center that physically contains a device with no load connections to be made.
5. Unequipped space: Portion of a motor control center that does not physically contain a device, standoff, bus, hardware, or other equipment.

1.04 DELEGATED DESIGN

- A. Requirements for Delegated Design are specified in the Technical Sections.
- B. Delegated design for the installation of the motor control centers will be by the Contractor to whom the MCC Procurement Contract is assigned.

1.05 SUBMITTALS (NOT USED)

1.06 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.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Shipping precautions:
 1. After completion of shop assembly and successful factory testing, pack 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.

1.08 PROJECT OR SITE CONDITIONS

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

1.09 ADMINISTRATIVE REQUIREMENTS

- A. Meetings:
 - 1. As specified in the equipment specifications.

PART 2 PRODUCTS

2.01 GENERAL (NOT USED)

2.02 DESIGN AND PERFORMANCE CRITERIA

- A. Provide field wiring and terminations.
- B. Equipment mounting and anchoring:
 - 1. Design equipment anchorage, supports, and connections for dead load, and, seismic load specified in Section 01850 - Design Criteria, and other loads as required for proper operation of equipment.
 - 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.
 - a. Provide metallic enclosures unless specifically indicated otherwise.

PART 3 EXECUTION

3.01 EXAMINATION

- A. The motor control centers furnished under this project are being installed at the same location as the existing motor control centers. The motor control centers being furnished cannot exceed the dimensions indicated on the Drawings.

3.02 PREPARATION (NOT USED)

3.03 INSTALLATION

- A. MCC installation will be by the Contractor to whom the MCC Procurement Contract is assigned.

3.04 FIELD QUALITY CONTROL

- A. Electrical acceptance testing will be performed by the Contractor to whom the MCC Procurement Contract is assigned.
- B. Inspection activities conducted during construction do not satisfy the inspection or testing requirements specified in Section 16950 - Field Electrical Acceptance Tests.
- C. Provide on-site assistance for troubleshooting and correcting electrical issues discovered during installation and testing for the Project.

3.05 OWNER TRAINING (NOT USED)

3.06 ADJUSTING (NOT USED)

3.07 CLEANING

- A. General:
 - 1. Clean and vacuum enclosures to remove 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.

END OF SECTION

SECTION 16412

LOW VOLTAGE MOLDED CASE CIRCUIT BREAKERS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Low voltage molded case circuit breakers.

1.02 REFERENCES

- A. National Fire Protection Association (NFPA):
 - 1. 70 - National Electrical Code (NEC).
- B. Underwriters Laboratories (UL):
 - 1. 489 - Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures.

1.03 DELEGATED DESIGN

- A. As specified in Section 01357 - Delegated Design Procedures.
- B. Anchoring and bracing.

1.04 SUBMITTALS

- A. Furnish Submittals as specified in Section 01330 - Submittal Procedures.
- B. Product data:
 - 1. Catalog cutsheets.
 - 2. Manufacturer's time-current curves for molded case circuit breakers furnished.
- C. Owner Training Submittals:
 - 1. As specified in Section 01756 - Commissioning.

1.05 QUALITY ASSURANCE

- A. Low voltage molded case circuit breakers shall be UL listed and labeled.

1.06 DELIVERY, STORAGE, AND HANDLING (NOT USED)

1.07 PROJECT OR SITE CONDITIONS

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

1.08 ADMINISTRATIVE REQUIREMENTS (NOT USED)

1.09 WARRANTY

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

PART 2 PRODUCTS

2.01 GENERAL

- A. Molded case thermal magnetic, solid-state, or motor circuit protector type circuit breakers as indicated on the Drawings and connected to form a completed system.

2.02 DESIGN AND PERFORMANCE CRITERIA (NOT USED)

2.03 MANUFACTURERS

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

2.04 MATERIALS (NOT USED)

2.05 MANUFACTURED UNITS

- A. General:
 1. In accordance with UL 489.
 2. Operating mechanism:
 - a. Quick-make, quick-break, non-welding silver alloy contacts.
 - b. Common Trip, Open and Close for multi-pole breakers such that all poles open and close simultaneously.
 - c. Mechanically trip free from the handle.
 - d. Trip indicating handle - automatically assumes a position midway between the manual ON and OFF positions to clearly indicate the circuit breaker has tripped.
 - e. Lockable in the "OFF" position.
 3. Arc extinction:
 - a. In arc chutes.
 4. Voltage and current ratings:
 - a. Minimum ratings as indicated on the Drawings.
 - b. Minimum frame size 100A.
 5. Interrupting ratings:
 - a. Minimum ratings as indicated on the Drawings.
 - b. Not less than the rating of the assembly (panelboard, switchboard, motor control center, etc.).
- B. Motor circuit protectors:
 1. Instantaneous only circuit breaker as part of a listed combination motor controller.

2. Each pole continuously adjustable in a linear scale with “LO” and “HI” settings factory calibrated.

2.06 EQUIPMENT (NOT USED)

2.07 COMPONENTS

- A. Terminals:
 1. Line and load terminals suitable for the conductor type, size, and number of conductors indicated on the Drawings and in accordance with UL 489.
- B. Case:
 1. Molded polyester glass reinforced.
 2. Ratings clearly marked.
- C. Trip units:
 1. Provide thermal magnetic or solid-state trip units as indicated on the Drawings.
 2. Thermal magnetic:
 - a. Instantaneous short circuit protection.
 - b. Inverse time delay overload.
 - c. Ambient or enclosure compensated by means of a bimetallic element.
 3. Solid state:
 - a. With the following settings as indicated on the Drawings:
 - 1) Adjustable long time current setting.
 - 2) Adjustable long time delay.
 - 3) Adjustable short time pickup.
 - 4) Adjustable short time delay.
 - 5) Adjustable instantaneous pickup.
 - 6) Adjustable ground fault pickup as indicated on the Drawings.
 - 7) Adjustable ground fault delay as indicated on the Drawings.
 - b. Energy reducing maintenance switch on breakers 1,200 amps and above and on additional breakers as indicated on the Drawings.
 - 1) Indication on the breaker.
- D. Provide ground fault trip devices as indicated on the Drawings.

2.08 ACCESSORIES

2.09 FABRICATION (NOT USED)

2.10 FINISHES (NOT USED)

2.11 SOURCE QUALITY CONTROL

- A. Test breakers in accordance with:
 1. UL 489.
 2. Manufacturer’s standard testing procedures.

PART 3 EXECUTION

3.01 EXAMINATION (NOT USED)

3.02 PREPARATION

- A. Anchoring and bracing to structures:
 - 1. Prepare equipment anchor setting template(s) and use to position anchors during construction of supporting structure(s).
 - 2. Install anchors of type and material indicated on approved anchoring designs.
 - 3. Install anchors with embedment indicated on approved anchoring designs.

3.03 INSTALLATION

- A. Install breakers to correspond to the accepted Shop Drawings.

3.04 FIELD QUALITY CONTROL

- A. Field electrical acceptance testing:
 - 1. As specified in Section 16950 - Field Electrical Acceptance Tests.

3.05 OWNER TRAINING

- a. As specified in Section 16444 - Low Voltage Motor Control Centers.

3.06 ADJUSTING

- A. Adjust trip settings in accordance with Protective Device Coordination Study performed by the Engineer during installation and in accordance with manufacturer's recommendations.
- B. Adjust motor circuit protectors in accordance with NEC and the manufacturer's recommendation based on the nameplate values of the installed motor.

END OF SECTION

SECTION 16413

LOW VOLTAGE INSULATED CASE CIRCUIT BREAKERS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Low voltage insulated case circuit breakers.

1.02 REFERENCES

- A. Underwriters Laboratories (UL):
 - 1. 489 - Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures.

1.03 DELEGATED DESIGN (NOT USED)

1.04 SUBMITTALS

- A. Furnish Submittals as specified in Section 01330 - Submittal Procedures.
- B. Product data:
 - 1. Catalog cutsheets.
 - 2. Manufacturer's time-current curves for all trip devices furnished.
- C. Owner Training Submittals:
 - 1. As specified in Section 01756 - Commissioning.

1.05 QUALITY ASSURANCE

- A. Insulated case circuit breakers shall be UL listed and labeled.

1.06 DELIVERY, STORAGE, AND HANDLING (NOT USED)

1.07 PROJECT OR SITE CONDITIONS

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

1.08 ADMINISTRATIVE REQUIREMENTS (NOT USED)

1.09 WARRANTY

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

PART 2 PRODUCTS

2.01 GENERAL

- A. Insulated case circuit breakers as indicated on the Drawings and connect to form a completed system:
 - 1. Used to open and close a circuit, and to open a circuit automatically on a predetermined overload or overcurrent, without damage to itself when properly applied within its ratings.

2.02 DESIGN AND PERFORMANCE CRITERIA (NOT USED)

2.03 MANUFACTURERS

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

2.04 MATERIALS (NOT USED)

2.05 MANUFACTURED UNITS

- A. Operating mechanism:
 - 1. Manual or electric as indicated on the Drawings:
 - a. Manual operation:
 - 1) Circuit breaker closing spring is energized by no more than 6 operations of the constant-force charging handle.
 - 2) Pushing the "CLOSE (ON)" button will close the breaker's contacts and pushing the "OPEN (OFF)" button will open the breaker's contacts.
 - 3) Opening springs are automatically charged when the breaker is closed.
 - b. Quick-make, quick-break, non-welding silver alloy contacts.
 - c. Common trip, open and close for multi-pole breakers such that all poles open and close simultaneously.
 - d. Mechanically trip free from the handle.
 - e. Trip indicating handles - automatically assumes a position midway between the manual ON and OFF positions to clearly indicate the circuit breaker has tripped.
 - f. Lockable in the "OFF" position.
- B. Arc extinction:
 - 1. In arc chutes.
- C. Voltage and current ratings:
 - 1. Minimum ratings as indicated on the Drawings.

- D. Interrupting ratings:
 - 1. Minimum ratings as indicated on the Drawings:
 - a. Modify as required to meet requirements of the Contractor's Short Circuit Fault Analysis as specified in Section 16305 - Electrical System Studies.
 - 2. Matching the rating of the assembly.
- E. Circuit breaker mounting shall be as indicated on the Drawings and consist of one of the following configurations:
 - 1. Draw out type capable of being racked to the disconnect position with the door closed:
 - a. Interlocks shall be provided to prevent connecting or disconnecting the circuit breaker unless the breaker is in the open position.
 - b. Breaker shall be prevented from being closed during any racking operation.
 - c. A test position shall be provided to permit operating the breaker while it is disconnected from the power circuit.
 - d. Equipped with interlocks to discharge stored energy spring before the circuit breaker is withdrawn from the cell.
 - 2. Plug-in (stationary) type capable of being removed with the main bus power off.
 - 3. Individually mounted in a separate enclosure.

2.06 EQUIPMENT (NOT USED)

2.07 COMPONENTS

- A. Terminals:
 - 1. Line and load terminals suitable for the conductor type, size, and number of conductors indicated on the Drawings and in accordance with UL 489.
- B. Case:
 - 1. Molded polyester glass reinforced.
 - 2. Double level of insulation between primary current-carrying parts and operating personnel.
 - 3. Ratings clearly marked.
 - 4. Open contact indication.
 - 5. Closed contact indication.
 - 6. Charging spring charged indication.
 - 7. Charging spring discharged indication.
 - 8. Open pushbutton.
 - 9. Close pushbutton.
 - 10. Retractable charging handle.
- C. Trip units:
 - 1. Microprocessor based with positive action flux-shifting trip device and a solid state type with the following functions:
 - a. Adjustable ampere setting:
 - 1) To determine the value of current that the breaker will carry indefinitely.
 - b. Adjustable long time delay:
 - 1) Varies the time it will take the breakers to trip under sustained overload.

- c. Adjustable short time pickup:
 - 1) Controls the level of high current the breaker will carry for short periods.
 - d. Adjustable short time delay:
 - 1) Controls the length of time the breaker will carry a high current without tripping.
 - e. Adjustable instantaneous pickup:
 - 1) Controls level at which immediate tripping of breaker occurs.
 - f. Adjustable ground fault pickup:
 - 1) Controls the level at which the breaker will trip under a ground fault condition.
 - g. Adjustable ground fault delay:
 - 1) Controls the time that a ground fault can exist without tripping the breaker.
 - h. Long time pickup indicator:
 - 1) Provides a visual indication that the breaker is experiencing an overload condition.
 - i. Energy reducing maintenance switch:
 - 1) Allows for input of alternative trip settings for arc flash hazard reduction during maintenance procedures.
 - 2) Enabled by the following:
 - a) Hardwired input.
 - b) Trip unit controls.
 - c) Trip unit network.
 - 3) Status:
 - a) Contact for remote indication.
 - b) Indication on trip unit.
 - c) Status communicated over trip unit network.
- D. Fault indicators:
- 1. Powered from a lithium battery.
 - 2. LED indicators for:
 - a. Overcurrent fault trip on long-time feature.
 - b. Overcurrent fault trip on short-time feature.
 - c. Short circuit fault trip on the instantaneous feature.
 - d. Ground fault trip.

2.08 ACCESSORIES

- A. Provide circuit breakers with the following accessories and required for proper operation of the automatic transfer system in HW-MCC-A and HW-MCC-B:
- 1. Electrical operator:
 - a. Circuit breaker closing spring is energized by an electric motor-driven charging mechanism.
 - b. Control voltage for electrically operated circuit breakers shall be:
 - 1) 120 VAC.
 - 2. Remote close solenoid.
 - 3. Shunt trip device.
 - 4. Anti-pump provision to prevent closing or reclosing operations when used with a normally closed contact in the "close" circuit.
 - 5. Operations counter.

2.09 FABRICATION (NOT USED)

2.10 FINISHES (NOT USED)

2.11 SOURCE QUALITY CONTROL

- A. Test breakers in accordance with:
 - 1. UL 489.
 - 2. Manufacturer's standard testing procedures.

PART 3 EXECUTION

3.01 EXAMINATION (NOT USED)

3.02 PREPARATION (NOT USED)

3.03 INSTALLATION

- A. Install breakers to correspond to the accepted Shop Drawings.

3.04 FIELD QUALITY CONTROL

- A. As specified in Section 16050 - Common Work Results for Electrical.
- B. Field electrical acceptance testing:
 - 1. As specified in Section 16950 - Field Electrical Acceptance Tests.

3.05 OWNER TRAINING

- A. Perform Owner Training as specified in Section 01756 - Commissioning.
 - 1. Number of sessions:
 - a. Operations: 1.
 - b. Maintenance: 1.

3.06 ADJUSTING

- A. Adjust trip settings in accordance with the Protective Device Coordination Study in accordance with the manufacturer's recommendations.

END OF SECTION

SECTION 16422
MOTOR STARTERS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
1. Motor starters and contactors.

1.02 REFERENCES

- A. Abbreviations:
1. FVNR: Full voltage non-reversing.
 2. FVR: Full voltage reversing.
 3. PWS: Part winding start.
 4. RVAT: Reduced voltage auto transformer.
 5. RVSS: Reduced voltage solid state.
 6. TS1W: 2 speed 1 winding (consequent pole).
 7. TS2W: 2 speed 2 winding.
- B. Standards:
1. Institute of Electrical and Electronics Engineers (IEEE).
 2. International Electrotechnical Commission (IEC):
 - a. 801-1 - Electromagnetic Compatibility for Industrial-Process Measurement and Control Equipment - Part 1: General Information.
 - b. 947-4 - Low-Voltage Switchgear and Control Gear.
 3. National Electrical Manufacturer's Association (NEMA):
 - a. 250 - Enclosures for Electrical Equipment (1,000 V Maximum).
 - b. ICS 2-230 - Industrial Control and Systems: Controllers, Contactors, and Overload Relays Rated 600 V.
 4. Underwriters Laboratories, Inc. (UL):
 - a. 508 - Standard for Industrial Control Equipment.
 - b. 508A - Standard for Industrial Control Panels.

1.03 TERMINOLOGY

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
1. Overload relay class: A classification of an overload relay time current characteristic by means of a number which designates the maximum time in seconds at which it will operate when carrying a current equal to 600 percent of its current rating.

1.04 SUBMITTALS

- A. Furnish Submittals as specified in Section 01330 - Submittal Procedures:
1. Submit motor starter data with equipment Submittal.

- B. Product data:
 - 1. Manufacturer.
 - 2. Catalog cutsheets.
 - 3. Technical information.
 - 4. Complete nameplate schedule.
 - 5. Complete bill of material.
 - 6. List of recommended spare parts.
 - 7. Confirmation that the overload relay class for each starter meets the requirements of the equipment and motor supplier.
 - 8. Electrical ratings:
 - a. Phase.
 - b. Wire.
 - c. Voltage.
 - d. Ampacity.
 - e. Horsepower.
 - 9. Furnish circuit breaker submittals as specified in Section 16412 - Low Voltage Molded Case Circuit Breakers.

- C. Shop Drawings:
 - 1. Elementary and schematic diagrams:
 - a. Provide 1 diagram for every starter and contactor.
 - b. Indicate wire numbers for control wires on the diagrams:
 - 1) Wire numbering as specified in Section 16075 - Identification for Electrical Systems.
 - c. Indicate interfaces with other equipment on the Drawings.

- A. Control descriptions and control logic program:
 - 1. Provide control descriptions describing the full control functionality to be incorporated into the programmable overloads, including the following:
 - a. Functionality in local and remote.
 - b. Software and hardware interlocks.
 - c. Control response upon loss and restoration of power.
 - 2. Provide complete register list of all IO available to the Plant PCS.
 - 3. Submit the completed control logic program for each and every device supplied.
 - 4. Submit a list of networking address tables.
 - 5. Submit configuration settings in accordance with actual motor and field equipment being supplied.

- B. Quality Control Submittals:
 - 1. Manufacturer's representative qualifications.
 - 2. Manufacturer's Certificate of Source Testing as specified in Section 01756 - Commissioning.
 - 3. Manufacturer's Certificate of Installation as specified in Section 01756 - Commissioning.
 - 4. Test reports.

- C. Owner Training Submittals:
 - 1. As specified in Section 01756 - Commissioning.

- D. Operation and maintenance manuals:
 - 1. As specified in Section 01782 - Operation and Maintenance Manuals.
 - 2. Submit complete operating and maintenance instructions presenting full details for care and maintenance of equipment furnished or installed under this Section, including, but not limited to:
 - a. Electrical ratings:
 - 1) Phase.
 - 2) Wire.
 - 3) Voltage.
 - 4) Ampacity.
 - b. Complete bill of material.
 - c. Manufacturer's operating and maintenance instructions starter and/or contactor component parts, including:
 - 1) Protective devices (fuses, breakers, overload relays, heater elements, etc.).
 - 2) Pilot devices.
 - d. Complete renewal parts list.
 - e. As-built drawings:
 - 1) Furnish as-built drawings for each starter and contactor indicating final:
 - a) Wire numbers.
 - b) Interfaces with other equipment.
 - 2) 11-inch by 17-inch format.

1.05 QUALITY ASSURANCE

- A. Regulatory requirements:
 - 1. Starters and components shall be UL listed and labeled:
 - a. UL 508 - Industrial Control Equipment.
 - b. UL 508A - Industrial Control Panels.
 - 2. NEMA ICS 2 - Industrial Control and System Controllers; Contactors and Overload Relays Rated: 600 Volts.
 - 3. Combination starters shall be UL listed and labeled.

1.06 DELIVERY, STORAGE, AND HANDLING (NOT USED)

1.07 PROJECT OR SITE CONDITIONS

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

1.08 ADMINISTRATIVE REQUIREMENTS (NOT USED)

1.09 WARRANTY

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

1.10 MAINTENANCE

- A. Spare parts:
 - 1. Provide the following spare parts, suitably packaged and labeled with the corresponding equipment number:
 - a. 1 spare fuse of each size and type per starter.

PART 2 PRODUCTS

2.01 GENERAL

- A. Starters for motor control centers, individual enclosed starters, or control panels.

2.02 DESIGN AND PERFORMANCE CRITERIA

- A. Provide equipment and components that are fully rated for the site elevation and operating environment where the equipment will be installed as specified in Section 01850 - Design Criteria and as indicated on the Drawings.

2.03 MANUFACTURERS

- A. One of the following or equal:
 - 1. NEMA starters and contactors:
 - a. ABB.
 - b. Allen-Bradley.
 - c. Eaton.
 - d. Schneider Electric.

2.04 MATERIALS (NOT USED)

2.05 MANUFACTURED UNITS

- A. General:
 - 1. Provide combination type starters with short-circuit protection circuit and control power transformer.
 - 2. NEMA size, design, and rated:
 - a. NEMA Size 1 minimum.
 - 3. Coordinate short-circuit protection and overload trip ratings with nameplate horsepower and current ratings of the installed motor.
 - a. If motors provided are different in horsepower rating than those specified or indicated on the Drawings, provide starters coordinated to the actual motors furnished.
 - 4. Provide starters NEMA Size 2 and larger with arc quenchers on load breaking contacts.
 - 5. Mount extended overload reset buttons to be accessible for operation without opening starter enclosure door.
- B. Full voltage starters (FVNR, FVR, TS1W, TS2W):
 - 1. Across-the-line full voltage magnetic starters.
 - 2. Rated for 600 volts.

3. Electrical characteristics as indicated on the Drawings.
4. Provide positive, quick-make, quick-break mechanisms, padlockable enclosure doors.
5. Furnish starter with solid state electronic overload relays.
6. Double-break silver alloy contacts.
7. Reversing starters provided with both mechanical and electrical interlocks to prevent line shorts and energizing both contactors simultaneously.
8. Provide 2-speed, 2-winding motor starters consisting of two 3-pole contactors and 2 sets of overload relays assembled together:
 - a. Provided with contactors that are both mechanically and electrically interlocked to prevent energizing both contactors simultaneously.

2.06 EQUIPMENT (NOT USED)

2.07 COMPONENTS

- A. Molded case circuit breakers:
 1. Circuit breaker type and ratings as indicated on the Drawings.
 2. Provide as specified in Section 16412 - Low Voltage Molded Case Circuit Breakers.

- B. Contactors:
 1. NEMA size as indicated on the Drawings.
 2. Electrically held.
 3. Factory adjusted and chatter free.
 4. Auxiliary contacts:
 - a. Contact ratings in accordance with NEMA A600 rating:
 - 1) Auxiliary contacts rated 10 amps at 600 volts.
 - b. Provide contacts indicated on the Drawings and any additional contacts required for proper operation.
 - c. Provide at least 1 normally open and 1 normally closed spare auxiliary contact.
 5. Constructed in accordance with the following standards:
 - a. UL 508.
 - b. IEC 947-4:
 - 1) Type 1 coordination when protected by a circuit breaker.
 - 2) Type 2 coordination when protected by a suitable UL listed fuse.
 - c. IEC 801-1 parts 2 through 6.

- C. Overloads:
 1. Solid state electronic with communications:
 - a. Selectable Class 5, 10, 20, 30 protection.
 - b. Motor current range:
 - 1) As required by the equipment:
 - a) Provide current transformers external to the overload where required.
 - c. Protective functions:
 - 1) Load protection:
 - a) Under current: Adjustable from 50 to 90 percent of motor full load amps with an adjustable 1 to 60 second delay.

- b) Low power: Adjustable from 20 to 80 percent of rated kW with an adjustable 1 to 60 second delay.
 - c) High power: Adjustable from 50 to 110 percent of rated kW with an adjustable 1 to 60 second delay.
 - 2) Supply protection:
 - a) Over voltage: Adjustable from 323 to 528 VAC with an adjustable 1 to 20 second delay.
 - b) Under voltage: Adjustable from 323 to 528 VAC with an adjustable 1 to 20 second delay.
 - c) Voltage imbalance: Adjustable from 1 to 20 percent with an adjustable 1 to 20 second delay.
 - 3) Motor protection:
 - a) Jam: Adjustable from 150 to 400 percent of motor full load amps with an adjustable 1 to 20 second delay.
 - b) Current imbalance: Adjustable from 1 to 30 percent with an adjustable 1 to 20 second delay.
 - c) Current phase loss: Set at 60 percent an adjustable 1 to 20 second delay.
 - d) Ground fault:
 - (1) Adjustable from 0.3 to 2 amps for motor currents up to 5 amps.
 - (2) Adjustable from 3 to 20 amps for motor currents from 5 to 90 amps.
 - (3) Time delay based on the percentage of ground fault current:
 - (a) Less than 150 percent: Adjustable from 1 to 60 seconds.
 - (b) Greater than 150 percent: 2 seconds.
 - (c) Greater than 25 percent: 1 second.
 - e) Phase reversal.
- d. Manual or automatic reset:
 - 1) Supply faults shall have an adjustable 1 to 500 second reset delay.
- e. Monitoring functions:
 - 1) Current:
 - a) Per phase RMS with 2 percent accuracy.
 - b) Average RMS with 2 percent accuracy.
 - c) Imbalance percent.
 - 2) Voltage:
 - a) Per phase RMS with 2 percent accuracy.
 - b) Average RMS with 2 percent accuracy.
 - c) Imbalance percent.
 - 3) Power:
 - a) Motor kW with 5 percent accuracy.
 - b) Power factor with 1 percent accuracy.
 - 4) Thermal capacity.
 - 5) Motor run hours.
 - 6) Frequency: 47 to 63 hertz with 1 percent accuracy.
- f. User interface:
 - 1) Provide the ability to set parameters.
 - 2) Trip pushbutton.

- 3) Reset pushbutton:
 - a) Shall have ability to be manually reset external to the overload.
 - 4) LED status indicators.
 - 5) Power, voltage, and current display LED display.
 - g. 120 VAC powered.
 - h. Inputs and Outputs:
 - 1) Rated for 120 VAC.
 - 2) Provide the inputs and outputs as indicated on the Drawings.
 - i. Communications module:
 - 1) Mounts to the side of the overload.
 - 2) Provides for programming and monitoring of the overload.
 - j. Network:
 - 1) Profinet.
 - 2) Modbus TCP.
 - 3) Use of gateways is not acceptable.
 - 4) Protocols shall be certified by the governing authority.
- D. Control power transformer:
- 1. Provide an integral control power transformer with capacity to power controls, motor and starter accessories as indicated on the Drawings.
 - 2. Primary and secondary fusing as indicated on the Drawings:
 - a. Fusing sized by the manufacturer for the rating of the transformer furnished.
 - 3. Control power transformer primary and secondary voltage:
 - a. As indicated on the Drawings.

2.08 ACCESSORIES

- A. Lugs and terminals:
- 1. For external connections of No. 6 AWG and larger.
 - 2. UL listed for either copper or aluminum conductors.
- B. Surge protective devices:
- 1. Furnish surge protection devices across the coil of each starter, contactor, and relay.
- C. Pilot devices:
- 1. Provide pilot lights, switches, elapsed time meters, and other devices as specified or as indicated on the Drawings.
- D. Nameplates and wire markers:
- 1. As specified in Section 16075 - Identification for Electrical Systems.
- E. 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 H₂S and chlorine.

2.09 FABRICATION (NOT USED)

2.10 FINISHES (NOT USED)

2.11 SOURCE QUALITY CONTROL

- A. Programming and Data Exchange Coordination Meeting:
 - 1. Supplier shall, on at least one occasion, conduct a programming and data exchange coordination meeting at the Owner's facility.
 - 2. Coordination meeting shall include, but not be limited to, the following topics:
 - a. Review of control descriptions.
 - b. Power loss and restoration response.
 - c. System networking and communication approach and data exchange include any specific requirements relating to network card supply and configuration.
 - d. Ethernet switch configuration, IP Addressing and IP addressing scheme.
 - e. Data exchange approach including data mapping criteria and formatting requirements.
 - f. Factory acceptance testing procedures and expectations.
 - g. Field services, support and testing procedures and expectations.
- B. Source Testing:
 - 1. Witnessed, in-person and virtual:
 - a. Number of Owner and Engineer representatives in person: 2.
 - 2. Prove out overload control logic as well as interaction with Owner's control and maintenance systems at the Supplier's facility:
 - a. PCIS programmer shall attend witnessed testing.
 - 3. Furnish test reports and Manufacturer's Certificate of Source Testing.

PART 3 EXECUTION

3.01 EXAMINATION (NOT USED)

3.02 PREPARATION

- A. Anchoring and bracing to structures:
 - 1. Prepare equipment anchor setting template(s) and use to position anchors during construction of supporting structure(s).
 - 2. Install anchors of type and material indicated on approved anchoring designs.
 - 3. Install anchors with embedment indicated on approved anchoring designs.

3.03 INSTALLATION

- A. Install the equipment in accordance with the accepted installation instructions and anchorage details.
- B. Starters in motor control centers:
 - 1. As specified in Section 16444 - Low Voltage Motor Control Centers.
 - 2. Programming and configuration:
 - a. Manufacturer/Supplier may contract with the Project programmer for portions of the tasks below.
 - b. Provide network communication card between the starter to the Owner's control system as required.
 - c. Provide configuration settings specific to each device.

- d. Provide overload logic as indicated in the control descriptions.

3.04 FIELD QUALITY CONTROL

- A. Field electrical acceptance testing:
 - 1. As specified in Section 16950 - Field Electrical Acceptance Tests.

3.05 OWNER TRAINING

- A. Perform Owner Training as specified in Section 01756 - Commissioning.
 - 1. Number of sessions:
 - a. Operations: 1.
 - b. Maintenance: 1.

3.06 ADJUSTING

- A. Make adjustments as necessary and as recommended by the manufacturer, Engineer, or testing firm.
- B. Set overloads and circuit breakers based on the nameplate values of the installed motor.

END OF SECTION

SECTION 16444

LOW VOLTAGE MOTOR CONTROL CENTERS

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Low voltage motor control centers.

1.02 REFERENCES

- A. National Electrical Manufacturers Association (NEMA):
 - 1. 250 - Enclosures for Electrical Equipment (1,000 V Maximum).
 - 2. ICS 18-2001 - Motor Control Centers.
- B. National Fire Protection Association (NFPA):
 - 1. 70 - National Electrical Code (NEC).
- C. Underwriters Laboratories (UL):
 - 1. 845 - Motor Control Centers.

1.03 TERMINOLOGY

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
 - 1. SELV: Safety extra-low voltage.

1.04 DELEGATED DESIGN

- A. As specified in Section 01357 - Delegated Design Procedures.
- B. Anchoring and bracing.

1.05 SUBMITTALS

- A. Furnish Submittals as specified in Section 01330 - Submittal Procedures.
- B. Product data:
 - 1. Manufacturer of motor control center.
 - 2. Manufacturer of motor control center parts.
 - 3. Nameplate schedule.
 - 4. Bill of material.
 - 5. Description of operation:
 - a. Protective relaying.
 - b. Automatic transfer system as specified in Section 16433 - Service Entrance Automatic Transfer Equipment.
 - 6. Enclosure:
 - a. NEMA rating.

- b. Finish color.
 - 7. Ratings:
 - a. Voltage.
 - b. Phase.
 - c. Current:
 - 1) Horizontal bus ampacity.
 - 2) Vertical bus ampacity.
 - 3) Ground bus ampacity.
 - d. Short circuit withstand rating.
 - e. Protective device interrupting rating.
 - 8. List of recommended spare parts.
 - 9. Catalog cutsheets:
 - a. Submit complete manufacturer's catalog information:
 - 1) Clearly indicate the features of the equipment including any options necessary to meet the required functionality.
 - 10. Furnish component Submittals as specified in the appropriate Section.
 - 11. For equipment installed in structures designated as seismic design category C, D, E, or F, submit the following as specified in Section 01850 - 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. Layout drawings:
 - a. Provide fully dimensioned and to scale layout drawings which include:
 - 1) Dimensions:
 - a) Overall length.
 - b) Overall width.
 - c) Overall height.
 - d) Overall weight and weight of individual shipping splits.
 - 2. Interfaces to other equipment.
 - a. Detail of interface connections to automatic transfer breakers, engine generators, etc.
 - 3. Shipping splits.
 - 4. Allowable top and bottom conduit windows.
 - 5. Complete component and unit layout drawings, including control, networking, and metering components.
 - 6. Indicate lug sizes, type, and manufacturer based on the cable size specified in the Contract Documents and as indicated on the Drawings.
 - 7. Elementary schematics:
 - a. Provide 1 custom schematic diagram for each compartment:
 - 1) Include remote devices.
 - 2) Show wire numbers on the schematics:
 - 8. External connection diagram showing the wiring to the external controls and devices associated with the motor control center.
 - 9. One-line diagrams:
 - a. Provide complete one-line diagrams for each motor control center, including, but not limited to: Protective devices, starters, drives, metering, and other equipment.
 - b. Indicate electrical ratings of the equipment shown on the one-line diagrams.

- D. Delegated Design Submittals:
 - 1. Anchoring and bracing: Provide project-specific calculations based on support conditions and requirements to resist loads specified in Section 01850 - Design Criteria:
 - a. To structures for equipment installed in structures designated as seismic design category C, D, E, or F.
 - b. For equipment installed outdoors.
- E. Control descriptions and control logic program:
 - 1. Provide control descriptions describing the full control functionality to be incorporated into the programmable overloads, including the following:
 - a. Functionality in local and remote.
 - b. Software and hardware interlocks.
 - c. Control response upon loss and restoration of power.
 - 2. Provide complete register list of IO available to the plant PCS.
 - 3. Submit the completed control logic program for each and every device supplied.
 - 4. Submit a list of networking address tables.
 - 5. Submit configuration settings in accordance with actual motor and field equipment being supplied.
- F. Installation instructions:
 - 1. Detail the complete installation of the equipment including rigging, moving, and setting into place.
 - 2. Provide manufacturer's installation instructions.
- G. Quality Control Submittals:
 - 1. Manufacturer's representative qualifications.
 - 2. Manufacturer's Certificate of Source Testing as specified in Section 01756 - Commissioning.
 - 3. Manufacturer's Certificate of Installation Verification as specified in Section 01756 - Commissioning.
- H. Owner Training Submittals:
 - 1. As specified in Section 01756 - Commissioning.
- I. Operation and maintenance manuals:
 - 1. As specified in Section 01782 - Operation and Maintenance Manuals.
 - 2. Provide complete operating and maintenance instructions presenting full details for care and maintenance of all types of equipment furnished and/or installed under this Section. Include the following:
 - a. Electrical ratings:
 - 1) Phase.
 - 2) Wire.
 - 3) Voltage.
 - 4) Ampacity.
 - 5) Bus bracing and protective device interrupting ratings.

- b. Manufacturer's operating and maintenance instructions for the motor control center and component parts, including:
 - 1) Starters.
 - 2) Overload relays and heater elements.
 - 3) Variable frequency drives.
 - 4) Protective devices, including, but not limited to, fuses, circuit breakers and protective relays.
 - 5) Pilot devices.
 - 6) Description of the automatic transfer sequence of operation, which outlines the steps the MCC follows during normal power failure, fault conditions, and return of normal power.
 - c. Complete renewal parts list.
- J. Test forms and reports:
 - 1. Submit complete factory acceptance test procedures and forms used during the test.
- K. Record documents:
 - 1. Elementary schematics:
 - a. Furnish as-built elementary schematics indicating final:
 - 1) Wire numbers.
 - 2) Interfaces with other equipment.
 - b. Provide 1 custom schematic diagram for each compartment:
 - 1) Include remote devices.
 - 2) Show wire numbers on the schematics.
 - c. Layout drawings: Provide complete dimensioned component and unit layout drawings.
 - 2. Record documents shall reflect modifications made during the submittal review process and during construction.
- L. Calculations:
 - 1. Detailed calculations or details of the actual physical testing performed on the motor control center to prove the motor control center is suitable for the seismic requirements at the Project Site.

1.06 QUALITY ASSURANCE

- A. All portions of the motor control center, vertical bays, and components shall be UL listed and labeled.
 - 1. Where indicated as service entrance equipment, the motor control center shall be UL labeled and listed "Suitable for Service Entrance".

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Ship the motor control center and associated equipment to the job site on a dedicated air ride vehicle that will allow the Contractor to utilize onsite off-loading equipment.
- B. Furnish temporary equipment heaters within the motor control center to prevent condensation from forming.

1.08 PROJECT OR SITE CONDITIONS

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

1.09 ADMINISTRATIVE REQUIREMENTS

A. Meetings:

1. Programming and Data Exchange Coordination Meeting:
 - a. Supplier shall on at least one occasion conduct a programming and data exchange coordination meeting at the Owner's facility.
 - b. Coordination meeting shall include, but not be limited to, the following topics:
 - 1) Review of control descriptions.
 - 2) Power loss and restoration response.
 - 3) System networking and communication approach and data exchange include any specific requirements relating to gateway supply and configuration.
 - 4) Ethernet switch configuration, IP addressing and IP addressing scheme.
 - 5) Data exchange approach including data mapping criteria and formatting requirements.
 - 6) Factory acceptance testing procedures and expectations.
 - 7) Field services, support and testing procedures and expectations.

B. Sequencing:

1. Submit complete equipment submittal.
2. Conduct Programming and Data Exchange Coordination Meeting.
3. Conduct factory acceptance test.
4. Submit manufacturer's test results.
5. Ship equipment to the Project Site after successful completion of factory acceptance test.
6. Assemble equipment in the field.
7. Conduct field acceptance test and submit results for Engineer's review.
8. Submit manufacturer's certification that the equipment has been properly installed and is fully functional for Engineer's review.
9. Conduct Owner's training sessions.
10. Commissioning and process start-up as specified in Section 01756 - Commissioning.

1.10 WARRANTY

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

PART 2 PRODUCTS

2.01 GENERAL

- A. Factory assembled, factory wired, and factory tested motor control centers:
 1. Motor control centers and major components to be products of a single manufacturer.

- B. The MCC elevations on the Drawings are based on the largest equipment sizes from the named manufacturers. Each manufacturer can adjust the size of the individual components. Unless otherwise indicated on the Drawings, the MCC cannot exceed the dimensions shown.
 - 1. Provide spare compartments as needed to make each MCC meet the dimensions shown.
- C. The Owner reserves the right to rearrange the MCC layouts and shift buckets between motor control centers for constructability reasons provided there is no overall material change.

2.02 DESIGN AND PERFORMANCE CRITERIA

- A. Provide equipment and components that are fully rated for the site elevation and operating environment where the equipment will be installed as specified in Section 01850 - Design Criteria and as indicated on the Drawings.

2.03 MANUFACTURERS

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

2.04 MATERIALS (NOT USED)

2.05 MANUFACTURED UNITS (NOT USED)

2.06 EQUIPMENT

- A. General:
 - 1. Furnish motor control centers as specified in the Contract Documents and indicated on the Drawings.
 - 2. Arrange the equipped sections to form continuous motor control center lineups as indicated on the Drawings:
 - a. Identify any deviations from the Drawings in writing and submit for approval.
 - 3. Provide wire markers at each end of every wire. Provide complete and functional motor control centers.
 - 4. Provide devices or accessories not specified in this Section but necessary for the proper installation and operation of the equipment.
- B. Design and construct motor control center to operate at the voltage level and configuration indicated on the Drawings.
- C. Bus system:
 - 1. Material:
 - a. Tin-plated copper.
 - b. Short-circuit rating:
 - 1) As indicated on the Drawings.

- c. Bus bar supports:
 - 1) High impact strength, non-tracking glass-polyester material that is impervious to moisture and gases.
- 2. Horizontal power bus:
 - a. Current-carrying capacity as indicated on the Drawings.
 - b. Mounting:
 - 1) Mount horizontal bus bars edgewise, one above the other, and fully isolated from wireways and units.
 - c. Temperature rise:
 - 1) In accordance with UL 845.
 - 2) De-rate the temperature rating of the bus for the specified conditions of ambient temperature and altitude as specified in Section 01850 - Design Criteria.
- 3. Vertical power bus:
 - a. Current-carrying capacity of not less than 600 amps.
 - b. Mounting:
 - 1) Enclose the vertical bus in a polyester-glass cover with small openings to permit unit stabs to mate with the bus:
 - a) Provide a shutter mechanism to cover the stab openings when plug-in units are removed.
 - 2) Provide top and bottom bus covers for insulation and isolation of the ends of the bus.
 - c. Isolated from the unit compartments by a full height barrier.
- 4. Ground bus:
 - a. Horizontal ground bus:
 - 1) Current-carrying capacity:
 - a) 300 amps when the horizontal bus is 2,000 amps or less.
 - b) 600 amps when the horizontal bus is greater than 2,000 amps.
 - 2) Mounting:
 - a) Full width, firmly secured to each vertical section structure:
 - (1) Located in the top or bottom wireway.
 - b) Pre-drilled and furnished with lugs for connection to equipment ground wires:
 - (1) Furnish a minimum of 10 lugs per vertical section of MCC.
 - b. Vertical ground bus:
 - 1) Mounting:
 - a) Furnish in each vertical section.
 - b) Bolted to the horizontal ground bus.
 - c) Install parallel to the vertical power bus.
 - d) Mount vertical ground bus such that plug-in units engage the ground bus before any connection to the power bus is made. Upon removal of plug-in units, ground stabs are disconnected from the ground bus after the power stabs have been disconnected.
- 5. Bus splice bars:
 - a. Provided to join the bus at the splits.
 - b. Connected to each horizontal bus bar with a minimum of 2 bolts.
 - c. Employ conical or spring washers at connections, designed to maintain constant pressure against the splice joint.
 - d. Same ampacity rating as the horizontal bus.

D. Enclosures:

1. Each motor control center shall consist of 1 or more vertical sections bolted together:
 - a. Freestanding.
 - b. Totally enclosed.
 - c. Dead-front assembly.
 - d. Designed for modification and/or addition of future vertical sections.
 - e. Form each vertical section of heavy gauge steel.
 - f. Designed for back-to-back arrangement installation, where required and/or as indicated on the Drawings.
2. Enclosure rating:
 - a. Indoor:
 - 1) NEMA Type 1 gasketed.
3. Standard section dimensions:
 - a. Nominal height: 90 inches.
 - b. Nominal depth: 20 inches.
 - c. Vertical section width as indicated on the Drawings.
4. Wireways:
 - a. Provide each vertical section with a horizontal wireway at the top and bottom of the section:
 - 1) Arranged to provide a full-width metal enclosed wiring trough across the entire motor control center assembly.
 - b. Provide each vertical section with a full-height vertical wireway.
 - c. Completely isolated from the vertical and horizontal bus bars.
 - d. Provide a removable, hinged door.
5. Shipping splits:
 - a. No more than 3 vertical sections and not more than 60 inches in width.
 - b. Solid bussing between vertical sections in a shipping split is not acceptable.
6. Lifting angles:
 - a. Furnish each vertical section and/or shipping split with a removable lifting angle mounted to the top of the enclosure:
 - 1) Extending the entire width of the shipping split.
7. Mounting channels:
 - a. Mount each vertical section and/or shipping split on an external 1.5-inch by 3-inch mounting channel.

E. Units:

1. A plug-in unit consists of:
 - a. Assembly.
 - b. Support pan.
 - c. Door assembly.
2. Completely enclosed and isolated from adjacent units, buses, and wireways, except for conductor entries into the unit, by a metal enclosure.
3. Supported and guided by a removable unit support pan:
 - a. Re-arrangement of units and the removal of a unit so that a new and possibly larger unit can be added without the removal of an in-service unit to gain access to the unit support pan.
4. Held in place by screws or other positive locking means after insertion.
5. Provide a test position with the unit supported in the structure but disengaged from the bus.
6. Integral plug-in ground stab.

7. Stabs:
 - a. Free floating.
 - b. Self-aligning.
 - c. Backed by spring steel clips to ensure high pressure contacts.
 - d. Electrolytically tin-plated copper.
 8. Handle:
 - a. Provide a flange mounted handle mechanism to operate each disconnect switch or circuit breaker.
 - b. Door mounted operators or operator handles are not acceptable.
 - c. Engaged with the disconnect device at all times as an integral part of the unit independent of the door position.
 - d. Lockable in the "OFF" position with up to 3 padlocks.
 - e. Mechanically interlocked so that the door cannot be opened with the handle in the "ON" position:
 - 1) Provide a means for qualified personnel to defeat this interlock.
 - f. Interlocked so the unit cannot be inserted or withdrawn with the handle in the "ON" position.
 - g. Lockable in the "ON" position:
 - 1) This shall not prevent the circuit breaker from operating and opening the contacts in the event of a fault condition.
 - h. Color-coded to indicate position.
 - i. Located so the center of the grip when it is in its highest position is not more than 6 feet 7 inches above the finished floor, including the height of the housekeeping pad and mounting channels.
 9. Space for future devices:
 - a. Provide spaces as indicated on the Drawings.
 - b. As specified in Section 16050 - Common Work Requirements for Electrical.
- F. Motor control center networks:
1. General:
 - a. Furnish each MCC with one of the following factory installed networks:
 - 1) Profinet.
 - 2) Modbus TCP.
 - 3) Use of gateways is not acceptable.
 - 4) Protocols shall be certified by the governing authority.
 - b. Network shall include a complete and tested cabling system compliant with applicable standards.
 2. Ethernet networks:
 - a. Ethernet switches:
 - 1) Provide unmanaged Ethernet switches:
 - 2) Provide the number of switches required to connect each smart device in the MCC.
 - a) 1 port per switch for a customer connection.
 - b) An empty port for each space, spare and/or future device.
 - 3) Requires NEC Class 2/SELV power circuit.
 - 4) Manufacturers: The following, or equal:
 - a) Phoenix Contact FL Switch 1000 Series.
 - b. Electronic circuit protectors:
 - 1) Used where a NEC Class 2/SELV power circuit is required.
 - 2) DIN rail mounting on 35-millimeter rail.

- 3) Power:
 - a) Rated for 24 VDC.
 - b) Maximum nameplate rating: 100 VA.
- 4) 4 channels to feed 4 independent power feeds to separate devices.
- 5) Output current ratings: As required for the application.
- 6) LED input status indication.
- 7) LED failure status of each channel indication.
- 8) Fail contacts.
- 9) Provide nameplate identifying each circuit electronic circuit protector module:
 - a) As specified in Section 16075 - Identification for Electrical Systems.
- 10) Manufacturers: One of the following, or equal:
 - a) Puls PISA11 series.
 - b) Rockwell Automation 1692-TD014.
- c. Network architecture:
 - 1) Connect each device directly to an Ethernet switch:
 - a) Ring or daisy-chained networks between the MCC devices are not allowed.
 - b) Disconnecting or removing multiple devices shall not affect communications with the remaining devices.
- d. Power supplies:
 - 1) 120 VAC to 24 VDC.
 - 2) Redundant.
 - 3) 120 VAC power will be sourced from outside the MCC.
- e. Ethernet cable:
 - 1) Shielding:
 - a) Overall foil shield with foiled twisted pairs.
 - 2) Voltage rating:
 - a) 600 VAC.
 - 3) Conductors:
 - a) #23 AWG solid bare annealed copper.
 - b) 4 Bonded pairs.
 - 4) Type:
 - a) Cat 5e or 6.

2.07 COMPONENTS

A. Provide components contained within the motor control center as specified in:

- 1.
2. Section 16412 - Low Voltage Molded Case Circuit Breakers.
3. Section 16413 - Low Voltage Insulated Case Circuit Breakers.
4. Section 16422 - Motor Starters.
5. Section 16491 - Transfer Switches.

2.08 ACCESSORIES

- A. Wiring:
 - 1. Wire the motor control center in accordance with the following NEMA Class and Type as defined by NEMA ICS 18-2001:
 - a. NEMA Class II-S:
 - 1) Furnish wiring diagrams for individual units consisting of drawings that identify electrical devices, electrical connections, and indicate terminal numbering designations.
 - 2) Furnish individual unit diagrams with each unit and include inter-wiring between units, i.e., electrical interlocking, etc., as specifically specified in the Contract Documents.
 - 3) Provide custom drawings with unique terminal numbering designations in lieu of standard manufacturer drawings.
 - b. NEMA Type B wiring:
 - 1) Control wiring:
 - a) Type B-T pull-apart terminal blocks.
 - 2) Power wiring:
 - a) Type B-T for Size 1 starters.
 - b) Type B-T or B-D for Size 2 and 3 starters.
 - c) Type B for Size 4 and larger starters and feeder units.
- B. Lugs and terminals:
 - 1. For external connections of No. 6 AWG wire or larger:
 - a. UL listed for copper or aluminum conductors.
 - 2. Compression type, requiring a hydraulic press and die for installation.
 - 3. Provide additional terminal blocks as needed for control conductors passing through the MCC.
 - 4. Provide 30 percent spare control block terminals.
- C. Pilot devices:
 - 1. General:
 - a. Size:
 - 1) 30.5 millimeters.
 - b. Heavy duty.
 - c. NEMA Type 4/13.
 - d. Pushbuttons:
 - 1) Contacts rated:
 - a) NEMA Type A600.
 - 2) Furnish 1 spare normally open contact and normally closed contact with each switch.
 - e. Selector switches:
 - 1) Contacts rated:
 - a) NEMA Type A600.
 - b) Knob type.
 - 2) Furnish 1 spare normally open contact and normally closed contact with each switch.
 - f. Pilot lights:
 - 1) Type:
 - a) LED for interior installations.
 - 2) Push to test.

3) Lamp color as indicated on the Drawings.

D. Nameplates:

1. Provide nameplates for each motor control center and units.
 - a. Identifying the motor control center designation as indicated on the Drawings.
2. Furnish individual nameplates for each unit indicated on the Drawings:
 - a. 1 nameplate to identify the unit designation.
 - b. 1 nameplate to identify the load served.
 - c. Furnish space units with blank nameplates.
3. Phenolic, black face with white letters.
4. Manufacturer's labels:
 - a. Furnish each vertical section with a label identifying:
 - 1) Serial number.
 - 2) Bus rating.
 - 3) Vertical section reference number.
 - 4) Date of manufacture.
 - 5) Catalog number of section.

2.09 FINISHES

- A. Finish metal surfaces and structural parts with phosphatizing, or equal, treatment before painting.
- B. Finish interior surfaces including bus support angles, control unit back plates, and top and bottom barrier plates with baked white enamel.
- C. Finish exterior of enclosure with manufacturer's standard gray.

2.10 SOURCE QUALITY CONTROL

- A. Source Testing (Factory Acceptance Tests):
 1. Witnessed, in-person:
 - a. Number of Owner and Engineer representatives in person: 4.
 2. Test the complete motor control center at the manufacturer's establishment. Completely assemble, wire and test the motor control center:
 - a. Detailed inspections before and after assembly to ensure correctness of design and workmanship.
 3. ICSC/Programmer shall attend the witnessed source testing.
 4. Provide groups of wires leaving the shipping-assembled equipment with terminal blocks with suitable numbering strips.
 5. Furnish test reports and Manufacturer's Certificate of Source Testing.

PART 3 EXECUTION

3.01 PREPARATION

- A. Anchoring and bracing to structures:
 1. Prepare equipment anchor setting template(s) and use to position anchors during construction of supporting structure(s).

2. Install anchors of type and material indicated on approved anchoring designs.
3. Install anchors with embedment indicated on approved anchoring designs.

3.02 INSTALLATION

- A. Install the equipment in accordance with the accepted installation instructions and anchorage details.
- B. General:
 1. Furnish cables, conduit, lugs, bolts, and other accessories necessary to completely install the motor control center for the line, load, and control connections.
 2. Assemble and install the motor control center in the locations and with the layouts as indicated on the Drawings.
 3. Make bus splice connections.
 4. Perform work in accordance with manufacturer's instruction and Shop Drawings.
 5. Furnish components and equipment necessary to complete the installation.
 6. Replace hardware, lost or damaged during installation or handling, in order to provide a complete installation.
 7. Install the MCC on an existing raised concrete housekeeping pad:
 - 1) Remove the manufacturer's supplied mounting channels as required by the manufacturer's installation instructions.
 - b. Weld and/or bolt the motor control center frame to leveling channels.
- C. Provide openings in the top or bottom of the motor control center for conduit only:
 1. No additional openings will be accepted:
 - a. Miscut holes will require that the entire vertical section or removable panel be replaced.
 - b. No hole closers or patches will be accepted.
- D. Bundle circuits together and terminate in each unit:
 1. Tie with nylon wire ties as specified in Section 16123 - 600-Volt or Less Wires and Cables.
 2. Label wires at each end with wire markers as specified in Section 16075 - Identification for Electrical Systems as shown on the approved elementary schematics.
- E. Programming and configuration:
 1. Manufacturer/Supplier may contract with the Project programmer for portions of the tasks below.
 2. Provide network communication card between the MCC to the Owner's control system as required.
 3. Provide configuration settings specific to each device.
 4. Provide overload logic as indicated in the control descriptions.
 5. Configure MCC mounted Ethernet switches, including performance and security settings, IP addresses and any other addressing tables required to provide a fully functioning system.
- F. Installation Verification:
 1. Furnish Manufacturer's Certificate of Installation Verification.

3.03 FIELD QUALITY CONTROL

- A. Functional Testing:
 - 1. As specified in Section 16950 - Field Electrical Acceptance Tests.
 - 2. Programming functional test:
 - a. Programming acceptance test shall include the ICSC or Owner's programmer.
 - b. Test network communication card between the MCC to the Owner's control system as required.
 - c. Test the functionality of overload logic in accordance with the control descriptions.
 - d. Test control response upon loss and restoration of power for every starter and drive.
 - e. Test configuration of MCC mounted Ethernet switches, including performance and security settings, IP addresses and any other addressing tables required to provide a fully functioning system.
 - f. Test and confirm IP addresses for switches and equipment in accordance with Owner's IP addressing scheme.
 - g. Test data exchange between each device to the Owner's control and maintenance systems.
 - 1) Confirm formatting and mapping criteria were followed.
 - 2) Data exchange approach and formatting and mapping criteria shall coordinate with the decisions made during the data exchange coordination meeting.
 - h. Test each MCC network to ensure proper communications.
- B. Provide the services of a manufacturer's representative to:
 - 1. Inspect, verify, and certify that the motor control center installation meets the manufacturer's requirements.
 - 2. Test each MCC network to ensure proper communications.
 - 3. Test network communication card between the MCC to the Owner's control system as required.
 - 4. Test configuration of MCC mounted Ethernet switches, including performance and security settings, IP addresses and any other addressing tables required to provide a fully functioning system.
 - 5. Test and confirm IP addresses for switches and equipment in accordance with Owner's IP addressing scheme.
 - 6. Test data exchange between each device to the Owner's control and maintenance systems.
 - 7. Load and test configuration settings in accordance with actual motor and field equipment.
 - 8. Test the functionality of overload logic as well as interaction with Owner's control and maintenance systems in accordance with the control descriptions.
 - 9. Test control response upon loss and restoration of power for every starter and VFD.

3.04 OWNER TRAINING:

- A. Perform Owner Training as specified in Section 01756 - Commissioning.
 - 1. Number of sessions:
 - a. Operations 1.

b. Maintenance 1.

3.05 ADJUSTING

- A. Make adjustments as necessary and recommended by the manufacturer, Engineer, or testing firm.

END OF SECTION

SECTION 16491
TRANSFER SWITCHES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
1. Transfer switches.

1.02 REFERENCES

- A. Abbreviations:
1. ATS: Automatic transfer switch.
- B. Standards:
1. National Electrical Manufacturers Association (NEMA):
 - a. 250 - Enclosures for Electrical Equipment (1,000 V Maximum).
 2. Underwriters Laboratories (UL):
 - a. 1008 - Transfer Switch Equipment.

1.03 TERMINOLOGY

- A. The words and terms listed below are not defined terms that require initial capital letters, but, when used in this Section, have the indicated meaning.
1. SCCR: Short-circuit current rating, the maximum short-circuit current a component and assembly can safely withstand when protected by a specific overcurrent protective device(s) or for a specified time.
 2. WCR: Withstand and closing rating, represents a transfer switch's capability to ride out a fault condition until the overcurrent protective device opens and clears the fault.

1.04 DELEGATED DESIGN

- A. As specified in Section 01357 - Delegated Design Procedures and Section 16444 - Low Voltage Motor Control Centers.

1.05 SUBMITTALS

- A. Furnish Submittals as specified in Section 01330 - Submittal Procedures.
- B. Product data:
1. Manufacturer of transfer switch.
 2. Manufacturer of component parts of the ATS.
 3. Dimensions:
 - a. Width.
 - b. Length.
 - c. Height.
 - d. Weight.

4. Bill of material.
 5. Description of operation.
 6. Ratings:
 - a. Voltage.
 - b. Phase.
 - c. Current.
 - d. Number of poles.
 - e. Withstand and closing rating (WCR).
 7. Overcurrent devices:
 - a. As specified in Section 16412 - Low Voltage Molded Case Circuit Breakers.
 8. List of recommended spare parts.
 9. For equipment installed in structures designated as Seismic Design Category C, D, E, or F, submit the following as specified in Section 01850 - 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. Layout drawings:
 - a. Furnish full-dimension and to-scale equipment layout drawings, which include:
 - 1) Plan, front, and side views.
 - 2) Sub-panels.
 - 3) Interior panels.
 - 4) Top and bottom conduit windows.
 2. Complete electrical wiring diagrams:
 - a. Point-to-point connections.
 - b. Indicate wire numbers.
 3. Complete interface and connection diagrams.
- D. Calculations:
1. Detailed calculations or details of the actual physical testing performed on the transfer switch to prove the transfer switch is suitable for the seismic requirements at the Project Site.
- E. Delegated Design Submittals:
1. Anchoring and bracing: Provide project-specific calculations based on support conditions and requirements to resist loads specified in Section 01850 - Design Criteria:
 - a. To structures for equipment installed in structures designated as seismic design category C, D, E, or F.
 - b. For equipment installed outdoors.
 - c. For wall mounted equipment weighing 125 pounds or more.
- F. Installation instructions:
1. Detail the complete installation of the equipment including rigging, moving, and setting into place.
 2. Provide manufacturer's installation instructions.

- G. Quality Control Submittals:
 - 1. Manufacturer's representative qualifications.
 - 2. Manufacturer's Certificate of Source Testing as specified in Section 01756 - Commissioning.
 - 3. Manufacturer's Certificate of Installation as specified in Section 01756 - Commissioning.
 - 4. Test reports.

- H. Owner Training Submittals:
 - 1. As specified in Section 01756 - Commissioning.

- I. Operation and maintenance manuals:
 - 1. As specified in Section 01782 - Operation and Maintenance Manuals.
 - 2. Operating instructions:
 - a. Detail the operational functions of transfer switch controls.
 - 3. Maintenance manual:
 - a. Furnish maintenance manuals with instructions covering maintenance of equipment and data identifying all parts.
 - b. Furnish information needed to maintain the transfer switch, including, but not limited to, the following:
 - 1) Instructions for testing, adjustment, and start-up.
 - 2) Detailed control instructions that outline the purpose and operation of every control device used in normal operation.
 - 3) Description of the sequence of operation that outlines the steps that follow normal power failure, transfer to standby power, return to normal power, and fault conditions.
 - 4) Schematics and wiring:
 - a) Furnished in a reduced 11-inch-by-17-inch fully legible format.
 - 5) Report listing the installed setting of adjustable parameters for the automatic transfer system.

1.06 QUALITY ASSURANCE

- A. Where indicated on the Drawings, the transfer switch shall be UL labeled and listed "Suitable for Service Entrance".

1.07 DELIVERY, STORAGE, AND HANDLING

- A. As specified in Section 16444 - Low Voltage Motor Control Centers.
- B. Furnish temporary equipment heaters within the transfer switch to prevent condensation from forming.

1.08 PROJECT OR SITE CONDITIONS

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

1.09 ADMINISTRATIVE REQUIREMENTS (NOT USED)

1.10 WARRANTY

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

PART 2 PRODUCTS

2.01 GENERAL

- A. Provide transfer switches capable of transferring load circuits from normal power to standby power and back.

2.02 DESIGN AND PERFORMANCE CRITERIA

- A. Provide equipment and components that are fully rated for the site elevation and operating environment where the equipment will be installed as specified in Section 01850 - Design Criteria and as indicated on the Drawings.
- B. ATS sequence of operation:
 - 1. When the voltage of any normal source phase drops below 80 percent and after an adjustable time delay (0 to 6 seconds minimum), the transfer switch shall start the standby generator.
 - 2. When standby voltage reaches 90 percent of nominal, and frequency is within 2 hertz of nominal, following an adjustable time delay (0 to 10 seconds), the switch shall transfer to standby power.
 - 3. When normal power has been restored to 90 percent of nominal on all phases, following an adjustable time delay (0 to 30 minutes), the switch shall retransfer to normal power:
 - a. If the standby source fails during this time delay, the switch shall automatically retransfer to normal power.
 - b. Retransfer to normal power shall be closed transfer.
 - 1) An alarm shall be initiated if the switch fails to retransfer in a pre-set period of time.
 - 2) Parallel operation shall not exceed 100 milliseconds.
 - 4. Following an adjustable generator cool-down timer (0 to 60 minutes), the switch shall stop the generator.

2.03 MANUFACTURERS

- A. One of the following or equal:
 - 1. ABB.
 - 2. ASCO.
 - 3. Eaton.

2.04 MATERIALS (NOT USED)

2.05 MANUFACTURED UNITS (NOT USED)

2.06 EQUIPMENT

- A. General:
 - 1. Capable of switching all classes of load.
 - 2. Rated for continuous duty when installed in a non-ventilated enclosure.
 - 3. Provide circuit breakers or contactors rated for continuous duty.
 - 4. Minimum transfer time for delayed transition ATS: 1 second.
 - 5. Capable of transferring successfully in either direction with 70 percent of rated voltage applied to the terminals.
 - 6. Provide automatic transfer switches with provisions for manual operation under no load.
 - 7. Transfer switch WCR to be coordinated with the overcurrent protective devices at the fault current available on the line side of the transfer switch.

- B. Electrical ratings:
 - 1. Voltage, configuration, and amp ratings as indicated on the Drawings.
 - 2. WCR in accordance with UL 1008.

- C. Contacts:
 - 1. Mechanically held.
 - 2. Mechanically interlocked to prevent normal and standby sources from being closed at the same time.
 - 3. Silver alloy construction.
 - 4. Neutral contact, when indicated on the Drawings:
 - a. Same ratings as the phase contacts.
 - b. Break last and make first operation.

- D. Controls:
 - 1. ATS shall have 3-phase over-voltage, under-voltage, over-frequency, and under-frequency on both normal and standby sources.
 - 2. ATS shall have a synch check relay for closed transfer:
 - a. Allows re-transfer when normal and standby sources are within 5 electrical degrees and within 5 percent of voltage.
 - 3. Control panel:
 - a. Microprocessor based.
 - b. 4-line, 20-character LCD display. Displayed data shall include:
 - 1) Normal and standby source parameters.
 - 2) Diagnostic information.
 - 3) Switch and timer status.
 - c. Keypad for making ATS settings and operating parameters:
 - 1) Settings shall be password protected.
 - d. LED display of the following:
 - 1) Normal source available.
 - 2) Connected to normal source.
 - 3) Standby source available.
 - 4) Connected to standby source.
 - e. Provisions for testing ATS operation by simulating a normal source failure.
 - f. Generator exerciser:
 - 1) Programmable to start the generator on a daily, weekly, monthly, or yearly basis for an adjustable period of time.
 - 2) Load or no load selectable.

4. Status and control contacts:
 - a. Generator start/stop contact:
 - 1) Single-pole, double-throw.
 - 2) Rated for 5 amps at 30 VDC.
 - b. Status contacts:
 - 1) Single-pole, double-throw.
 - 2) Rated for 10 amps at 250 VAC.
 - 3) Provide contacts for the following:
 - a) Normal source available.
 - b) Normal source failure.
 - c) Connected to normal source.
 - d) Standby source available.
 - e) Standby source failure.
 - f) Connected to standby source.

- E. Enclosure:
 1. Motor control center.

2.07 COMPONENTS (NOT USED)

2.08 ACCESSORIES (NOT USED)

2.09 SOURCE QUALITY CONTROL

- A. Source Testing:
 1. Complete factory test to verify proper operation of timers, settings, and operation.
 2. Furnish test reports and Manufacturer's Certificate of Source Testing.

PART 3 EXECUTION

3.01 EXAMINATION (NOT USED)

3.02 PREPARATION

- A. As specified in Section 16444 - Low Voltage Motor Control Centers.

3.03 INSTALLATION

- A. As specified in Section 16444 - Low Voltage Motor Control Centers.

3.04 FIELD QUALITY CONTROL

- A. As specified in Section 16050 - Common Work Results for Electrical.
- B. Field electrical acceptance testing:
 1. As specified in Section 16950 - Field Electrical Acceptance Tests.

3.05 OWNER TRAINING

- A. Perform Owner Training as specified in Section 01756 - Commissioning.
 - 1. Number of sessions:
 - a. Operations 1.
 - b. Maintenance 1.

END OF SECTION

