

City of Ketchum and Sun Valley Water  
and Sewer District

**Ketchum-SVWSD WRF Equipment Procurement -  
VFDs**

**Construction Documents  
Project Manual**

**Issued for Bid**

**October 11, 2023**

**HDR Project No. 10360008**



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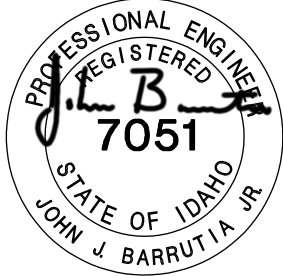
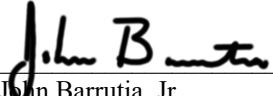
**DIVISION 00**

**PROCUREMENT AND CONTRACTING  
REQUIREMENTS**



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**SECTION 00 01 07**  
**SEALS AND SIGNATURES**

 <p style="text-align: center;">10/11/2023</p>	<p>I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Idaho.</p>  <hr/> <p>Bradley S. Bjerke Idaho PE #P-8778 HDR Engineering (208) 387-7073</p>
 <p style="text-align: center;">10/11/2023</p>	<p>I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Idaho.</p>  <hr/> <p>John Barrutia, Jr. Idaho PE #P-7051 DC Engineering (208) 493-0026</p>

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**SECTION 00 11 13**  
**NOTICE OF ADVERTISEMENT FOR BIDS**

Sealed bids will be received by the City Clerk of the City of Ketchum, Idaho, at Ketchum City Hall, P.O. Box 2315, 191 5<sup>th</sup> Street West, Ketchum, Idaho 83340, on behalf of the City of Ketchum and Sun Valley Water and Sewer District (Ketchum / SVWSD; Buyer), on the **1<sup>st</sup>** day of **November 2023** until the hour of **2 p.m.**, local time, of said day for supply of Variable Frequency Drives (VFD) equipment for the Ketchum / SVWSD Water Reclamation Facility (WRF) consisting of the following:

Supply shall consist of ten (10) configured VFD systems, each installed within its own enclosure, consisting of solid state VFD, HIM, fused disconnect switch, line conditioning, control power transformer, enclosure temperature control, and associated control components. Variable frequency drives shall be Rockwell Automation PowerFlex 753 or Schneider Electric Altivar ATV600 Series. VFD's shall be for existing inverter rated motor sizes as follows: two – 150 HP, three – 25 HP, four – 15 HP, and one – 3 HP. All system components delivered to the project site assembled. Special Services shall include: installation certification, operations and maintenance manuals, start-up services and training of Buyers personnel.

Bids will be opened at the office of the City Clerk at **2:00** o'clock **p.m.** on said date. The Project Manual, including bid forms, bidder's instructions, contract forms, specifications, and figures, is available to interested bidders at the office of the City Clerk. Electronic versions of the Project Manual in PDF format will be available at no cost.

All bids shall be presented or delivered in a sealed envelope or delivered electronically as a pdf in an attachment to an e-mail. If delivered in an envelope, address to Trent Donat / Ketchum City Clerk, 191 5<sup>th</sup> Street West, Ketchum, ID 83340. The sealed envelope shall identify the VFD equipment bid inside. Likewise, for electronic bidding the subject line shall identify the bid contained in the attachment. The electronic bid e-mail shall be addressed only to [tdonat@ketchumidaho.org](mailto:tdonat@ketchumidaho.org). Mr. Donat shall send a return acknowledgement of receiving the e-mail. The attachment will not be opened until the designated bid opening date and time.

The Project Manual may be examined at:

- Ketchum City Hall, 191 5<sup>th</sup> Street West, Ketchum, Idaho 83340. 208-726-3841.  
[tdonat@ketchumidaho.org](mailto:tdonat@ketchumidaho.org).
- HDR, 412 East Parkcenter Blvd, Ste. 100, Boise, ID 83706. 208-387-7073.  
[brad.bjerke@hdrinc.com](mailto:brad.bjerke@hdrinc.com).

Questions regarding this Project Manual should be submitted in writing via email to Trent Donat with cc to Brad Bjerke.

The right is reserved to reject any or all bids.

Dated: October 11, 2023

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Trent Donat / Ketchum City Clerk

Publish:      October 11, 2023  
                  October 18, 2023

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**SECTION 00 21 13**  
**INSTRUCTIONS TO BIDDERS**

**1. Defined Terms**

Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

- 1.1 Bidder - The individual or entity who submits a Bid directly to Buyer.
- 1.2 Buyer – City of Ketchum, Idaho and Sun Valley Water and Sewer District (Ketchum / SVWSD).
- 1.3 Issuing Office - The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered. For this project, the Issuing Office is the office of the City Clerk of the City of Ketchum as listed in the Notice of Advertisement for Bids.
- 1.4 Seller – The individual or entity furnishing the Goods and Special Services.
- 1.5 Successful Bidder – The lowest responsible Bidder submitting a responsive Bid to whom Buyer makes an award.

**2. Copies of the Project Manual**

- 2.1 Project Manuals for a fee, if any, stated in the Notice of Advertisement for Bids shall be obtained from the Issuing Office.
- 2.2 Complete Project Manuals must be used in preparing Bids; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete information.
- 2.3 Buyer and Engineer in making copies of the Project Manuals available on the above terms do so only for the purpose of obtaining Bids for the Goods and Special Services and do not confer a license or grant for any other use.

**3. Qualification of Bidders**

- 3.1 To demonstrate Bidder’s qualifications to furnish Goods and Special Services, Bidder shall submit written evidence of Bidder’s qualifications, if requested. .

**4. Examination of Project Manual, Other Related Data, and Site.**

- 4.1 It is the responsibility of each Bidder before submitting a Bid, to:
  - 4.1.1 Examine and carefully study the Project Manual, any Addenda, and other related data identified in the Bidding Documents.
  - 4.1.2 Understand the equipment layout to become familiar with and satisfy Bidder as to the general, local and site conditions that may affect equipment design, cost, progress, performance or furnishing of the Goods and Special Services.
  - 4.1.3 Consider federal, state, and local Laws and Regulations that may affect costs, progress, performance, and furnishing of the Goods and Special Services.

- 4.1.4 Carefully study, consider, and correlate the information known to Bidder; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Bidder's visits, if any, to the Point of Destination and the site where the Goods are to be installed or Special Services are to be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations and documents on the cost, progress, and performance of Seller's obligations under the Contract Documents.
- 4.1.5 Promptly notify Engineer of all conflicts, errors, ambiguities or discrepancies which Bidder has discovered in or between the Project Manual and such other related documents.
- 4.2 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon furnishing Goods and Special Services required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions (if any) thereof by Engineer are acceptable to Bidder, and that the Bidding documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing Goods and Special Services.

**5. Availability of Lands for Work, etc. (NOT USED)**

**6. Interpretations and Addenda**

- 6.1 All questions about the meaning or intent of the Project Manual are to be submitted to the Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the Project Manual. Questions received less than ten days prior to the date for opening of Bids may not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.2 Addenda may also be issued to clarify, correct, or change the Project Manual as deemed advisable by Buyer or Engineer.

**7. Contract Times**

The number of days within which, or the dates by which, furnishing of the Goods and Special Services is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement Between Buyer and Seller.

**8. Liquidated Damages**

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

## **9. “Or-Equal” Items**

- 9.1 The Contract, if awarded, will be on the basis of material and equipment specified or described in the Bidding documents without consideration of possible “or-equal” items. Whenever it is specified or described in the 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 Agreement. The procedure for submittal of any such application by Seller and consideration by engineer is set forth in the General Conditions and may be supplemented in the Supplementary Conditions.
- 9.2 Bidders may propose “or equal” materials and equipment, which if approved by Engineer will be identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function, and quality to be met by any proposed “or-equal” unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each such request shall conform to the requirements of Paragraph 5.04 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. Bidders shall not rely upon approvals unless set forth in an Addendum.

## **10. Subcontractors, Suppliers and Others (NOT USED)**

## **11. Preparation of Bid**

- 11.1 The Procurement Bid Form is included with the Bidding Documents. Additional copies of Bidding Documents may be obtained from the City Clerk.
- 11.2 All blanks on the Procurement Bid Form shall be completed in ink and the Procurement Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Procurement Bid Form. A Bid price shall be indicated for each item listed therein. In the case of optional alternates the words “No Bid,” “No Change”, or “Not Applicable” may be entered.
- 11.3 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.
- 11.4 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.
- 11.5 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 11.6 A Bid by an individual shall show the Bidder’s name and official address.
- 11.7 A Bid by a joint venture shall be executed by each joint venture in the manner indicated on the Procurement Bid Form. The official address of the joint venture shall be shown.
- 11.8 All names must be typed or printed in ink below the signature.
- 11.9 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Procurement Bid Form.

11.10 Each Bidder shall list the postal address, e-mail address, and telephone number for communications regarding the Bid.

11.11 The Bidder shall include adequate information on the proposed equipment supply for the bid items.

**12. Submittal of Bid**

12.1 A bid shall be submitted no later than the date and time prescribed, and in the manner indicated in the Notice of Advertisement for Bids.

**13. Modification and Withdrawal of Bid**

13.1 A Bid may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

13.2 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 (if applied). Thereafter, if the Goods and Special Services are rebid, that Bidder will be disqualified from further bidding on the Goods and Special Services as described in this Project Manual.

**14. Opening of Bids**

14.1 Bids will be opened at the time and place indicated in the Notice of Advertisement for bids and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the Base Bids and Alternate Bids, if any, will be made available to Bidders after the opening of Bids.

**15. Bids to Remain Subject to Acceptance**

15.1 All Bids will remain subject to acceptance for sixty days after the day of the Bid opening, but Buyer may, in its sole discretion, release any Bid prior to the end of this period.

**16. Award of Contract**

16.1 Buyer intends to award the contract to the lowest responsive, responsible Bidder(s) on the basis of the lump sum total bid price as described in Section 00 41 13 Procurement Bid Form.

16.2 If the Contract is to be awarded, Buyer will give Successful Bidder a Notice of Award within sixty (60) days after the day of the Bid opening. The form for Notice of Award for Procurement Contracts is included in the Project Manual for reference.

16.3 Buyer reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, nonresponsive, unbalanced or conditional Bids. Buyer also reserves the right to waive all informalities not involving price, time or changes in the Goods and Special Services. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

- 16.4 The Buyer reserves the right to reject any Bid if the information submitted by, or investigation of, the Bidder fails to satisfy the Buyer that such Bidder is sufficiently qualified to carry out the obligations of the Agreement and has a history of successfully furnishing similar projects with goods and special of the type contemplated herein. A Bid may be rejected for any one or more of the following, or similar, reasons:
- 16.4.1. More than one proposal on the same project from a bidder, under the same or different names.
  - 16.4.2 Evidence of collusion with any other bidder or bidders. Participants in such collusion shall be disqualified from submitting bids on any future work.
  - 16.4.3 Insufficient experience and organization to establish a proven history of responsibility for satisfactory furnishing of similar goods and special services.
  - 16.4.4 An unsatisfactory performance record which may indicate disregard for project schedules, specifications, necessary skills, quality of work, laws, regulations, or safety.
  - 16.4.5 Projects in progress, whether for the Buyer or others, which might hinder or prevent the furnishing of the goods and special services being bid.
  - 16.4.6 Failure to pay or settle bills for labor or materials on any previous contracts.
  - 16.4.7 Default in the performance of any previous written public contract, or conviction of a crime arising from a previous public contract.
  - 16.4.8 Failure to comply with the requirements of the Instructions to Bidders.

## **17. Contract Security and Insurance**

- 17.1 Article 4 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Buyer's requirements as to Bonds and Insurance. When the Successful Bidder delivers the executed Agreement Between Buyer and Seller to Buyer, it must be accompanied by the required Bonds and the evidence of insurance as required.

## **18. Execution of Contract**

- 18.1 Notice of Award for Procurement Contracts will obligate the Successful Bidder to immediately return acknowledgement of receipt of Notice of Award for Procurement Contracts and, within fifteen (15) days, execute and return the Agreement Between Buyer and Seller, furnish the required Bond(s), and provide evidence of insurance as required.
- 18.2 If the lowest responsive, responsible Bidder fails to execute and deliver the Agreement Between Buyer and Seller and furnish the required Bonds and satisfactory evidence of insurance within fifteen (15) days after the Notice of Award, Buyer may annul the Notice of Award for Procurement Contracts and may award a contract to the next lowest responsive, responsible Bidder, or may reject all bids.
- 18.3 The Buyer, within fifteen (15) days of receipt of the Agreement Between Buyer and Seller, signed by the Seller, and acceptable forms of security as required, shall sign the Agreement Between Buyer and Seller, specify the effective date of the agreement, and return a fully executed duplicate to the Seller. Should the Buyer not execute the Agreement Between Buyer and Seller within such period, the Bidder may by written notice withdraw its signed Agreement Between Buyer and Seller. Such notice of withdrawal shall be effective upon receipt by the Buyer.

**19. Notice to Proceed**

20.1 The Notice to Proceed with Special Services for Procurement Contracts shall be issued by the Buyer at any time within thirty (30) days after the Effective Date of the Agreement. The form, to be issued by the Buyer, is included in the Project Manual for reference.

20.2 The Contract Times will commence to run on the day indicated on the Notice to Proceed.

20.3 In no event will the Contract Times commence to run later than sixty (60) days after Bid Opening or thirty (30) days after the Effective Date of the Agreement Between Buyer and Seller, whichever date is earlier, without mutual agreement between the Buyer and the Seller.

**20. Taxes**

20.1 The Buyer is tax exempt per Idaho State Tax Commission Sales Tax Resale or Exemption Certificate ST-101 item 3 (State Government Entity) or item 5 (Pollution Control). The signed copy of said certificate shall be provided with the Agreement.

**END OF SECTION**



**SECTION 00 41 13**  
**PROCUREMENT BID FORM**  
**Ketchum / SVWSD WRF Equipment Procurement –**  
**VFD's**  
**Ketchum / SVWSD**

It is the intent of the Buyer to award a contract to the lowest responsive, responsible bidder on the basis of the lump sum total price written below.

The Bidder hereby certifies that the costs for all labor, services, equipment, tools, materials, licenses, permits, fees, and taxes (unless exempt) necessary for furnishing the Goods and Special Services according to the Project Manual are included in the price(s) for the items shown herein.

1. Bid Item Description:

This section, in general, describes the bid items included in the Bid Schedule. The description of Bid Items is provided for clarity purposes only. It is not intended to replace, supersede, or preclude any information in the plans and specifications. Unless specified otherwise, all lump sum Bid Items will be paid as a shown in the Agreement Between Buyer and Seller. Descriptions of the project Bid Items are provided below:

**Bid Item A: VFD's.**

This lump sum Bid Item includes furnishing of goods and special services consisting of ten (10) VFD's. Supply of configured VFD systems, each installed within its own enclosure, consisting of solid state VFD, HIM, fused disconnect switch, line conditioning, control power transformer, enclosure temperature control, and associated control components. Variable frequency drives shall be Rockwell Automation PowerFlex 753 or Schneider Electric Altivar ATV600 Series. The VFD shall accomplish speed control by adjusting the output frequency according to the desired reference speed. Adjust ac voltage and frequency simultaneously to provide the constant Volts/Hertz necessary to operate the motor at the desired speed. The VFD must use pulse width modulation technology. Provide integrated VFD system with solid state VFD, HIM, fused disconnect switch, line/load conditioning, control power transformer, enclosure temperature control, and associated control components. Each VFD system shall be installed within its own individual enclosure. System shall comply with NEMA ICS 1, 3, 4, 3.1, 4, and 6. VFD's shall be sized for existing inverter rated motord as follows: two – 150 HP, three – 25 HP, four – 15 HP, and one – 3 HP.

Purchase requires seller supply payment/performance bonds and insurance meeting State of Idaho municipal bidding criteria. All system components delivered to the project site fully assembled (freight included in bid price). Special Services shall include: furnishing of installation certification, operations and maintenance manuals, start-up services, and training of Buyer's personnel.

2. Bid Schedule:

BID ITEM NO.	DESCRIPTION	UNIT	EST QTY	UNIT PRICE	BID PRICE
A	VFD's	Lump Sum	-	-	\$
Total Contract Bid Price for Item A					
(use words)					

3. Lowest Responsive BIDDER:

Determination of the lowest responsive, responsible BIDDER shall be based on the lump sum bid price.

4. Completion:

BIDDER agrees that the Goods will be furnished and Special Services will be substantially completed and ready for final payment in accordance with Paragraph 10.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement Between Buyer and Seller.

BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified in the Agreement Between Buyer and Seller.

**Dated:** \_\_\_\_\_

**Name of Business:** \_\_\_\_\_

**Authorized Signature:** \_\_\_\_\_

**Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**SECTION 00 41 13.01**

**BID PROPOSAL**

For

**Ketchum / SVWSD WRF Equipment Procurement – VFDs  
Ketchum / SVWSD**

**From:** \_\_\_\_\_

**To:** Ketchum / SVWSD Water Reclamation Facility,  
110 River Ranch Road, Ketchum, Idaho 83340

The undersigned, as Bidder, declares that we have received and examined the Project Manual for the **Ketchum / SVWSD WRF Equipment Procurement – VFDs** that we are well-qualified to supply the Goods and Special Services, that we are familiar with the Goods and Special Services, applicable federal, state, and local laws, ordinances, rules, and regulations, and conditions affecting cost, progress, or performance of the Goods and Special Services, and have made such independent investigations as Bidder deems necessary.

We acknowledge that the Project Manual provides the contract requirements, the general conditions of the contract, the technical specifications, as well as the referenced federal, state, and local laws, ordinances, rules, and regulations.

We acknowledge that addenda numbers \_\_\_\_ through \_\_\_\_ have been received and have been examined as part of the Project Manual.

We acknowledge that this price includes the following completed documents: Bid Proposal, and Procurement Bid Form.

The undersigned, as Bidder, proposes and agrees that if this bid is accepted we will contract with the City of Ketchum and Sun Valley Water and Sewer District (Ketchum / SVWSD), hereinafter referred to as Buyer, on the form of Agreement Between Buyer and Seller provided herewith to furnish the Goods and Special Services according to the Contract Documents with all terms and conditions contained therein. We agree to sign the Agreement Between Buyer and Seller without qualification and to furnish the performance and payment bonds and the required evidence of insurance within fifteen (15) calendar days after receiving written Notice to Proceed for the contract.

We further propose and agree, if our bid is accepted and a contract for furnishing the Goods and Special Services is entered into with the Buyer, to plan the furnishing and to prosecute it with such diligence that the Goods and Special Services shall be completely furnished within the time stipulated, and to accept as full payment the bid price(s) written in the following Procurement Bid Form.

We agree that this Bid Proposal constitutes an offer, which shall be binding on the undersigned for sixty (60) days from the date of this Bid Proposal.

The party by whom this proposal is submitted and by whom the contract will be entered into in case the award is made to him:

Bidder (State whether business is a Corporation, a Partnership, or an Individual)

\_\_\_\_\_, a \_\_\_\_\_

Bidder's Address:

State of Incorporation:

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

Corporate Address:

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

Bidder's Phone Number: \_\_\_\_\_

Bidder's Fax Number: \_\_\_\_\_

Bidder's E-mail Address: \_\_\_\_\_

Dated: \_\_\_\_\_ (SEAL)

Signature:

\_\_\_\_\_

**END OF SECTION**

**SECTION 00 41 13.02**  
**BIDDER'S CHECKLIST**

This Bidder's Checklist is offered to the prospective bidder as a means of checking the Bidder's Bid Proposal in order to ensure that a complete Bid is submitted, free from omissions and errors that could possibly lead to rejection of the Bid. This checklist is provided only as a convenience for Bidders and is not intended to be a detailed or complete listing of all actions and documents that may be required. Bidders are advised to carefully read all portions of the Project Manual and to comply with all requirements.

**BID PROPOSAL**

- \_\_\_\_\_ 1. Have questions arising from the Project Manual been submitted to the proper authority and resolved in the proper manner?
- \_\_\_\_\_ 2. Are all blank spaces filled out on Bid Proposal, including required signatures?
- \_\_\_\_\_ 3. Have all Addenda been received, factored into the bid price, and acknowledged on the Bid Proposal?

**PROCUREMENT BID FORM**

- \_\_\_\_\_ 4. Is bid price shown correctly including totals? Recheck for errors and omissions. Total lump sum bids must be shown in words and figures.
- \_\_\_\_\_ 5. Are all required signatures included?

**BIDDER QUALIFICATION**

- \_\_\_NA\_\_\_ 6. Is the written evidence of Bidder's qualifications to furnish Goods and Special Services included in the bid package?

**BID PACKAGE SUBMITTAL**

- \_\_\_\_\_ 7. Are all required Bid Forms ready for delivery in either electronic or hard-copy to the specified authority prior to the time for the Bid Opening?

**END OF SECTION**

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**SECTION 00 41 13.03**  
**SUCCESSFUL BIDDER'S CHECKLIST**

Upon Notice of Award, the successful bidder will be required to submit, for approval, the following information prior to execution of the contract by the Buyer and formal Notice to Proceed.

- \_\_\_\_\_ 1. Signed Acceptance of the Notice of Award for Procurement Contracts sent by the Buyer
- \_\_\_\_\_ 2. Signed Agreement Between Buyer and Seller (original-quality form mailed to Successful Bidder by Buyer)
- \_\_\_\_\_ 3. Performance Bond (meeting State bidding requirements)
- \_\_\_\_\_ 4. Payment Bond (meeting State bidding requirements)
- \_\_\_\_\_ 5. Evidence of Insurances (certificates with requested cancellation clause and naming Buyer and Engineer(s) as additional insureds):
  - a. General Liability
  - b. ~~Automobile Liability~~
  - c. ~~Workman's Compensation~~

**END OF SECTION**

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**SECTION 00 50 13**  
**AGREEMENT BETWEEN BUYER AND SELLER**

This Agreement is between the CITY OF KETCHUM, IDAHO and SUN VALLEY WATER AND SEWER DISTRICT (Ketchum / SVWSD; Buyer) and

\_\_\_\_\_ (Seller).

Buyer and Seller, in consideration of the mutual covenants set forth herein, agree as follows:

ARTICLE 1 - GOODS AND SPECIAL SERVICES

1.01 Seller shall furnish to Buyer the Goods and Special Services as specified or indicated in the Contract Documents.

ARTICLE 2 - THE PROJECT

2.01 The Project for which the Goods and Special Services to be provided under the Contract Documents may be the whole or only a part is generally described as follows:

**Ketchum / SVWSD WRF Equipment Procurement – VFDs**

ARTICLE 3 - ENGINEER

3.01 The Contract Documents for the Goods and Special Services have been prepared by HDR Engineering, Inc., who is hereinafter called Engineer and who is to assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the furnishing of Goods and Special Services.

ARTICLE 4 - POINTS OF DESTINATION

4.01 The places where the Goods are to be delivered are defined in the STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS as the Points of Destination and designated as: City of Ketchum / Sun Valley Water and Sewer District Water Reclamation Facility (Ketchum / SVWSD WRF).

ARTICLE 5 - CONTRACT TIMES

5.01 *Time of the Essence*

A. All time limits for Milestones, the delivery of Goods and the furnishing of Special Services as stated in the Contract Documents are of the essence. The statement herein that time is of the essence shall not be construed to limit the Seller's cure rights as set forth in the Contract Documents upon default, or any other provision of the Contract Documents or under applicable law that would afford Seller a time certain or a reasonable time to perform its contractual obligations.

5.02 Dates for Goods and Special Services

A. Special Services required by the Contract Documents will be performed pursuant to the schedule set forth:

<u>ITEM NO.</u>	<u>MILESTONE EVENT</u>	<u>CONTRACT TIMES</u>	<u>CALENDAR DAYS</u>
1	Shop Drawing Submittals		
a	Equipment Data/Cut Sheets, Electrical Drawings, , Control Schematics.	After date of Agreement	70
2	Review of Shop Drawing Submittals (by Engineer)	After Shop Drawing Submittal (item 1.a.)	14
3	Fabrication & Delivery of Goods	After Approval of Shop Drawings by Engineer (item 2)	365
4	Spare Parts	With Delivery of Goods	-
5	Installation Manuals	After Approval of Shop Drawings by Engineer (item 2)	140
6	Final O&M Manual	After Approval of Shop Drawing by Engineer (item 2)	210
7	Completion of installation inspection, verification of wiring, testing, tune-up, adjustment, and performance.	Time Period after Installation Contractor states equipment is ready for commencement of manufacturer's field services	42
8	Operator Training (3 days)	Time Period after Installation Contractor states equipment is ready for commencement of manufacturer's field services	60
9	Successful Completion of Performance Demonstration Period (14 days uninterrupted operation)	Time Period after Installation Contractor states equipment is ready for commencement of manufacturer's field services	60

5.03 *Liquidated Damages*

- A. Buyer and Seller recognize that time is of the essence of this Agreement and that Buyer will suffer financial loss if the Goods are not delivered at the Point of Destination and ready for receipt of delivery by Buyer within the times specified for delivery of Goods and Special Services, plus any extensions thereof allowed in accordance with Article 7 of the GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS. The parties also recognize that the timely performance of services by others involved in the Project are materially dependent upon Seller's specific compliance with the requirements for delivery of Goods and Special Services. Further, they recognize the delays, expense and difficulties involved in proving the actual loss suffered by Buyer if complete acceptable Goods are not delivered on time. Accordingly, instead of requiring such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer \$500.00 for each calendar day that expires after the time specified for delivery of each item. The maximum total amount for liquidated damages shall be limited to ten (10) percent of the Total Contract Price in Article 6.
- B. The liquidated damages provided in this Specification Section shall be Buyer's sole and exclusive remedy for Seller's late delivery of Goods and Special Services. Seller shall have no liability to Buyer under this Article if Seller's delay causes no damages or losses to Buyer.
- C. If Seller is prevented from achieving the delivery times, milestone submittal dates or response times, as defined in Article 5.02A. and 5.02.B., for any reason beyond Seller's reasonable

control and not attributable to its actions or inactions, Seller shall not be assessed liquidated damages and shall be entitled to an adjustment of the Contract Times in an amount equal to the duration of the reason or event causing the delay in delivery to the extent that the delay is caused by Buyer.

- D. Upon receipt of Buyer’s Notification to Proceed with Fabrication of Equipment that satisfies Seller’s requirements for meeting the delivery schedule, Seller shall commence fabrication of equipment. The place of delivery specified therein shall be firm and fixed, provided that Buyer may notify Seller no later than 45 days prior to the scheduled shipment date of the products of an alternate point of delivery (the "Alternate Delivery Site"). Provided the parties agree to a Variation to take into account any additional cost or delay incurred by Seller in implementing this change, the Alternate Delivery Site shall become the agreed place of delivery for all purposes under this Agreement. In such event the following conditions shall apply: (i) title and risk of loss shall pass to the Buyer upon delivery of the products to the Alternate Delivery Site; (ii) any amounts payable to the Seller upon delivery or shipment shall become payable upon delivery of the products to the Alternate Delivery Site; (iii) any additional expenses incurred by the Seller in connection with such shipment to storage shall become payable by the Buyer upon submission of the Seller’s invoice(s) (including but not limited to costs of any additional transportation, preparation for and placement into storage, handling, inspection, preservation, insurance, storage, removal charges and any applicable taxes); (iv) transportation of the products from the storage facility to their place of installation shall be the Buyer’s responsibility; and, (v) if the Contract includes Services, subject to the terms and conditions in the Contract the Seller shall resume provision of Services to Buyer when instructed to do so by Buyer provided that all amounts due hereunder plus any cost incurred by Seller in delaying such Services have been paid.

**ARTICLE 6 - CONTRACT PRICE**

6.01 Buyer shall pay Seller for furnishing the Goods and Special Services in accordance with the Contract Documents in current funds pursuant to the schedule below:

<u>MILESTONE EVENT</u>	<u>PERCENT PAYMENT</u> <u>AT EACH EVENT</u>	<u>PRICE</u>
Notice to Proceed	20	\$
Approval of Shop Drawing Submittals	20	
Delivery of Installation Manuals		\$
Delivery of Goods	50	\$
Final Installation / O&M Manual	5	\$
Satisfactory Install Certification/Performance	5	
Testing/Operator Training		\$
 Total Price	 100	 \$

## ARTICLE 7 - PAYMENT PROCEDURES

### 7.01 *Submittal and Processing of Payments*

- A. Seller shall submit Applications for Payment to Buyer in accordance with the Contract Documents. Applications for Payment will be processed by Engineer as provided in the Contract Documents.

### 7.02 *Progress Payments*

- A. Buyer shall make payments on account of the Contract Price on the basis of Seller's Applications for Payment as recommended by Engineer for items listed in Article 6.

### 7.03 *Final Payment*

- A. Upon receipt of the final Application for Payment accompanied by Engineer's recommendation of payment in accordance with Paragraph 10.06 of the GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS, Buyer shall make final payment thirty (30) days after acceptance by the City Council.

## ARTICLE 8 - INTEREST

- 8.01 All moneys not paid when due hereunder shall bear interest at the maximum statutory rate allowed by law at the place of BUYER'S project in accordance with State of Idaho.

## ARTICLE 9 - SELLER'S REPRESENTATIONS

- 9.01 In order to induce Buyer to enter into this Agreement, Seller makes the following representations:

- A. Seller has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. If specified or if, in Seller's judgment, any local condition may affect cost, progress or the furnishing of the Goods and Special Services, Seller has visited the Point of Destination and become familiar with and is satisfied as to the local conditions that may affect cost, progress or the furnishing of the Goods and Special Services.
- C. Seller is familiar with and is satisfied as to all local federal, state and local Laws and Regulations that may affect cost, progress and the furnishing of the Goods and Special Services.
- D. Seller has carefully studied and correlated the information known to Seller, and information and observations obtained from Seller's visits, if any, to the Point of Destination, with the Contract Documents.
- E. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Seller.
- F. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing Goods and Special Services.
- G. Seller's relationship to the Buyer in performance of this Agreement is that of an Independent Contractor. The personnel performing services under this Agreement shall at all times be under the Seller's exclusive direction and control and not employees of the Buyer. Seller shall pay all wages, salaries and other amounts due to its employees in connection with this agreement and shall be responsible for all applicable state, federal, and local reports and obligations respecting

them such as labor wages, social security, income tax withholding, unemployment compensation and similar matters.

## ARTICLE 10 - CONTRACT DOCUMENTS

### 10.01 *Contents*

- A. The Contract Documents consist of the following:
1. This Agreement for Procurement Contracts.
  2. Performance Bond for Procurement Contracts.
  3. Payment Bond for Procurement Contracts.
  4. General Conditions for Procurement Contracts.
  5. Supplementary Conditions for Procurement Contracts.
  6. Specifications as listed in table of contents.
  7. Drawings as listed in table of contents.
  8. Addenda (Numbers \_\_\_\_\_ to \_\_\_\_\_, inclusive).
  9. Exhibits to this Agreement (enumerated as follows):
    - a. Documentation submitted by Seller prior to Notice of Award;
  10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Notice to Proceed.
    - b. Written Amendment(s).
    - c. Change Order(s).
    - d. Field Order(s).
    - e. Engineer's Written Interpretation(s).
- B. The documents listed in Paragraph 10.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 10.
- D. The Contract Documents may only be amended, or supplemented as provided in Paragraph 3.04 of the GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS.

ARTICLE 11 - MISCELLANEOUS

11.01 *Defined Terms*

- A. Terms used in this Agreement will have the meanings indicated in the GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS and the SUPPLEMENTARY CONDITIONS FOR PROCUREMENT CONTRACTS.

11.02 *Successors and Assigns*

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

11.03 *Severability*

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

11.04 *Limitations of Liability*

- A. Notwithstanding any other provisions of the Contract Documents, the Supplier's total liability for direct, indirect, incidental, special, punitive or other damages arising at any time under any of the Contract Documents or otherwise in connection with completing the Contract (whether arising under breach of contract, tort, strict liability, or any other theory of law) shall not exceed the amount of the Contract Price.

11.05 *Performance and Payment Bond*

- A. For the faithful performance of this Agreement Between Buyer and Seller in accordance with the Contract Documents and payment for all labor and materials as specified in Section 00 41 13 – Procurement Bid Form, the Seller shall execute good and sufficient performance bond and payment bond each in the amount of one hundred percent (100%) of the total amount of the price stated, said bonds to be executed by a surety company authorized to do business in the State of Idaho.

11.06 *Sales Tax*

- A. The Buyer will provide to the Seller a copy of Idaho State Tax Commission Sales Tax Resale or Exemption Certificate (ST-101) for the Seller's records. The Equipment is Sales Tax Exempt by both item 3. Exempt Buyer (Federal/Idaho Government Entity) and item 5. Other Exempt Goods and Buyers (Pollution Control items). If the State of Idaho determines the equipment is not Tax Exempt, Buyer will reimburse Seller by Change Order for the Sales Tax paid to the State (actual paid amount only, receipt required).

IN WITNESS WHEREOF, Buyer and Seller have signed this Agreement in duplicate. One counterpart each has been delivered to Buyer and Seller. All portions of the Contract Documents have been signed or identified by Buyer and Seller or on their behalf.

\_\_\_\_\_  
Seller Company Name

\_\_\_\_\_  
Seller Authorized Signature

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

Attest: \_\_\_\_\_

Address for giving notice:

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

\_\_\_\_\_  
Seal (if applicable)  
(If Seller is a corporation or a partnership, attach  
evidence of authority to sign.)

Buyer: City of Ketchum, Idaho

Buyer: Sun Valley Water and Sewer District

By: Neil Bradshaw

By: Jim Loyd

Title: City of Ketchum, Idaho Mayor

Title: SVWSD Chairman

Executed on \_\_\_\_/\_\_\_\_, 2023

Executed on \_\_\_\_/\_\_\_\_, 2023

Attest By:

Attest By:

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

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

Approved to as Form:

Approved to as Form:

**END OF SECTION**

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**SECTION 00 51 16**  
**NOTICE OF AWARD FOR PROCUREMENT CONTRACTS**  
For  
**Ketchum / SVWSD WRF Equipment Procurement – VFDs**  
For  
Ketchum / SVWSD

Dated:

TO:

(Successful BIDDER - SELLER)

ADDRESS:

CONTRACT FOR:     **Ketchum / SVWSD WRF Equipment Procurement – VFDs**  
                          **Ketchum / SVWSD**

You are notified that the Contract Time under the above contract will commence to run on as of the date of the Notice of Proceed for Procurement Contracts. By that date, you are to start performing your obligations under the Contract Documents.

Within fifteen (15) days of this Notice of Award for Procurement Contracts, you must deliver to the Buyer:

- Certificates of insurance are required to be purchased and maintained in accordance with the Contract Documents.
- Signed Copy of the Agreement Between Buyer and Seller.
- Bonds are required to be purchased and maintained in accordance with the Contract Documents.
- All applicable licenses required by the contract documents.

\_\_\_\_\_  
City of Ketchum, Idaho (Ketchum) and Sun Valley Water and Sewer District (SVWSD)  
(Buyer)

By: \_\_\_\_\_  
(Ketchum’s Authorized Signatory)

By: \_\_\_\_\_  
(SVWSD’s Authorized Signatory)

\_\_\_\_\_  
(printed name and title)

\_\_\_\_\_  
(printed name and title)

(Use Certified Mail,  
Return Receipt Requested)

**END OF SECTION**

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**SECTION 00 55 19**

**NOTICE TO PROCEED WITH FABRICATION FOR PROCUREMENT CONTRACTS**

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

TO: \_\_\_\_\_  
(SELLER)

ADDRESS: \_\_\_\_\_  
\_\_\_\_\_

PROJECT NO.: 10360008

CONTRACT FOR: **Ketchum / SVWSD WRF Equipment Procurement - VFDs**

You are notified to proceed with Fabrication of Equipment that satisfies Seller’s requirements for meeting the delivery schedule listed in the Agreement. Seller shall commence fabrication of equipment so as to meet these dates. The place of delivery and conditions shall be as specified in the Agreement. You are to continue performing your obligations under the Contract Documents.

\_\_\_\_\_  
City of Ketchum, Idaho (Ketchum) and Sun Valley Water and Sewer District (SVWSD)  
(Buyer)

By: \_\_\_\_\_  
(Ketchum’s Authorized Signatory)

By: \_\_\_\_\_  
(SVWSD’s Authorized Signatory)

\_\_\_\_\_  
(printed name and title)

\_\_\_\_\_  
(printed name and title)

**END OF SECTION**

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**SECTION 00 72 09**  
**STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS**

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

## STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS

Prepared by



and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

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AMERICAN SOCIETY OF CIVIL ENGINEERS

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ASSOCIATED GENERAL CONTRACTORS OF AMERICA

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PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE  
*A Practice Division of the*  
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

These Standard General Conditions for Procurement Contracts have been prepared for use with the Suggested Instructions to Bidders for Procurement Contracts (EJCDC P-200, 2010 Edition), the Agreement Between Buyer and Seller for Procurement Contracts (EJCDC P-520, 2010 Edition), and the Guide to Preparation of Supplementary Conditions for Procurement Contracts (EJCDC P-800, 2010 Edition). Their provisions are interrelated and a change in one may necessitate a change in the others. Additional information concerning the use of the EJCDC Procurement Documents may be found in the Commentary on Procurement Documents (EJCDC P-001, 2010 Edition).

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# STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS

## ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

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

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

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

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

## 1.02 Terminology

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

### B. *Intent of Certain Terms or Adjectives:*

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

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

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

## **ARTICLE 2 - PRELIMINARY MATTERS**

### *2.01 Delivery of Bonds*

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

### *2.02 Evidence of Insurance*

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

### *2.03 Copies of Documents*

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

### *2.04 Commencement of Contract Times; Notice to Proceed*

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

### *2.05 Designated Representatives*

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

### *2.06 Progress Schedule*

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

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

#### 2.07 *Preliminary Conference*

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

#### 2.08 *Safety*

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

### **ARTICLE 3 - CONTRACT DOCUMENTS: INTENT AND AMENDING**

#### 3.01 *Intent*

- A. The Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.
- C. Clarifications and interpretations of, or notifications of minor variations and deviations in, the Contract Documents, will be issued by Engineer as provided in Article 9.

#### 3.02 *Standards, Specifications, Codes, Laws and Regulations*

- A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.



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

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies:*

1. *Seller's Review of Contract Documents Before the Performance of the Contract:* Before performance of the Contract, Seller shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Seller shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Seller discovers or has actual knowledge of and shall obtain a written interpretation or clarification from Engineer before proceeding with the furnishing of any Goods and Special Services affected thereby.
2. *Seller's Review of Contract Documents During the Performance of the Contract:* If, during the performance of the Contract, Seller discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any Law or Regulation applicable to the performance of the Contract, any standard, specification, manual or code, or of any instruction of any Supplier, Seller shall promptly report it to Engineer in writing. Seller shall not proceed with the furnishing of the Goods and Special Services affected thereby until an amendment to or clarification of the Contract Documents has been issued.
3. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Seller had actual knowledge thereof.

- B. *Resolving Discrepancies:* Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Amending and Clarifying Contract Documents*

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

## **ARTICLE 4 - BONDS AND INSURANCE**

### 4.01 *Bonds*

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

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

#### 4.02 *Insurance*

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

#### 4.03 *Licensed Sureties and Insurers*

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

### **ARTICLE 5 - SELLER'S RESPONSIBILITIES**

#### 5.01 *Supervision and Superintendence*

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

#### 5.02 *Labor, Materials and Equipment*

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

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

### 5.03 *Laws and Regulations*

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

### 5.04 *Or Equals*

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

- a. in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and
  - b. Seller certifies that if approved: 1) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and 2) the proposed item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraph 5.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or submittal. No "or-equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Contract Documents.
- C. *Special Guarantee:* Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."
- D. *Data:* Seller shall provide all data in support of any such proposed "or-equal" at Seller's expense.

#### 5.05 Taxes

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

#### 5.06 Shop Drawings and Samples

- A. Seller shall submit Shop Drawings and Samples to Buyer for Engineer's review and approval in accordance with the schedule required in Paragraph 2.06.A. All submittals will be identified as required and furnished in the number of copies specified in the Contract Documents. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide.
- B. Where a Shop Drawing or Sample is required by the Contract Documents, any related work performed prior to Engineer's approval of the pertinent submittal will be at the sole expense and responsibility of Seller.

*C. Submittal Procedures:*

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

*D. Engineer's Review:*

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

*E. Resubmittal Procedures:*

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

5.07 *Continuing Performance*

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

5.08 *Seller's Warranties and Guarantees*

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

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

#### 5.09 *Indemnification*

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



#### 5.10 *Delegation of Professional Design Services*

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

### **ARTICLE 6 - SHIPPING AND DELIVERY**

#### 6.01 *Shipping*

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

#### 6.02 *Delivery*

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

for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours notice by telephone prior to the anticipated time of delivery.

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

#### 6.03 *Risk of Loss*

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

#### 6.04 *Progress Schedule*

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

### **ARTICLE 7 - CHANGES: SCHEDULE AND DELAY**

#### 7.01 *Changes in the Goods and Special Services*

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

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

- C. Seller shall not suspend performance while Buyer and Seller are in the process of making such changes and any related adjustments to Contract Price or Contract Times.

#### 7.02 *Changing Contract Price or Contract Times*

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

### **ARTICLE 8 - BUYER'S RIGHTS**

#### 8.01 *Inspections and Testing*

##### A. *General:*

1. The Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable

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

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

#### B. Inspection on Delivery:

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

C. Final Inspection:

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

8.02 *Non-Conforming Goods and Special Services*

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

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

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

C. Remedying Non-Conforming Goods and Special Services:

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

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

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

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

F. *Buyer's Rejection of Conforming Goods:*

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

8.03 *Correction Period*

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

**ARTICLE 9 - ROLE OF ENGINEER**

9.01 *Duties and Responsibilities*

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

9.02 *Clarifications and Interpretations*

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

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

#### 9.03 *Authorized Variations*

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

#### 9.04 *Rejecting Non-Conforming Goods and Special Services*

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

#### 9.05 *Decisions on Requirements of Contract Documents*

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

#### 9.06 *Claims and Disputes*

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

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

## **ARTICLE 10 - PAYMENT**

### *10.01 Applications for Progress Payments*

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



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

#### 10.02 *Review of Applications for Progress Payments*

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

#### 10.03 *Amount and Timing of Progress Payments*

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

#### 10.04 *Suspension of or Reduction in Payment*

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

#### 10.05 *Final Application for Payment*

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

#### 10.06 *Final Payment*

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

## 10.07 *Waiver of Claims*

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

## **ARTICLE 11 - CANCELLATION, SUSPENSION, AND TERMINATION**

### 11.01 *Cancellation*

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

### 11.02 *Suspension of Performance by Buyer*

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

### 11.03 *Suspension of Performance by Seller*

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

## 11.04 *Breach and Termination*

### A. Buyer's Breach:

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

### B. Seller's Breach:

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

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

## **ARTICLE 12 - LICENSES AND FEES**

### *12.01 Intellectual Property and License Fees*

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

### *12.02 Seller's Infringement*

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

### 12.03 *Buyer's Infringement*

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

### 12.04 *Reuse of Documents*

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

### 12.05 *Electronic Data*

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

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

## **ARTICLE 13 - DISPUTE RESOLUTION**

### *13.01 Dispute Resolution Method*

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

## **ARTICLE 14 - MISCELLANEOUS**

### *14.01 Giving Notice*

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

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

#### 14.02 *Controlling Law*

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

#### 14.03 *Computation of Time*

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

#### 14.04 *Cumulative Remedies*

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

#### 14.05 *Survival of Obligations*

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

#### 14.06 *Entire Agreement*

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





# DIVISION 01

## GENERAL REQUIREMENTS



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**SECTION 01 11 00**  
**SUMMARY OF GOODS AND SPECIAL SERVICES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Project Summary
  - 1. This project provides ten (10) configured VFD systems for installation (by others) at the Ketchum and Sun Valley Water and Sewer District Water Reclamation Facility (WRF). Installation by others.
- B. Related sections include but are not necessarily limited to:
  - 1. Division 00 – Bidding Requirements, Contract Forms, and Conditions of the Contract.
  - 2. Division 01 – General Requirements.
  - 3. Division 26 – Electrical

**1.2 GOODS AND SPECIAL SERVICES COVERED BY CONTRACT**

- A. The Procurement Bid Form, Section 00 41 13, includes the Bid Items for the project. The Goods and Special Services to be furnished include:

**1. Bid Item: VFDs.**

All labor, equipment, materials, and appurtenances for furnishing the system as specified in these Contract Documents and generally described as:

Supply of configured VFD systems, each installed within its own enclosure, consisting of solid state VFD, HIM, fused disconnect switch, line conditioning, control power transformer, enclosure temperature control, and associated control components. Variable frequency drives shall be Rockwell Automation PowerFlex 753 or Schneider Electric Altivar ATV600 Series. A total of ten (10) VFD's with horsepower ratings from 150 HP to 3 HP. The VFD shall accomplish speed control by adjusting the output frequency according to the desired reference speed. Adjust ac voltage and frequency simultaneously to provide the constant Volts/Hertz necessary to operate the motor at the desired speed. The VFD must use pulse width modulation technology. Provide integrated VFD system with solid state VFD, HIM, fused disconnect switch, line/load conditioning, control power transformer, enclosure temperature control, and associated control components. Each VFD system shall be installed within its own individual enclosure. System shall comply with NEMA ICS 1, 3, 4, 3.1, 4, and 6.

- a. The equipment shall be delivered to the Ketchum and Sun Valley Water and Sewer District Water Reclamation Facility, Ketchum, Idaho.
- b. Special Services shall include, but are not limited to:
  - 1) Shop Drawings.
  - 2) Operations and Maintenance Manuals
  - 3) Manufacturer's Services shall include supply of installation certification, startup, testing, and training of Buyer's operations and maintenance personnel as quality control and quality assurance of the delivered equipment.
- c. Conduct performance testing of equipment to show compliance with performance requirements.
- d. The completion of all the furnishing of Goods and Special Services shall be on or before the dates or within the number of calendar days indicated in the Agreement.

### **1.3 WORK BY OTHERS**

- A. Buyer or Buyer's Installation Contractor will unload equipment in accordance with Section 01 65 50, Product Delivery, Storage, and Handling.
- B. Buyer's Installation Contractor under separate contract will install all electrical.

### **1.4 FABRICATION SCHEDULE**

- A. Within ten (10) days of Notice to Proceed, the Seller shall submit their fabrication schedule to meet the scheduled sequence, milestones, and limitations. The schedule shall be a bar chart showing, as a minimum, the schedule for the following activities:
  - 1. Shop Drawings Submittals.
  - 2. Final Shop Drawings
  - 3. Fabrication of equipment.
  - 4. Equipment delivery.

### **1.5 OTHERS WORKING AT PROJECT SITE**

- A. The Seller shall coordinate the delivery of the equipment and appurtenances with the Buyer and the Buyer's Installation Contractor.

### **1.6 FINAL COMPLETION**

- A. For the purposes of establishing when the Project is complete and suitable for its intended purpose, the following functional components and work elements shall be completed:
  - 1. Final shop drawings submitted and approved.
  - 2. Goods delivered to the site.
  - 3. Final operations and maintenance manuals submitted and approved.
  - 4. Manufacturer's Field Services are complete.
  - 5. Satisfactory completion of performance testing.

### **1.7 REGULATORY REQUIREMENTS**

- A. Comply with all Federal, State, and local laws, regulations, codes, and ordinance applicable to furnishing the Goods and Special Services.
- B. References in the Contract Documents to local codes shall mean City of Ketchum, Idaho.
- C. Other standards and codes that apply to furnishing the Goods and Special Services are designated in the Specifications.

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

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

**END OF SECTION**

**SECTION 01 33 00**  
**SUBMITTALS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Mechanics and administration of the submittal process for:
    - a. Shop Drawings.
    - b. Informational submittals.
  - 2. General content requirements for Shop Drawings.
- B. Related Specification Sections include but are not necessarily limited to:
  - 1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
  - 2. Division 01 - General Requirements.
  - 3. Operations and Maintenance Manual submittal requirements are specified in Specification Section 01 33 04.
  - 4. Specification Sections in Division 02 through Division 46 identifying required submittals.

**1.2 DEFINITIONS**

- A. Shop Drawings:
  - 1. See STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS.
  - 2. Product data is Shop Drawing information.
- B. Informational Submittals:
  - 1. Submittals other than Shop Drawings and samples required by the Contract Documents that do not require approval.
  - 2. Representative types of informational submittal items include but are not limited to:
    - a. Equipment delivery schedule.
    - b. Installed equipment and systems performance test reports.
    - c. Manufacturer's installation certification letters.
    - d. Instrumentation and control commissioning reports.
    - e. Warranties.
  - 3. For-Information-Only submittals upon which the Engineer is not expected to conduct review or take responsive action may be so identified in the Contract Documents.

**1.3 TRANSMITTAL OF SUBMITTALS**

- A. Shop Drawings and Product Data:
  - 1. Transmit paper copy submittals to:

HDR Engineering, Inc.  
412 East Parkcenter Boulevard, Suite 100  
Boise, ID 83706  
Attn: Brad Bjerke, PE
  - 2. Electronic Transmission of Submittals:
    - a. Via email:  
[brad.bjerke@hdrinc.com](mailto:brad.bjerke@hdrinc.com)
  - 3. Utilize one (1) copy of attached Exhibit "A" to transmit all Shop Drawings and samples.
    - a. An electronic version (Microsoft Word .doc format) of Exhibit "A" will be given to Seller upon request.
  - 4. All submittals must be from Seller and bear his approval stamp.
    - a. Shop Drawing submittal stamp shall read "(Seller's Name) has satisfied Seller's obligations under the Contract Documents with respect to Seller's review and approval

as stipulated under STANDARD GENERAL CONDITIONS FOR PROCUREMENT CONTRACTS Paragraph 5.06C".

5. Provide submittal information defining specific equipment or materials utilized on the project.
    - a. Generalized product information, not clearly defining specific equipment or materials to be provided, will be rejected.
  6. Calculations required in individual Specification Sections will be received for information purposes only, as evidence calculations have been performed by individuals meeting specified qualifications and will be returned stamped "E. Engineer's Review Not Required" to acknowledge receipt.
  7. Submittal schedule:
    - a. Schedule of Shop Drawings:
      - 1) Submitted and approved in accordance with timeframes listed in Contract.
      - 2) Account for multiple transmittals under any Specification Section where partial submittals will be transmitted.
- B. Informational Submittals:
1. Transmit under Seller's standard letter of transmittal or letterhead.
  2. Submit in triplicate or as specified in individual Specification Section.
  3. Transmit paper copy submittals to:

HDR Engineering, Inc.  
412 East Parkcenter Boulevard, Suite 100  
Boise, ID 83706  
Attn: Brad Bjerke, PE

4. Electronic Transmission of Submittals:
  - a. Via email:  
[brad.bjerke@hdrinc.com](mailto:brad.bjerke@hdrinc.com)

#### **1.4 PREPARATION OF SUBMITTALS**

- A. Legibility:
1. All submittals and all pages of all copies of a submittal shall be completely legible.
  2. Submittals which, in the Engineer's sole opinion, are illegible will be returned without review.
- B. Shop Drawings:
1. Scope of any submittal and letter of transmittal:
    - a. Limited to one (1) Specification Section.
    - b. Do not submit under any Specification Section entitled (in part) "Basic Requirements" unless the product or material submitted is specified, in total, in a "Basic Requirements" Specification Section.
  2. Numbering letter of transmittal:
    - a. Use the Specification Section number followed by a series number ("-xx" and beginning with "01"); increase the series number sequentially with each additional transmittal for that Specification Section.
  3. Describing transmittal contents:
    - a. Provide listing of each component or item in submittal capable of receiving an independent review action.
    - b. Identify for each item:
      - 1) Manufacturer and Manufacturer's Drawing or data number.
      - 2) Contract Document tag number(s).
      - 3) Specification Article/Paragraph number if appropriate.
      - 4) Unique page numbers for each page of each separate item.
    - c. When submitting "or-equal" items that are not the products of named manufacturers, include the words "or-equal" in the item description.

4. Seller stamping:
  - a. General:
    - 1) Seller's review and approval stamp shall be applied either to the letter of transmittal or a separate sheet preceding each independent item in the submittal.
      - a) Seller's signature and date shall be original ink signature.
    - 2) Letters of transmittal may be stamped only when the scope of the submittal is one (1) item.
    - 3) Submittals containing multiple independent items shall be prepared with an index sheet for each item listing the discrete page numbers for each page of that item, which shall be stamped with the Seller's review and approval stamp.
      - a) Individual pages or sheets of independent items shall be numbered in a manner that permits Seller's review and approval stamp to be associated with the entire contents of a particular item and vice-versa.
    - 4) In the event submittals are transmitted as a single item and found to include multiple independent items, the Buyer and Engineer reserve the right to limit review to the single item listed, remove the other items from the submittal and return them not reviewed to the Seller for coordination, stamping and submittal under a new transmittal number that is not a re-submittal number.
      - a) The items not listed in the transmittal letter will not be logged as received, or in any other manner acknowledged as submitted.
  - b. Electronic stamps:
    - 1) Seller may electronically embed Seller's review and approval stamp to either the letter of transmittal or a separate index sheet preceding each independent item in the submittal.
    - 2) Seller's signature and date on electronically applied stamps shall be original ink signature.
5. Resubmittals:
  - a. Number with original Specification Section and series number with a suffix letter starting with "A" on a (new) duplicate transmittal form.
  - b. Do not increase the scope of any prior transmittal.
  - c. Account for all components of prior transmittal.
    - 1) If items in prior transmittal received "A" or "B" Action code, list them and indicate "A" or "B" as appropriate.
      - a) Do not include submittal information for items listed with prior "A" or "B" Action in resubmittal.
    - 2) Indicate "Outstanding-To Be Resubmitted At a Later Date" for any prior "C" or "D" Action item not included in resubmittal.
      - a) Obtain Engineer's approval to exclude items.
6. Seller shall not use red color for marks on transmittals.
  - a. Duplicate all marks on all copies transmitted, and ensure marks are photocopy reproducible.
  - b. Engineer will use red marks or enclose marks in a cloud.
7. Transmittal contents:
  - a. Coordinate and identify Shop Drawing contents so that all items can be easily verified by the Engineer.
  - b. Provide submittal information or marks defining specific equipment or materials utilized on the Project.
    - 1) Generalized product information, not clearly defining specific equipment or materials to be provided, will be rejected.
  - c. Identify equipment or material project application, tag number, Drawing detail reference, weight, and other Project specific information.
  - d. Provide sufficient information together with technical cuts and technical data to allow an evaluation to be made to determine that the item submitted is in compliance with the Contract Documents.
  - e. Do not modify the manufacturer's documentation or data except as specified herein.

- f. Submit items such as equipment brochures, cuts of fixtures, product data sheets or catalog sheets on 8-1/2 x 11 IN pages.
    - 1) Indicate exact item or model and all options proposed.
  - g. When a Shop Drawing submittal is called for in any Specification Section, include as appropriate, scaled details, sizes, dimensions, performance characteristics, capacities, test data, anchoring details, installation instructions, storage and handling instructions, color charts, layout Drawings, rough-in diagrams, wiring diagrams, controls, weights and other pertinent data in addition to information specifically stipulated in the Specification Section.
    - 1) Arrange data and performance information in format similar to that provided in Contract Documents.
    - 2) Provide, at minimum, the detail specified in the Contract Documents.
  - h. If proposed equipment or materials deviate from the Contract Drawings or Specifications in any way, clearly note the deviation and justify the said deviation in detail in a separate letter immediately following transmittal sheet.
8. Provide one (1) electronic copy of each submittal until submittal has received either an “A” or “B” action.
- a. Submittal may be transmitted via e-mail or on a CD-ROM disc.
  - b. The Engineer will mark comments directly on the electronic copy of each submittal or provide review comment in an electronic comment sheet attached to the Shop Drawing Transmittal sheet included in Exhibit A.
  - c. Engineer will return the submittals with the review comments via e-mail.
9. If “B” action, incorporate response addressing the “Furnish as Noted” items and then provide one (1) electronic copy via e-mail or on compact disc (CD-ROM) of each submittal.
- C. Informational Submittals:
- 1. Prepare in the format and detail specified in Specification requiring the informational submittal.
- D. Paper copy submittals:
- 1. Provide 8-1/2 x 11 IN, 8-1/2 x 14 IN, and 11 x 17 IN size sheets on heavy first quality paper with standard three-hole punching and bound in appropriately sized three-ring (or post) binders with clear overlays front, spine and back.
  - 2. Reduce Drawings or diagrams bound in manuals to an 8-1/2 x 11 IN or 11 x 17 IN size.
    - a. Where reduction is not practical to ensure readability, fold larger Drawings separately and place in vinyl envelopes which are bound into the binder.
    - b. Identify vinyl envelopes with Drawing numbers.
  - 3. Provide a Cover Page for each binders with the following information:
    - a. Seller’s Name.
    - b. Date.
    - c. Buyer’s Name.
    - d. Project Name.
    - e. Specification Section.
    - f. Project Equipment Tag Numbers, if applicable.
    - g. Model Numbers, if applicable.
    - h. Engineer.
  - 4. Provide a Table of Contents or Index for each binder.
    - a. Use plastic-coated dividers to tab each section per the Table of Contents/Index for easy reference.
- E. Electronic copy submittals:
- 1. Electronic copies are to be produced in Adobe Acrobat’s Portable Document Format (PDF) Version 5.0 or higher.
  - 2. Do not password protect and/or lock the PDF document.
  - 3. Create one (1) PDF document (PDF file) for each submittal.
  - 4. Drawings shall be provided in AutoCAD 2020.dwg and PDF formats. The equipment shall also be provided in a 3D model.



5. Rotate pages that must be viewed in landscape to the appropriate position for easy reading.
6. Images only shall be scanned at a resolution of 300 dpi or greater.
  - a. Perform Optical Character Recognition (OCR) capture on all images.
  - b. Word searches of the PDF document must operate successfully to demonstrate OCR compliance.
7. Create bookmarks in the navigation frame, for each entry in the Table of Contents/Index.
8. File naming conventions:
  - a. File names shall use a "ten dot three" convention (XX XX XX-YY-Z.PDF) where XX XX XX is the Specification Section number, YY is the Shop Drawing Root number and Z is an ID number used to designate the associated volume.
    - 1) Example 1:
      - a) Two (2) pumps submitted as separate Shop Drawings under the same Specification Section:
        - (1) Pump 1 = 43 23 50-01-1.pdf.
        - (2) Pump 2 = 43 23 50-02-1.pdf.
    - 2) Example 2:
      - a) Control system submitted as one (1) Shop Drawing but separated into two (2) O&M volumes:
        - (1) Volume 1 = 40 90 00-01-1.pdf.
        - (2) Volume 2 = 40 90 00-01-2.pdf.
9. Label CD-ROM discs and jewel cases with same information required for Cover Pages.
  - a. Include labeled CD(s) in labeled jewel case(s).

## **1.5 ENGINEER'S REVIEW ACTION**

- A. Shop Drawings and Samples:
  1. Items within transmittals will be reviewed for overall design intent and will receive one (1) of the following actions:
    - a. A - FURNISH AS SUBMITTED.
    - b. B - FURNISH AS NOTED (BY ENGINEER).
    - c. C - REVISE AND RESUBMIT.
    - d. D - REJECTED.
    - e. E - ENGINEER'S REVIEW NOT REQUIRED.
  2. Submittals received will be initially reviewed to ascertain inclusion of Seller's approval stamp.
    - a. Drawings not stamped by the Seller or stamped with a stamp containing language other than that specified in Paragraph 1.3A.4.a., will not be reviewed for technical content and will be returned without any action.
  3. Submittals returned with Action "A" or "B" are considered ready for fabrication and installation.
    - a. If for any reason a submittal that has an "A" or "B" Action is resubmitted, it must be accompanied by a letter defining the changes that have been made and the reason for the resubmittal.
    - b. Destroy or conspicuously mark "SUPERSEDED" all documents having previously received "A" or "B" Action that are superseded by a resubmittal.
  4. Submittals with Action "A" or "B" combined with Action "C" (Revise and Resubmit) or "D" (Rejected) will be individually analyzed giving consideration as follows:
    - a. The portion of the submittal given "C" or "D" will not be distributed.
      - 1) Correct and resubmit items so marked.
    - b. Items marked "A" or "B" will be fully distributed.
    - c. If a portion of the items or system proposed are incomplete or require revision, the entire submittal may be given "C" or "D" Action.
      - 1) This is at the sole discretion of the Engineer. In this case, some Drawings may contain relatively few or no comments or the statement, "Resubmit to maintain a complete package."

- 2) Distribution to the Buyer and field will not be made (unless previously agreed to otherwise).
  5. Failure to include any specific information specified under the submittal paragraphs of the Specifications will result in the submittal being returned to the Seller with "C" or "D" Action.
  6. Calculations required in individual Specification Sections will be received for information purposes only, as evidence calculations have been performed by individuals meeting specified qualifications and will be returned stamped "E. Engineer's Review Not Required" to acknowledge receipt.
  7. Transmittals of submittals which the Engineer considers as "Not Required" submittal information, which is supplemental to but not essential to prior submitted information, or items of information in a transmittal which have been reviewed and received "A" or "B" Action in a prior submittal, will be returned with Action "E. Engineer's Review Not Required."
- B. Engineer will review two versions, initial submittal and one resubmittal, of each Shop Drawing, Installation Manual, and Operations and Maintenance Manual at no cost to the Seller.
1. Should additional reviews beyond the root and one resubmittal be required due to no fault of the Buyer or Engineer, Engineer will tack the review hours and expenses associated with these extra reviews.
  2. Buyer will issue a deductive change order to the Seller for the extra review expenses of the Engineer and/or Buyer.

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

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

**END OF SECTION**



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**SECTION 01 33 04**  
**OPERATION AND MAINTENANCE MANUALS**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Administration of the submittal process for Operation and Maintenance Manuals.
  - 2. Content requirements for Operation and Maintenance Manuals.
- B. Related Specification Sections include but are not necessarily limited to:
  - 1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
  - 2. Division 01 - General Requirements.
  - 3. General submittal requirements are specified in Specification Section 01 33 00 - Submittals.
  - 4. Sections in Division 02 through Division 46 identifying required Operation and Maintenance Manual submittals.

**1.2 DEFINITIONS**

- A. Equipment Operation and Maintenance Manuals:
  - 1. Contain the technical information required for proper installation, operation and maintenance of process, electrical and mechanical equipment and systems.
- B. Building Materials and Finishes Operation and Maintenance Manuals:
  - 1. Contain the information required for proper installation and maintenance of building materials and finishes.

**1.3 SUBMITTALS**

- A. List of all the Operation and Maintenance Manuals required by the Contract as identified in Division 02 through Division 46.
- B. Operation and Maintenance Manuals:
  - 1. Draft and final electronic copies.
  - 2. Final paper copies: One (1).

**1.4 SUBMITTAL SCHEDULE**

- A. List of Required Operation and Maintenance Manuals:
  - 1. Submit list with Specification Section number and title within 21 days after Notice to Proceed.
- B. Draft Operation and Maintenance Manuals:
  - 1. Submit approvable draft manuals in electronic format (PDF) within 90 days after Notice to Proceed.
    - a. Include placeholders or fly sheet pages where information is not final or is missing from the draft manual.
- C. Final Operation and Maintenance Manuals:
  - 1. Final approval of Operation and Maintenance Manuals in electronic format (PDF) must be obtained 45 days prior to equipment start-up.
  - 2. Provide paper copies and CD-ROMs of approved final Operation and Maintenance Manuals in electronic format (PDF), a minimum of 30 days prior to equipment start-up.
  - 3. Issue addenda to Final Approved Operation and Maintenance Manual to include:
    - a. Equipment data that requires collection after start-up, for example but not limited to electrical switchgear, automatic transfer switch, and circuit breaker settings.
    - b. Equipment field testing data.
    - c. Equipment start-up reports.
    - d. Revisions made to the drawings that are included in the manual during the field testing.

## 1.5 PREPARATION OF SUBMITTALS

### A. General:

1. All pages of the Operation and Maintenance Manual submittal shall be legible.
  - a. Submittals which, in the Engineer's sole opinion, are illegible will be rejected without review.
2. Identify each equipment item in a manner consistent with names and identification numbers used in the Contract Documents, not the manufacturer's catalog numbers.
3. Neatly type any data not furnished in printed form.
4. Operation and Maintenance Manuals are provided for Owner's use, to be reproduced and distributed as training and reference materials within Owner's organization.
  - a. This requirement is:
    - 1) Applicable to both paper copy and electronic files.
    - 2) Applicable to materials containing copyright notice as well as those with no copyright notice.
5. Notify supplier and/or manufacturer of the intended use of Operations and Maintenance Manuals provided under the Contract.

### B. Operation and Maintenance Manual Format and Delivery:

1. Draft electronic submittals:
  - a. Provide manual in Adobe Acrobat Portable Document Format (PDF), latest version.
  - b. Create one (1) PDF file for each equipment Operation and Maintenance Manual.
  - c. Do not password protect or lock the PDF document.
  - d. Drawings or other graphics must be converted to PDF file format from the original drawing file format and made part of the PDF document.
  - e. Scanning of drawings is to be used only where actual file conversion is not possible and drawings must be scanned at a resolution of 300 dpi or greater.
  - f. Rotate sheets that are normally viewed in landscape mode so that when the PDF file is opened the sheet is in the appropriate position for viewing.
  - g. Create bookmarks in the bookmarks panel for the Operation and Maintenance Manual cover, the Table of Contents and each major section of the Table of Contents.
  - h. Using Adobe Acrobat Standard or Adobe Acrobat Professional, set the PDF document properties, initial view as follows:
    - 1) Select File → Properties → Initial View.
    - 2) Select the Navigation tab: Bookmarks Panel and Page.
    - 3) Select the Page layout: Single Page.
    - 4) Select the Magnification: Fit Page.
    - 5) Select Open to page: 1.
    - 6) Set the file to open to the cover page of the manual with bookmarks to the left, and the first bookmark linked to the cover page.
  - i. Set the PDF file "Fast Web View" option to open the first several pages of the document while the rest of the document continues to load.
    - 1) To do this:
      - a) Select Edit → Preferences → Documents → Save Settings.
      - b) Check the Save As optimizes for Fast Web View box.
  - j. PDF file naming convention:
    - 1) Use the Specification Section number, the manufacturer's name and the equipment description, separated by underscores.
    - 2) Example: 46 51 21\_Sanitaire\_Coarse\_Bubble\_Diffusers.pdf.
    - 3) Do not put spaces in the file name.
2. Final electronic submittals:
  - a. Submit two (2) copies in PDF file format on two (2) CD-ROM discs (one (1) copy per CD-ROM), each secured in a jewel case.
  - b. CD-ROM Labeling:
    - 1) Provide the following printed labeling on all CD-ROM discs:
      - a) Project name.

- b) Specification Section.
      - c) Equipment names and summary of tag(s) covered.
      - d) Manufacturer name.
      - e) Date (month, year).
    - c. CD-ROM Jewel Case Holder:
      - 1) Insert jewel cases containing labeled CD-ROM discs in three-ring binder holder (C-Line Products, www.c-lineproducts.com stock number CLI-61968 or equivalent) at the front of each final paper copy.
  - 3. Final paper copy submittals:
    - a. Quantity: Provide one (1) copies.
    - b. Paper: 8.5 x 11 IN or 11 x 17 IN bright white, 20 pound paper with standard three-hole punching.
    - c. 3-Ring Binder:
      - 1) Provide D-ring binder with clear vinyl sleeves (i.e. view binder) on front and spine.
      - 2) Insert binder title sheet with the following information under the front and spine sleeves:
        - a) Project name.
        - b) Specification Section.
        - c) Equipment names and summary of tag(s) covered.
        - d) Manufacturer name.
        - e) Date (month, year).
      - 3) Provide plastic sheet lifters prior to first page and following last page.
    - d. Drawings:
      - 1) Provide all drawings at 11 x 17 IN size, triple folded and three-hole punched for insertion into manual.
      - 2) Where reduction is not practical to ensure readability, fold larger drawings separately and place in three-hole punched vinyl envelopes inserted into the binder.
      - 3) Identify vinyl envelopes with drawing numbers.
    - e. Use plastic coated dividers to tab each section of each manual in accordance with the Table of Contents.
- C. Equipment Operation and Maintenance Manual Content:
- 1. Provide a cover page as the first page of each manual with the following information:
    - a. Manufacturer(s) Name and Contact Information.
    - b. Vendor's Name and Contact Information.
    - c. Date (month, year).
    - d. Project Owner and Project Name.
    - e. Specification Section.
    - f. Project Equipment Tag Numbers.
    - g. Model Numbers.
    - h. Engineer's Name.
    - i. Seller's Name.
  - 2. Provide a Table of Contents for each manual.
  - 3. Provide Equipment Record sheets as follows:
    - a. Printed copies of the Equipment Record (Exhibits B1, B2 and B3), as the first tab following the Table of Contents.
    - b. Exhibits B1-B3 are available as Fillable PDF Form documents from the Engineer.
    - c. Each section of the Equipment Record must be completed in detail; simply referencing the related equipment Operation and Maintenance Manual sections for nameplate, maintenance, spare parts or lubricant information is not acceptable.
    - d. For equipment involving separate components (for example, a motor and gearbox), a fully completed Equipment Record is required for each component.
    - e. Submittals that do not include the Equipment Record(s) will be rejected without further content review.
  - 4. Provide a printed copy of the Manufacturer's Field Services report as required by Specification Section 01 75 00 following the Equipment Record sheets.

5. Provide the following detailed information, as applicable:
    - a. Use equipment tag numbers from the Contract Documents to identify equipment and system components.
    - b. Equipment function, normal and limiting operating characteristics.
    - c. Instructions for assembly, disassembly, installation, alignment, adjustment, and inspection.
    - d. Operating instructions for start-up, normal operation, control, shutdown, and emergency conditions.
    - e. Lubrication and maintenance instructions.
    - f. Troubleshooting guide.
    - g. Mark each sheet to clearly identify specific products and component parts and data applicable to the installation for the Project; delete or cross out information that does not specifically apply to the Project.
    - h. Parts lists:
      - 1) A parts list and identification number of each component part of the equipment.
      - 2) Exploded view or plan and section views of the equipment with a detailed parts callout matching the parts list.
      - 3) A list of recommended spare parts.
      - 4) List of spare parts provided as specified in the associated Specification Section.
      - 5) A list of any special storage precautions which may be required for all spare parts.
    - i. General arrangement, cross-section, and assembly drawings.
    - j. Electrical diagrams, including elementary diagrams, wiring diagrams, connection diagrams, and interconnection diagrams.
    - k. Test data and performance curves.
    - l. As-constructed fabrication or layout drawings and wiring diagrams.
    - m. Copy of the equipment manufacturer's warranty meeting the requirements of the Contract.
    - n. Copy of any service contracts provided for the specific piece of equipment as part of the Contract.
  6. Additional information as required in the associated equipment or system Specification Section.
- D. Building Materials and Finishes Operation and Maintenance Manual Content:
1. Building products, applied materials and finishes:
    - a. Include product data, with catalog number, size, composition and color and texture designations.
    - b. Provide information for ordering custom manufactured products.
  2. Necessary precautions:
    - a. Include product MSDS for each approved product.
    - b. Include any precautionary application and storage guidelines.
  3. Instructions for care and maintenance:
    - a. Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods and recommended schedule for cleaning and maintenance.
  4. Moisture protection and weather exposed products:
    - a. Include product data listing, applicable reference standards, chemical composition, and details of installation.
    - b. Provide recommendations for inspections, maintenance and repair.
  5. Additional requirements as specified in individual product specifications.



## 1.6 TRANSMITTAL OF SUBMITTALS

- A. Operation and Maintenance Manuals.
1. Transmit paper copy submittals to:  
  
HDR Engineering, Inc.  
412 East Parkcenter Boulevard, Suite 100  
Boise, ID 83706  
Attn: Brad Bjerke, PE
  2. Utilize one (1) copy of attached Exhibit "A" to transmit all Operation and Maintenance Manuals.
    - a. An electronic version (Microsoft Word .doc format) of Exhibit "A" will be given to Seller upon request.
  3. Transmittal numbering:
    - a. Number each submittal with the Specification Section number followed by a series number beginning with "-01" and increasing sequentially with each additional transmittal, followed by "-OM" (for example: 11061-01-OM).
  4. Submit draft and final Operation and Maintenance Manual in electronic format (PDF) to Engineer, until manual is approved.
  5. All submittals must be from Seller and bear his approval stamp.
    - a. Operation and Maintenance Manual submittal stamp may be Seller's standard approval stamp.
- B. Expedited Return Delivery:
1. Include prepaid express envelope or air bill in submittal transmittal package for any submittals Seller expects or requires express return mail.
  2. Inclusion of prepaid express envelope or air bill does not obligate Engineer to conduct expedited review of submittal.

## 1.7 ENGINEER'S REVIEW ACTION

- A. Draft Electronic (PDF) Submittals:
1. Engineer will review and indicate one of the following review actions:
    - a. A – FURNISH AS SUBMITTED
    - b. B - FURNISH AS NOTED
    - c. C - REVISE AND RESUBMIT
    - d. D - REJECTED
  2. Submittals marked as Acceptable or Furnish As Noted will be retained; however, the transmittal form will be returned with a request for the final paper and electronic documents to be submitted.
  3. Copies of submittals marked as Revise and Resubmit or Rejected will be returned with the transmittal form marked to indicate deficient areas.
  4. Resubmit until approved.
- B. Final Paper Copy Submittals:
1. Engineer will review and indicate one (1) of the following review actions:
    - a. A - ACCEPTABLE
    - b. D - REJECTED
  2. Submittals marked as Acceptable will be retained with the transmittal form returned as noted.
  3. Submittals marked as Rejected will be returned with the transmittal form marked to indicate deficient areas.
  4. Resubmit until approved.

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

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

**END OF SECTION**



**EXHIBIT A Operation and Maintenance Manual  
Transmittal \_\_\_\_\_ - \_\_\_\_\_ - OM  
(Spec Section) (Series) \_\_\_\_\_ .**

Project Name: \_\_\_\_\_ Date Received: \_\_\_\_\_

Project Owner: \_\_\_\_\_ Checked By: \_\_\_\_\_

Contractor: \_\_\_\_\_ Owner: \_\_\_\_\_ Log Page: \_\_\_\_\_

Address: \_\_\_\_\_ Address: \_\_\_\_\_ HDR No.: \_\_\_\_\_

Attn: \_\_\_\_\_ Attn: \_\_\_\_\_  
1st. Sub. \_\_\_\_\_ ReSub. \_\_\_\_\_

Date Transmitted: \_\_\_\_\_ Previous Transmittal Date: \_\_\_\_\_

No. Copies	Description of Item	Manufacturer	Dwg. or Data No.	Action Taken*

Remarks: \_\_\_\_\_  
\_\_\_\_\_

To: \_\_\_\_\_ From: *HDR Engineering, Inc.*

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

\* The Action designated above is in accordance with the following legend:

- A - Acceptable
- B - Furnish as Noted
- C - Revise and Resubmit
- D - Rejected

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

Distribution:		Contractor		File		Field		Owner		Other	
By _____						Date _____					

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Equipment Data and Spare Parts Summary

Project Name	Specification Section:
Equipment Name	Year Installed:

Project Equipment Tag No(s).

Equipment Manufacturer

Address

Fax Web Site E-mail

Local Vendor/Service Center

Address

Fax Web Site E-mail

MECHANICAL NAMEPLATE DATA

Equip. Serial No.

Make Model No.

ID No. Frame No. HP RPM Cap.

Size TDH Imp. Sz. CFM PSI

ELECTRICAL NAMEPLATE DATA

Equip. Serial No.

Make Model No.

ID No. Frame No. HP V. Amp. HZ PH RPM SF

Duty Code Ins. Cl. Type NEMA C Amb. Temp. Rise Rating

SPARE PARTS PROVIDED PER CONTRACT

Part No.	Part Name	Quantity

RECOMMENDED SPARE PARTS

Part No.	Part Name	Quantity

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Lubrication Summary

Equipment Description	Project Equip. Tag No(s).
-----------------------	---------------------------

Lubricant Point						
Lubricant Type	Manufacturer		Product	AGMA #	SAE #	ISO
	1					
	2					
	3					
	4					
	5					

Lubricant Point						
Lubricant Type	Manufacturer		Product	AGMA #	SAE #	ISO
	1					
	2					
	3					
	4					
	5					

Lubricant Point						
Lubricant Type	Manufacturer		Product	AGMA #	SAE #	ISO
	1					
	2					
	3					
	4					
	5					

Lubricant Point						
Lubricant Type	Manufacturer		Product	AGMA #	SAE #	ISO
	1					
	2					
	3					
	4					
	5					

Lubricant Point						
Lubricant Type	Manufacturer		Product	AGMA #	SAE #	ISO
	1					
	2					
	3					
	4					
	5					

Lubricant Point						
Lubricant Type	Manufacturer		Product	AGMA #	SAE #	ISO
	1					
	2					
	3					
	4					
	5					

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**SECTION 01 65 50**  
**PRODUCT DELIVERY, STORAGE, AND HANDLING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. General work included in this section:
  - 1. Scheduling of product delivery.
  - 2. Packaging of products for delivery.
  - 3. Protection of products against damage from:
    - a. Handling.
    - b. Exposure to elements or harsh environments.
- B. Related sections include but are not necessarily limited to:
  - 1. Division 00 – Bidding Requirements, Contract Forms, and Conditions of the Contract.
  - 2. Division 01 – General Requirements.
  - 3. Division 26 – Electrical

**1.2 DELIVERY**

- A. Scheduling:
  - 1. Arrange deliveries of products in accordance with the schedule in the Agreement.
  - 2. Immediately on delivery, Seller or Seller's duly authorized representative, and Buyer or Buyer's duly authorized representative shall inspect shipments to assure compliance with the Contract Documents and accepted submittals, and that products are properly protected and undamaged.
  - 3. Seller or his representative and Buyer or his representative shall agree in writing to conditions of delivery.
  - 4. Equipment shall be packaged for outdoor all-weather storage at the Buyer's facility, except electrical control panels which are not rated NEMA 3, 4, 7, or 9.
- B. Location:

Ketchum / SVWSD Water Reclamation Facility  
110 River Ranch Road  
Ketchum, Idaho 83340

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

**PART 3 - EXECUTION**

**3.1 PROTECTION, STORAGE, AND HANDLING**

- A. Preparation for shipment:
  - 1. Package materials and equipment to facilitate handling and protect against damage during transit, handling or storage.
  - 2. Box, crate, or otherwise completely enclose and protect all equipment.
  - 3. Protect equipment from exposure to the elements and keep thoroughly dry and dust free at all times.
  - 4. Protect painted surfaces against impact, abrasion, discoloration, or other damage.
  - 5. Grease or oil all bearings and similar items.
  - 6. Tag or mark each item per the delivery schedule or shop drawings.
  - 7. Include complete packing lists and bills of materials with each shipment.

8. Provide permanent, labeled packing of spare parts.
- B. Delivery and unloading:
1. Seller shall deliver all parts and equipment to the Ketchum / SVWSD Water Reclamation Facility.
  2. Seller or his representative shall supervise unloading of equipment and Buyer or Buyer's duly authorized representative will unload equipment.
  3. Seller shall give Buyer a minimum of 48 hours notice prior to shipping the goods.
  4. Seller shall give Buyer a minimum of 24 hours written notice as to the time and date of delivery.
  5. Seller shall inform Buyer of the type of equipment required to unload the goods 30 days prior to shipping.
  6. Goods must be delivered between 8:00 am and 3:00 pm, Mondays through Friday:
    - a. No deliveries on weekends accepted.
    - b. No deliveries on holidays accepted.
    - c. Buyer has no obligation to accept products before or after specified times of day.
  7. Buyer or Buyer's duly authorized representative shall unload equipment within 24 hours of time of delivery:
    - a. Seller shall pay for all delivery truck and driver's time except that due to Buyer's failing to unload equipment within 24 hours of time of delivery.
    - b. Buyer shall pay for additional delivery truck and driver's time resulting from Buyer's failure to unload equipment within 24 hours of time of delivery.
  8. Seller or his representative shall insure equipment is properly stored after off-loading.
  9. If equipment is not delivered within 2 hours of the specified time and date in Seller's written notice, Seller shall reimburse Buyer for standby charges for unloading equipment and personnel.
- C. Storage:
1. Buyer shall store equipment after delivery.
  2. Buyer shall store and protect equipment in accordance with the following requirements:
    - a. Store immediately upon delivery.
    - b. Store products in accordance with Seller's instruction.
    - c. Store electrical equipment in weathertight structures.
    - d. Protect electrical equipment, controls and insulation against moisture, water, and dust damage.
    - e. Store fabricated products above the ground on blocking or skids.
    - f. Arrange storage in a manner to provide easy access for inspecting. Make periodic inspections of stored products to assure that products are maintained under specific conditions, and free from damage or deterioration.

### **3.2 FIELD QUALITY CONTROL**

- A. Inspect all Deliveries:
1. Seller or his representative and Buyer or Buyer's duly authorized representative shall inspect all goods upon delivery.
  2. All products that are damaged, used, or in any other way unsatisfactory for use on the project shall be rejected.

**END OF SECTION**

**SECTION 01 75 00**  
**SYSTEM START-UP**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Procedures and actions, required of the Seller, which are necessary to achieve and demonstrate Substantial Completion.
  - 2. Requirements for Substantial Completion Submittals.
- B. Related Sections include but are not necessarily limited to:
  - 1. Division 00 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
  - 2. Division 01 - General Requirements.
  - 3. Section 26 – Electrical

**1.2 DEFINITIONS**

- A. Pre-Demonstration Period: The period of time, of unspecified duration after initial construction and installation activities during which Seller, with assistance from Construction Contractor, performs in the following sequence:
  - 1. Supervise commissioning of VFDs furnished by Seller
  - 2. Assist Construction Contractor with commissioning of the work that directly interfaces with the VFDs furnished by Seller.
  - 3. Assist Buyer and Contractor initiates process flow through the headwork equipment and systems and starts up and operates the headwork equipment and systems, without exceeding specified downtime limitations, to prove the functional integrity of the mechanical and electrical equipment and components and the control interfaces of the respective equipment and components comprising the VFDs as evidence of Substantial Completion.
  - 4. Train Buyer’s personnel on the operation and maintenance of the VFDs furnished by Seller.
- B. Performance Demonstration Period: A period of time, of specified duration, following the Pre-Demonstration Period, during which the Seller, with assistance from Construction Contractor, performs:
  - 1. Seller performs field demonstration testing to demonstrate the system meets the design criteria as defined in the Contract Documents and all regulatory requirements have been achieved.
  - 2. Coordinate with other associated equipment Seller(s) to demonstrate the functional integrity of all the systems.
  - 3. Documentation of demonstration testing.
- C. Substantial Completion: See the General Conditions.

**1.3 SUBMITTALS**

- A. See Specification Section 01 33 00 for requirements for the mechanics and administration of the submittal process.
- B. Submit in the chronological order listed below prior to the completion of the Pre-Demonstration Period.
  - 1. Within five (5) days following the completion of any required on-site service, including but not limited to reports field logs, electronic data files etc., the Seller shall submit to the Buyer five (5) copies of all field notes and test data collected during the service visit.
    - a. The data and notes collected shall include but not be limited to:
      - 1) Production logs of the VFDs.
      - 2) Component instrument calibration certificates.

- 3) Motor amperage readings to verify electrical is properly sized.
  - 4) Tolerance and alignment measurements, where applicable.
  - 5) And all other information collected that demonstrate that the equipment has been properly installed.
2. Master operation and maintenance training schedule:
    - a. Submit 30 days (minimum) prior to first training session for Buyer's personnel.
    - b. Schedule to include:
      - 1) Target date and time for Buyer witnessing of each system initial start-up.
      - 2) Target date and time for Operation and Maintenance training for each system, both field and classroom.
      - 3) Target date for initiation of Demonstration Period.
    - c. Submit for review and approval by Buyer.
    - d. Include holidays observed by Buyer.
    - e. Attend a schedule planning and coordination meeting 90 calendar days prior to first anticipated training session.
      - 1) Provide a status report and schedule-to-complete for requirements prerequisite to manufacturer's training.
      - 2) Identify initial target dates for individual manufacturer's training sessions.
    - f. Buyer reserves the right to insist on a minimum seven (7) days' notice of rescheduled training session not conducted on master schedule target date for any reason.
    - g. Schedule to be resubmitted until approved.
  3. Completion Submittal:
    - a. File Seller's Notice of Completion & Request for Inspection.
    - b. Approved Operation and Maintenance manuals (paper and electronic) received by Engineer minimum 1 week prior to scheduled training.
    - c. Written request for Buyer to witness each system start-up.
      - 1) Request to be received by Buyer minimum one (1) week before scheduled training of Buyer's personnel on that system.
    - d. Equipment installation certifications.
    - e. Letter verifying completion of all Commissioning start-up activities including receipt of all specified items from manufacturers or suppliers as final item prior to initiation of Performance Demonstration Period.
    - f. Written report detailing the results of the field demonstration testing, including a copy of all field notes and test data.
      - 1) Buyer and Engineer will review the written report.
    - g. The start of the equipment warranty will commence on the date of the successful field demonstration testing is completed.

#### **1.4 COST OF START-UP**

- A. Seller to pay all costs associated with:
  1. Seller's labor, travel and other labor-related expenses.
    - a. Seller shall also pay for the services of any manufacturer's representatives required for equipment and systems furnished by Seller.
  2. The costs for work specified elsewhere as the Seller's responsibility.
- B. Buyer and Buyer's Installation Contractor will pay costs associated with:
  1. Construction trades labor for commissioning and testing.
  2. Utilities from the time field demonstration testing begins until completion of the Performance Demonstration Period.
  3. Supervision of commissioning of the overall project and of the equipment and systems not furnished by Seller.

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

## **PART 3 - EXECUTION**

### **3.1 GENERAL**

- A. The VFDs equipment and systems start-up is divided into two periods:
  - 1. Pre-Demonstration Period including:
    - a. Completion of construction work to bring Project to a state of readiness for performance demonstration.
    - b. Installation certification.
    - c. Start-up of Equipment.
    - d. Training of Personnel.
    - e. Completion of the filing of all required submittals.
  - 2. Demonstration Period including:
    - a. Demonstration of VFDs equipment and systems meets the design criteria as defined in the contract documents and all regulatory requirements
    - b. Demonstration of functional integrity of the VFDs equipment for continuous operation for stated period.
    - c. Filing of Seller's Notice of Completion.

### **3.2 PRE-DEMONSTRATION PERIOD**

- A. Completion of Construction Work:
  - 1. Complete the work to bring the VFDs equipment and systems to a state of readiness for performance Demonstration.
  - 2. The Seller shall instruct the Construction Contractor in the proper installation procedures for the VFDs equipment.
    - a. The training shall be conducted on-site by an authorized, experienced, and competent representative of the Seller, and shall include both verbal and written instructions, as specified herein.
  - 3. The Seller shall place the Goods into operation and perform tests to determine if equipment is operating properly.
    - a. The purpose of these tests is to verify that both the System and each Unit are:
      - 1) Properly installed.
      - 2) Operational.
      - 3) Capable of completing an operating cycles free of problems.
      - 4) Free from overheating, overloading, vibration, or other operating problems.
  - 4. The Construction Contractor will be responsible for making any adjustments and/or modifications to the installation process that may become necessary to ensure that all equipment is properly installed in accordance with the Seller's written instructions.
  - 5. After the installation is complete, the Seller, Construction Contractor, and Engineer shall jointly inspect the system and list any equipment that has not been properly installed, detailing the problems and noting the party who shall be responsible for each correction.
- B. Equipment Start-up:
  - 1. Requirements for individual items of equipment are included in Division 02 through Division 16 Specification Sections.
  - 2. Prepare the equipment so it will operate properly and safely and be ready to demonstrate functional integrity during the Demonstration Period.
  - 3. Procedures include but are not necessarily limited to the following:
    - a. Test or check and correct deficiencies of:
      - 1) Power, control, and monitoring circuits for continuity prior to connection to power source.
      - 2) Voltage of all circuits.
      - 3) Phase sequence.

- 4) Cleanliness of connecting piping systems.
- 5) Alignment of connected machinery.
- 6) Vacuum and pressure of all closed systems.
- 7) Lubrication.
- 8) Valve orientation and position status for manual operating mode.
- 9) Instrumentation and control signal generation, transmission, reception, and response.
- 10) Tagging and identification systems.
- 11) All equipment: Proper connections, alignment, calibration and adjustment.
- b. Calibrate all components, instruments, and safety equipment.
- c. Manually rotate or move moving parts to assure freedom of movement.
- d. "Bump" start electric motors to verify proper rotation.
- e. Perform other tests, checks, and activities required to make the equipment ready for Demonstration Period.
- f. Documentation:
  - 1) Prepare a log showing each equipment item subject to this paragraph and listing what is to be accomplished during Equipment Start-up.
  - 2) Provide a place for the Seller to record date and person accomplishing required work.
  - 3) Submit completed document before requesting inspection for Substantial Completion certification.
4. Obtain certifications, without restrictions or qualifications, and deliver to Engineer:
  - a. Manufacturer's equipment installation check letters (sometimes referred to as Manufacturer's Field Services report).
  - b. Instrumentation Supplier's Instrumentation Installation Certificate.
5. Perform Equipment Start-up to extent possible without introducing process flow including but not limited to:
  - a. Submittal of check list with verification of equipment functions with manual activation of PLC inputs and outputs.
  - b. Submittal of check list of manual activation of equipment functions from SCADA/HMI Control Panel(s).
  - c. Submittal of check list demonstrating manual SCADA/HMI system activation of equipment functions from SCADA/HMI including demonstration of field faults and instrument readings to SCADA.
  - d. Calibration of all primary elements and transmitters.
  - e. Check list confirming PLC input of all primary elements and transmitters.
    - 1) Transmitter process variable water elevations shall be simulated by using a small bucket of water to simulate different water level elevations.
  - f. Check list confirming equipment and control system restart upon opening of main service entrance breaker.
  - g. Check list describing the system status when power is lost to individual components demonstrated by opening disconnect, circuit breaker and fuses:
    - 1) Main control panel.
    - 2) PLC.
    - 3) SCADA Computer, if included in Contract.
    - 4) Each individual instrument.
    - 5) Each VFD, if included in Contract.
    - 6) Each reduced voltage starter, if included in Contract.
    - 7) UPS system, if included in Contract.
    - 8) Confirm loss of signal response and out of range response for each analog instrument.
    - 9) Checklist will be developed after P&ID Drawings and Control Loop Descriptions are provided by Seller.
  - h. Document and verify point to point as-built drawings.



6. As part of the commissioning, the Seller shall start up and operate all support systems provided by or required by the Seller for operation of the system, including but not limited to water supply system, instrumentation, air compression equipment, and electrical controls.
    - a. This testing shall demonstrate that there are no water or air leaks in the System, that the piping has been installed and connected properly, the electrical system is operating correctly, and that the instrumentation has been properly calibrated.
  7. The Seller shall furnish materials (excluding water and power), instruments, and incidental and expendable equipment required for commissioning/placing the equipment into operation.
    - a. The Seller shall retain the services of any manufacturer's representatives as required in the Contract Documents to assist with the commissioning/placing into operation of the Goods.
  8. When requested by the Seller, the Engineer shall review the operation of the equipment to verify that the commissioning is complete.
    - a. The Engineer shall perform random tests to determine if the equipment is operating properly and witness various operational sequences.
    - b. The Engineer may initiate alarm conditions to determine if the control system is functioning properly.
    - c. The Engineer's review shall include a review of the HMI interface and PLC SCADA system commissioning requirements to determine conformance with Contract Documents.
    - d. The Engineer's review shall identify any equipment that has not been properly installed, or operating, detailing the outstanding installation issues on a punch list and noting the party who shall be responsible for each correction and identify the items that require that correction.
  9. Upon satisfactory completion of the review, the Engineer shall submit to the Seller a written Notice of Completed Commissioning.
    - a. Once the :Notice of Completed Commissioning is issued, Training of Operation and Maintenance Personnel may commence.
- C. Personnel Training:
1. See individual equipment specification sections.
  2. Conduct all personnel training after completion of Equipment Start-up for the equipment for which training is being conducted.
    - a. Personnel training on individual equipment or systems will not be considered completed unless:
      - 1) All pretraining deliverables are received and approved before commencement of training on the individual equipment or system.
      - 2) No system malfunctions occur during training.
      - 3) All provisions of field and classroom training specifications are met.
    - b. Training not in compliance with the above will be performed again in its entirety by the manufacturer at no additional cost to Buyer.
  3. Field and classroom training requirements:
    - a. Hold classroom training on-site.
    - b. Notify each manufacturer specified for on-site training that the Buyer reserves the right to video record any or all training sessions.
      - 1) Organize each training session in a format compatible with video recording.
    - c. Training instructor qualification: Factory trained and familiar with giving both classroom and "hands-on" instructions.
    - d. Training instructors:
      - 1) Be at classes on time.
      - 2) Session beginning and ending times to be coordinated with the Owner and indicated on the master schedule.
      - 3) Normal time lengths for class periods can vary, but brief rest breaks should be scheduled and taken.

- e. Organize training sessions into maintenance verses operation topics and identify on schedule.
  - f. Plan for minimum class attendance of 5 people at each session and provide sufficient classroom materials, samples, and handouts for those in attendance.
  - g. Instructors to have a typed agenda and well-prepared instructional material.
    - 1) The use of visual aids, e.g., films, pictures, and slides is recommended for use during the classroom training programs.
    - 2) Deliver agendas to the Engineer a minimum of seven (7) days prior to the classroom training.
    - 3) Provide equipment required for presentation of films, slides, and other visual aids.
    - 4) Provide copies in electronic format to Buyer for Buyer's subsequent use.
  - h. In the on-site training sessions, cover the information required in the Operation and Maintenance Manuals submitted according to Specification Section 01 33 04 and the following areas as applicable to the VFDs equipment.
    - 1) Operation of equipment.
    - 2) Lubrication of equipment.
    - 3) Maintenance and repair of equipment.
    - 4) Troubleshooting of equipment.
    - 5) Preventive maintenance procedures.
    - 6) Adjustments to equipment.
    - 7) Inventory of spare parts.
    - 8) Optimizing equipment performance.
    - 9) Capabilities.
    - 10) Operational safety.
    - 11) Emergency situation response.
    - 12) Takedown procedures (disassembly and assembly).
  - i. Address above Paragraphs 1), 2), 8), 9), 10), and 11) in the operation sessions. Address above Paragraphs 3), 4), 5), 6), 7), and 12) in the maintenance sessions.
  - j. Maintain a log of classroom training provided including: Instructors, topics, dates, time, and attendance.
- D. Complete the filing of all required submittals:
- 1. Shop Drawings.
  - 2. Operation and Maintenance Manuals (paper copies and electronic copy).
  - 3. Training material (including electronic presentation materials).
- E. Filing of Seller's Notice of Completion of the Equipment Start-up and Request for Inspection:
- 1. File the notice when the following Commissioning items have been completed:
    - a. Construction work (brought to state of readiness for demonstration testing).
      - 1) Coordinate with Construction Contractor.
    - b. Equipment Start-up.
    - c. Personnel Training.
    - d. Submittal of required documents.
  - 2. Upon notification of completion of the Pre-Demonstration testing by the Seller, the Engineer shall review the operation of the equipment to verify that the testing is complete.
    - a. The Engineer shall perform random tests to determine if the equipment is operating properly and witness various operational sequences.
    - b. The Engineer may initiate alarm conditions to determine if the control system is functioning properly.
  - 3. Engineer will inform Seller in writing of the status of the Work reviewed.
    - a. Work determined not meeting state of readiness:
      - 1) Seller: Correct deficiencies noted or submit plan of action for correction.
      - 2) Engineer: Re-inspect work after Seller's notice of correction of deficiencies.
      - 3) Second reinspection costs incurred by Engineer will be billed to Buyer who will deduct them from final payment due Seller.

### 3.3 DEMONSTRATION PERIOD

#### A. General:

1. Demonstrate the functional integrity of the mechanical, electrical, and control interfaces of the respective equipment and components comprising the VFDs as evidence of Completion.
  - a. During this demonstration period Seller shall perform the following tests and simulations and submit verification checklists:
    - 1) Equipment functions with manual activation of PLC outputs.
    - 2) Manual activation of equipment functions from HMI/SCADA system.
    - 3) Manual HMI/SCADA system activation of equipment functions from HMI/SCADA including demonstration of field faults and instrument readings to HMI/SCADA.
2. Buyer and Engineer may test system and confirm status when power is lost to individual components demonstrated by opening disconnect, circuit breaker and fuses:
  - a. Main control panel(s).
  - b. PLC if provided.
  - c. SCADA Computer if provided.
  - d. Each individual instrument.
  - e. Each VFD.
  - f. Each reduced voltage starter if provided.
  - g. UPS system if provided.
  - h. Confirm loss of signal response and out of range response for each analog instrument
  - i. Loss of Utility Power to system.
3. If, during the Demonstration Period, the aggregate amount of time used for repair, alteration, or unscheduled adjustments to any equipment or system that renders the affected equipment or system inoperative exceed 10 percent of the Demonstration Period, the demonstration of functional integrity will be deemed to have failed.
  - a. In the event of failure not caused by Buyer/Engineer's testing of power failure described above, a new Demonstration Period will recommence after correction of the cause of failure.
  - b. The new Demonstration Period shall have the same requirements and duration as the Demonstration Period previously conducted.
4. Conduct the demonstration of functional integrity under full operational conditions.
5. Buyer will provide operational personnel to provide process decisions affecting facility performance.
  - a. Buyer's assistance will be available only for process decisions.
  - b. Contractor will perform all other functions including but not limited to equipment operation and maintenance until successful completion of the Demonstration Period.
6. Buyer reserves the right to simulate operational variables, equipment failures, routine maintenance scenarios, etc., to verify the functional integrity of automatic and manual backup systems and alternate operating modes.
7. Time of beginning and ending any Demonstration Period shall be agreed upon by Seller, Buyer and Engineer in advance of initiating Demonstration Period.
8. Throughout the Demonstration Period, provide knowledgeable personnel to answer Buyer's questions; provide final field instruction on all mechanical, pumping, electrical and control systems; and respond to any system problems or failures which may occur.
9. Seller to provide all of his labor, supervision, utilities, maintenance, equipment, vehicles or any other item necessary for Seller to operate and demonstrate all systems being demonstrated.
10. The length of time to demonstrate compliance with the contract requirement in no case shall be less than 120 consecutive hours.
11. Upon successful completion of the Performance Demonstration period, Engineer will endorse certificate attesting to the successful demonstration, and citing the hour and date on which Buyer has placed the Goods in continuous service as the effective date of Substantial Completion and the beginning of the warranty period on the equipment.

- 1) Issued subject to completion or correction of items cited in the certificate (punch list).
- 2) Issued with responsibilities of Buyer and Seller cited.
- 3) Executed by Engineer.
- 4) Accepted by Buyer.
- 5) Accepted by Seller.

**END OF SECTION**



DIVISION 26

ELECTRICAL



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## SECTION 26 29 23

### OWNER-FURNISHED LOW-VOLTAGE ADJUSTABLE FREQUENCY DRIVES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This section includes configured VFD systems, each installed within its own enclosure, consisting of solid state VFD, HIM, fused disconnect switch, line conditioning, control power transformer, enclosure temperature control, and associated control components.
- B. For the purposes of this contract, the terms “adjustable frequency drive (AFD)” and “variable frequency drive (VFD)” are used interchangeably and refer to the same motor drives.
- C. Install adjustable frequency drives, conditioning, HIM’s and other specified elements as shown on Drawings.

##### 1.2 REFERENCES

- A. The following is a list of standards which may be referenced in this section:
  - 1. National Electrical Manufacturers’ Association (NEMA):
    - a. NEMA ICS 1, General Standards for Industrial Controls and Systems.
    - b. NEMA ICS 2, Standards for Industrial Control Devices, Controllers and Assemblies
    - c. NEMA ICS 3, Industrial Systems
    - d. NEMA ICS 3.1, Safety Standards for Construction and Guide for Selection, Installation and Operation of Variable-speed Drive Systems
    - e. NEMA ICS 4, Terminal Blocks for Industrial Control Equipment and Systems
    - f. NEMA ICS 6, Enclosures for Industrial Controls and Systems.
  - 2. American National Standards Institute (ANSI)
    - a. ANSI C37.90, Relays and Relay Systems Associated with Electric Power Apparatus
    - b. ANSI C37.30A (1984), Definitions and Requirements for High- Voltage Air Switches, Insulators, and Bus Supports, Supplement to C37.30-1971
    - c. ANSI C37.32, Schedules of Preferred Ratings, Manufacturing Specifications and Application Guide for High-Voltage Air Switches, Bus Supports, and Switch Accessories.
  - 3. Institute of Electrical and Electronics Engineers (IEEE)
    - a. IEEE 519, Harmonic Control and Reactive Compensation of Static Power Converters

##### 1.3 SOURCE QUALITY CONTROL

- A. Listed and labeled by Underwriter’s Laboratories, Inc. (UL), ETL, or Canadian Standards Association.
- B. All upgrades to specified requirements per UL 508 or ETL.
- C. Quality Assurance: The Owner reserves the right to observe factory tests on the VFD controller at the Owner’s option and expense.
- D. Compatibility: VFD controller’s performance shall be compatible and tolerant of disturbances produced by other VFD controllers and not interfere with each other.
- E. Programming: Provide VFD controller configuration and MACRO or sub-routine programming to meet specified driven equipment requirements.
- F. Maintainability: VFD controller’s parts shall be interchangeable and modular for all controllers.
- G. Factory Test: Subject VFD to a complete simulated operational test. Drive a calibrated load at various speeds over the specified speed range to determine VFD efficiency.

## 1.4 SUBMITTALS

- A. Action Submittals:
  - 1. Catalog and technical data indicating the equipment complies with the Construction Documents.
  - 2. Installation instructions, outline dimensions and equipment weights including reactors and harmonic filters.
  - 3. External connection diagram showing function and identification of all terminals requiring field connections.
  - 4. O&M manuals per Section 01 78 23, Operations and Maintenance Data.
  - 5. Schematics and wiring diagrams.
  - 6. Plan drawings showing conduit entry locations.
  - 7. Calculations of cooling and ventilation requirements.
  - 8. Certified final factory test procedure and results for each drive.
  - 9. Location and description of service center and spare parts stock.
  - 10. Recommended spare parts list.
  - 11. Factory and field test documentation.
  - 12. Training schedule and materials.
  - 13. Written descriptions explaining ladder diagram operation, system operation, and analog signal processing.
  - 14. Comprehensive interconnection diagrams for VFD and motor.
  - 15. Certification that VFD, motor, and driven load are compatible throughout the specified speed range.
  - 16. Certified statement from the manufacturer accepting responsibility for providing a fully functioning installation as specified herein.

## 1.5 COORDINATION

- A. Obtain and review the appropriate data for the driven motor and load over the required speed range, for a complete system analysis.
- B. Confirm VFD is rated for the applicable variable torque or constant torque applications.
- C. Verify that equipment is mutually compatible and free of resonance over the complete operating range. Coordinate the assignment of any critical frequencies with the motor supplier.
- D. Prepare the certificate required under Submittals paragraph in this Section; the certificate shall specifically state whether the VFD equipment is rated for variable torque or constant torque applications.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS/PRODUCTS

- A. Variable frequency drives shall be Rockwell Automation PowerFlex 753 or Schneider Electric Altivar ATV600 series.

### 2.2 VARIABLE FREQUENCY DRIVES

- A. Operation: Accomplish speed control by adjusting the output frequency according to the desired reference speed. Adjust ac voltage and frequency simultaneously to provide the constant Volts/Hertz necessary to operate the motor at the desired speed. The VFD must use pulse width modulation technology.
- B. Rating:
  - 1. Line Voltage: 480 volts, -5 percent continuous, -10 percent momentary, +10 percent, 3-phase.
  - 2. Line Frequency: 60 Hz,  $\pm 2$  Hz
  - 3. Ambient Temperature: 5°C to 40°C
  - 4. Altitude: Up to 5,800 feet above sea level.



5. Power Factor: Above 0.95 at full speed and rated load.
- C. Performance:
1. Efficiency: Above 95 percent at 100 percent full speed, above 93 percent at 70 percent full speed.
  2. VFD Inrush Current: Limited to less than 100 percent of motor full load
  3. Duty Cycle: 6 starts per hour.
- D. Features:
1. Provisions to accept the following control signals for automatic and manual operation:
    - a. FWD & REV Run signal from a single remote contact closure when specified
    - b. A 4-20 mA dc signal for speed control. The VFD shall provide linear speed control of the motor from zero to full speed as the variable speed input signal varies from its minimum to maximum. Input impedance shall be 250 ohms resistive.
  2. Native Ethernet/IP connectivity.
  3. Provisions for remote speed control potentiometer. Motor speed indicator calibrated in percent of full speed.
  4. A 4-20 mA dc signal for remote speed indication to a local PLC. The VFD shall provide linear speed indication of the motor speed from zero to full speed. Input impedance shall be 250 ohms resistive.
  5. A 4-20 mA dc signal for remote motor current indication to a local PLC. The VFD shall provide linear current indication of the motor from zero to full current. Input impedance shall be 250 ohms resistive.
  6. 24 VDC control circuitry.
  7. Variable time delay for delaying motor drive restart after power failure; timer range shall be 0 to 120 seconds, with initial settings differing by 10 seconds for each drive; provide module which causes multiple attempts to restart.
  8. Provision for automatic emergency shutdown in any mode, activated by the following:
    - a. Motor thermal protection.
    - b. Any additional abnormal conditions as shown on the Drawings. Provide for manual restart.
  9. Auxiliary contacts for remote indication of "Run" and "VFD Fault."
  10. VFD able to withstand harmonic distortion and notching as defined in IEEE-519 for dedicated system (10 percent voltage distortion factor and 36,500-volt microseconds commutation notch area).
  11. VFD operable with motor disconnected, in order to test VFD.
  12. Linearity and repeatability accuracy of 3 phase output of 1 percent of analog input control signal regardless of input power voltage fluctuations between 437 and 505 volts.
  13. Independent acceleration and deceleration controls, adjustable from 2 to 30 Hz per second.
- E. Protection: Protect VFD against the following conditions:
1. Reverse phase sequence and single phasing of input power.
  2. Input power failure.
  3. Input transient voltages, including peak suppression and snubbers, in accordance with ANSI C37.90.
  4. Transmission signal interference.
  5. Output overcurrent.
  6. Input overcurrent.
  7. Motor over temperature.
  8. Cabinet over temperature.
  9. Under voltage: VFD shall automatically shut down if input voltage falls below preset limit with automatic restart upon return to a stable supply.
- F. Enclosure:
1. Installed as stand-alone unit: NEMA Type 12
  2. Installed as element of VFD configured system: Refer to paragraph Configured VFD System.

- G. HIM
  - 1. Provide HIM with the following indications.
    - a. Power On
    - b. Speed indication

## 2.3 CONFIGURED VFD SYSTEM

- A. Provide integrated VFD system with solid state VFD, HIM, fused disconnect switch, line/load conditioning, control power transformer, enclosure temperature control, and associated control components. Each VFD system shall be installed within its own individual enclosure. System shall comply with NEMA ICS 1, 3, 4, 3.1, 4, and 6.
- B. Variable Frequency Drive and HIM: As specified above.
- C. Enclosure:
  - 1. Housing controller modules and components shall be free-standing, wall-mounted, NEMA 12 gasketed and fabricated from steel, 12-gauge minimum.
  - 2. Dead front and dead back construction with all modules, components, load, line, and control terminations fully front accessible.
  - 3. Fan-vented with axial fan controlled via thermostat.
  - 4. Provision for top and bottom entry of wiring and conduits.
  - 5. Gasketed doors mounted on semi-concealed hinges, with lockable door latches.
  - 6. Door interlocking: Interlock mechanically so door cannot be opened with unit energized. Provide defeater mechanism to allow intentional access at any time.
  - 7. Door-mount the following devices:
    - a. HIM.
    - b. Control devices and indication: As shown on Drawings.
    - c. External operating handle for the incoming line fused disconnect switch.
  - 8. Configuration of the enclosure and the components shall be as shown on the drawings.
  - 9. Components: Mount components on circuit cards or modules, which can be adjusted or replaced in the field without the use of special tools.
  - 10. Finish: Paint finish shall be ANSI Gray.
- D. Incoming line fused disconnect switch:
  - 1. External disconnect handle, padlocked in OFF position.
- E. Conditioning:
  - a. Provide 5 percent nominal reactance power input series line reactor.
  - b. Provide 3 percent nominal reactance series load reactor where shown on the Drawings.
- F. Control Power Transformers (CPT):
  - 1. Two winding, 120-volt secondary, primary voltage to suit.
  - 2. Two current-limiting fuses for primary circuit.
  - 3. One fuse in secondary circuit.
  - 4. All fuses shall be provided with blown fuse indicators.
  - 5. Size for load shown on motor control schematics.
- G. Spare Parts: Furnish two sets of spare power fuses for each size and type of fuse used; furnish a minimum of five fuses of each size and type of control circuit fuse.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Install in accordance with manufacturer's printed instructions.
- B. Enclosure shall be fully wired to all field devices as indicated by the Drawings.
- C. Protect the internal panel components from metal shavings, liquids and construction debris at all times.

- D. Properly level and plumb VFDs so that doors will open and close freely and are in longitudinal alignment with pad or wall.
- E. Clean and repair scratched or damaged surfaces to "new" condition
- F. Secure enclosure hardware of sufficient size and number for specified seismic conditions.
- G. Provide the services of a factory trained service technician to inspect and check out each system before energizing.
- H. Per manufacturer's instructions, lace power conductors to resist short circuit forces.
- I. Operate each drive from no load to full load and perform a spectrum analysis to verify line side waveform complies with IEEE 519 for general systems.
- J. Provide and install batteries in factory I/O cards as required to maintain time and date settings.
- K. Label with fault current rating and arc flash warning per Section 26 05 73, Electrical Systems Analysis.
- L. Label denoting overload setting and date it was set.

### **3.2 IDENTIFICATION**

- A. Install unique designation label that is consistent with wiring diagrams, schedules, and Operation and Maintenance Manual on each enclosure.

### **3.3 MANUFACTURER'S SERVICES**

- A. Furnish manufacturer's representative for startup services:
  1. Physical inspection and verification of proper drive and motor installation practices prior to application of power.
  2. Verification of external control wiring.
  3. Confirmation of drive cabling to motor and line feed.
  4. Incoming line and drive output grounding checks.
  5. Voltage application, checkout, calibration, and testing of the drive as appropriate for the application.
  6. Tune-up of drive internal regulating loops as appropriate for the application.
  7. Adjustment of operation parameters, with drive and motor design limitations, to values as appropriate for the application.
  8. Operation of drive through speed range to verify proper performance.
  9. Documentation of drive and motor nameplate information, application information, drive settings, and operating parameters.
  10. Provide confirmation the drives have been properly installed.
- B.
- C. Provide 3 person-days for installation inspection and prestart-up classroom training at site or classroom as designated by Owner, travel time excluded.
- D. Furnish startup services and training of Owner's personnel at such times as requested by Owner to accommodate the shift schedules of Owner's operation and maintenance staff.

## **PART 4 - ATTACHMENTS**

### **4.1 ATTACHMENT A: VFD EQUIPMENT SUPPLY LIST**

### **4.2 ATTACHED DRAWINGS**

- A. Attachment B: E-005 Modified On-Line Diagram
- B. Attachment C: E-012 Typical Submersible Pump Drive Motor Control Schematic
- C. Attachment D: E-013 Typical Blower Drive Motor Control Schematic

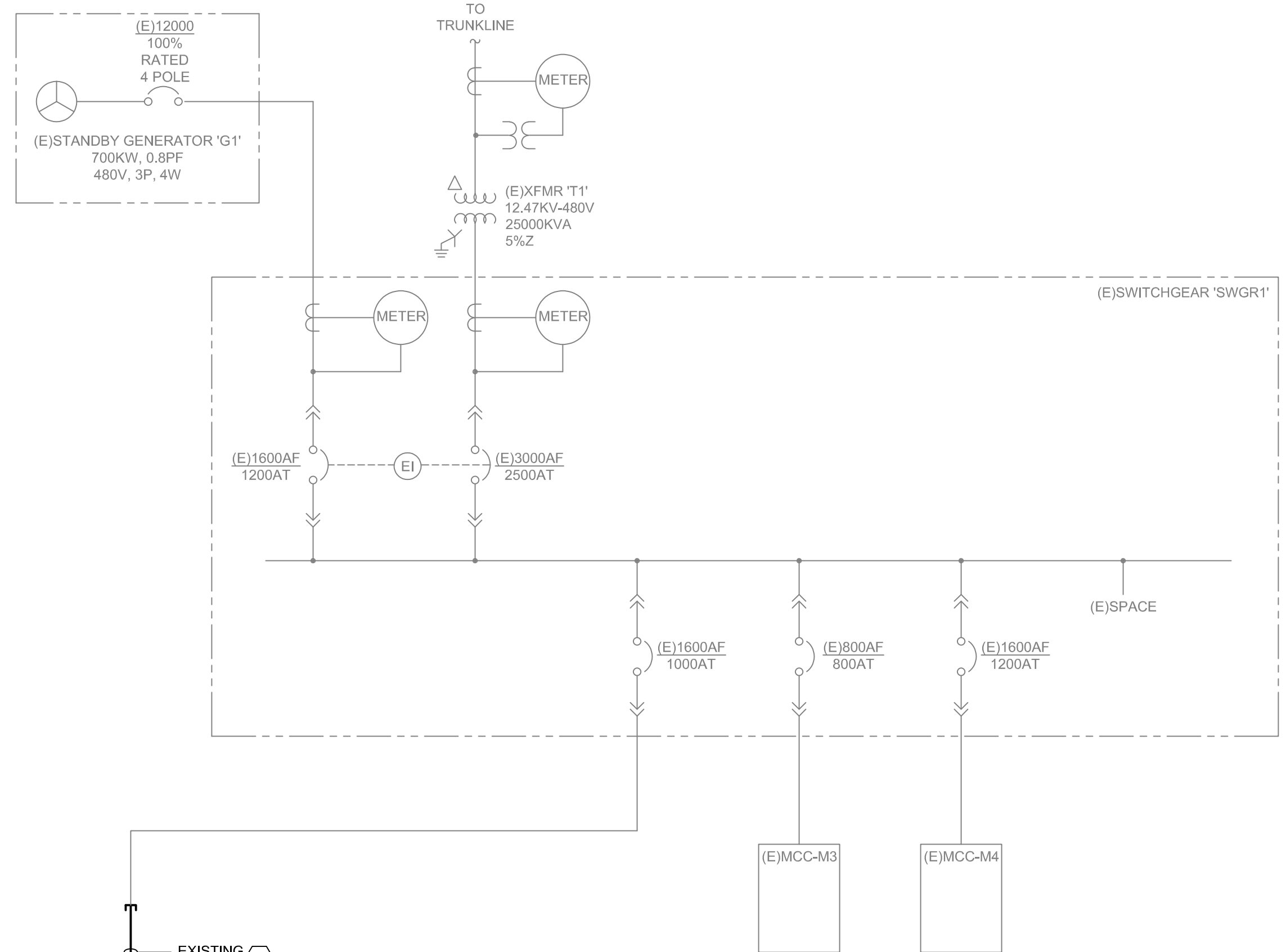
D. Attachment E: E-014 Typical Packaged Drive and MCC Installed FVNR Starter Motor Control Schematics

**END OF SECTION**

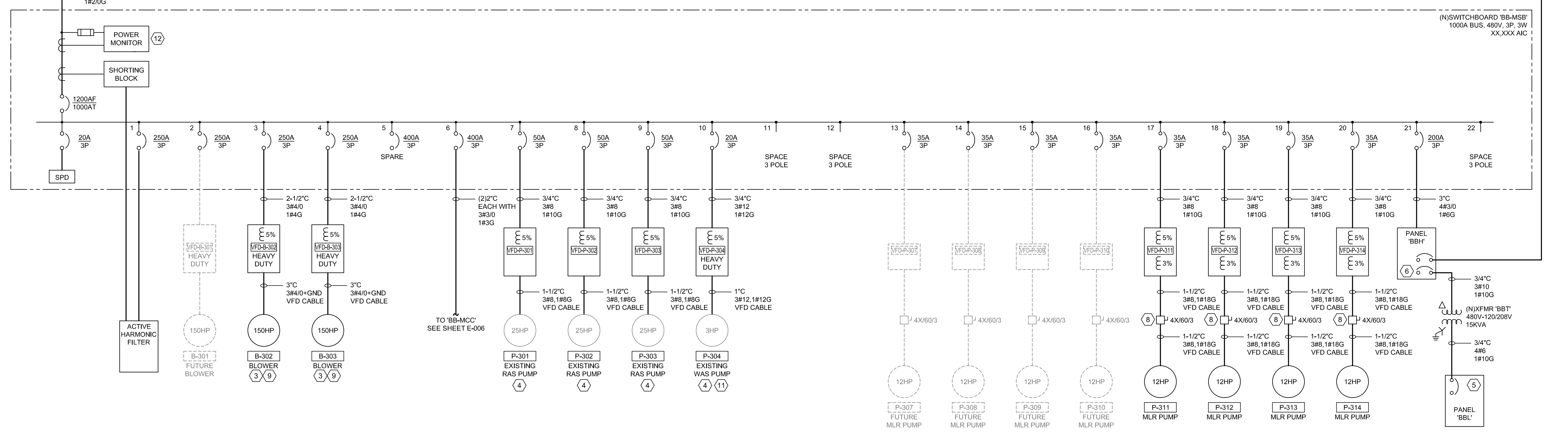
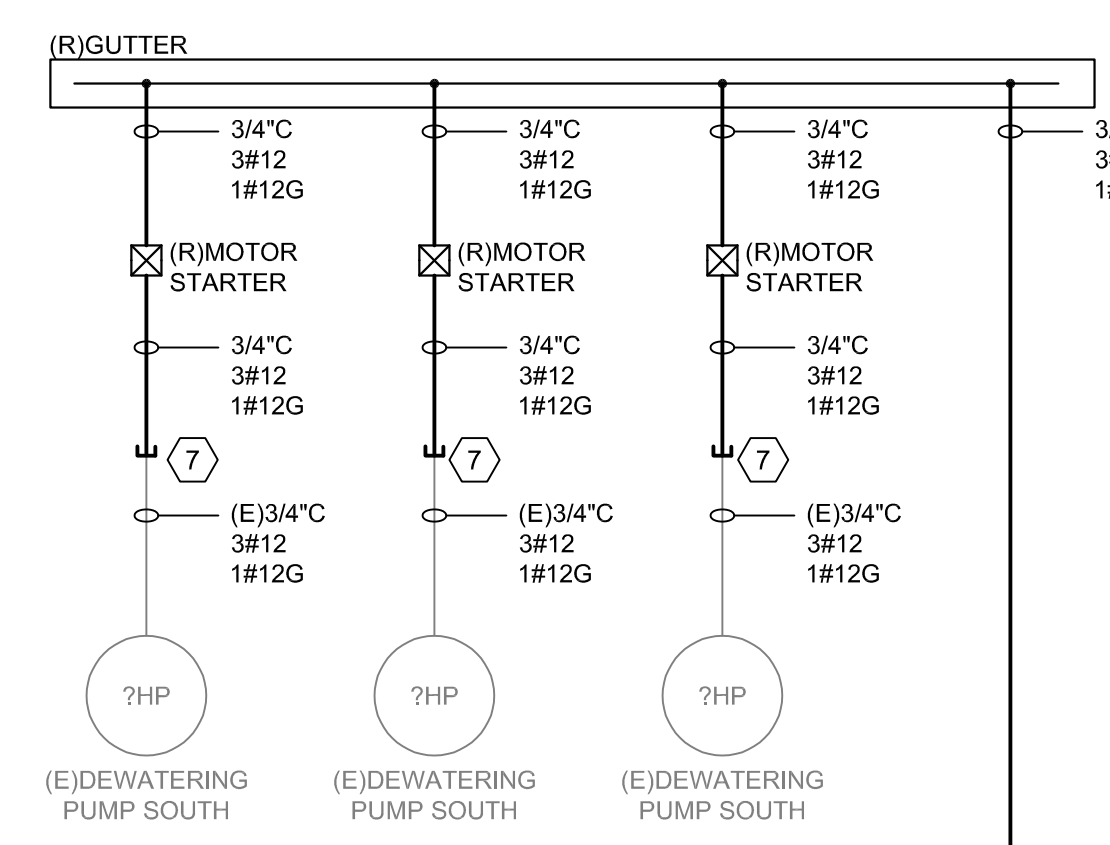
**ATTACHMENT A**  
**VFD SUPPLY LIST**

<b>EQUIPMENT NAME</b>	<b>VFD TAG</b>	<b>VFD HP RATING</b>	<b>Voltage</b>	<b>Torque Requirement</b>	<b>5% Line Reactor</b>	<b>3% Load Reactor</b>
Aeration Blower 02	VFD-B-302	150	480V	CONSTANT	YES	NO
Aeration Blower 03	VFD-B-303	150	480V	CONSTANT	YES	NO
RAS Pump 01	VFD-P-301	25	480V	VARIABLE	YES	NO
RAS Pump 02	VFD-P-302	25	480V	VARIABLE	YES	NO
RAS Pump 03	VFD-P-303	25	480V	VARIABLE	YES	NO
WAS Pump	VFD-P-304	3	480V	CONSTANT	YES	NO
MLR Pump 05	VFD-P-311	15	480V	VARIABLE	YES	YES
MLR Pump 06	VFD-P-312	15	480V	VARIABLE	YES	YES
MLR Pump 07	VFD-P-313	15	480V	VARIABLE	YES	YES
MLR Pump 08	VFD-P-314	15	480V	VARIABLE	YES	YES

**ATTACHMENTS B, C, D, & E**



- KEY NOTE:**
- 1 UTILIZE EXISTING FEEDER FOR NEW SWITCHBOARD. MAKE PROVISIONS AS REQUIRED.
  - 2 EXISTING EQUIPMENT TO REMAIN. PROVIDE NEW FEEDER.
  - 3 NEW EQUIPMENT.
  - 4 PROVIDE NEW FEEDER TO EXISTING EQUIPMENT. CONTRACTOR MAY UTILIZE PART OF EXISTING CONDUIT AND WIRING TO EXISTING EQUIPMENT AS APPLICABLE.
  - 5 UTILIZE PANEL FOR EXISTING CIRCUITS FROM MCC PANELBOARD 'CL'.
  - 6 UTILIZE PANEL FOR EXISTING CIRCUITS FROM MCC PANELBOARD 'CH'.
  - 7 INTERCEPT EXISTING CONDUIT AND PROVIDE NEW AS REQUIRED TO EXTEND EXISTING CIRCUIT TO RELOCATED STARTER.
- KEY NOTE (CONTINUED):**
- 8 DISCONNECT EQUIPPED WITH AUX CONTACT FOR EARLY BREAK VFD SHUTDOWN. PROVIDE AND INSTALL 3/4" WITH 2#14 AND 1#14 GROUND BETWEEN DISCONNECT AND VFD.
  - 9 SEE MOTOR CONTROL SCHEMATIC ON SHEET E-012.
  - 10 SEE MOTOR CONTROL SCHEMATIC ON SHEET E-013.
  - 11 "SEEPEX WASTE PUMP" TO BE RELABELLED TO "WAS PUMP". SEE SHEET E-004.
  - 12 PROVIDE 120V CIRCUIT FROM PLC UPS. 3/4" CONDUIT WITH 2#12 AND 1#12 GROUND.



08/25/2023	60% DESIGN REVIEW
ISSUE DATE	DESCRIPTION

PROJECT MANAGER	B. BJERKE
DESIGN BY	
DRAWN BY	
CHECKED BY	
PROJECT NUMBER	10360008

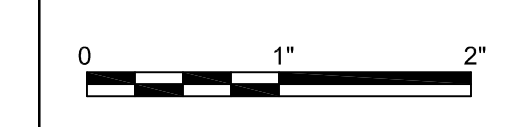
**PRELIMINARY**



**KETCHUM/SVSWD  
WASTEWATER TREATMENT  
PLANT  
AERATION IMPROVEMENTS**



**MODIFIED ONE-LINE DIAGRAM**



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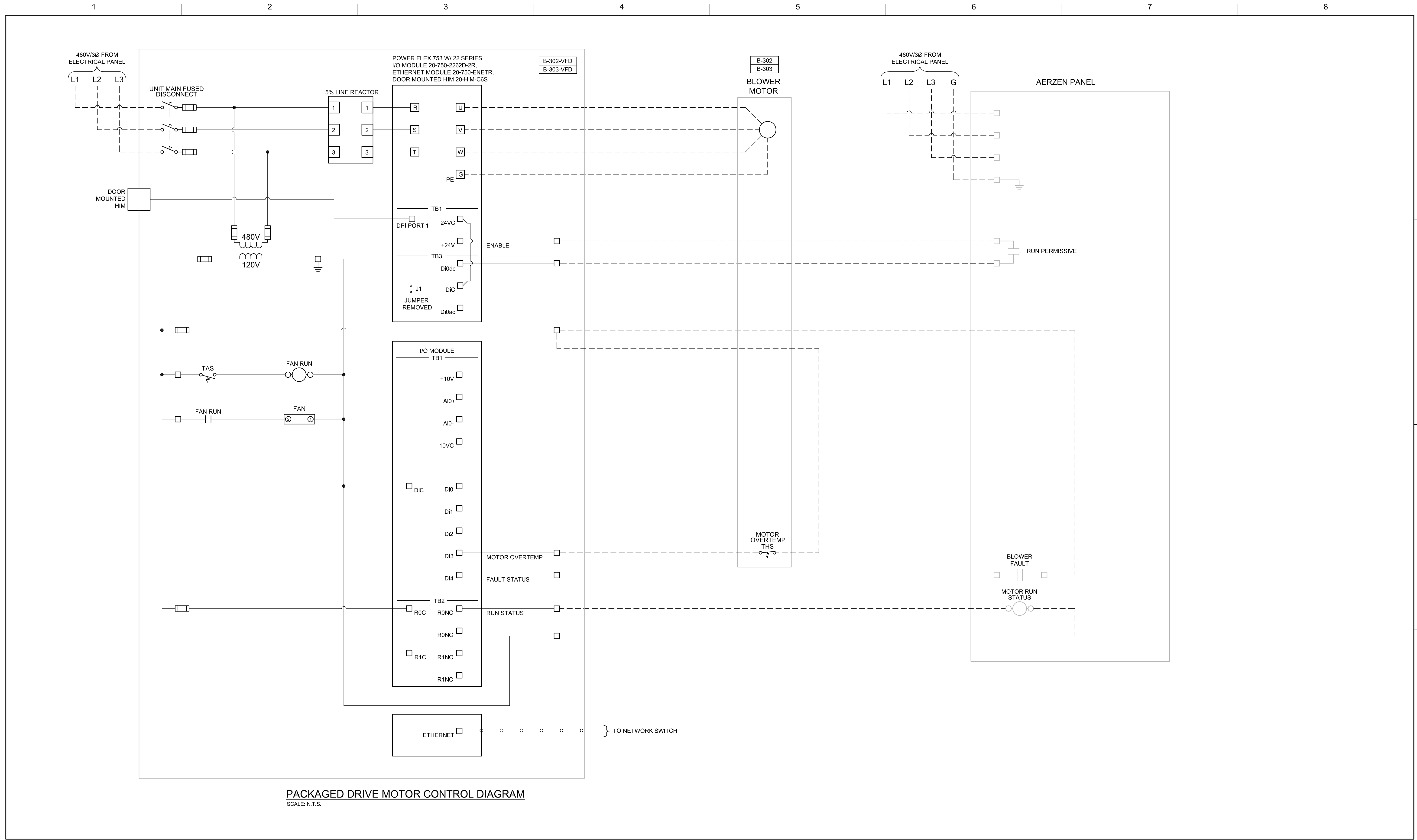
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PACKAGED DRIVE MOTOR CONTROL DIAGRAM  
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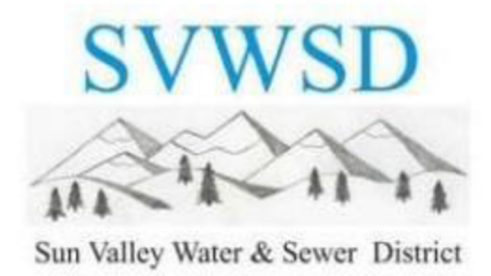
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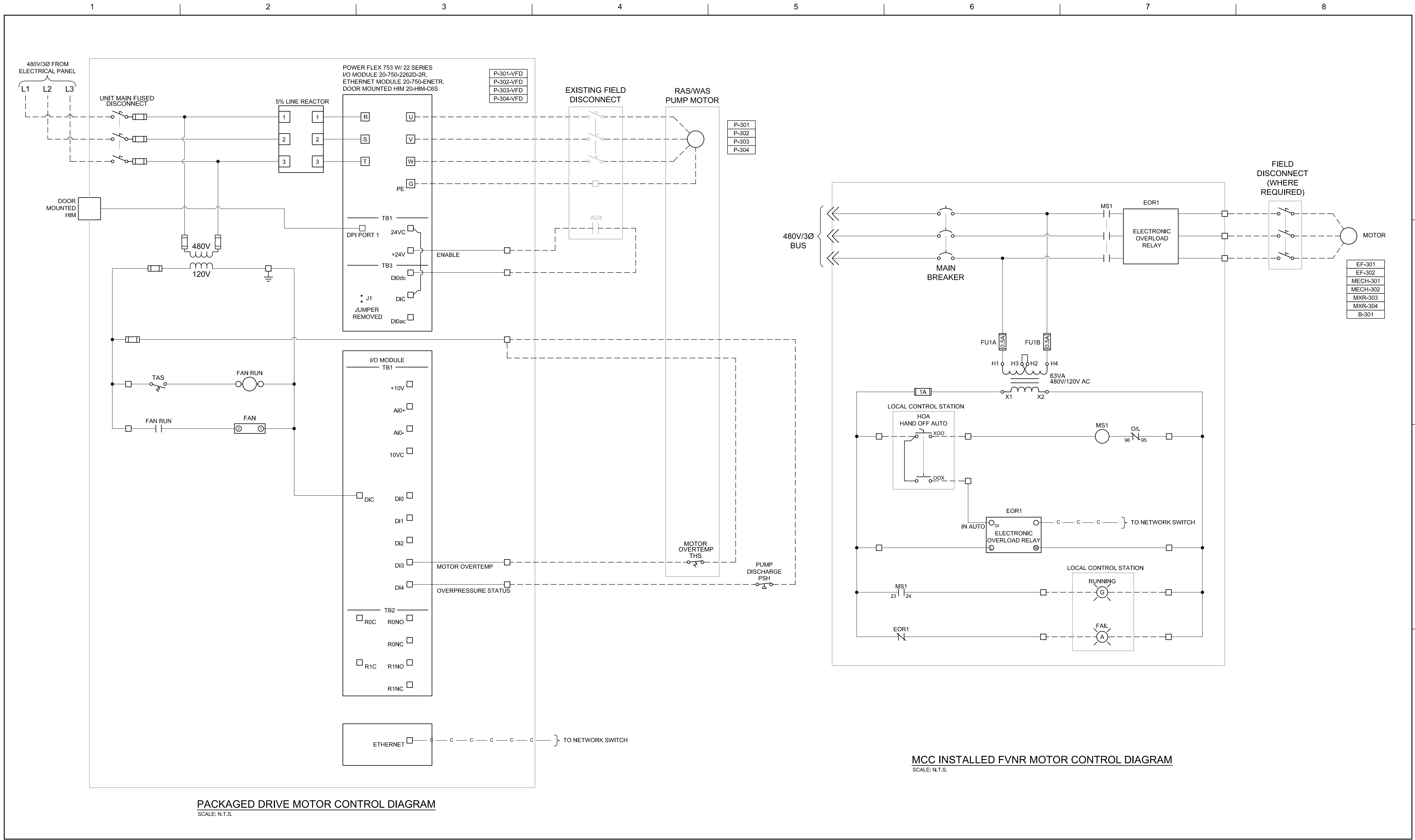
PROJECT MANAGER	B. BJERKE
DESIGN BY	E. KOROTKIH
DRAWN BY	E. KOROTKIH
CHECKED BY	N. QUIGLEY
PROJECT NUMBER	10360008

**PRELIMINARY**



KETCHUM/SVSWD  
WASTEWATER TREATMENT  
PLANT  
AERATION IMPROVEMENTS





**PACKAGED DRIVE MOTOR CONTROL DIAGRAM**  
SCALE: N.T.S.

**MCC INSTALLED FVNR MOTOR CONTROL DIAGRAM**  
SCALE: N.T.S.

ISSUE	DATE	DESCRIPTION
	08/25/2023	60% DESIGN REVIEW

PROJECT MANAGER	B. BJERKE
DESIGN BY	E. KOROTKIH
DRAWN BY	E. KOROTKIH
CHECKED BY	N. QUIGLEY
PROJECT NUMBER	10360008

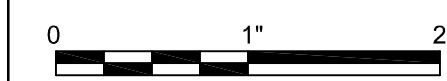
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**KETCHUM/SVSWD**  
**WASTEWATER TREATMENT**  
**PLANT**  
**AERATION IMPROVEMENTS**



**TYPICAL PACKAGED DRIVE AND MCC INSTALLED FVNR STARTER MOTOR CONTROL SCHEMATICS**



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SCALE | N.T.S.

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**E-014**

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