

**ALLEGHENY COUNTY SANITARY AUTHORITY
PITTSBURGH, PENNSYLVANIA**

CONTRACT DOCUMENTS

INCLUDING

LEGAL NOTICE

PROCUREMENT CONTRACT DOCUMENTS

FOR

CONTRACT No. 1801

**OHIO RIVER TUNNEL 23kV AND 13.8kV
SWITCHGEAR ~ PRE-PURCHASE**

MARCH 2024

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**OHIO RIVER TUNNEL 23kV AND 13.8kV
SWITCHGEAR ~ PRE-PURCHASE**

MARCH 2024

**APPROVED FOR
ADVERTISEMENT:**

 (on behalf of Kim Kennedy)

Kimberly Kennedy P.E.

Director of Engineering and Construction

DOCUMENTS PREPARED BY:

Arcadis U.S., Inc.

 PE



Jeff Argyros P.E.

Manager of Capital Projects - Treatment

John Sidoti, PE

Principal Engineer

ALLEGHENY COUNTY SANITARY AUTHORITY

LEGAL NOTICE

CONTRACT NO. 1801

1801–OHIO RIVER TUNNEL SUBSTATION 23kV AND 13.8 kV SWITCHGEAR-PRE-PURCHASE

Sealed Bids for **CONTRACT NO. 1801–OHIO RIVER TUNNEL SUBSTATION 23kV AND 13.8 kV SWITCHGEAR-PRE-PURCHASE** shall be received at the Engineering Department office of the Allegheny County Sanitary Authority, 3300 Preble Avenue, Pittsburgh, PA, 15233, until **11:00 A.M.**, Prevailing Time, **Tuesday, May 7, 2024**, and then shall be publicly opened and read.

A **Mandatory Pre-Bid Meeting** will be held at ALCOSAN in person or via **Microsoft Teams** in the auditorium of the **O&M Building**, located on the 1st Floor of the O&M Building at 3300 Preble Avenue, Pittsburgh, PA, 15233 on **Wednesday, April 17, 2024, at 10:00 A.M.**, Prevailing Time. The purpose of the Pre-Bid Meeting is to provide all potential Bidders an opportunity to discuss with ALCOSAN all aspects of the Procurement Contract Documents. Any changes, additions, and/or deletions resulting from the Pre-Bid Meeting will be addressed in addenda to the Procurement Contract Documents. Proper identification will be required at the plant security entrance gate to access the site. If interested in attending the **Pre-Bid Meeting either in person or via Microsoft Teams**, contact **Kathleen P. Uniatowski** via email at Kathleen.Uniatowski@alcosan.org to ensure clearance at security gate entrance upon arrival or to receive an link to join the meeting on Microsoft Teams.

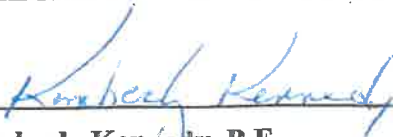
Procurement Contract Documents may be examined and obtained at the Engineering office of the Authority. Bid Security shall be furnished by providing with the Bid a **Certified Check or Bid Bond** in the amount of **10%** of the Bid Price. **Procurement Contract Documents must be obtained directly from ALCOSAN to qualify as an eligible bidder.**

Any questions regarding the Technical Aspects of the Project should be directed to **John Sidoti, Arcadis U.S., Inc.**, via email to John.Sidoti@arcadis.com .

Any questions regarding the Procurement Contract Documents should be directed to **Kathleen P. Uniatowski, ALCOSAN**, via email to contract.clerks@alcosan.org .

The Authority reserves the right to reject any or all bids, to waive any informality in any bid and to accept any bid should it be deemed in the interest of the Authority to do so.

ALLEGHENY COUNTY SANITARY AUTHORITY



Kimberly Kennedy, P.E.
Director of Engineering and Construction


March 27, 2024

**SECTION 00 01 07
SEALS AND CERTIFICATIONS**

**ALLEGHENY COUNTY SANITARY AUTHORITY
CONTRACT NO. 1801**

Ohio River Tunnel Substation 23kV and 13.8kV Switchgear Pre-Purchase

ENGINEER: Arcadis U.S., 2100 Georgetown Drive, Suite 402, Sewickley, PA 15143.

<p>Dave Oberle, PE License No. PE 076383</p> 	<p>The seal and signature to the left applies to the following Specifications Divisions and Sections of this Project Manual:</p> <ul style="list-style-type: none">• Division 00• Division 01• Division 26
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Engineer's seal and signature does not apply to the documents that comprise Division 00, Bidding and Contracting Requirements.

It is a violation of applicable laws and regulations governing professional licensing and registration for any person, unless acting under the direction of the licensed and registered design professional(s) indicated above, to alter in any way the Specifications in this Project Manual.

END OF SECTION

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END OF SECTION

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INSTRUCTIONS TO BIDDERS FOR PROCUREMENT CONTRACTS

ARTICLE 1—DEFINED TERMS

- 1.01 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.
- A. *Issuing Office*—The office from which the Procurement Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2—PROCUREMENT BIDDING DOCUMENTS

- 2.01 Bidder may obtain complete sets of the Procurement Bidding Documents for the non-refundable fee stated in the advertisement or invitation to bid from the Issuing Office. Bidders must obtain a complete set of the Procurement Contract Documents as listed in the Procurement Agreement.
- 2.02 Bidder must use a complete set of the Procurement Bidding Documents in preparing the Bid; neither Buyer nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Procurement Bidding Documents.
- 2.03 Buyer and Engineer make copies of Procurement Bidding Documents available on the above terms only for obtaining Bids for furnishing Goods and Special Services, and do not authorize or confer a license for any other use.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 Buyer may at any time conduct such investigations as Buyer deems necessary to establish the responsibility, qualifications, and financial ability of Bidder, and after the opening of Bids may require a Bidder to submit documentation of its qualifications, including but not limited to financial data and documentation of previous experience providing goods and services comparable to the specified Goods and Special Services.
- 3.02 Bidder is to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.
- 3.03 Bidder shall submit a qualifications statement with the Bid, including financial data and documentation of previous experience providing comparable goods and services, to demonstrate Bidder's qualifications to furnish the specified Goods and Special Services.
- 3.04 Work shall comply with the Pennsylvania Steel Products Procurement Act (PA Steel Act).

ARTICLE 4—SITE VISIT; PRE-BID CONFERENCE

- 4.01 Buyer recommends that Bidder visit the Point of Destination and the site where the Goods are to be installed and Special Services will be provided, taking into account observable local and site

conditions that may affect the delivery, cost, progress, and furnishing of the Goods and Special Services. Arrangements for such a visit may be made through Engineer.

4.02 A pre-bid conference will be held for this procurement as stated in the Legal Notice.

ARTICLE 5—INTERPRETATIONS AND ADDENDA

5.01 All questions about the meaning or intent of the Procurement Bidding Documents are to be submitted to Engineer in writing at:

Arcadis U.S., Inc.
2100 Georgetown Drive, Suite 402
Sewickley, PA 15143
Attention: John Sidoti
Phone: (330) 515-5682
E-mail: john.sidoti@arcadis.com

5.02 Interpretations or clarifications considered necessary by Engineer in response to such written questions will be issued by Addenda mailed or delivered to all parties recorded as having received the Procurement Bidding Documents. Questions received less than 10 days prior to the date for opening of Bids will not be answered. Only answers in the Addenda will be binding. Oral statements, interpretations, and clarifications may not be relied upon in the preparation of a Bid, and will not be binding or legally effective.

5.03 Addenda may be issued to clarify, correct, or change the Procurement Bidding Documents as deemed advisable by Buyer or Engineer.

ARTICLE 6—BID SECURITY

6.01 A Bid must be accompanied by Bid security made payable to Buyer in an amount of ten percent (10%) of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 5.01 of the General Conditions. Such Bid bond will be issued in the form included in the Procurement Bidding Documents.

6.02 The Bid security of the apparent Successful Bidder will be retained until Buyer (Project Owner) awards the Procurement Contract to such Bidder, and such Bidder has executed the Procurement Contract, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Procurement Contract and furnish the required contract security within 15 days after the Notice of Award, Buyer (Project Owner) may consider Bidder to be in default and annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Buyer's damages in the case of a damages-form bond. Such forfeiture will be Buyer's exclusive remedy if Bidder defaults.

6.03 The Bid security of other Bidders that Buyer believes to have a reasonable chance of receiving the award may be retained by Buyer until the earlier of 10 days after the Effective Date of the

Procurement Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

- 6.04 Bid security of other Bidders that Buyer believes do not have a reasonable chance of receiving the award will be released within 10 days after the Bid opening.

ARTICLE 7—PROCUREMENT CONTRACT TIMES

- 7.01 See applicable provisions in the Procurement Agreement.

ARTICLE 8—LIQUIDATED DAMAGES

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

ARTICLE 9—CONFIDENTIALITY OF BID INFORMATION

- 9.01 Confidential information is information in the Bid, or in documents submitted by Bidder with the Bid or submitted subsequent to the opening of Bids in support of the Bid, that Bidder clearly and prominently labels in writing to be a trade secret, proprietary, or confidential. Bids will be opened and accompanying documents, if any, will be maintained in a manner that endeavors to avoid disclosing confidential information to third parties, to the extent allowed by Laws and Regulations.
- 9.02 Bidder shall clearly and prominently mark confidential information with the word “CONFIDENTIAL” on each page or sheet or on the cover of bound documents. Place “CONFIDENTIAL” stamps or watermarks so that they do not obscure any of the required information on the document, either in the original or in a way that would obscure any of the required information in a photocopy of the document.
- 9.03 If Buyer is requested to disclose confidential information, becomes legally compelled to disclose confidential information, or is required by a regulatory body, governing agency, or controlling authority to disclose confidential information, or make any other disclosure that is prohibited or otherwise constrained by these Procurement Bidding Requirements, Buyer will provide Bidder with prompt notice so Bidder may seek a protective order or other appropriate remedy. Bidder will be solely responsible for submitting to the regulatory body, governing agency, or controlling authority any arguments, briefs, memoranda, motions, authorities, or other information in opposition to disclosure.
- 9.04 Buyer’s obligations with respect to confidential information are nullified by the following exceptions:
- A. Confidential information becomes a part of the public domain through publication or otherwise, through no fault of the Buyer;
 - B. Buyer can demonstrate through suitable documentation that the confidential information was already in the Buyer’s possession, and not previously marked as confidential, or was otherwise publicly available prior to the date of Bid submittal;
 - C. The confidential information is subsequently and independently disclosed to the Buyer by a third party who has a lawful right to disclose such information;

- D. Buyer concludes in good faith that the information is not confidential, or that disclosure is required or justified; or
 - E. Buyer is required to disclose the confidential information by court order or by applicable Laws and Regulations.
- 9.05 Notwithstanding any other provision of the Procurement Bidding Documents, it is stipulated and agreed that by accepting a Bid, Buyer has not and does not waive its legal immunity (if any) from suit or liability.

ARTICLE 10—“OR-EQUAL” ITEMS

- 10.01 The Procurement Contract, if awarded, will be based on material and equipment specified in the Procurement Bidding Documents without consideration of possible “or-equal” items. Whenever it is specified or described in the Procurement Bidding Documents that an “or-equal” item of material or equipment may be furnished or used by Seller if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Procurement Contract. 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 Procurement Specifications.
- 10.02 (Not Used)

ARTICLE 11—PREPARATION OF BID

- 11.01 The Bid Form is included with the Procurement Bidding Documents. Additional copies of Procurement Bidding Documents may be obtained from the Issuing Office.
- 11.02 All blanks on the Bid Form must be completed and the Bid Form must be signed by an individual authorized to act on behalf of the Bidder. Alterations must be initialed by an individual authorized to act on behalf of the Bidder. A Bid price must be indicated for each item in the Bid Form. In the case of optional alternates, the words “No Bid” may be entered.
- 11.03 Bidder must acknowledge all Addenda by filling in the number and date of each Addendum in the Bid Form and sign where indicated to verify that the Addenda were received. A Bid that does not acknowledge receipt of all Addenda may be considered non-responsive.
- 11.04 Bidder shall:
- A. Sign the Bid Form as indicated in the Bid Form.
 - B. Include evidence of authority to sign.
 - C. Provide information on the individual to be contacted for any communications regarding the Bid.
 - D. Provide evidence of the Bidder’s authority and qualification to do business in the locality of the Project, to the extent required, or indicate the ability to obtain such authority and qualification prior to award of the Procurement Contract.

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

ARTICLE 12—BASIS OF BID; COMPARISON OF BIDS

12.01 *Lump Sum*

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

12.02 *Series of Lump Sums*

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

ARTICLE 13—SUBMITTAL OF BID

- 13.01 Bidder shall refer to the Advertisement for Bids for specific identification of the date, time, and place where Bids are to be submitted.
- 13.02 Bidder must submit one separate unbound copy of the completed Bid Form, and, if required, the Bid Security and the other documents required to be submitted under the terms of Article 4 of the Bid Form.
- 13.03 A Bid must be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid. Submit the Bid in an envelope plainly marked with “SEALED BID FOR Contract 1801 Ohio River Tunnel Substation 23kV and 13.8kV Switchgear Pre-Purchase” (and, if applicable, the designated portion of the Project for which the Bid is submitted) and the name and address of Bidder. Enclose the Bid security and other documents required to be submitted with the Bid as listed in the Bid Form. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation “BID ENCLOSED.”

ARTICLE 14—MODIFICATION OR WITHDRAWAL OF BID

- 14.01 A Bid may be modified or withdrawn by a document duly signed in the same manner that a Bid must be signed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 14.02 If, within 48 hours after Bids are opened, any Bidder files a duly signed written notice with Buyer and promptly thereafter demonstrates to the reasonable satisfaction of Buyer that there was a

material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned.

ARTICLE 15—OPENING OF BIDS

- 15.01 Bids will be received at the office of the Owner until 11:00 AM, prevailing time, on 5/7/2024, at which time and place said Bids will be opened publicly and read aloud, unless obviously non-responsive.
- 15.02 (Not Used).

ARTICLE 16—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 17—EVALUATION OF BIDS AND AWARD OF PROCUREMENT CONTRACT

- 17.01 Buyer reserves the right to reject any and all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Buyer also reserves the right to waive all informalities not involving price, time, or changes in the Goods and Special Services.
- 17.02 Buyer will reject the Bid of any Bidder that Buyer finds, after reasonable inquiry and evaluation, to not be responsible.
- 17.03 In evaluating Bids, Buyer will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data as may be requested in the Bid Form or may be requested from Bidders prior to a Notice of Award.
- 17.04 If Buyer awards the Procurement Contract, such award will be to the responsible Bidder submitting the lowest responsive Bid.

ARTICLE 18—BONDS AND INSURANCE

- 18.01 Article 5 of the General Conditions and Article 5 of the Supplementary Conditions set forth Buyer's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the signed Procurement Agreement to Buyer, it must be accompanied by such bonds and acceptable evidence of insurance.

ARTICLE 19—SIGNING OF PROCUREMENT AGREEMENT

- 19.01 When Buyer issues a Notice of Award to the Successful Bidder, it will be accompanied by the unsigned counterparts of the Procurement Agreement along with the other Procurement Contract Documents identified in the Procurement Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Procurement Agreement and any bonds and insurance documentation required to be delivered by the Procurement Contract Documents to Buyer. Within 15 days thereafter, Buyer will deliver one fully executed counterpart of the Procurement Agreement to Successful Bidder, together

with printed and electronic copies of the Procurement Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 20— SALES AND USE TAXES

20.01 The Owner renders a public utility service, i.e., sewage treatment. Pennsylvania Department of Revenue Regulations provide, in part, that a contractor or subcontractor's purchase of "equipment, machinery or parts thereof" which are "used directly in the rendition of a public utility service upon installation" are exempt from Pennsylvania sales tax. See Section 204(k)(8)(C) of the Tax Reform Code of 1971, Act of March 4, 1971, P.L.6, as amended (the "Act") and Pennsylvania Department of Revenue Regulation 61 Pa. Code § 31.13(b). Accordingly, the Owner shall issue to Contractor one or more exemption certificates in the form attached hereto as Exhibit D so that Contractor may avail itself of the said sales and use tax exemption.

Notwithstanding the foregoing, the Owner makes no representation or warranty regarding the applicability of the exemption with respect to any particular purchase of property by Contractor in connection with the Work. The Contractor shall remain responsible for the full amount of sales and use tax, including interest and penalty, applicable to its Work under this Contract and required to be paid pursuant to Section 204 of the Act and Pennsylvania and local law. The Contractor represents that it is familiar with the Pennsylvania and local sales and use tax law, regulations, and rulings applicable to construction contracts including Pennsylvania Department of Revenue Regulations 61 Pa. Code §§ 31.11, Construction Contractors-Definitions, 31.12, Construction Contractor-Imposition of Tax, and 31.13, Construction Contractors-Claim for Exemptions.

ARTICLE 21—(NOT USED)

ARTICLE 22— STATUTORY AND FUNDING-FINANCING REQUIREMENTS

22.01 (Not Used)

22.02 (Not Used)

22.03 (Not Used)

END OF SECTION

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**SECTION 00 41 63
BID FORM FOR PROCUREMENT CONTRACT**

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

ARTICLE 1—BUYER AND BIDDER

1.01 This Bid is submitted to:

- A. Allegheny County Sanitary Authority
3300 Preble Avenue
Pittsburgh, PA 15233

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

ARTICLE 2—BASIS OF BID

2.01 *Lump Sum Bids*

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

- 1. Lump Sum Bid Price (single or multiple Lump Sum)

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

3.01 Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule of Procurement Contract Times set forth in Article 2 of the Procurement Agreement.

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

ARTICLE 4—ATTACHMENTS TO THIS BID

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

- A. Required Bid security in the form prescribed in the Instructions to Bidders.
- B. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids.
- C. Required Bidder Qualification Statement with supporting data.

ARTICLE 5—BIDDER’S ACKNOWLEDGMENTS

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

Addendum No.	Addendum Date

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder’s Representations*

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

6.02 *Bidder's Certifications*

A. Bidder certifies that:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
3. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Procurement Contract. For the purposes of this Paragraph 6.02.A.4:
 - a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;
 - c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

END OF SECTION

This Bid is offered by:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Date:

(date signed)

Name:

(typed or printed)

Title:

(typed or printed)

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

Attest:

(individual's signature)

Title:

(typed or printed)

Address for giving notices:

Designated Representative:

Name:

(typed or printed)

Title:

(typed or printed)

Address:

Phone:

Email:

License No.:

Classification:

Limitation:

**SECTION 00 43 14
BID BOND (DAMAGES FORM)**

<p>Bidder Name: _____ Address (<i>principal place of business</i>): _____</p>	<p>Surety Name: _____ Address (<i>principal place of business</i>): _____</p>
<p>Owner Name: Allegheny County Sanitary Authority Address (<i>principal place of business</i>): 3300 Preble Avenue Pittsburgh, PA 15233</p>	<p>Bid Project (<i>name and location</i>): Contract No. 1801 Ohio River Tunnel Substation 23kV and 13.8kV Switchgear Pre-Purchase Bid Due Date: 5/7/2024</p>
<p>Bond Bond Amount: _____ Date of Bond: _____</p>	
<p>Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.</p>	
<p>Bidder</p>	<p>Surety</p>
<p style="text-align: center;"><i>(Full formal name of Bidder)</i></p>	<p style="text-align: center;"><i>(Full formal name of Surety) (corporate seal)</i></p>
<p>By: _____ <i>(Signature)</i></p>	<p>By: _____ <i>(Signature) (Attach Power of Attorney)</i></p>
<p>Name: _____ <i>(Printed or typed)</i></p>	<p>Name: _____ <i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p>Attest: _____ <i>(Signature)</i></p>	<p>Attest: _____ <i>(Signature)</i></p>
<p>Name: _____ <i>(Printed or typed)</i></p>	<p>Name: _____ <i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p><i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i></p>	

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

**SECTION 00 45 13
QUALIFICATIONS STATEMENT**

ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:			
Corporate Office			
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business's organizational structure:

Form of Business:	<input type="checkbox"/> Sole Proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		
	<input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Joint Venture comprised of the following companies:		
	1.		
	2.		
	3.		
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Pending	

1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			

Name of business:		Affiliation:	
Address:			

1.04 Provide information regarding the Business’s officers, partners, and limits of authority.

Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	
Authorized to sign contracts:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Limit of Authority:	\$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:			
Licensing Agency:			
License No:		Expiration Date:	
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.01 (Not Used)

ARTICLE 4—SAFETY

4.01 Provide information regarding Business’s safety organization and safety performance.

Name of Business’s Safety Officer:		
Safety Certifications		
Certification Name	Issuing Agency	Expiration

4.02 (Not Used)

ARTICLE 5—FINANCIAL

5.01 Provide information regarding the Business’s financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:		
Business address:		
Date of Business’s most recent financial statement:		<input type="checkbox"/> Attached
Date of Business’s most recent audited financial statement:		<input type="checkbox"/> Attached
Financial indicators from the most recent financial statement		
Contractor’s Current Ratio (Current Assets ÷ Current Liabilities)		
Contractor’s Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)		

ARTICLE 6—SURETY INFORMATION

6.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:		
Surety is a corporation organized and existing under the laws of the state of:		
Is surety authorized to provide surety bonds in the Project location?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is surety listed in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Mailing Address (principal place of business):		

Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 7—INSURANCE

7.01 Provide information regarding Business’s insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider		Type of Policy (Coverage Provided)	
Are providers licensed or authorized to issue policies in the Project location?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Does provider have an A.M. Best Rating of A-VII or better?		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 8—EXPERIENCE

8.01 Manufacturer shall be a company specializing in manufacturing products specified in Sections 26 13 26.1 and 26 13 26.2 with minimum five years documented experience.

ARTICLE 9—REQUIRED ATTACHMENTS

9.01 Provide the following information with the Statement of Qualifications:

- A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.
- B. Diverse Business Certifications if required by Paragraph 3.01.
- C. Financial statements as required by Paragraph 5.01.
- D. Additional items as pertinent.

This Statement of Qualifications is offered by:

Business: _____
(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(date signed)

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

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address: _____

Phone: _____

Email: _____

END OF SECTION

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SECTION 00 52 63
AGREEMENT BETWEEN BUYER AND SELLER
FOR PROCUREMENT CONTRACT

This Procurement Agreement is by and between **Allegheny County Sanitary Authority** (“Buyer”) and _____ (“Seller”).

Terms used in this Procurement Agreement have the meanings stated in the General Conditions of the Procurement Contract and the Supplementary Conditions of the Procurement Contract.

Buyer and Seller hereby agree as follows:

ARTICLE 1—PROCUREMENT CONTRACT

1.01 *Goods and Special Services*

- A. Seller shall furnish the Goods and Special Services as specified or indicated in the Procurement Contract Documents. The Goods and Special Services are generally described as follows: (1) Medium Voltage 23kV switchgear and (1) Medium Voltage 13.8kV Switchgear.

1.02 *The Project*

- A. The Project, of which the Goods and Special Services are a part, is generally described as follows: Ohio River Tunnel Substation 23kV and 13.8kV Switchgear Pre-Purchase.

1.03 *Engineer*

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

1.04 *Point of Destination*

- A. The Point of Destination is designated as: Allegheny County Sanitary Authority, 3300 Preble Avenue, Pittsburgh, PA 15233. Exact location to be determined by Buyer.

ARTICLE 2—PROCUREMENT CONTRACT TIMES

2.01 *Time of the Essence*

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

2.02 *Schedule of Procurement Contract Times*

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

Milestone	Date or Days	Notes
Submit Shop Drawings	60 days after Notice To Proceed	
Deliver acceptable 23kV and 13.8 kV medium voltage switchgear units to Point of Destination	January 2, 2026	Delivery may be made in the 15-day period before delivery date
Complete Special Services for Goods	January 30, 2026	
Readiness for Final Inspection and Acceptance of Goods and Special Services	February 6, 2026	

2.03 *Shop Drawings and Samples*

- A. *Submittal of Shop Drawings and Samples:* Seller shall submit all Shop Drawings and Samples required by the Procurement Contract Documents to Engineer for its review and approval.
- B. *Engineer's Review:* It is the intent of the parties that Engineer will conduct its review of Shop Drawings and Samples and issue its approval, or a denial accompanied by substantive comments regarding information needed to gain approval, within 30 days after Seller's submittal of such Shop Drawings and Samples, or within such longer period that is needed because of the quantity and quality of such submittals. Resubmittals will be limited whenever possible.

2.04 *Liquidated Damages*

- A. Buyer and Seller recognize that time is of the essence as stated in Paragraph 2.01, and that Buyer will suffer financial and other losses if the Goods are not delivered to the Point of Destination and ready for receipt of delivery by Buyer within the time specified in Paragraph 2.02, plus any extensions thereof allowed in accordance with this Procurement Contract. The parties also recognize that the timely performance of services by others involved in the Project is materially dependent upon Seller's specific compliance with the delivery requirements of Paragraph 2.02. Further, the parties recognize the time, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the loss (whether direct, consequential, or otherwise) suffered by Buyer if complete, acceptable Goods are not delivered on time. Accordingly, instead of requiring any such proof, Buyer and Seller agree that as liquidated damages for delay (but not as a penalty) Seller shall pay Buyer \$1000 for each day that expires after the time specified in Paragraph 2.02 for delivery of acceptable Goods.

ARTICLE 3—PROCUREMENT CONTRACT PRICE

3.01 *Procurement Contract Price and Total Price*

- A. The Procurement Contract Price is comprised of the Lump Sum amounts set forth in the following paragraphs.
- B. Buyer shall pay Seller a Lump Sum of \$ _____ for furnishing the Goods and Special Services (other than any Unit Price Goods and Special Services) in accordance with the Procurement Contract Documents.

ARTICLE 4—

ARTICLE 4—PAYMENT PROCEDURES

4.01 *Submittal and Processing of Applications for Payment*

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

4.02 *Progress Payments; Final Payment*

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

Payment Line Item (Lump Sum)	Percentage of Lump Sum
1. Approval of Shop Drawings and Samples	30%
2. Completion of acceptable factory testing (if any)	20%
3. Delivery of Goods to Point of Destination in accordance with the Procurement Contract Documents	35% ⁽¹⁾
4. Completion of Special Services in accordance with Procurement Contract Documents	10%
5. Final Payment: Final Payment: Correction of non-conformities, provision of final operations and maintenance manuals, submittal of warranties and other final documentation required by the Procurement Contract Documents	5%
Total Procurement Contract Price (Lump Sum)	100%

⁽¹⁾ Payment will be for 35% of the value of the delivered Goods to the Point of Destination in accordance with the accepted Schedule of Values.

- B. Buyer shall pay Seller the amount owed under an Application for Payment within 60 days after Engineer's presentation to Buyer of the Application for Payment and Engineer's recommendation.

4.03 (Not Used)

- A. (Not Used)

ARTICLE 5—(NOT USED)

5.01 (Not Used)

ARTICLE 6—PROCUREMENT CONTRACT DOCUMENTS

6.01 *List of Procurement Contract Documents*

- A. The Procurement Contract Documents consist of the following:
 - 1. This Procurement Agreement.
 - 2. General Conditions of the Procurement Contract.
 - 3. Supplementary Conditions of the Procurement Contract.

4. Procurement Specifications as listed in the Procurement Specifications table of contents.
 5. Procurement Drawings.
 6. Addenda.
 7. Bonds:
 - a. Performance bond (together with power of attorney).
 - b. Payment bond (together with power of attorney).
 8. Exhibits to this Procurement Agreement (enumerated as follows):
 - a. (Not Used)
 9. The following which may be delivered or issued on or after the Effective Date of the Procurement Contract and are not attached hereto:
 - a. Change Orders;
 - b. Change Directives; and
 - c. Field Orders.
- B. The documents listed in Paragraph 6.01.A are attached to this Procurement Agreement (except as expressly noted otherwise above).
- C. There are no Procurement Contract Documents other than those listed above.
- D. The Procurement Contract Documents may only be amended or supplemented as provided in Paragraph 11.01 of the Procurement General Conditions.

ARTICLE 7—SELLER’S REPRESENTATIONS AND CERTIFICATIONS

7.01 *Seller’s Representations*

- A. In order to induce Buyer to enter into this Procurement Agreement, Seller makes the following representations:
1. Seller has examined and carefully studied the Procurement Contract Documents.
 2. If, in Seller’s judgment, any observable local or site conditions may affect the delivery, cost, progress, or furnishing of the Goods and Special Services, then Seller has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided (as applicable) and become familiar with and is satisfied as to the observable local and site conditions that may affect delivery, cost, progress, and furnishing of the Goods and Special Services.
 3. Seller is familiar with and is satisfied as to all Laws and Regulations that may affect the cost, progress, and performance of Seller's obligations under the Procurement Contract.
 4. Seller has carefully studied, considered, and correlated the information known to Seller with respect to the effect of such information on the cost, progress, and performance of Seller's obligations under the Procurement Contract.

5. Seller has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Seller has discovered in the Procurement Contract Documents, and the written resolution (if any) thereof by Engineer is acceptable to Seller.
6. The Procurement Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance of Seller's obligations under the Procurement Contract.
7. Seller's entry into this Procurement Contract constitutes an incontrovertible representation by Seller that without exception all prices in the Procurement Agreement are premised upon furnishing the Goods and Special Services as required by the Procurement Contract Documents.

7.02 *Seller's Certifications*

- A. Seller certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Procurement Contract. For the purposes of this Paragraph 7.02:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Procurement Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Procurement Contract to the detriment of Buyer, (b) to establish bid or contract prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Procurement Contract.

ARTICLE 8—CONFIDENTIALITY

8.01 *Confidential Information*

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

8.02 *Disclosure of Confidential Information*

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

8.03 *Waiver of Immunity*

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

ARTICLE 9—MUTUAL WAIVER

9.01 *Mutual Waiver of Consequential Damages*

- A. Buyer and Seller waive against each other, and against the other's officers, directors, members, partners, employees, agents, consultants, and subcontractors, any and all claims for or entitlement to incidental, indirect, or consequential damages arising out of, resulting from, or related to the Procurement Contract. If Buyer (Project Owner) assigns this Procurement Contract to a construction contractor (Contractor/Assignee), then the terms of this Paragraph 9.01.A will be binding upon the Contractor/Assignee with respect to Seller and assignor. The terms of this mutual waiver do not apply to or limit any claim by either Buyer or Seller against the other based on any of the following: (a) contribution or indemnification, (b) liquidated damages, (c) costs, losses, or damages attributable to personal or bodily injury, sickness, disease, or death, or to injury to or destruction of the

tangible property of others, (d) intentional or reckless wrongful conduct, or (e) rights conferred by any bond provided by Seller under this Procurement Contract.

END OF SECTION

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

The Effective Date of the Procurement Contract is _____.

Buyer

Seller

(typed or printed name of organization)

(typed or printed name of organization)

By: _____
(individual's signature)

By: _____
(individual's signature)

Date: _____
(date signed)

Date: _____
(date signed)

Name: _____
(typed or printed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

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

Attest: _____
(individual's signature)

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Address for giving notices:

Designated Representative:

Designated Representative:

Name: _____
(typed or printed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

Address:

Phone: _____

Phone: _____

Email: _____

Email: _____

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

**SECTION 00 61 13.13
PERFORMANCE BOND FOR PROCUREMENT CONTRACT**

<p>Seller Name: Address (<i>principal place of business</i>):</p>	<p>Surety Name: Address (<i>principal place of business</i>):</p>
<p>Buyer Name: Allegheny County Sanitary Authority Mailing address (<i>principal place of business</i>): 3300 Preble Avenue Pittsburgh, PA 15233</p>	<p>Procurement Contract Description (<i>name and location</i>): Contract No. 1801 Ohio River Tunnel Substation 23kV and 13.8kV Switchgear Pre-Purchase Procurement Contract Price: Effective Date of Procurement Contract:</p>
<p>Bond Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Procurement Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 15</p>	
<p>Surety and Seller, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Seller as Principal	Surety
<i>(Full formal name of Seller)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Seller, Surety, Buyer, or other party is considered plural where applicable.</i></p>	

1. The Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Buyer for the performance of the Procurement Contract, which is incorporated herein by reference.
2. If the Seller performs the Procurement Contract, the Surety and the Seller shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Buyer Default under the Procurement Contract, the Surety's obligation under this Bond will arise after:
 - 3.1. The Buyer first provides notice to the Seller and the Surety that the Buyer is considering declaring a Seller Default. Such notice may indicate whether the Buyer is requesting a conference among the Buyer, Seller, and Surety to discuss the Seller's performance. If the Buyer does not request a conference, the Surety may, within five (5) business days after receipt of the Buyer's notice, request such a conference. If the Surety timely requests a conference, the Buyer shall attend. Unless the Buyer agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Buyer's notice. If the Buyer, the Seller, and the Surety agree, the Seller shall be allowed a reasonable time to perform the Procurement Contract, but such an agreement does not waive the Buyer's right, if any, subsequently to declare a Seller Default;
 - 3.2. The Buyer declares a Seller Default, terminates the Procurement Contract, and notifies the Surety; and
 - 3.3. The Buyer has agreed to pay the Balance of the Procurement Contract Price in accordance with the terms of the Procurement Contract to the Surety or to a seller selected to perform the Procurement Contract.
4. Failure on the part of the Buyer to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Buyer has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
 - 5.1. Arrange for the Seller, with the consent of the Buyer, to perform and complete the Procurement Contract;
 - 5.2. Undertake to perform and complete the Procurement Contract itself, through its agents or independent contractors;
 - 5.3. Obtain bids or negotiated proposals from qualified sellers acceptable to the Buyer for a contract for performance and completion of the Procurement Contract, arrange for a contract to be prepared for execution by the Buyer and a seller selected with the Buyer's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Procurement Contract, and pay to the Buyer the amount of damages as described in Paragraph 7 in excess of the Balance of the Procurement Contract Price incurred by the Buyer as a result of the Seller Default; or
 - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new seller, and with reasonable promptness under the circumstances:
 - 5.4.1. After investigation, determine the amount for which Surety may be liable to the Buyer and, as soon as practicable after the amount is determined, make payment to the Buyer; or

5.4.2. Deny liability in whole or in part and notify the Buyer, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven (7) days after receipt of an additional written notice from the Buyer to the Surety demanding that the Surety perform its obligations under this Bond, and the Buyer shall be entitled to enforce any remedy available to the Buyer. If the Surety proceeds as provided in Paragraph 5.4, and the Buyer refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Buyer shall be entitled to enforce any remedy available to the Buyer.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Buyer will not be greater than those of the Seller under the Procurement Contract, and the responsibilities of the Buyer to the Surety will not be greater than those of the Buyer under the Procurement Contract. Subject to the commitment by the Buyer to pay the Balance of the Procurement Contract Price, the Surety is obligated, without duplication for:
 - 7.1. the responsibilities of the Seller for correction of defective or non-conforming Goods and Special Services, and completion of the Procurement Contract;
 - 7.2. additional legal, design professional, and delay costs resulting from the Seller's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
 - 7.3. liquidated damages, or if no liquidated damages are specified in the Procurement Contract, actual damages caused by delayed performance or non-performance of the Seller.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Buyer or others for obligations of the Seller that are unrelated to the Procurement Contract, and the Balance of the Procurement Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Buyer or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Procurement Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction where the Point of Destination is located and must be instituted within two years after a declaration of Seller Default, or within two years after the Seller ceased working, or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice to the Surety, the Buyer, or the Seller must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Point of Destination, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1. *Balance of the Procurement Contract Price*—The total amount payable by the Buyer to the Seller under the Procurement Contract after all proper adjustments have been made including

allowance for the Seller for any amounts received or to be received by the Buyer in settlement of insurance or other claims for damages to which the Seller is entitled, reduced by all valid and proper payments made to or on behalf of the Seller under the Procurement Contract.

- 14.2. *Buyer Default*—Failure of the Buyer, which has not been remedied or waived, to pay the Seller as required under the Procurement Contract or to perform and complete or comply with the other material terms of the Procurement Contract.
- 14.3. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, as defined in the Procurement Contract.
- 14.4. *Point of Destination*—The location where delivery of the Goods shall be made, as stated in the Procurement Contract.
- 14.5. *Procurement Contract*—The contractual agreement between the Buyer and Seller identified on the cover page, including all Procurement Contract Documents and changes made to the Procurement Contract.
- 14.6. *Seller Default*—Failure of the Seller, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Procurement Contract.
- 14.7. *Procurement Contract Documents*—All the documents that comprise the contractual agreement between the Buyer and Seller.

15. Modifications to this Bond are as follows: None

END OF SECTION

**SECTION 00 61 13.16
PAYMENT BOND FOR PROCUREMENT CONTRACT**

<p>Seller Name: _____ Address (<i>principal place of business</i>): _____</p>	<p>Surety Name: _____ Address (<i>principal place of business</i>): _____</p>
<p>Buyer Name: Allegheny County Sanitary Authority Mailing address (<i>principal place of business</i>): 3300 Preble Avenue Pittsburgh, PA 15233</p>	<p>Procurement Contract Description (<i>name and location</i>): Contract No. 1801 Ohio River Tunnel Substation 23kV and 13.8kV Switchgear Pre-Purchase Procurement Contract Price: _____ Effective Date of Procurement Contract: _____</p>
<p>Bond Bond Amount: _____ Date of Bond: _____ <i>(Date of Bond cannot be earlier than Effective Date of Procurement Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 17</p>	
<p>Surety and Seller, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Seller as Principal	Surety
_____ <i>(Full formal name of Seller)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Seller, Surety, Buyer, or other party is considered plural where applicable.</i></p>	

1. The Seller and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Buyer to pay for labor, materials, and equipment furnished for use in the performance of the Procurement Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Seller promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Buyer from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Procurement Contract, then the Surety and the Seller shall have no obligation under this Bond.
3. If there is no Buyer Default under the Procurement Contract, the Surety's obligation to the Buyer under this Bond will arise after the Buyer has promptly notified the Seller and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Buyer or the Buyer's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Procurement Contract, and tendered defense of such claims, demands, liens, or suits to the Seller and the Surety.
4. When the Buyer has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Buyer against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 5.1. Claimants who do not have a direct contract with the Seller
 - 5.1.1. have furnished a written notice of non-payment to the Seller, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2. Claimants who are employed by or have a direct contract with the Seller have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Buyer to the Seller, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1. Send an answer to the Claimant, with a copy to the Buyer, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2. Pay or arrange for payment of any undisputed amounts.
 - 7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Seller may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Buyer to the Seller under the Procurement Contract will be used for the performance of the Procurement Contract and to satisfy claims, if any, under any procurement performance bond. By the Seller furnishing and the Buyer accepting this Bond, they agree that all funds earned by the Seller in the performance of the Procurement Contract are dedicated to satisfying obligations of the Seller and Surety under this Bond, subject to the Buyer's priority to use the funds for the completion of the Goods and Special Services.
10. The Surety shall not be liable to the Buyer, Claimants, or others for obligations of the Seller that are unrelated to the Procurement Contract. The Buyer shall not be liable for the payment of any costs or expenses of any Claimant under this Bond and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Procurement Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the Point of Destination is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Procurement Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
13. Notice and Claims to the Surety, the Buyer, or the Seller must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement where the Point of Destination is located, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Seller and Buyer shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. Definitions
 - 16.1. *Buyer Default*—Failure of the Buyer, which has not been remedied or waived, to pay the Seller as required under the Procurement Contract or to perform and complete or comply with the other material terms of the Procurement Contract.
 - 16.2. *Claim*—A written statement by the Claimant including at a minimum:
 - 16.2.1. The name of the Claimant;
 - 16.2.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.2.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Procurement Contract;

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

END OF SECTION

SECTION 00 72 63
STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Whenever used in the Procurement Bidding Requirements or Procurement 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 Procurement Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Procurement Contract Documents.
 2. *Application for Payment*—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.
 3. *Bid*—An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.
 4. *Bidder*—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.
 5. *Buyer*—The individual or entity purchasing the Goods and Special Services.
 6. *Change Directive*—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.
 7. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.
 8. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.
 9. *Contractor/Assignee*—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.
 10. *Effective Date of the Procurement Contract*—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.

11. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
12. *Electronic Means*—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
13. *Engineer*—The individual or entity designated as such in the Procurement Agreement.
14. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services, but which does not involve a change in the Procurement Contract Price or Procurement Contract Times.
15. *Goods*—The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.
16. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.
17. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
18. *Milestone*—A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.
19. *Notice of Award*—The written notice, by Buyer to a Bidder, of Buyer’s acceptance of the Bid.
20. *Point of Destination*—The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.
21. *Procurement Agreement*—The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.
22. *Procurement Bidding Documents*—The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).

23. *Procurement Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.
24. *Procurement Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.
25. *Procurement Contract Documents*—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.
26. *Procurement Contract Price*—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.
27. *Procurement Contract Times*—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.
28. *Procurement Drawings*—That part of the Procurement Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Procurement Drawings as so defined.
29. *Procurement Specifications*—That part of the Procurement Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.
30. *Project*—The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.
31. *Project Owner*—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.
32. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.
33. *Schedule of Submittals*—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer’s review of the Submittals.
34. *Seller*—The individual or entity furnishing the Goods and Special Services.
35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.

36. *Special Services*—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.
37. *Submittal*—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
38. *Successful Bidder*—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.
39. *Supplementary Conditions*—The part of the Procurement Contract that amends or supplements these General Conditions.
40. *Unit Price Goods and Special Services*—Goods and Special Services to be paid for on the basis of unit prices (if any).

1.02 Terminology

- A. The words and terms 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 Procurement Contract Documents.
- B. *Intent of Certain Terms or Adjectives*
 1. The Procurement Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Procurement Contract Documents.

2. The word “non-conforming” when modifying the words “Goods and Special Services,” “Goods,” or “Special Services,” refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:
 - a. do not conform to or comply with the requirements of the Procurement Contract Documents;
 - b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or
 - c. in the case of Special Services, have not been completed.
 3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer under the conditions specified in Paragraph 9.02.B.2.
 4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
 5. The word "furnish," when used in connection with the Goods and Special Services means to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Procurement Contract Documents.
- C. *Procurement Contract Price or Procurement Contract Times*: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.
- D. Unless stated otherwise in the Procurement Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer the performance bond and payment bond (if the Procurement Contract requires Seller to furnish such bonds).
- B. *Evidence of Seller’s Insurance*: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with Article 5. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.
- C. *Evidence of Buyer’s Insurance*: After receipt of the signed counterparts of the Procurement Agreement and all required bonds and insurance documentation, Buyer shall promptly

deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

2.02 *Copies of Documents*

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

2.03 *Electronic Transmittals*

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

2.04 *Preliminary Schedules*

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

2.05 *Preliminary Conference*

- A. Within 20 days after the Procurement Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedules referred to in Paragraph 2.04.A, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

2.06 *Safety*

- A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.
- B. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.
- C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

ARTICLE 3—PROCUREMENT CONTRACT DOCUMENTS

3.01 *Intent*

- A. The Procurement 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 Procurement Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.
- C. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.
- D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents, as provided in Paragraph 3.04.
- F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

3.02 *Reference Standards*

- A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific

or by implication, means the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.

- B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer any duty or authority to supervise or direct the performance of Seller's obligations, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Procurement Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Seller's Review of Procurement Contract Documents:* If, before or during the performance of Seller's obligations, Seller discovers any conflict, error, ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.
2. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Procurement Contract Documents unless Seller had actual knowledge thereof.

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

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

3.04 *Requirements of the Procurement Drawings and Procurement Specifications*

- A. During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and

Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.

1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.
- B. Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents, and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment as provided in Article 12.
- C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

3.05 *Reuse of Documents*

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

ARTICLE 4—COMMENCEMENT AND SCHEDULE

4.01 *Commencement of Procurement Contract Times*

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

4.02 *Continuing Performance*

- A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered and the Special Services furnished within the Procurement Contract Times.
- B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

4.03 *Adjustments to Progress Schedule*

- A. The progress schedule established in accordance with Paragraph 2.04 may be adjusted from time to time as provided below.
 - 1. Seller shall submit to Buyer for acceptance (to the extent indicated in Paragraph 2.04) proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such adjustments will comply with any applicable provisions of the Procurement Specifications.
 - 2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

4.04 *Delays*

- A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.
- B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.
- C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. abnormal weather conditions;
 - 3. inspection delays by governmental authorities, and custom delays;
 - 4. international shipping delays;
 - 5. acts or failures to act of third-party entities; and
 - 6. acts of war or terrorism.

- D. *Adjustments of Procurement Contract Times or Procurement Contract Price—General Provisions:* Seller’s entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:
1. Seller’s entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller’s obligations, as of the time of the delay, disruption, or interference.
 2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.
 3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.
- E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller’s progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller’s progress; (4) the number of days’ increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

ARTICLE 5—BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Seller shall furnish a performance bond and a payment bond, each in an amount at least equal to the Procurement Contract Price, as security for the faithful performance and payment of Seller’s obligations under the Procurement Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 9.04, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Procurement Contract.
- B. Seller shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Procurement Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Buyer prior to execution of the Procurement Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable

Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Seller shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Seller is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Seller shall promptly notify Buyer and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements of this Procurement Contract.
- F. If Seller has failed to obtain a required bond, Buyer may exercise Buyer’s termination rights under Article 14.
- G. Upon request to Buyer from any subcontractor, supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of Seller’s obligations, Buyer shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Seller from any subcontractor, supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of Seller’s obligations, Seller shall provide a copy of the payment bond to such person or entity.

5.02 *Insurance*

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

5.03 *Surety or Insurance Companies*

- A. All bonds and insurance required by the Procurement Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue

bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

ARTICLE 6—LICENSES AND FEES

6.01 *Intellectual Property and License Fees*

- A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.
- B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.
- C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights, or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.
- D. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Procurement Contract Documents.

6.02 *Seller's Infringement*

- A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.
- B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.
- C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.
 - 1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound, in any subsequent suit or claim against Seller by Buyer, by any factual determination in the prior suit or claim.
 - 2. If Buyer fails to provide Seller the opportunity to defend such suit or claim, Buyer shall be barred from any remedy against Seller for such suit or claim.

- D. If a determination is made that Seller has infringed upon the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

6.03 *Buyer's Infringement*

- A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications, and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.
- B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.
- C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.
 - 1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound, in any subsequent suit or claim against Buyer by Seller, by any factual determination in the prior suit or claim.
 - 2. If Seller fails to provide Buyer the opportunity to defend such suit or claim, Seller shall be barred from any remedy against Buyer for such suit or claim.

ARTICLE 7—SELLER'S RESPONSIBILITIES

7.01 *Performance of Obligations*

- A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.
- B. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Procurement Contract Documents.
- C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

7.02 *Labor, Materials and Equipment*

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

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

7.03 *Laws and Regulations*

- A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Procurement Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller's compliance with any Laws or Regulations.
- B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It will not be Seller's responsibility to make certain that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations 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 Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Article 12.

7.04 *"Or Equals"*

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

appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement Contract Documents.

- B. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or Submittal made pursuant to Paragraph 7.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or Submittal. No "or equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Procurement Contract Documents.
- C. *Special Guarantee:* Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."
- D. *Data:* Seller shall provide all data in support of any such proposed "or equal" at Seller's expense.

7.05 Taxes

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

7.06 Submittals

A. Shop Drawing and Sample Requirements

1. Before submitting a Shop Drawing or Sample, Seller shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.

3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Seller shall submit the number of copies required in the Procurement Specifications.
 - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.06.C.
 2. *Samples*
 - a. Seller shall submit the number of Samples required in the Procurement Specifications.
 - b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.06.C.
 3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.
5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements of Paragraphs 7.06.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.
8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

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

E. Submittals Other than Shop Drawings and Samples

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:
 - a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either

Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.

- c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.
 - d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

7.07 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.
- B. In any and all claims against Buyer, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.07.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.08 *Concerning Subcontractors and Suppliers*

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

ARTICLE 8—SHIPPING AND DELIVERY

8.01 *Shipping*

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

8.02 *Delivery*

- A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.
- B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours' notice by telephone prior to the anticipated time of delivery.
- C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.
- D. Buyer will assure that adequate facilities are available to receive delivery of the Goods at the time established for delivery, or on another date agreed to by Buyer and Seller.
- E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.
- F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

8.03 *Risk of Loss*

- A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.
- B. Notwithstanding the provisions of Paragraph 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

ARTICLE 9—BUYER'S RIGHTS

9.01 *Seller's Warranties and Guarantees*

- A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.
- B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Procurement Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller's warranty and guarantee. If the Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.B.

- C. Seller's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;
 2. excessive corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement Contract Documents required the Goods to withstand such conditions;
 3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or
 4. normal wear and tear under normal usage.
- D. Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents will be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents:
1. observations by Buyer, Engineer, or Project Owner;
 2. recommendation by Engineer or payment by Buyer of any progress or final payment;
 3. use of the Goods by Buyer or Project Owner;
 4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;
 5. the end of the correction period established in Paragraph 9.04;
 6. the issuance of a notice of acceptance;
 7. any inspection, test or approval by others; or
 8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.
- E. Buyer shall promptly notify Seller of any breach of Seller's warranties or guarantees.

9.02 *Inspections and Testing*

A. *General Provisions*

1. The Procurement Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.
2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Procurement Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of re-inspection or retesting.
3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting

from a determination of non-conformity, as set forth in Paragraph 9.03); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.

4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Procurement Contract Documents specify are to be observed by Buyer prior to shipment.
5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination, and a representative of Seller will attend such tests, inspections, and approvals.
6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 9.03.
7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

B. *Visual Inspection on Delivery*

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.
2. If, on the basis of the visual inspection specified in Paragraph 9.02.B.1, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.
2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.
3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

9.03 *Non-Conforming Goods and Special Services*

- A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of

delivery and before the expiration of the correction period described in Paragraph 9.04, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

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

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

C. *Buyer's Rejection of Non-Conforming Special Services*

1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.
2. Seller shall promptly provide conforming Special Services acceptable to Buyer.
3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.

D. *Remedying Non-Conforming Goods:* If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

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

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

G. *Buyer's Rejection of Conforming Goods:* If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if

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

9.04 *Correction Period*

- A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the acceptance of the Goods and Special Services in accordance with Paragraph 9.02.C.2.
- B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 10—ENGINEER'S STATUS

10.01 *Engineer's Role Defined*

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

10.02 *Duties and Responsibilities; Authority; Limitations*

- A. As set forth in Article 3, Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.
- B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.02, whether or not the Goods are fabricated or installed, or the Special Services are completed.

- C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 7.06.A.3, or 2) a Field Order.
- D. As set forth in Article 12, Engineer will review Claims, and render decisions on Claims.
- E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.
- F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 11—CHANGES

11.01 *Amending and Supplementing the Procurement Contract*

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

11.02 *Change Orders*

- A. Buyer and Seller shall execute appropriate Change Orders covering:
 - 1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;
 - 2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;
 - 3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services under Paragraph 9.03 or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves

the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.
- B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Change Directives*

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

11.04 *Field Orders*

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

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

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

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

11.06 *Unauthorized Changes in the Goods and Special Services*

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

11.07 *Change of Procurement Contract Price*

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

11.08 *Change of Procurement Contract Times*

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

11.09 *Notification to Surety*

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

ARTICLE 12—CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

12.01 *Claims*

- A. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the Claims process, including the time periods established in this Paragraph 12.01; if so, a written record of such mutual agreement should be made and jointly executed.
- B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.
- C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.

- D. Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- E. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 12.01.D., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.
- G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Paragraph 12.02.
- H. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 12.01, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Paragraph 12.02.
- I. If Article 12 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 12, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.
- J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.
- K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement, Article 5.

12.02 *Dispute Resolution Method*

- A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final

inspection of the Goods and Services. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.

- B. Mediation is a condition precedent to seeking final dispute resolution under Paragraph 12.01.C. Buyer and Seller shall participate in the mediation process in good faith. The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.
- C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:
 - 1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or
 - 2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or
 - 3. if no final dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 13—PAYMENT

13.01 *Applications for Progress Payments*

- A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Procurement Contract Documents and also as Buyer or Engineer may reasonably require.
- B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.
- C. Any Application for Payment that is based in whole or in part on the delivery of Goods must be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights.
- D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

13.02 *Review of Applications for Progress Payments*

- A. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;
 - b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and
 - c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer, or entitle Buyer to withhold payment to Seller.
4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or
 - b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or
 - c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or
 - d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or

- e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:
 - a. the Goods and Services are non-conforming, requiring correction or replacement;
 - b. the Procurement Contract Price has been reduced by Change Orders;
 - c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or
 - d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

13.03 *Basis and Amount of Progress Payments*

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

13.04 *Suspension of or Reduction in Payment*

- A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, even though recommended for payment by Engineer, under the following circumstances:
 1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Procurement Contract Documents, and
 2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.
 3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;

- c. Seller has failed to provide and maintain required bonds or insurance;
 - d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - e. the Goods and Special Services are non-conforming, requiring correction or replacement;
 - f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;
 - g. the Procurement Contract Price has been reduced by Change Orders;
 - h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;
 - i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or
 - j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.
- B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

13.05 *Final Payment*

- A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.
- B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.
- C. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.

- D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.
- E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.
- F. If the final Application for Payment and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, pursuant to the provisions of Paragraph 13.04.
- G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

13.06 *Waiver of Claims*

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

ARTICLE 14— CANCELLATION, SUSPENSION, AND TERMINATION

14.01 *Cancellation*

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

14.02 *Suspension of Performance by Buyer*

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

14.03 *Suspension of Performance by Seller*

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

14.04 *Breach and Termination*

A. *Buyer's Breach*

1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.
2. If Seller believes Buyer is in breach of its obligations under the Procurement Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. *Seller's Breach*

1. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.
2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.
3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

ARTICLE 15—MISCELLANEOUS

15.01 *Giving Notice*

- A. Whenever any provision of the Procurement Contract requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

15.02 *Controlling Law*

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

15.03 *Computation of Time*

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

15.04 *Cumulative Remedies*

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

15.05 *Survival of Obligations*

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

15.06 *Entire Agreement*

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

15.07 *No Waiver*

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

15.08 *Headings*

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

15.09 *Successors and Assigns*

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

END OF SECTION

SECTION 00 73 06
SUPPLEMENTARY CONDITIONS OF THE PROCUREMENT CONTRACT

These Supplementary Conditions amend or supplement EJCDC® P-700, Standard General Conditions of the Procurement Contract (2019). The General Conditions remain in full force and effect except as amended.

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

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

SC-1.01.A.12 Add the following language at the end of the final sentence:

Electronic Means does include transmission via the Buyer's eBuilder® Program Management Information System.

SC-1.02.B.4 Add the following language at the end of the sentence:

unless otherwise noted

ARTICLE 2—PRELIMINARY MATTERS

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Buyer shall furnish to Seller one printed copy of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF).

SC-2.03 Delete Paragraphs 2.03.B and 2.03.C in their entirety and insert the following in their place:

B. *Electronic Documents Protocol:*

1. Refer to "01 33 16 – Project Management Information System (eBuilder®)".
2. Buyer has implemented a Program Management Information System (eBuilder®) for the electronic transmittal and storage for all construction documents. The system is owned and operated by Buyer and runs on the eBuilder® platform. The Seller shall use eBuilder® to electronically submit all of the data and documents required by the Contract Documents (unless specified otherwise by Buyer) to achieve the following:
 - a. Facilitate exchanging information electronically.
 - b. Expedite the review process for submitted documents.
 - c. Centralize Project information.

ARTICLE 5- BONDS AND INSURANCE

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

1. *Required Performance Bond Form*: The performance bond that Seller furnishes will be in the form of EJCDC® P-610, Performance Bond (2010 or 2019 edition).
2. *Required Payment Bond Form*: The payment bond that Contractor furnishes will be in the form of EJCDC® P-615, Payment Bond (2010 or 2019 edition).

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

1. The correction period specified as one year after the date of acceptance of the Goods and Special Services in Paragraph 9.04 of the General Conditions is hereby revised to be 2 years after acceptance of the Goods and Special Services.
2. After acceptance of the Goods and Special Services, Seller shall furnish a warranty bond issued in the form of EJCDC® C-612, Warranty Bond (2018). The warranty bond must be in a bond amount of 10 percent of the final Procurement Contract Price. The warranty bond period will extend to a date 2 years after acceptance of the Goods and Special Services. Seller shall deliver the fully executed warranty bond to Buyer prior to or with the final application for payment, and in any event no later than 11 months after acceptance of the Goods and Special Services.
3. The warranty bond must be issued by the same surety that issues the performance bond required under Paragraph 5.01.A of the General Conditions.

SC-5.02 Add the following new paragraphs immediately after Paragraph 5.02.E:

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

5. claims for damages, other than to the Goods, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- G. The policies of insurance so required by this Paragraph 5.02 to be purchased and maintained must:
1. with respect to insurance required by Paragraphs SC-5.02.F.3 through SC-5.02.F.6 inclusive, include as additional insureds (subject to any customary exclusion in respect of professional liability) Buyer, Engineer, and their consultants, all of whom must be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds must provide primary coverage for all claims covered thereby;
 2. include at least the specific coverages and be written for not less than the limits of liability provided below or required by Laws or Regulations, whichever is greater;
 3. include completed operations insurance;
 4. include contractual liability insurance covering Seller's indemnity obligations under Paragraph 7.07;
 5. contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder will provide a copy of the notice to the other party, each other insured, and Engineer;
 6. remain in effect at least until final payment and at all times thereafter when Seller may be correcting, removing, or replacing non-conforming Goods in accordance with Paragraph 9.03 and 9.04; and
 7. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Seller shall furnish Buyer and each other additional insured identified in these Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Buyer and any such additional insured of continuation of such insurance at final payment and one year thereafter).
 8. Provide Waiver of Subrogation in favor of buyer for Workers Compensation, Commercial General Liability, and Automobile Liability.
- H. The limits of liability for the insurance required by Paragraph SC-5.02.F must provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
1. Workers' Compensation, and related coverages under Paragraphs SC-5.02.F.1 and F.2:

Workers' Compensation and Related Policies	Policy limits of not less than
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Jones Act (if applicable)	
Bodily injury by accident—each accident	\$100,000
Bodily injury by disease—aggregate	\$500,000
Employer's Liability	
Each accident	\$100,000
Each employee	\$100,000
Policy limit	\$500,000
Stop-gap Liability Coverage	
For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:	\$

2. Seller's General Liability under Paragraphs SC-5.02.F.3 through F.6 which must include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Seller:

Commercial General Liability	Policy limits of not less than
General Aggregate	\$2,000,000
Products—Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

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

Automobile Liability	Policy limits of not less than
Bodily Injury	
Each Person	\$1,000,000
Each Accident	\$1,000,000
Property Damage	
Each Accident	\$1,000,000
[or]	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	\$1,000,000

4. Professional Liability (if the Special Services include professional services):

Seller's Professional Liability	Policy limits of not less than
Each Claim	\$1,000,000
Annual Aggregate	\$2,000,000

- I. Seller shall deliver to Buyer, with copies to each additional insured identified in these Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Buyer or any other additional insured) which Seller is required to purchase and maintain.

ARTICLE 7- SELLER'S RESPONSIBILITIES

SC-7.08 Add the following new subparagraph immediately after Paragraph 7.08.A:

- 1. Buyer reserves the right to limit the amount of work subcontracted to a maximum of 50 percent of the Procurement Contract Price.

ARTICLE 8- SHIPPING AND DELIVERY

SC-8.01 Add the following new paragraph immediately after Paragraph 8.01A:

- B. All equipment and materials shall be shipped in flat bed or open-top trailers. If shipped in a closed top trailer, materials must be at the rear of the truck for unloading with a forklift. A loading dock will not be available.

SC-8.02B Amend the last sentence of Paragraph 8.02B to read as follows:

- B. Seller shall also require the carrier to give the Buyer at least 48 hours' notice by telephone prior to the anticipated time of delivery.

SC-8.02G Add the following new paragraph immediately after Paragraph 8.02F:

- G. Provide storage and/or unloading instructions with delivery to maintain warranty.

ARTICLE 9- BUYER'S RIGHTS

SC-9.04 Add the following new Paragraph 9.04:

- D. The correction period specified as one year after the acceptance of the Goods and Special Services in Paragraph 9.04.A of the General Conditions is hereby revised to be the number of years set forth in SC-5.01.B; or if no such revision has been made in SC-5.01.B, then the correction period is hereby specified to be 2 years after acceptance of the Goods and Special Services.

ARTICLE 12- CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

SC-12.01 Delete subpart I of Paragraph 12.01

SC-12.02 Replace Paragraph 12.02 with the following:

- A. In the event that either party disputes the Engineer's decision of a Claim, that party shall refer the Claim, in writing, with all material facts described, to the Buyer's Executive Director for determination within fifteen (15) calendar days of the Engineer's decision of the Claim.
- B. As an additional express condition precedent to the right to submit a Claim to the Buyer's Executive Director, the Seller may be required to provide certain materials utilized by the Seller in preparation of its Bid, including, but not limited to, worksheets, quotations, calculations, pricing data, estimates and correspondence relating thereto, clarification, additional information or data requested, and shall present in writing to the Executive Director evidence regarding the Claim, including evidence regarding liability, causation and damages, sufficient to enable the Executive Director to render a decision with respect to the Claim, and such evidence must be submitted to the Executive Director within thirty (30) calendar days of the Engineer's decision of the Claim. The Executive Director, in his/her sole discretion, may require an informal hearing prior to making a determination. The Executive Director may conduct the hearing or may appoint a hearing officer of his/her choice. If the hearing officer is other than the Executive Director, the hearing officer shall make a recommendation to the Executive Director as to the disposition of the Claim. The decision of the Executive Director, or hearing officer, shall be made in writing within fifteen (15) calendar days of the hearing.
- C. It is mutually agreed that any controversies, claims or disputes of any nature arising out of or relating to this Contract, or the breach thereof, or otherwise related to the Project, including any unresolved Claim, may, at the Buyer's sole discretion, be settled by arbitration in accordance with the then current Construction Industry Arbitration Rules of the American Arbitration Association in Pittsburgh, Pennsylvania and that all findings and decisions by the arbitrators shall be conclusive and binding on both parties and shall not be appealable and judgment upon the award rendered by the arbitration panel may be entered in the Court of Common Pleas of Allegheny County. The Buyer may exercise its discretion to utilize arbitration at any time and shall not be deemed to have waived such discretion by any lapse of time or performance of any act.

- D. If so determined by the arbitrators, and to the extent so determined by the arbitrators, the fees, costs and expenses of the arbitration shall be borne by the party against whom the arbitration is determined.
- E. It is mutually agreed that any controversies, claims or disputes of any nature arising out of or relating to this Contract, or the breach thereof, or otherwise related to the Project, including any unresolved Disputed Item, may, at the Buyer's sole discretion be resolved by legal proceedings in the courts of the Commonwealth of Pennsylvania beginning in the Court of Common Pleas, Allegheny County Pennsylvania unless otherwise determined by the Buyer.
- F. The Buyer shall make no claim against any officer, agent, or employee of the Seller for, or on account of, any act or omission to act in connection with the Contract, and hereby waives any and all rights to make any such claim or claims.

END OF SECTION

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SECTION 01 11 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 GENERAL

A. General:

1. It is the intent of the Contract Documents to describe a functionally complete project.
2. The work included in this project is at the Allegheny County Sanitary Authority (Buyer) Woods Run Wastewater Treatment Plant in Pittsburgh, PA and is described in detail in the rest of this section.
3. Furnish all materials, tools, equipment and Manufacturer Field Services as indicated in accordance with provisions of Contract Documents.
4. Furnish and install all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, complete, and functional installation of the work.
5. In addition to this individual project, there may be construction activities underway at the plant site during part or all of the construction period for this project.

B. Contract No. 1801 will be executed by Sellers according to the requirements of the Contract Documents. The following parties may be present at the job site and have the responsibilities described generally in Article 3, Contract Provisions:

1. ALCOSAN (Buyer)
2. Construction Manager (CM)
3. Engineer
4. Seller(s)
5. Fabricators and supplier(s)
6. Testing agencies
7. Commissioning firms
8. Other project stakeholders

C. Buyer:

1. The BUYER may be identified as the responsible entity for certain actions in the sections of Division 26. The BUYER may elect to delegate certain of these respective duties and responsibilities to the aforementioned parties.
2. All contact between the seller(s) and the remaining aforementioned parties shall be through the Construction Manager.

D. Cooperate fully with separate Sellers so work on those contracts may be carried out smoothly, without interfering with or delaying work under this contract. Coordinate the work of this contract with work performed under separate contracts.

1.2 WORK COVERED BY CONTRACT

- A. The work includes, but is not necessarily limited to, the following. However, this description is in no way meant to limit or restrict the work required under the contract. Refer to the Contract Drawings and the remainder of the specifications for additional**

detail on the Scope of the Work. All Sellers are responsible to review the entire set of Contract Documents and Contract Drawings to familiarize themselves with the entire project.

- B. Tasks to be completed by the General Seller will include, but will not be limited to:
 - 1. Furnish all goods required to install and put equipment into service, consistent with Division 26 specifications.
 - 2. Initial onsite instrument calibration and check out of equipment.
 - 3. Final check out and commissioning.

1.3 WORK SEQUENCE

- A. Organize and plan the construction activities to assure the safety and reliability of and to minimize the interruption to the plant operations and performance.

1.4 OCCUPANCY

- A. Buyer will occupy the premises during the entire period of construction for the conduct of his normal operations. Coordinate with BUYER in all construction operations to minimize conflicts and to facilitate BUYER usage.
- B. Execute Certificate of Substantial Completion for each area all systems installed and commissioned as described in Article 1.2.
 - 1. After Buyer occupancy, allow:
 - a. Access for Buyer's personnel.
 - b. Access for the public.
 - c. Operation of area process, HVAC, plumbing and electrical systems.
 - 2. After occupancy, Buyer will provide:
 - a. Seller access to finish punch list items.
 - b. Access to area process, HVAC, plumbing, and electrical systems for Sellers to perform warranty work.

1.5 SELLER-FURNISHED PRODUCTS

- A. Furnish all products other than Buyer-furnished products designated above.
- B. Components required to be supplied in quantity within a specification section shall all be the same and shall be interchangeable.
- C. Unless otherwise indicated in the Contract Documents, provide materials and equipment that:
 - 1. Are produced by reputable manufacturers having adequate experience in the manufacture of these items;
 - 2. Are designed for the service intended;
 - 3. Have not been previously incorporated into another project or facility;
 - 4. Have not changed ownership since their initial production or fabrication and shipment from the manufacturer's factory or facility;
 - 5. If stored since their manufacture or fabrication, have, while in storage, been properly maintained and serviced in accordance with the manufacturer's recommendations for long-term storage. Submit documentation under the relevant technical section that such maintenance and service has been performed.

6. Have not been subject to degradation or deterioration since manufacture.
7. Are the current model(s) or type(s) furnished by the supplier and only modified as necessary to comply with the design.

1.6 PERMITS AND LICENSES

A. The Seller shall acquire all necessary permits required for the project.

1.7 ACCESS BY GOVERNMENT OFFICIALS

A. Authorized representatives of governmental agencies shall at all times have access to the work.

1.8 DESCRIPTION OF PROJECT PERSONNEL AND THEIR RESPONSIBILITIES

A. Seller's Personnel: As described in these Contract Documents and as follows:

1. Project Manager and Site Superintendent must be on site at all times when work in individual contract area is proceeding. The Buyer reserves the right to approve the Seller's proposed Project Manager and Site Superintendent. If at any time during the execution of the Contract the Buyer determines that the Seller's Project Manager or Site Superintendent is not executing the work in conformance with the Contract Documents, the Buyer may request in writing that he/she be replaced. Seller will not replace the Project Manager or Site Superintendent without written notice to Construction Manager except under extraordinary circumstances. The Project Manager or Site Superintendent will be Seller's representative at the site and shall have the authority to act on behalf of Seller. All communications to the Project Manager or Site Superintendent shall be as binding as if given to Seller. If at any time during the Project the Project Manager or Site Superintendent must leave the project site while work is in progress, the Construction Manager shall be notified and provided with the name of the Seller's representative having responsible charge.
2. Quality Control Representative will be responsible for Seller's quality control program while work is in progress.
3. Safety and Protection Representative:
 - a. Seller shall designate a qualified and experienced Safety Representative at the site whose duties and responsibilities shall be to prevent accidents and to maintain and supervise the implementation of the Seller's Safety Plan. The Safety Representative shall be trained in First Aid and CPR. The Safety Representative's qualifications shall be submitted to the Construction Manager prior to beginning work on site.
 - b. Initiate, maintain, and supervise the safety plan in connection with the work. Take all necessary precautions for safety and provide for the necessary protection to prevent damage, injury, or loss to:
 - 1) All persons on the work site or who may be affected by the work;
 - 2) All the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and
 - 3) Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and underground facilities not designated for removal, relocation, or replacement in the course of

construction.

- c. Comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss.
 - d. Before any work at the site is started, the Seller shall prepare a written project Site-Specific Safety Plan and submit to the Construction Manager for record. The **Site-Specific Safety Plan** must follow the template attached to this specification. If it does not, the Buyer will return it for revisions. See **Appendix A** at the end of this specification for the template.
 - e. The Safety Representative shall revise the Safety Plan at appropriate times to reflect changes in construction conditions, the work, Seller's means, methods, techniques, sequences and procedures of transport. The Safety Representative will submit the revised Safety Plan to the Construction Manager for record.
 - f. Seller's personnel are obligated to act, without direction or authorization from Buyer or Construction Manager, to prevent any potential injury or property loss when confronted with any emergency situation affecting the safety or protection of persons or the work or property at the site or adjacent thereto.
 - g. Seller shall give Construction Manager prompt written notice if Seller believes that any significant changes in the work or variations from the Contract Documents have been caused by any unforeseen emergency situation. If Construction Manager determines that a change in the Contract Documents is required because of the action taken by Seller in response to such an emergency, Construction Manager will proceed in accordance with Article 3, Contract Provisions.
 - h. In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, each Seller, without special instruction or authorization from Buyer or Construction Manager, is obligated to act to prevent threatened damage, injury or loss. Seller shall give Construction Manager prompt written notice if Seller believes that any significant changes in the work or variations from the Contract Documents have been caused thereby. If Construction Manager determines that a change in the Contract Documents is required because of the action taken by Seller in response to such an emergency, Construction Manager will proceed in accordance with Article 3, General Contract Conditions.
 - i. Seller shall take precautions to prevent any materials related to the work from falling into active process tanks such as the aeration basins, secondary clarifiers, primary sedimentation basins, etc. It will be the Seller's responsibility to retrieve any such debris at his own expense with assistance from ALCOSAN. Seller may be back-charged ALCOSAN's costs for assistance in retrieving Seller debris from process tanks.
- B. Buyer: As described in these Contract Documents and as follows:
1. Can enter into legal contract with Seller for completion of the work.
 2. Can approve contract amendments, progress payments, and make final acceptance of the work.
 3. Can participate in coordination of site construction activities.

4. Can participate in training, testing and startup activities.
- C. Construction Manager (CM): As described in these Contract Documents and as follows:
1. Inspect and monitor Seller progress and quality of work.
 2. Seller shall provide all required assistance for the CM's Engineer's inspection of the work.
 3. Make available for the use of Seller, copies of all existing information in the possession of the Construction Manager, which may be pertinent to the performance of Seller services under the Scope of work
 4. Provides engineering support services including RFI responses.
 5. Reviews technical submittals and shop drawings.
 6. Prepares drawing revisions and cost estimates.
 7. Provides drawing and submittal control.
 8. Provides technical supervision of startup activities
 9. Assists in training, testing and startup activities.
- D. Supplier (Material and Equipment): As described in these Contract Documents and as follows:
1. Will provide submittals and operation and maintenance manuals for equipment and material as specified.
 2. Will perform on-site training
 3. Will provide commissioning and start up services
 4. Will provide engineering support services during commissioning

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

Attachments:

- Appendix A – Site-Specific Safety Plan (SSSP) Template

END OF SECTION

SITE SPECIFIC SAFETY PLAN (SSSP) TEMPLATE

Cover Page

- Company Name
- Address or coordinates
- Site Specific Safety Plan
- Project Name/Number
- Date

Table of Contents

1. Purpose

2. Scope of Work

- a. Identify steps of the work
- b. Hours of Operation Project

3. Site Specific Safety Plan

- a. Spill Leak Prevention and Response
 - i. Identify location of Chemical Inventory (SDSs) – ex: Tool Trailer, Job Office, Foreman Truck
- b. Hazard Recognition and Mitigation (Define *all project* hazards and steps to mitigate)
 - i. Examples:
 - a) Hot Work
 - b) Confined Space Entry
 - c) Fall Hazard Control and Protection
 - d) Arc Flash Protection (70E) using correct PPE
 - c. Minimum Required PPE
 - d. Fire Control
 - e. Dust Control
 - f. Housekeeping Program
 - g. Evacuation Plan
 - h. Rescue Plan (if applicable)
 - i. Traffic Control – School Bus Curfews, Speed Limits, etc.
 - j. Utility Locate Verification (if applicable)
 - k. COVID-19 Plan (consistent with Buyer protocols)

4. Contact information – Names / Contact Info.

- a. Seller
 - i. Operations Manager
 - ii. Project Supervisor
 - iii. Safety Manager
 - iv. Foreman

- b. Seller(s)
 - i. List Company Name and Contact Person
- c. Buyer
 - i. Engineers
 - ii. Loss Control Manager
 - iii. Safety Specialist
 - iv. Security

5. Injury and Incident Response Plan

- a. Buyer Emergency Procedures/Notification
 - i. All cases
 - ii. First aid cases
 - iii. Severed of life-threatening injuries
- b. Important information
 - i. GPS Coordinates
 - ii. Emergency Contact Information
 - a) Hospital(s) Contact Information
 - a. Map – Route to Hospital

6. Training – What types of work should include specific regulatory training

- a. Examples:
 - i. Hot work
 - ii. Confined Space
 - iii. Fall Protection
 - iv. Hazard Communication
 - v. LOTO
 - vi. Housekeeping
 - vii. Equipment

7. Acknowledgment Form

- a. “I acknowledge the SSSP for _____ has been reviewed and explained to me”

Note: Plan to be reviewed with General Seller and Subcontractors

- i. Print name
- ii. Signatures
- iii. Date

8. Attachments

- a. Training Documents for specific work listed
- b. Safety Data Sheets (SDS) for all chemicals brought onto site
- c. Proof of CCO certification for all crane operators
- d. Required blank (Seller owned) forms to be completed
 - i. Examples:
 - a) Hot Work
 - b) Tailgate Safety Meeting (TSM) / Job Safety Analysis (JSA)

- c) Confined Space Entry
- d) Excavation Daily Inspection
- e) LOTO

9. Additional Comments/Notes

SECTION 01 11 20
JOB CONDITIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Job conditions.

B. Related Specification Sections include but are not necessarily limited to:

1. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
2. Specification Section 00 41 63 - Bid Form for Procurement Contracts
3. Specification Section 00 43 14 - Bid Bond (Damages Form)
4. Specification Section 00 45 13 - Qualifications Statement

1.2 PROJECT LOCATION

- A. The work is located at the ALCOSAN Woods Run Wastewater Treatment Plant, 3300 Preble Avenue, Pittsburgh, PA 15233.

1.3 COORDINATION AND PROJECT CONDITIONS

- A. The Engineer will verify that utility requirements and characteristics of operating equipment are compatible with building utilities during submittal review and coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing operating equipment in service. Engineer will coordinate with Construction Manager as needed.

B. Coordination Meetings:

1. In addition to other meetings specified in this section, General Seller will hold coordination meetings with the other Prime Sellers as necessary to ensure coordination of their work.

- C. Coordinate completion and clean-up of work in preparation for Substantial Completion and for portions of work designated for Buyer's occupancy.

- D. After Buyer's occupancy of premises, Construction Manager shall coordinate access to site for correction of defective work and work not complying with Contract Documents, to minimize disruption of Buyer's activities.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 WORKING HOURS

- A. Normally, Seller(s) (and SubSeller) working hours consist of 8 working hours within a 10-hour period between 7:00 a.m. and 5:00 p.m., on a regularly scheduled basis, excluding Saturdays, Sundays and holidays. Work hours outside of this time frame must be approved through the Construction Manager. Approval for work outside

normal work hours shall be requested no less than 48 hours prior to start of the respective work period. This contract will require coordination with ALCOSAN operations staff and may have limited working hours allowed Monday through Friday during normal work hours. All scheduling shall take work location limitations, nighttime and weekend work, and any incidental costs incurred into consideration. No additional compensation will be allowed for work outside of normal working hours.

- B. As noted on the Contract Drawings or in Section 01 52 00, Maintenance of Plant Operations, there may be need for second shift work to accommodate construction sequence or other constraints, i.e., plant operations or consent decree deadlines.
- C. Buyer-designated holidays are as follows:
 - 1. New Year's Day
 - 2. Martin Luther King, Jr. Birthday
 - 3. Presidents Day
 - 4. Good Friday
 - 5. Memorial Day
 - 6. Independence Day (Fourth of July)
 - 7. Labor Day
 - 8. Columbus Day/Indigenous Peoples Day
 - 9. Election Day
 - 10. Veterans Day
 - 11. Thanksgiving Day
 - 12. Day after Thanksgiving Day
 - 13. Christmas Day
- D. The Buyer hosts an annual Open House that is usually scheduled for the third or fourth Saturday in September. This event is open to the public and requires time for set-up before the event and take-down after the event. Seller should expect that these tasks will impede normal traffic flows the week prior and the week following Open House. Absolutely no contract work can be performed on the Saturday of Open House.

END OF SECTION

SECTION 01 22 00
MEASUREMENT AND PAYMENT (LUMP SUM PRICES)

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:

1. Defines how work items are measured and paid for on Lump Sum and Unit Price Contracts. These items include unit price, lump sum price, and allowance payment items.
2. In the case of conflict between this Section and the measurement methods specified in the individual Technical Specification Sections, the measurement methods in Technical Specification Sections shall govern.
3. Receive payment for work per the payment schedule laid out in Section 00 52 63. Payment for material on hand can only be paid for if allowed by the Agreement, the General and/or Special Conditions.
4. Partial payment may be requested for items partially installed when agreed to by the Buyer.

B. Related Specification Sections include but are not necessarily limited to:

1. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
2. Specification Section 00 41 63 - Bid Form for Procurement Contracts
3. Specification Section 00 43 14 - Bid Bond (Damages Form)
4. Specification Section 00 45 13 - Qualifications Statement
5. Applications for Payment requirements are included in this specification section.

C. Provisions of this section apply to the work of each Prime Seller.

1.2 LUMP SUM ITEMS – GENERAL

- A.** Payment for the work completed under this Contract will be made at the lump sum bid amount. The lump sum shall include the furnishing of all labor, tools, equipment and materials and the performance of all work required to complete the Contract as indicated and specified in accordance with all requirements of the Contract Documents and to the satisfaction of the Construction Manager. Should there be discrepancies among Contract Documents, it shall be assumed that the more costly and higher quality design, as solely judged by the Construction Manager, was the basis of the bid; no additional payment shall be required from the Buyer.
- B.** Before the first Application for Payment, the Seller shall submit to the Construction Manager a Schedule of Values allocated to the various portions of the Work, as set forth in this section and supported by such data to substantiate its accuracy as the Buyer may require. This Schedule of Values, when approved by the Buyer shall be used as the basis for the Seller's Applications for Payment and only for this purpose.

- C. No progress payments will be made by the Buyer until the Progress Schedule, including the Schedule of Values, has been submitted to and approved by the Buyer.
- D. The total bid amount shall include all lump sum and unit price bid items for all Prime Contracts.
- E. The Seller agrees that it will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated quantities.

1.3 SCHEDULE OF VALUES

- A. The Schedule of Values is a statement furnished by the Seller to the Construction Manager. It shall be submitted within seven calendar days prior to the Preconstruction Conference and shall reflect the portions of the contract price allocated to various portions of the Work.
- B. Once accepted by the Construction Manager, the Schedule of Values shall be the basis for reviewing Payment Applications by the Seller in accordance with the Schedule of Payments in the Contract Provisions.
- C. This Schedule will contain all of the major components making up the work, shall be coordinated with the Schedule of Payments, and shall contain, as a minimum, the following information:
 - 1. Organization of Work Items by Specification; Section; Reference.
 - 2. For all major Work Items/Components
 - a. Listing of Labor Value
 - b. Listing of Material/Equipment/Deliverable Value
 - c. Reflect all activities shown on the Project Schedule.
 - 3. Show all Subtotals and Totals as directed by the Construction Manager to support the Payment Application Form.
- D. Refer to Section 00 52 63 Agreement Between Buyer and Seller for Procurement Contract subpart 4.02 for progress payments and final payment.
- E. All Prime Sellers shall utilize the following work breakdown structure (WBS) for the creation of the Schedule of Values and CPM Schedule:
 - 1. Receipt of Approved Shop Drawings
 - 2. Completion of Factory Testing
 - 3. Delivery of Goods
 - 4. Completion of Special Services
 - 5. Project Completion

1.4 APPLICATION FOR PAYMENT

- A. General:
 - 1. Progress payments applications will be made monthly on the date established at the preconstruction meeting.
- B. Pay Applications shall be submitted in eBuilder®. Pencil copy shall be submitted

to the CM for review prior to submission of progress Pay Application. Pencil copy shall be submitted on form provided by the CM.

- C. Payment for all work shown or specified in the Contract Documents is included in the Contract Price. No measurement or payment will be made for individual items.
- D. General:
 - 1. The lump sum bid price for this work will consist of work identified in the Specifications and on the Contract Drawings associated with procurement in the Specifications and on the Contract Drawings.
 - 2. Major items of work are provided in Section 01 11 00, Summary of Work, paragraph 1.2.B.
 - 3. Measurement and payment for this item will be a physical percent complete as agreed upon by the Construction Manager and the Seller per the Seller's Schedule of Values.

1.5 NON-PAYMENT FOR REJECTED OR UNUSED PRODUCTS

- A. Payment will not be made for following:
 - 1. Loading, hauling, and disposing of rejected material.
 - 2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
 - 3. Rejected loads of material, including material rejected after it has been placed by reason of failure of Seller to conform to provisions of Contract Documents.
 - 4. Material not unloaded from transporting vehicle.
 - 5. Defective work not accepted by Buyer.
 - 6. Material remaining on hand after completion of work.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL CONTRACT – PAY ITEMS

- A. Lump Sum:
 - 1. This pay item will not be measured for payment.
 - 2. Payment for this pay item will be made at the lump sum bid price, which price and payment will include all labor, materials, equipment, tools, testing, fees, and incidentals needed to complete the work specified, except as otherwise itemized in the Schedule of Values.
- B. Pay Item 1 – Receipt of Approved Shop Drawings
 - 1. Payment for this pay item will be lump sum, payment and will be 30 percent of the lump sum cost of the Contract.
- C. Pay Item 2 – Completion of Acceptable Factory Testing
 - 1. Payment for this pay item will be lump sum payment, and will be 20 percent

of the lump sum cost of the Contract.

D. Pay Item 3 – Delivery of Goods

1. Payment for this pay item will be lump sum payment, and will be 35 percent of the lump sum cost of the Contract.

E. Pay Item 4 – Completion of Special Services

1. Payment for this pay item will be lump sum payment, and will be 10 percent of the lump sum cost of the Contract.

F. Pay Item 5 – Project Completion

2. Payment for this pay item will be lump sum payment, and will be 5 percent of the lump sum cost of the Contract.

3.2 INITIAL APPLICATION FOR PAYMENT

A. Administrative actions and submittals that must precede the first Application for Payment include the following:

1. Baseline Construction Schedules information.
2. Seller's Schedule of Values.
3. Seller's Submittal Schedule.
4. List of SubSellers (if required).
5. List of Principal Suppliers and Fabricators (if required).
6. List of Seller's staff assignments (if required).
7. Copies of Building Permits (if applicable).
8. Copies of licenses and authorizations from governing authorities for performance of the work (if applicable).
9. Certificates of Insurance.
10. Required Bonds.
11. Safety Program reviewed by the Buyer and Construction Manager and recorded as reviewed without comments.

3.3 MONTHLY APPLICATION FOR PAYMENT

A. Administrative actions and submittals that must precede each monthly Application for Payment include the following:

1. Seller's Project Schedule with brief summary narrative (updated).
2. Seller's submittal schedule (updated).
3. Certificates of Insurance (updated).
4. Required backup/approved shop drawings for materials stored on site.
5. Resolution of all Site Safety Notices.
6. Disposition of all Non-Conformance Notices by the Construction Manager.

3.4 FINAL APPLICATION FOR PAYMENT

A. Administrative actions and submittals that must precede the Final Application for Payment are outlined in Article 3, General Contract Conditions.

END OF SECTION

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SECTION 01 26 13
REQUESTS FOR INFORMATION (RFI)

PART 1 – GENERAL

1.1 SUMMARY

- A. This section defines the process for handling Requests for Information (RFI).
- B. RFIs are intended to provide clarifications and interpretations of the Contract Documents and maintain progress of work.
- C. RFIs are not intended for general communication, requesting substitutions, requesting proposed changes, resolution of nonconforming work, or coordination between Sellers.

1.2 REQUIREMENTS OF THE CONTRACT DOCUMENTS

- A. During the performance of the work and until final payment, Seller and Buyer shall submit to the Engineer through the Construction Manager all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation [RFIs]), or relating to the acceptability of the work under the Contract Documents, as soon as possible after such matters arise.
 - 1. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the work thereunder.
- B. Within 10 working days of receipt of RFI, Construction Manager will return a response to the RFI, request additional information, or will provide a schedule of when a response will be issued. If warranted, Construction Manager will initiate an amendment or supplement to the Contract Documents.
 - 1. Engineer's written clarification, interpretation, or decision will be final and binding on Seller, unless it appeals by submitting a Change Proposal, and on Buyer, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns Terms and Conditions of the Contract Documents that do not involve: (1) the performance or acceptability of the Work under the Contract Documents; (2) the design (as set forth in the Drawings, Specifications, or otherwise); or (3) other engineering or technical matters, then Construction Manager will direct the RFI to the Buyer to provide a decision or interpretation.
 - 1. If Buyer and Seller is unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in the General Conditions.

1.3 RFI SUBMITTAL PROCEDURE

- A. All RFIs shall be submitted to the Construction Manager through eBuilder®.
- B. When needed, the RFI shall include backup information to clarify the request.
 - 1. Backup information can include verified field measurements, quantities, dimensions, photos showing existing conditions, and any other information that will assist the Engineer or Buyer in reviewing and responding to the RFI.

PART 2 - PRODUCTS - (NOT USED)

PART 3 – EXECUTION

3.1 REQUESTS FOR INFORMATION

A. Review of Contract Documents and Field Conditions:

1. Before starting each portion of work, carefully study and compare drawings, specifications and other contract documents, coordination drawings, shop drawings, prior correspondence, or documentation relative to that portion of work, and any other information furnished by Construction Manager and Buyer.
2. Evaluate field conditions and take field measurements related to that portion of work.
3. Any inconsistencies discovered in the above review of the Contract Documents and field conditions should be submitted to the Construction Manager in an RFI.

B. Seller's Responsibilities:

1. When interpretation, clarification, or explanation of portion of Construction Documents is needed Seller's SubSeller, Vendor or Supplier, the request shall be processed through the Seller.
 - a. Review the RFI for completeness, quality, proper referencing drawings, specification, or other contract documents.
 - b. When submitting RFIs generated from subSellers, suppliers, and others, make every attempt to validate, resolve or respond to RFI by thoroughly researching and reviewing Contract Documents and field conditions before transmitting to the Engineer.
 - c. If the RFI is not clear, concise, complete, and easily understood, do not submit the RFI to Construction Manager for response.
2. Follow these procedures in developing an RFI:
 - a. List relevant Contract Documents when seeking information being requested.
 - 1) Reference all applicable Contract Drawings by sheet number.
 - 2) Specifications by section and paragraph number
 - 3) Reference any other relevant documents.
 - b. Clearly state any additional information needed so request can be fully understood, including sketches, photos, or other reference material.
 - c. Suggest any reasonable solutions and recommendations which will aid in determining a solution or response.
 - d. Any critical RFIs requiring a rapid response shall clearly indicate such with an explanation as to why RFI is critical.
 - e. Priority for responses shall be indicated when multiple RFIs are submitted within short period of time.
3. A response to RFI shall not be considered a notice to proceed with a change that may revise the Contract Sum or Contract Time, unless authorized by Buyer in writing.
4. If response to RFI is determined incomplete, it shall be resubmitted with reason response is unacceptable and any necessary additional information within five days of time of receipt of response to RFI.
5. RFI Submittal Format:

- a. Request for information shall be submitted to the Construction Manager through eBuilder®.
 - b. RFI Attachments shall be in electronic text or PDF file format. Photo attachments may be in JPG format.
- C. RFI Submittal Numbering:
- 1. RFIs shall be assigned unique numbers in sequential order by eBuilder®.
- D. A resubmitted RFI or a previously answered RFI requiring revising or further clarification shall be assigned a unique number by eBuilder®.
- 1. Engineer may return RFI without response for following reasons:
 - a. Request is unclear or incomplete.
 - b. Request was answered in a previous RFI.
 - c. Requested information is readily available in the Construction Documents.
 - d. Request is related to construction means, methods or techniques.
 - e. Request is related to health or safety measures.
 - f. Request is due to Seller's lack of adequate coordination.
 - g. Issue relates to coordination between SubSellers.
 - h. Request is a "Substitution Request."
 - i. Request is a "Seller Proposed Change."
 - j. Request is due to non-conformance.
 - 2. Should the invalid RFIs continue to be provided, the Buyer may deduct the cost of the Engineer's time to process, review and return the RFIs.

END OF SECTION

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SECTION 01 33 00
SUBMITTALS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Procedures and administration of the submittal process for:
 - a. Shop drawings.
 - b. Informational (administrative) submittals.
2. General content requirements.

B. Related Specification Sections include but are not necessarily limited to:

1. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
2. Specification Section 00 41 63 - Bid Form for Procurement Contracts
3. Specification Section 00 43 14 - Bid Bond (Damages Form)
4. Specification Section 00 45 13 - Qualifications Statement
5. Technical Specification Sections identifying required submittals

B. Certain requirements in this section may require modification due to eBuilder® processes. The Construction Manager will coordinate these requirements with the Seller at the outset of the contract.

1.2 DEFINITIONS

A. Shop Drawings:

1. See General Contract Conditions Article 3.3
2. Product data and samples are shop drawing information.

B. Informational Submittals:

1. Submittals other than shop drawings and samples required by the Contract Documents that do not require review and/or approval by the Engineer.
2. Representative types of informational submittal items include but are not limited to:
 - a. Manufacturer's Certificates of Proper Installation.
 - b. Warranties.
 - c. Service agreements.
 - d. Construction photographs.
 - e. Health and Safety Plans.
 - f. Work plans.
 - g. Delegated designs per performance specification requirements.

1.3 SUBMITTAL SCHEDULE

A. Schedule of Shop Drawings:

1. The Seller shall develop a Submittal Schedule based upon the project submittal register that is compiled in eBuilder® and developed by the Engineer, Seller, Buyer, and the Construction Manager. This schedule shall be managed in eBuilder® by the Construction Manager.

2. This Submittal Schedule will contain all of the key projected submittal and return dates for the required submittals, particularly emphasizing near-term work activities and long lead items of procurement. Submittal Schedule shall contain, as a minimum, the following information for each submittal:
 - a. Contract Article/Specification Section Reference.
 - b. Submittal Number/Package.
 - c. Submittal Description.
 - d. Submission and resubmissions dates /return dates/review durations.
- B. Shop Drawings:
1. Submittal and approval all prior to 30 percent completion of project.
- C. Informational Submittals:
1. Reports and installation certifications submitted within seven days of conducting testing, installation, or examination.
 2. Submittals showing compliance with required qualifications submitted 10 days prior to any work beginning using the subject qualifications unless specified otherwise.
- D. The Submittal Schedule format shall support Sections 01 33 16, Project Management Information System (eBuilder®) and Buyer eBuilder® guidelines.
- E. Coordinate with Project Schedule and prepare Schedule of Submittals to show for each identified submittal, the following:
1. Specifically request and clearly identify review times if shorter than that set forth herein for Engineer, with justification for such request and critical dates.
 2. For first six-month period from the date the Contract Time commences or following any update or adjustment of the Schedule of Submittals submissions, the estimated submittal submission date shall be week, month, and year; for submittals submissions beyond six-month time periods, show closest month and year.
 3. The Seller's Submittal Schedule shall be submitted within 10 working days after the Preconstruction Conference and will be reviewed by the Engineer and the Construction Manager. It will be revised by the Seller, as required, in order to support the Project Baseline Schedule and requirements of the Contract Documents.
 4. Identify items for which Seller anticipates proposing substitute or "or equal" products or methods.
 5. Submit to Construction Manager monthly:
 - a. Updated Submittals Schedule.
 - b. Adjusted Schedule of Submittals submissions reflecting submittal submission activity planned for forthcoming six-month time period and beyond. Coordinate with construction progress schedule (CPS) updates.

1.4 PREPARATION OF SHOP DRAWING SUBMITTALS

- A. General:
1. See Section 01 33 16, Project Management Information System (eBuilder®).
 2. Description: All drawings, diagrams, and samples; manufacturer product information in the form of shop drawings and product data; and other data or information required to illustrate the work.

3. All submittals shall be submitted electronically to the Construction Manager using eBuilder® except when specified otherwise.
 4. Identify and indicate pertinent specification section, Drawing sheet(s) and detail number(s), products, units and assemblies, and system or equipment identification or tag numbers.
 5. All submittals and all pages of all copies of a submittal shall be completely legible.
 6. Submittals which, in the Construction Manager's or Engineer's opinion, are illegible will be returned without review.
 7. Extraneous information for equipment and products not relevant to the submittal shall be crossed out in black.
 8. Sellers or vendors written comments on the submittal drawings shall be in green.
- B. Scope of any Submittal:
1. See Section 01 33 16, Project Management Information System (eBuilder®).
 2. Limited to one submittal when possible per specification section.
 3. Submittals with more than one specification section included will be rejected unless items are interrelated in fabrication, installation and operation and with prior Construction Manager approval.
 4. 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.
- C. Numbering of Submittals:
1. See Section 01 33 16, Project Management Information System (eBuilder®).
 2. Identification of Submittals through eBuilder:
 - a. Provide listing of each component or item in submittal capable of receiving an independent review action in order to avoid partial submittals, partial reviews, and partial approval.
 - b. Identify for each item:
 - 1) Manufacturer and manufacturer's drawing or data number.
 - 2) Contract Document tag number(s).
 - 3) Unique page numbers for each page of each separate item.
 - 4) When submitting "or-equal" items that are not the products of named manufacturers, include the words "or-equal" in the item description.
 3. Seller certification of review and approval:
 - a. See Section 01 33 16, Project Management Information System (eBuilder®).
 - b. Indicate that Seller has reviewed and approved the submittal contents.
 - 1) Clearly identify the person who reviewed the submittal and the date it was reviewed.
 - c. Submittals containing multiple independent items shall be prepared with each item listed on the letter of transmittal or on an index sheet for all items listing the discrete page numbers for each page of each item, which shall be stamped with the Seller's review and approval stamp.
 4. Resubmittals:
 - a. Do not increase the scope of any prior transmittal.
 - b. Provide cover letter indicating how each (3) or (4) Action from previous submittal was addressed and where the correction is found in the resubmittal.

- c. Account for all components of prior transmittal.
- d. If items in prior transmittal received (1) or (2) Action code, list them and indicate (1) or (2) as appropriate.
- e. Do not include submittal information for items listed with prior (1) or (2) Action in resubmittal.
- f. Indicate "Outstanding-To Be Resubmitted at a Later Date" for any prior (3) or (4) Action item not included in resubmittal.
- g. Obtain Engineer's approval to exclude items.
- 5. Do 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.
- 6. 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 use, 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.
 - 1) Indicate exact item or model and all options proposed by arrow and leader.
 - 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. Any deviation from plans or specifications not depicted in the submittal or included but not clearly noted by the Seller may not have been reviewed. Review by the Engineer shall not serve to relieve the Seller of the contractual responsibility for any error or deviation from contract requirements.

1.5 TRANSMITTAL OF SUBMITTALS

A. Hard Copy Transmission of Submittals:

1. Transmit all hardcopy submittals to:
Arcadis U.S., Inc.
2100 Georgetown Drive, Suite 402
Sewickley, PA 15143
Attention: John Sidoti
Phone: (330) 515-5682
E-mail: John.Sidoti@arcadis.com

- a. Utilize eBuilder® to transmit all shop drawings and samples submitted as a hard copy to the Engineer.
 - b. All submittals must be from the Seller. Submittals will not be received from or returned to subSellers.
 - c. Provide submittal information 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.
2. Calculations required in the individual specifications are required for “For Information Only.”

B. Electronic Transmission of Submittals:

1. Transmittals shall be made electronically through eBuilder®.
 - a. Protocols and processes will be determined at the pre-construction conference.
2. Provide documents in Adobe Acrobat Portable Document Format (PDF), latest version.
3. Do not password protect or lock the PDF document.
4. Drawings or other graphics must be converted to PDF file format from the original drawing file format and made part of the PDF document.
 - a. 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.
 - b. Required signatures may be applied prior to scanning for transmittal.
5. Electronic drawings shall be formatted to be at full-scale (or half-scale when printed to 11 inches x 17 inches).
 - a. Do not reduce drawings by more than 50 percent in size.
 - b. Reduced drawings shall be clearly marked "Half-Size" and shall scale accurately at that size.
6. 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.
7. Create bookmarks in the bookmarks panel for the cover, the Table of Contents, and each major section of the document.
8. Using Adobe Acrobat Standard or Adobe Acrobat Professional, set the PDF document properties, initial view as follows:
 - a. Select File → Properties → Initial View.
 - b. Select the Navigation tab: Bookmarks Panel and Page.

- c. Select the Page layout: Single page.
 - d. Select the Magnification: Fit page.
 - e. Select Open to page: 1.
 - f. Set the file to open to the cover page with bookmarks to the left, and the first bookmark linked to the cover page.
9. 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. To do this:
- a. Select Edit→ Preferences→ Documents→ Save Settings.
 - b. Check the Save As optimizes for Fast Web View box.
10. File Naming Conventions:
- a. Shall be established by eBuilder® convention and submittal register assembled by the Engineer and Seller.
11. Labeling:
- a. As a minimum, include the following labeling on all electronic media:
 - 1) Project Name.
 - 2) Equipment Name and Project Tag Number.
 - 3) Project Specification Section.
 - 4) Manufacturer Name.
 - 5) Vendor Name.
 - 6) As requested by the Engineer
12. Binding:
- a. Include labeled electronic media in a protective case.
 - 1) Bind protective case in three-ring binder, inserted at the front of the Final paper copy submittal.
 - 2) Protective case(s) to have means for securing electronic media to prevent loss (e.g., zip case, flap and strap, or equivalent).

1.6 ENGINEER'S REVIEW ACTION

- A. Submittals received will be initially reviewed by the Construction Manager to verify evidence of Seller's approval. Submittals not reviewed and approved by Seller or stamped with a stamp containing language other than that specified herein will not be reviewed for technical content and will be returned rejected.
- B. The Engineer's approval of Submittals will involve a general check to ascertain conformance with the design. The Seller is responsible for confirmation and correlation of dimensions; for information pertaining solely to fabrication and installation processes or techniques; and for coordination of major system component manufacturers.
 - 1. The Engineer's review shall be made as soon as practical following the receipt of each submittal. In scheduling, allow 20 working days for the Engineer's review.
 - 2. When re-submittals are required, Seller shall re-submit within 10 working days and allow 10 working days for the Engineer's review. Clearly identify changes made from previous submittal(s).
- C. Shop Drawings, Submittals and Samples:
 - 1. Items within transmittals will be reviewed for overall design intent and will receive one of the following actions:

- a. 1 –“APPROVED”
 - b. 2 –“APPROVED AS NOTED”
 - c. 3 –“REVISE AND RESUBMIT”
 - d. 4 –“NOT APPROVED”
 - e. 5 –“RECEIPT ACKNOWLEDGED”
- D. Informational Submittals:
- 1. Include, but are not limited to the following:
 - a. Schedules
 - b. Training Materials
 - c. Submittals Required by Laws and Regulations and Governing Agencies
 - d. Other submittals identified as Informational in the specifications.
- E. The Engineer will return the Submittals to the Construction Manager via eBuilder® for return to the Seller for appropriate action. Under codes (1) and (2), the work may proceed. Under codes (3) and (4), the work may not proceed. Under code (2), corrected copies of the submittal are required as Project Record Documents for the Engineer and Buyer’s files (see Section 01 78 39, Project Record Documents).
- F. No material or equipment shall be processed or fabricated for the work nor delivered to the job site or installed without prior written approval, Codes (1) or (2), of shop drawings by the Engineer which is to be obtained by the Seller.
- G. Other items in the submittal but not reviewed by the Engineer will:
- 1. Not be logged as received by the Engineer.
 - 2. Be removed from the submittal package and returned without review and comment to the Seller for coordination, description and stamping.
 - 3. Be submitted by the Seller as a new series number,
- H. Engineer, at Engineer’s discretion, may revise the transmittal letter item list and descriptions, and conduct review.
- 1. Unless Seller notifies Engineer in writing that the Engineer’s revision of the transmittal letter item list and descriptions was in error, Seller’s review and approval stamp will be deemed to have applied to the entire contents of the submittal package.
- I. Submittals returned with Action (1) or (2) are considered ready for fabrication and installation.
- 1. If for any reason a submittal that has an (1) or (2) Action is resubmitted, it must be accompanied by a letter defining the changes that have been made and the reason for the resubmittal.
 - 2. Destroy or conspicuously mark "SUPERSEDED" all documents having previously received (1) or (2) Action that are superseded by a resubmittal.
- J. Submittals with Action (1) or (2) combined with Action (3) (Revise and Resubmit) or (4) (Not Approved) will be individually analyzed giving consideration as follows:
- 1. The portion of the submittal given (3) or (4) will be resubmitted in eBuilder® by the Seller using a new series number in accordance with 01 33 16, Project

Management Information System (eBuilder®).

2. If a portion of the items or system proposed are acceptable, however, the major part of the individual Drawings or documents are incomplete or require revision, the entire submittal may be given (3) or (4) Action.
 - a. This is at the sole discretion of the Engineer.
- K. 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 (3) or (4) Action.
- L. Calculations required in individual specification sections will be received for information purposes only, as evidence calculations have been stamped by the professional as defined in the specifications and for limited purpose of checking conformance with given performance and design criteria. The Engineer is not responsible for checking the accuracy of the calculations and the calculations will be returned stamped "5. Receipt Acknowledged".
- M. Furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a shop drawings, sample, or other item requiring approval, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due to Seller to secure reimbursement for such charges.
- N. 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 (1) or (2) action in a prior submittal, will be returned with action "5. Receipt Acknowledged."
- O. Samples may be retained for comparison purposes.
 1. Remove samples when directed.
 2. Include in bid all costs of furnishing and removing samples.
- P. Approved samples submitted or constructed, constitute criteria for judging completed work.
 1. Finished work or items not equal to samples may be rejected.

1.7 INCOMPLETE SUBMISSIONS

- A. At the Construction Manager's, Buyer's Representative, or Engineer's discretion, the Construction Manager will either: (a) return the entire Submittal for Seller's revision/correction and resubmission, or (2) review portions of the Submittal and request submission/resubmission of specified items or as noted thereon.
- B. Submittals which do not clearly bear Seller's specific indication of Seller review and approval of submittal or which are transmitted with an unsigned or uncertified submission form or as may otherwise be required under Contract Documents, will be returned to Seller unreviewed for resubmission.
- C. Submittals for "or equal" products that do not contain information as specified in Section 01 61 03, Basic Equipment Requirements, paragraph 1.5A.1, shall be considered appropriate cause for rejection of the "or equal." Any ambiguities shall also

be cause for rejecting an "or equal."

- D. Delays, resequencing or other impact to work resulting from Seller's submission of unchecked or unreviewed, incomplete, inaccurate or erroneous, or nonconforming Submittals, which will require Seller's resubmission of a Submittal for Engineer's review, shall not constitute a basis of claim for adjustment in Contract Price or Contract Time.

1.8 SUBMITTALS REQUIRED BY LAWS, REGULATIONS, AND GOVERNING AGENCIES

- A. Promptly submit notifications, reports, certifications, payrolls, and otherwise as may be required, directly to the applicable federal, state, or local governing agency or their representative.
- B. Transmit agency-approved documents through eBuilder® for the Buyer and Engineers review (to include enclosures and attachments) between Seller and governing agencies.
- C. Disposition:
 - 1. Construction Manager will coordinate the Buyer's and Engineer's review and indicate any requirements for resubmission or acceptance as an Informational Submittal.
 - a. Accepted:
 - 1) Accepted submittal will be filed in eBuilder® for access by the Construction Manager, Engineer, Buyer and Seller.
 - b. Revise and Resubmit:
 - 1) Returned submittals will be sent digitally to the Seller via eBuilder® by the Construction Manager for resubmittal
 - 2) Seller shall revise/correct or develop replacement and resubmit

1.9 QUALITY CONTROL SUBMITTALS

- A. Manufacturer Certificate of Compliance:
 - 1. When specified in individual specification sections or where products are specified to a recognized standard or code, submit prior to installation of product or material into the Work.
 - 2. When Seller proposes to furnish an "or approved equal", submit with shop drawing submittals.
 - 3. Signed by product manufacturer certifying that materials, manufacture, and product specified conforms to or exceeds specified requirements and intent for which product will be used. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 4. May reflect recent or previous test results on material or product but must be acceptable to Engineer.
 - 5. The Construction Manager shall receive copies of all required Certificates of Compliance.
 - 6. Materials incorporated in the Work without required certification shall either be removed from the Work or allowed to remain pending further investigation and testing by the Buyer at the expense of the Seller.

- B. Manufacturer's Certificate of Compliance: Shall clearly identify the following:
 - 1. Identity of the materials.
 - 2. Quantity of the materials.
 - 3. Conformance to specified requirements.
 - 4. Suitability of materials for intended use.
 - 5. Name and number of Contract.
- C. Certificates of Successful Testing or Inspection:
 - 1. Submit when testing or inspection is required by Laws and Regulations or governing agency or specified in the individual Specification Sections.
- D. Manufacturer's Certificate of Proper Installation:
 - 1. Coordinate with Section 01 75 00, Facility Start-up.
- E. Statements of Qualification:
 - 1. Evidence of qualification, certification, or registration. As required in these Contract Documents, to verify qualifications of professional land surveyors, engineers, materials testing laboratories, specialty subSellers, trades, specialists, consultants, installers, manufacturer service representatives, and other professionals.
- F. Written Test Reports of Each Shop Test and Inspection: As a minimum, include the following:
 - 1. Date of test and date issued, project title and number, testing laboratory name, address, and telephone number, and name and signature of laboratory inspector.
 - 2. Date and time of sampling or inspection and record of temperature and weather conditions.
 - 3. Identification of product and specification section, location of sample, test or inspection in the project, type of inspection or test with referenced standard or code, certified results of test.
 - 4. Compliance with Contract Documents and identifying corrective action necessary to bring materials and equipment into compliance.
 - 5. Interpretation of test results.
- G. Disposition:
 - 1. Construction Manager will coordinate the Buyers and Engineers review and indicate any requirements for resubmission or acceptance as an Informational Submittal. Accepted:
 - a. Accepted:
 - 1) Accepted submittal will be filed in eBuilder® for access by the Construction Manager, Engineer, Buyer and Seller.
 - b. Revise and Resubmit:
 - 1) Returned submittals will be sent digitally to the Seller via eBuilder® by the Construction Manager for resubmittal.
 - 2) Seller shall revise/correct or develop replacement and resubmit.

1.10 COORDINATION DRAWINGS

- A. General Seller shall prepare basic coordination drawings for project use, showing the

location of equipment to be installed under his contract. The Contract Documents will be used as a guide. Final coordination drawings will govern installation sequence and will be submitted to the Buyer for record.

1.

- B. Adjustments in sequencing will be made as necessary in coordination meetings. Final Coordination Drawings will be signed by all Prime Sellers.

1.11 CONTRACT CLOSEOUT SUBMITTALS

A. Record and As Built Drawings:

1. Submit in accordance with Section 01 78 39, Project Record Documents.

B. Special Bonds, Special Warranties, Guarantees, and Service Agreements:

1. Form of Submittals:

- a. Bind in commercial quality, 8-1/2-inch by 11-inch three-ring side binders with hardback, cleanable, plastic covers.
- b. Label cover of each binder with typed or printed title "Warranties And Bonds," with title of project; name, address, and telephone number of Seller; and name of responsible principal.
- c. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project O&M Manual, with each item identified with the number and title of the specification section in which specified, the name of the product or work item and the dates documents are effective.
- d. Separate each Warranty or Bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List SubSeller, Seller, and Manufacturer, with name, address, and telephone number of responsible principals.
- e. Meet all requirements specified under Article 3 of the General Contract Conditions.

2. Preparation for Submission:

- a. Obtain notarized warranties and bonds, executed in duplicate by responsible subSellers, suppliers, and manufacturers, within 10 days after completion of the applicable item or work. Except for items put into use with Buyer's permission, leave date of beginning of time of warranty until the date of Substantial Completion is determined.
- b. Retain Warranties, Bonds, and Service Agreements until time specified for submission.
- c. Other Required Submittals: In accordance with the Contract Documents.

- C. Disposition: Consulting Engineer will review, stamp, and indicate requirements for resubmission or acceptance on Submittal as follows:

1. Accepted:
 - a. Acceptance will indicate that Submittal conforms to intent of Contract Documents as to form and substance.
 - b. Seller may proceed to perform submittal-related work.
 - c. Remaining copies returned to Seller appropriately annotated.
2. Revise and Resubmit:
 - a. Remaining copies returned to Seller appropriately annotated.
 - b. Seller shall revise/correct or develop replacement and resubmit.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PREPARATION

A. Submittals:

1. Grouping:
 - a. Whenever possible, schedule for and combine Submittals required for submission by specification section or division into a single submittal package. Also combine product data for like items into a single Submittal package.
2. Presentation:
 - a. In detailed and scaled drawings with plan and sectional views adequate to depict sufficient detail to show type, size, arrangement, installation, and function of components, materials, and devices and compliance with Contract Documents. Identify details by reference to sheet and detail, and schedule or room numbers shown on Drawings. Show relative location and incorporation with adjacent equipment.
3. Product Data: As a minimum:
 - a. Clearly mark each copy to identify pertinent products or models and show performance characteristics and capacities, details of construction, assembly details, dimensions and clearances required, weights, finishes, O&M data, wiring diagrams and controls, instrumentation taps and mounts, Bill of Materials, and external connections, anchorages, and supports required.
 - b. Modify to delete information that is not applicable to Work.
 - c. Supplement standard information to provide information specifically applicable to Work.
4. Equipment and Component Titles:
 - a. Identical to that shown on Drawings and in the Specifications.
5. Partial submittals and submittals that fail to meet any of the contract requirements may be rejected. Any delays resulting from such rejection shall not be considered as cause for a Time Extension.
6. Quantities:
 - a. The Seller shall submit all submittals in eBuilder® except as noted herein, unless specifically directed otherwise.

7. Information shall be submitted on 8-1/2-inch by 11-inch sheets to the extent practicable. All drawings and plans shall be 22 inches by 34 inches in size (ANSI size "D") or half size (11 inches x17 inches).

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 (O&M) Manuals.
 - 2. Content requirements for O&M Manuals.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
 - 2. Specification Section 00 41 63 - Bid Form for Procurement Contracts
 - 3. Specification Section 00 43 14 - Bid Bond (Damages Form)
 - 4. Specification Section 00 45 13 - Qualifications Statement
 - 5. Specification Section 01 33 00 - Submittals.
 - 6. Specification Section 26 05 53 – Identification for Electrical Systems.
 - 7. Specification Section 26 13 26.1 – 23kV Medium-Voltage Switchgear
 - 8. Specification Section 26 13 26.2 – 15kV Medium-Voltage Metal Clad Switchgear
 - 9. Specification Section 26 13 26.3 – Switchgear One Lines

1.2 QUALITY ASSURANCE

- A. Manuals for equipment and systems shall be prepared by equipment manufacturer or system supplier. Any additional instructions and data required shall be prepared by personnel experienced in the maintenance and operation of the described products.

1.3 DEFINITIONS

- A. Equipment O&M Manuals:
 - 1. Contain the technical information required for proper installation, operation and maintenance of process, electrical and mechanical equipment and systems.
- B. Maintenance Activity:
 - 1. As used in the Maintenance Summary Form is defined to mean any routine activity required to ensure satisfactory performance and longevity of equipment. Examples of typical maintenance activities are removal of flow meter electrodes, calibration, and routine adjustments.

1.4 GENERAL

- A. Furnish O&M Manuals for equipment or system as specified in the individual specification sections, and for all equipment and other Items furnished under this contract which require any operation or maintenance attention on a regular basis, or which may require repair at any time. These manuals shall set forth all information necessary for the Buyer to operate all equipment; to make full and efficient use thereof; and to perform any maintenance troubleshooting or servicing as would ordinarily be performed by the Buyer.

- B. Prepare data for use by Buyer's personnel in the form of an instructional manual. Information shall be given in simple, non-technical language with sufficient diagrams and explanations as required to be readily understandable to the average layman. Possible operational and maintenance hazards shall be particularly pointed out with instructions cautioning against mistakes that might result in damage to equipment or buildings and/or pose a danger to personnel.
- C. All copies of the Final O&M Manual shall be comprised of original copies of all brochures, catalog "cuts" and other pre-printed manufacturer's literature. Reproductions of such Material will not be acceptable for incorporation into the final versions of the O&M Manuals. All such information shall be annotated to indicate only the specific equipment or other Items furnished. References to other sizes, types or models of similar items shall be deleted or neatly lined out.

1.5 SUBMITTALS

- A. In accordance with Section 01 33 00, Submittals, except as noted herein.
- B. List of all the O&M Manuals required by the Contract as identified in the technical specification sections. These may be referred to as "Operation and Maintenance Data" submittals.
- C. O&M Manuals:
 - 1. Draft and final electronic copies.
 - 2. Final paper copies: Two.

1.6 SUBMITTAL SCHEDULE

- A. List of Required O&M Manuals:
 - 1. Submit list with specification section number and title within 90 days after Notice to Proceed.
- B. Draft O&M Manuals:
 - 1. Submit approvable draft manuals in electronic format (PDF) within 30 days following approval of the respective shop drawing.
 - a. Include placeholders or fly sheet pages where information is not final or is missing from the draft manual.
 - 2. All Draft O&M Manuals shall be received by no later than 50 percent project completion.
- C. Final O&M Manuals:
 - 1. Final approval of O&M 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 O&M Manuals in electronic format (PDF), a minimum of 30 days prior to equipment start-up.
 - 3. Issue addenda to Final Approved O&M Manual to include:
 - a. Equipment data that requires collection after start-up, for example but not limited to electrical switchgear and circuit breaker settings.
 - b. Equipment field testing data.
 - c. Equipment start-up reports.

1.7 SEQUENCING AND SCHEDULING

A. Manual Outline:

1. Submit for the Engineer's review and approval detailed outline of each manual prior to preparation and submittal of the Draft O&M Manuals.

B. Manuals for Equipment and Systems

1. Manufacturer's data, giving full information on products:
 - a. Catalog number, size, and composition.
 - b. Color and texture designations.
 - c. Information required for reordering special-manufactured products.
2. Instructions for Care and Maintenance:
 - a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods that are detrimental to product.
 - c. Recommended schedule for cleaning and maintenance.
3. Content for Moisture Protection and Weather Exposed Products:
 - a. Manufacturer's data, giving full information on products:
 - 1) Applicable standards.
 - 2) Chemical composition.
 - 3) Details of installation.
 - b. Instructions for inspections, maintenance, and repair.

C. Manuals for Materials and Finishes:

1. Draft Manuals: Submit at least 15 days prior to request for substantial completion.
2. Final Manuals: Submit within 10 days after final inspection.

D. Instructions for care and maintenance

1.8 PREPARATION OF SUBMITTALS

A. General:

1. All pages of the O&M 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. O&M Manuals are provided for Buyer's use, to be reproduced and distributed as training and reference materials within Buyer'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 O&M Manuals provided under the contract.

B. O&M Manual Format and Delivery:

1. Draft Electronic Submittals:
 - a. Buyer intends to integrate the Operations and Maintenance information provided under this Contract into its on-line Facility Information Manager (FIM). Provide manual in Adobe Acrobat Portable Document Format (PDF), latest version. Electronic submission may be provided via CD-ROM, DVD, flash drive, or secure online file exchange service.
 - b. Create one PDF file for each equipment O&M Manual.
 - c. Do not password protect or lock the PDF document.
 - d. Scanned images of paper documents are not acceptable. Create the O&M Manual PDF file from the original source document.
 - e. Drawings or other graphics must be converted to PDF file format from the original drawing file format and made part of the PDF document.
 - f. 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.
 - g. 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.
 - h. Create bookmarks in the bookmarks panel for the O&M Manual cover, the Table of Contents, and each major section of the Table of Contents.
 - i. 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 Continuous.
 - 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.
 - 7) Window Options: Check the "Resize window to initial page" box.
 - j. 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.
 - k. PDF File Naming Convention:
 - 1) Use the specification section number, the manufacturer's name and the equipment description, separated by underscores.
 - 2) Example: 465121_Sanitaire_Coarse_Bubble_Diffusers.pdf.
 - 3) Do not put spaces in the file name.
2. Final Electronic Submittals:
 - a. Submit two copies in PDF file format on two USB flash drives or on two CD-ROM discs (one copy per electronic media), each secured in a protective case.
 - b. Labeling:
 - 1) Provide the following printed labeling on all electronic media:
 - a) Project name.
 - b) Specification section.

- c) Equipment names and summary of tag(s) covered.
 - d) Manufacturer name.
 - e) Date (month, year).
- c. Binding:
 - 1) Include labeled electronic media in a protective case.
 - a) Bind protective case in three-ring binder, inserted at the front of the Final paper copy submittal.
 - b) Protective case(s) to have means for securing electronic media to prevent loss (e.g., zip case, flap and strap, or equivalent).
- 3. Final Paper Copy Submittals:
 - a. Quantity: Provide three copies.
 - b. Paper: 8.5 x 11 inches or 11 x 17 inches, bright white, 20-lb. paper with standard three-hole punching.
 - c. Three-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) Contract number
 - c) Identity of Buyer equipment number and specification section.
 - d) Designate the system or equipment for which it is intended.
 - e) Identity of separate structure/facility as applicable.
 - f) Manufacturer name.
 - g) 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-inch 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.
 - f. Material shall be suitable for reproduction, with quality equal to original. Photocopying will not be acceptable for the final copies of the manuals.
 - g. Binders:
 - 1) Draft Manuals: Heavy paper covers.
 - 2) Final Manuals: Commercial quality, substantial, permanent, three-ring, D-type binders with durable, cleanable, plastic covers.
 - h. Table of Contents neatly typewritten, arranged in a systematic order:
 - 1) Seller(s), name of responsible principal, address, and telephone number.
 - 2) List of each product required to be included, indexed to content of each volume.

- 3) List with Each Product: Name, address, and telephone number of Subcontractor, Supplier, and maintenance contractor, as appropriate.
 - i. Identify area of responsibility of each.
 - j. Provide local source of supply for parts and replacement.
 - k. Identify each product-by-product name and other identifying numbers or symbols as set forth in Contract Documents.
 - l. Product Data:
 - 1) Include only those sheets that are pertinent to specific product.
 - 2) Clearly annotate each sheet to:
 - a) Identify specific product or part installed.
 - b) Identify data applicable to installation.
 - c) Delete references to inapplicable information.
 - m. Drawings: Supplement product data Drawings as necessary to clearly illustrate:
 - 1) Relations of component parts of equipment and systems.
 - 2) Control and flow diagrams.
 - 3) Coordinate drawings with Project record documents to assure correct illustration of completed installation.
 - 4) Do not use Project record documents as maintenance manual drawings.
 - 5) Provide reinforced punched binder tab, bind in with text.
 - 6) Reduced to 8-1/2 inches by 11 inches, or 11 inches by 17 inches folded to 8-1/2 inches by 11 inches.
 - 7) Where reduction is impractical, fold and place in 8-1/2-inch by 11-inch envelopes bound in text.
 - 8) Identify specification section and product on Drawings and envelopes.
 - n. Instructions and Procedures: Within text, as required to supplement product data.
 - 1) Handling, storage, maintenance during storage, assembly, erection, installation, adjusting, testing, operating, shutdown in emergency, troubleshooting, maintenance, interface, and as may otherwise be required.
 - 2) Organize in a consistent format under separate heading for each different procedure.
 - 3) Provide a logical sequence of instructions for each procedure.
 - 4) Provide information sheet for Buyer's personnel, including:
 - a) Proper procedures in the event of failure.
 - b) Instances that might affect the validity of warranties or bonds.
 - o. Warranties, Bonds, and Service Agreements: Include a copy of each.
- C. Equipment and Systems O&M 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 Buyer and project name.
 - e. Engineer's name.
 - f. Seller's name
 - g. Specification section.
 - h. Information required for reordering

- i. Catalog number, size, and composition
- j. Color and texture designations Provide a Table of Contents for each manual.
- 2. Content for Each Unit (or Common Units) and System:
 - a. Description of unit and component parts, including controls, accessories, and appurtenances:
 - 1) Function, normal operating characteristics, and limiting conditions.
 - 2) Performance curves, engineering data, nameplate data, and tests.
 - 3) Complete nomenclature and commercial number of replaceable parts.
 - b. Operating Procedures:
 - 1) Startup, break-in, routine, and normal operating instructions.
 - 2) Test procedures and results of factory tests where required.
 - 3) Regulation, control, stopping, and emergency instructions.
 - 4) Description of operation sequence by control manufacturer.
 - 5) Shutdown instructions for both short and extended durations.
 - 6) Summer and winter operating instructions, as applicable.
 - 7) Safety precautions.
 - 8) Special operating instructions.
 - 9) Installation instructions.
 - c. Maintenance and Overhaul Procedures:
 - 1) Routine operations.
 - 2) Guide to troubleshooting.
 - 3) Disassembly, removal, repair, reinstallation, and reassembly.
 - 4) Preventive maintenance tasks.
 - d. Installation Instructions:
 - 1) Including alignment, adjusting, calibrating, and checking.
 - e. Original manufacturer's parts list, illustrations, detailed assembly drawings showing each part with part numbers and sequentially numbered parts list, and diagrams required for maintenance.
 - f. Spare parts ordering instructions.
 - g. Where applicable, identify installed spares and other provisions for future work (e.g., reserved panel space, unused components, wiring, and terminals).
 - h. Manufacturer's printed operating and maintenance instructions.
- 3. Maintenance Summary:
 - a. Compile an individual Maintenance Summary for each equipment item, respective unit or system, and for components or subunits.
 - b. Format:
 - 1) Use Maintenance Summary Form bound with this section, or an electronic facsimile of such.
 - 2) Each Maintenance Summary may take as many pages as required.
 - 3) Use only 8-1/2-inch by 11-inch size paper.
 - 4) Complete type written via electronic printing.
 - c. Include detailed lubrication instructions and diagrams showing points to be greased or oiled; recommend type, grade, and temperature range of lubricants and frequency of lubrication.
 - d. Recommended Spare Parts:
 - 1) Data to be consistent with manufacturer's Bill of Materials/Parts List

- furnished in O&M manuals.
 - 2) "Unit" is the unit of measure for ordering the part.
 - 3) "Quantity" is the number of units recommended to be kept in the Buyer's inventory to support maintenance.
 - 4) "Unit Cost" is the current purchase price.
- 4. Content for Each Electric or Electronic Item or System:
 - a. Description of Unit and Component Parts:
 - 1) Function, normal operating characteristics, and limiting conditions.
 - 2) Performance curves, engineering data, nameplate data, and tests.
 - 3) Complete nomenclature and commercial number of replaceable parts.
 - 4) Interconnection wiring diagrams, including all control and lighting systems.
 - b. Circuit Directories of Panelboards:
 - 1) Electrical service.
 - 2) Controls.
 - 3) Communications.
 - c. List of electrical relay settings, and control and alarm contact settings.
 - d. Electrical interconnection wiring diagram, including control and lighting systems.
 - e. As-installed control diagrams by control manufacturer.
 - f. Operating Procedures:
 - 1) Routine and normal operating instructions.
 - 2) Sequences required.
 - 3) Safety precautions.
 - 4) Special operating instructions.
 - 5) Maintenance Procedures:
 - 6) Routine operations.
 - 7) Guide to troubleshooting.
 - 8) Adjustment and checking.
 - 9) List of relay settings, control and alarm contact settings.
 - g. Manufacturer's printed operating and maintenance instructions.
 - h. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
- 5. 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.
 - 1) For Instrumentation and Control equipment, International Society of Automation (ISA) Data Sheets will be acceptable in lieu of the Equipment Record sheets.
 - b. Exhibits B1 through 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.
6. Provide a printed copy of the Manufacturer's Field Services report as required by Section 01 75 00, Facility Start-Up, following the Equipment Record sheets.
 7. 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. 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.
 - e. 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.
 - f. General arrangement, cross-section, and assembly drawings.
 - g. Electrical diagrams, including elementary diagrams, wiring diagrams, connection diagrams, and interconnection diagrams.
 - h. Factory and field test data and performance curves (if applicable).
 - i. As-constructed fabrication or layout drawings and wiring diagrams.
 - j. Copy of the equipment manufacturer's warranty meeting the requirements of the Contract.
 - k. Copy of any service contracts provided for the specific piece of equipment as part of the contract.
 8. Additional information as required in the associated equipment or system specification section.
 9. Provide a Table of Contents for each manual.
 10. Necessary Precautions:
 - a. Include product MSDS for each approved product.
 - b. Include any precautionary application and storage guidelines.
 11. 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.
 12. 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.

13. Additional requirements as specified in individual product specifications.

D. National Fire Protection Association 70 (National Electrical Code) Documentation:

1. Assemble documented calculations of Arc-Fault Current, Equipment Available Fault Current and Short Circuit Current Rating (SCCR) provided as part of equipment submittals into one O&M manual volume.

1.9 TRANSMITTAL OF SUBMITTALS

A. Operation and Maintenance Manuals.

1. Transmit all submittals to:

Arcadis U.S., Inc.

2100 Georgetown Drive, Suite 402

Sewickley, PA 15143

Attention: John Sidoti

Phone: (330).284.8656

E-mail: John.Sidoti@arcadis.com

2. Transmittal Form:

a. Use Operation and Maintenance Manual Transmittal, Exhibit A.

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: 43 23 14-01-OM).

4. Submit draft and final O&M Manual in electronic format (PDF) to Engineer, until manual is approved.

1.10 ENGINEER'S REVIEW ACTION

A. Draft Electronic (PDF) Submittals:

1. Engineer will review and indicate one of the following review actions:
 - a. 1 –“APPROVED”.
 - b. 2 –“APPROVED AS NOTED”
 - c. 3 –“REVISE AND RESUBMIT”.
 - d. 4 –“NOT APPROVED”.
2. Submittals marked as APPROVED or APPROVED 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 NOT APPROVED 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 of the following review actions:
 - a. 1 – “APPROVED”
 - b. 2 – “NOT APPROVED”
2. Submittals marked as APPROVED will be retained with the transmittal form returned as noted.

3. Submittals marked as NOT APPROVED 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

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Project Name: _____ Date Received: _____
 Project Owner: _____ Checked By: _____
 Contractor: _____ Owner: _____ Log Page: _____
 Address: _____ Address: _____ 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: _____

 Date: _____

- * The Action designated above is in accordance with the following legend:
- A - Acceptable, provide one (1) additional paper copy and two (2) electronic copies on CD-ROM for final review.
 - B - Furnish as Noted
 - C - Revise and Resubmit
 This Operation and Maintenance Manual Submittal is deficient in the following area:
 1. Equipment Records.
 2. Functional description.
 3. Assembly, disassembly, installation, alignment, adjustment & checkout instructions.
 4. Operating instructions.
 - 5. Lubrication & maintenance instructions.
 - 6. Troubleshooting guide.
 - 7. Parts list and ordering instructions.
 - 8. Organization (binder, binder titles, index & tabbing).
 - 9. Wiring diagrams & schematics specific to installation.
 - 10. Outline, cross section & assembly diagrams.
 - 11. Test data & performance curves.
 - 12. Tag or equipment identification numbers.
 - 13. Inclusion of all components & subcomponents.
 - 14. Other - see comments.
 - D - Rejected

Comments: _____

Distribution: Contractor | | File | | Field | | Owner | | Other | |

 By _____ Date _____



EXHIBIT B3

Equipment Record

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					

SECTION 01 33 16

PROJECT MANAGEMENT INFORMATION SYSTEM (eBuilder®)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Related Sections
2. Seller's Responsibilities
3. User Access Limitations
4. Data Ownership
5. Computer requirements
6. System use requirements
7. Internet connectivity
8. Program Management Information System (eBuilder®) downtime
9. eBuilder®
10. eBuilder® use and rollout
11. Communications

1.2 DEFINITIONS

A. eBuilder® - Buyer's Project Management Information System (eBuilder®)

1.3 RELATED SECTIONS

- A. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
- B. Specification Section 00 41 63 - Bid Form for Procurement Contracts
- C. Specification Section 00 43 14 - Bid Bond (Damages Form)
- D. Specification Section 00 45 13 - Qualifications Statement

1.4 eBuilder® APPLICATION

- A. Buyer has implemented a Program Management Information System (eBuilder®) for the electronic transmittal and storage for all construction documents. The system is owned and operated by Buyer and runs on the eBuilder® platform. The Seller shall use eBuilder® to electronically submit all of the data and documents required by the Contract Documents (unless specified otherwise by Buyer) to achieve the following:
 1. Facilitate exchanging information electronically.
 2. Expedite the review process for submitted documents.
 3. Centralize Project information.
- B. Project communications shall be submitted and processed using eBuilder® and shall be the primary communication tool for all document transfers between the Buyer, Construction Manager, the Engineer, and the Seller(s).
- C. All documents that are required in a hard copy format shall be provided in accordance with the Contract Documents.
 1. eBuilder® shall be used to process/track and expedite the processing of electronic/hardcopy project-related items.

2. The submitted documents accepted via eBuilder® shall not relieve the Seller(s) from their accountability for any variation from the Contract Document's requirements.

D. If a discrepancy exists between the electronic version and the paper documents, the electronic documents shall govern.

1.5 USER ACCESS LIMITATIONS

A. Buyer shall establish, assign, and manage user access and rights to eBuilder® site. The Seller shall be provided access rights and training for two staff.

B. Access to eBuilder® shall be provided to allow for submitting and processing documents including, but not limited to, letters, shop drawings, submittals, meeting minutes, daily reports, drawings, specifications, memoranda, payment requisitions, change order requests, testing reports, warranties, guarantees, and correspondence. Certain documents such as Requests for Information (RFIs) shall be directly entered into eBuilder® and generated by the application unless specified otherwise.

C. Subcontractors and suppliers shall not have direct access to eBuilder®, and documents generated by eBuilder® template unless specified otherwise or approved otherwise by Buyer. Entering information to be exchanged and transferred between the Seller(s) and subcontractors and suppliers shall be the Seller's responsibility.

1.6 DATA OWNERSHIP

A. All data entered into eBuilder® shall be Buyer's sole property.

1.7 COMPUTER REQUIREMENTS

A. eBuilder® is accessed via the internet through a web browser using Java run-time plug-in technologies. Provide computer hardware and software that meets the eBuilder® system requirements. The Buyer shall not operate, install, or troubleshoot any of the Seller's hardware or software. The Seller is solely responsible for their system's functionality.

B. Should the eBuilder® version be upgraded during the Contract Time, the Seller shall not be required to upgrade their system(s) to meet the upgraded application's requirements unless the Seller cannot access eBuilder®. Should the Seller be required to upgrade its computer systems as a result of Buyer eBuilder® upgrades this shall not be justification for a time and/or cost modification to the Contract.

C. Buyer shall accept no liabilities arising from the Seller(s) using eBuilder® .

1.8 SYSTEM USE REQUIREMENTS

A. The Seller(s) shall be responsible for the validity of the information placed in the eBuilder® and their personnel's ability to use the application.

B. An overview of the setup and submittal processes associated with eBuilder® shall be presented by the Buyer to the Seller(s) after the Notice to Proceed is issued. The Seller is responsible for training their personnel in the use of eBuilder®.

- C. All costs associated with using the eBuilder® system shall be evenly distributed in the Seller's Schedule of Values; a separate cost line item shall not be allowed.
- D. Seller(s) shall notify the Construction Manager immediately when users no longer require eBuilder® access. Their user account shall be deactivated.
- E. The Seller(s) shall protect the eBuilder® system's security by limiting access to authorized users only and not allowing them to share usernames and passwords.
- F. The Seller(s) shall comply with the applicable laws and regulations regarding the electronic transmission of documents requiring the stamps or signatures of professional architects, professional engineers, geologists, and surveyors including any provisions to provide of hard copies of such documents as appropriate.
- G. The Seller(s), their representatives, users, sub-consultants, and subcontractors shall not enter, attach, or store sensitive personal, financial or corporate information in the eBuilder®.
- H. Project Communications requiring an authorized person's signature shall use either of the following:
 1. An approved image of the official signature to be affixed to the document with the original signed hard copy/paper document to be provided as well.
 2. An electronic copy or electronic image of a fully executed document containing the required signatures with the original signed hard copy/paper document to be provided as well.

1.9 INTERNET CONNECTIVITY

- A. eBuilder® is a web-based environment subject to the Seller's internet service provider's speed and connectivity issues. The Seller is responsible for their own connectivity to the internet. eBuilder®'s response time depends on the user's equipment including processor speed, network interface equipment, internet service provider access speed, etc., and current traffic on the internet.
- B. Buyer shall not be liable for any delays associated with the usage of eBuilder® including, but not limited to, slow response time, down time periods, connectivity problems, or information loss on the Seller's equipment.
- C. Under no circumstances shall using eBuilder® be grounds for a time extension or cost adjustment to the Contract.
- D. The Seller shall have access to eBuilder® and eBuilder® shall be operational on the Notice to Proceed date.

1.10 eBuilder® DOWNTIME

- A. If the eBuilder® system is temporarily unavailable, continue with project communications using an alternate secure means (e-mail) or hard copies to transmit and receive project communications.
- B. Maintain records for all project communications during the eBuilder® downtime and upload the records to eBuilder® when it is operational.
- C. Notify the Engineer by telephone and/or e-mail when eBuilder® is not functional.

PART 2 - PRODUCTS

2.1 CONSTRUCTION MANAGEMENT SOFTWARE

- A. eBuilder® – A Trimble Company.

PART 3 - EXECUTION

3.1 eBuilder® USE AND ROLLOUT

- A. The Seller shall meet with the Construction Manager within 10 days after the Contract is awarded to discuss the Seller's use of eBuilder®.
- B. Prior to providing access to eBuilder®, a system overview shall be held. The overview shall include:
 - 1. User access requirements, information (name, position, e-mail address, and phone number).
 - 2. eBuilder® site location (URL) and log-on process.
 - 3. Navigation through eBuilder®.
 - 4. Uploading documents instructions.
 - 5. Submittal review process.
 - 6. Administrative forms and processes review process.
 - 7. Correspondence requirements.

END OF SECTION

SECTION 01 42 19
REFERENCE STANDARDS AND ABBREVIATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Reference to standards and specifications of technical societies and reporting and resolving discrepancies associated therewith shall be as provided in Article 3, Contract Provisions, and as may otherwise be required herein and in the individual specification sections.
- B. Work specified by reference to the published standard or specification of a government agency, technical association, trade association, professional society or institute, testing agency, or other organization shall meet the requirements or surpass the minimum standards of quality for materials and workmanship established by the designated standard or specification. Where Work is specified in accordance with a standard, the most current standard at the time of Bid applies; when Work is in accordance with a regulatory code, the code in effect (not necessarily the most recently published) applies.
- C. Where so specified, products or workmanship shall also meet or exceed the additional prescriptive or performance requirements included within the Contract Documents to establish a higher or more stringent standard of quality than that required by the referenced standard.
- D. Standard referred to, except as modified herein, shall have full force and effect as though printed in these specifications.
- E. These standards are not furnished to the contractors since manufacturers and trades involved are assumed to be familiar with their requirements.
- F. Where two or more standards are specified to establish quality, the product and workmanship shall meet or exceed the requirements of the most stringent as determined by the Engineer.
- G. Where both a standard and a brand name are specified for a product in the Contract Documents, the proprietary product named shall meet or exceed the requirements of the specified reference standard.
- H. Where locally adopted Codes or Authorities having jurisdiction otherwise stipulate, follow the specified edition.
- I. Copies of standards and specifications of technical societies:
 - 1. Copies of applicable referenced standards have not been bound in these Contract Documents.
 - 2. Where copies of standards are needed by the Seller, obtain a copy or copies directly from the publication source and maintain in an orderly manner at the site as Work site records, available to the Seller's personnel, Subcontractors, Buyer, Construction Manager and Engineer.

- J. By submitting a bid, Seller is deemed to represent self as competent to accomplish Work of this Division in conformance with the applicable Codes. In case of a conflict between the Contract Documents and Code requirements, the Codes shall take precedence except as otherwise specified herein. Should conflicts such appear, cease work on parts of contract affected and immediately contact the Construction Manager in writing. It shall be the Seller's responsibility to correct, at no cost to the Buyer, work Seller executed in violation of Code requirements.

1.2 ABBREVIATIONS

- A. Abbreviations for trade organizations and government agencies: Following is a list of construction industry organizations and government agencies to which references may be made in the Contract Documents, with abbreviations used.

1. AA Aluminum Association
2. AABC Associated Air Balance Council
3. AAMA American Architectural Manufacturers Association
4. AASHTO American Association of State Highway and Transportation Officials
5. ACI American Concrete Institute
6. AFBMA Anti-Friction Bearing Manufacturers' Association
7. AFI American Filter Institute
8. AGA American Gas Association
9. AGMA American Gear Manufacturers' Association
10. AI Asphalt Institute
11. AISC American Institute of Steel Construction
12. AISI American Iron and Steel Institute
13. AITC American Institute of Timber Construction
14. ALS American Lumber Standards
15. AMA Acoustical Materials Association
16. AMCA Air Movement and Control Association
17. ANSI American National Standards Institute
18. APA American Plywood Association
19. API American Petroleum Institute
20. APWA American Public Works Association
21. AREA American Railway Engineering Association
22. ARI Air Conditioning and Refrigeration Institute
23. ASA American Standards Association
24. ASAE American Society of Agricultural Engineers
25. ASCE American Society of Civil Engineers
26. ASHRAE American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
27. ASME American Society of Mechanical Engineers
28. ASTM ASTM International
29. AWI Architectural Woodwork Institute
30. AWPA American Wood Preservers' Association
31. AWPB American Wood Preservers Bureau

32.	AWPI	American Wood Preservers' Institute
33.	AWS	American Welding Society
34.	AWWA	American Water Works Association
35.	BHMA	Builders Hardware Manufacturers' Association
36.	BOCA	Building Officials and Code Administrators
37.	CBMA	Certified Ballast Manufacturers' Association
38.	CDA	Copper Development Association
39.	CFW	Cold Potable City Flushing Water
40.	CGA	Compressed Gas Association
41.	CIPRI	Cast Iron Pipe Research Institute
42.	CISPI	Cast Iron Soil Pipe Institute
43.	CMAA	Crane Manufacturers' Association of America
44.	CRSI	Concrete Reinforcing Steel Institute
45.	CS	Commercial Standard
46.	CSA	Canadian Standards Association
47.	CSI	Construction Specifications Institute
48.	CSM	Concentrated Scum Mixing
49.	CSR	Concentrated Scum Recirculate 48.
50.	CST	Concentrated Scum Transfer
51.	CTSS	Caltrans Standard Specification
52.	EJCDC	Engineers Joint Contract Documents' Committee
53.	ETL	Engineering Test Laboratories
54.	FAR	Foul Air
55.	FCC	Federal Communications Commission
56.	FEMA	Federal Emergency Management Agency
57.	FGI	Facilities Guidelines Institute
58.	FGMA	Flat Glass Marketing Association
59.	FM	Factory Mutual
60.	FR.	Federal Register
61.	FS	Federal Specification
62.	GA	Gypsum Association
63.	HI	Hydraulic Institute
64.	HMI	Hoist Manufacturers' Institute
65.	ICBO	International Conference of Building Officials
66.	IPCEA	Insulated Power Cable Engineers' Association
67.	IEEE	Institute of Electrical and Electronics Engineers, Inc.
68.	IES	Illuminating Engineering Society
69.	IFI	Industrial Fasteners Institute
70.	ISA	Instrument Society of America
71.	ISO	Insurance Service Office
72.	JIC	Joint Industry Conferences of Hydraulic Manufacturers
73.	MIA	Marble Institute of America
74.	Mil. Sp.	Military Specification or MIL
75.	MS	Military Specifications
76.	MMA	Monorail Manufacturers' Association

77. MPC	Medium Pressure Condensate
78. NAAMM	National Association of Architectural Metal Manufacturers
79. NACE	National Association of Corrosion Engineers
80. NAFM	National Association of Fan Makers
81. NBHA	National Builders' Hardware Association
82. NEC	National Electrical Code
83. NECA	National Electrical Contractors Association
84. NEMA	National Electrical Manufacturers' Association
85. NESC	National Electric Safety Code
86. FPA	National Fire Protection Association
87. NHLA	National Hardwood Lumber Association
88. NHPMA	Northern Hardwood and Pine Manufacturer's Association
89. NLA	National Lime Association
90. NLMA	National Lumber Manufacturers' Association
91. NRCA	National Roofing Contractors Association
92. NSF	National Sanitation Foundation Testing Laboratory
93. NSPE	National Society of Professional Engineers
94. NTMA	National Terrazzo and Mosaic Association
95. NWWDA	National Wood Window and Door Association
96. OECI	Overhead Electrical Crane Institute
97. OSHA	Occupational Safety and Health Act (both Federal and State)
98. PCI	Prestressed Concrete Institute
99. PEI	Porcelain Enamel Institute
100. PPI	Plastic Pipe Institute
101. PS	Product Standards Section U.S. Department of Commerce
102. PSC	Primary Scum
103. RMA	Rubber Manufacturers' Association
104. SAE	Society of Automotive Engineers
105. SCPRF	Structural Clay Products Research Foundation
106. SDI	Steel Deck Institute
107. SDI	Steel Door Institute
108. SIGMA	Sealed Insulating Glass Manufacturing Association
109. SJI	Steel Joist Institute
110. SMACNA	Sheet Metal and Air Conditioning Contractors National Association
111. SMP	Saturated Medium Pressure Steam
112. SPI	Society of the Plastics Industry
113. SSPC	Steel Structures Painting Council
114. SWI	Steel Window Institute
115. TEMA	Tubular Exchanger Manufacturers' Association
116. TCA	Tile Council of America
117. UBC	Uniform Building Code
118. UFC	Uniform Fire Code
119. UL	Underwriters Laboratories Inc.
120. UMC	Uniform Mechanical Code
121. US	U.S. Bureau of Standards

122. USBR	Bureau of Reclamation
123. UST	Underflow Scum Transfer
124. WCLIB	West Coast Lumber Inspection Bureau
125. WWPA	Western Wood Products Association

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 45 00
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Quality control.
 - 2. Tolerances.
 - 3. Labeling.
 - 4. Testing and inspection services.
- B. Related Specification Sections:
 - 1. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
 - 2. Specification Section 00 41 63 - Bid Form for Procurement Contracts
 - 3. Specification Section 00 43 14 - Bid Bond (Damages Form)
 - 4. Specification Section 00 45 13 - Qualifications Statement

 - 5. Section 01 42 19 – Reference Standards

1.2 QUALITY CONTROL

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and contractor/subcontractor workmanship, to produce work of specified quality.
- B. Comply with specified standards as the minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- C. Perform work using persons qualified to produce required and specified quality.
- D. Products, materials, and equipment may be subject to inspection by CM and Buyer at place of manufacture or fabrication. Such inspections shall not relieve Seller of complying with requirements of Contract Documents.
- E. Supervise performance of work in such manner and by such means to ensure that work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

1.3 TOLERANCES

- A. Comply with manufacturers' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- B. Adjust products to appropriate dimensions; position before securing products in place.

1.4 LABELING

- A. Attach label from agency approved by authorities having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

- B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label:
 - 1. Model number.
 - 2. Serial number.
 - 3. Performance characteristics.
- C. Manufacturer's Nameplates, Trademarks, Logos, and Other Identifying Marks on Products: Not allowed on surfaces exposed to view in public areas, interior or exterior.

1.5 TESTING AND INSPECTION SERVICES

- A. An Inspection and Test Plan from the equipment provider and Seller shall be submitted to Buyer for approval. A mutually discussed and agreed upon inspection and test plan shall govern all aspects of equipment inspection, installation finalization, performance testing and performance guarantees. Buyer may retain an independent third party for inspections or other Construction Management services.
- B. When required of the Seller in the Technical Specifications, Seller shall employ and pay for services of an Independent Seller Testing Agency or laboratory acceptable to Buyer to perform specified testing.
 - 1. Before starting Work, submit Independent Seller Testing Agency laboratory name, address, and telephone number, and names of full-time specialist and responsible supervisor.
 - 2. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.
 - 3. Submit copy of report of laboratory facilities' inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.
- C. When required of the Buyer in the Technical Specifications, Buyer will employ and pay for services of an Independent Buyer Testing Agency to perform tests, inspections, and other services specified in individual specification sections and as required by Buyer.
- D. Seller testing, inspections, and source quality control may occur on or off project site. Perform off-site testing as required by Engineer or Buyer.
- E. Reports shall be submitted by Buyer and Seller Independent Testing Agency to Construction Manager, Engineer, Seller(s), and authorities having jurisdiction, in eBuilder®, indicating observations and results of tests and compliance or noncompliance with Contract Documents.
 - 1. Submit in eBuilder® final report indicating correction of Work previously reported as noncompliant.
- F. Employment of Independent Buyer Testing Agency or laboratory shall not relieve Seller of obligation to perform Work according to requirements of Contract Documents.
- G. Retesting or re-inspection required because of Seller nonconformance with specified or indicated requirements shall be performed by same Independent Buyer Testing Agency on instructions from Engineer at no additional cost to Buyer.
- H. Independent Seller Testing Agency Responsibilities:

1. Provide qualified personnel at site. Cooperate with Construction Manager and Seller in performance of services.
 2. Promptly notify Construction Manager and Seller of observed irregularities or nonconformance of Work or products.
 3. Perform additional tests required by Construction Manager.
 4. Attend preconstruction meetings and progress meetings.
- I. Independent Seller Testing Agency Reports: After each test, promptly submit two copies of report to Construction Manager, Engineer, Seller, and authorities having jurisdiction. When requested by Construction Manager, provide interpretation of test results. Include the following:
1. Date issued.
 2. Project title and number.
 3. Name of inspector.
 4. Date and time of sampling or inspection.
 5. Identification of product and Specification Section
 6. Location in Project.
 7. Type of inspection or test.
 8. Date of test.
 9. Results of tests.
 10. Conformance with Contract Documents.
- J. Limits on Independent Seller Testing Agency Authority:
1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 2. Agency or laboratory may not approve or accept any portion of the Work.
 3. Agency or laboratory may not assume duties of Seller.
 4. Agency or laboratory has no authority to stop the Work.

PART 2 – PRODUCTS - (NOT USED)

PART 3 - EXECUTION - (NOT USED)

END OF SECTION

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SECTION 01 61 03
BASIC EQUIPMENT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Unless otherwise expressly provided within the Contract Documents, only new Material and Equipment shall be incorporated into the Work. All Materials and Equipment furnished by the Seller shall be tested by the Seller in accordance with the methods and requirements of the Contract Documents. All Materials and Equipment furnished by the Seller incorporated into the Work shall be subject to inspections and testing by the Buyer's representative.
- B. The Seller bears the full responsibility to demonstrate to the Buyer's satisfaction that the Materials and Equipment being incorporated into the Work are of the specified quality and conform, in all respects, with the Contract requirements. The Seller shall maintain a quality control program to ensure that Materials and Equipment conform to contract requirements whether they are self-manufactured, processed, or procured from other sources. The Seller shall be responsible for testing of Materials and Equipment when so specified in the Contract Documents. If testing is implied and not assigned to the Seller, it shall be the responsibility of the Construction Manager to either preform or coordinate with Buyer.
- C. Section Includes:
 - 1. Requirements of this Technical Specification applies to all equipment and materials provided on the Project including those found in other Divisions even if not specifically referenced in individual "Equipment" and "Material" Articles of those Specification Sections.
- D. Related Sections include but are not necessarily limited to:
 - 1. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
 - 2. Specification Section 00 41 63 - Bid Form for Procurement Contracts
 - 3. Specification Section 00 43 14 - Bid Bond (Damages Form)
 - 4. Specification Section 00 45 13 - Qualifications Statement
 - 5. Technical Specifications

1.2 QUALITY ASSURANCE

- A. Referenced Standards:
 - 1. American Bearing Manufacturers Association (ABMA).
 - 2. American Gear Manufacturers Association (AGMA).
 - 3. ASTM International (ASTM):
 - a. E1934, Standard Guide for Examining Electrical and Mechanical Equipment with Infrared Thermography.
 - b. F593, Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs.
 - 4. International Electrotechnical Commission (IEC).

5. Institute of Electrical and Electronics Engineers, Inc. (IEEE).
 6. International Organization for Standardization (ISO):
 - a. 1940, Mechanical Vibration - Balance Quality Requirements for Rotors in a Constant (Rigid) State - Part 1: Specification and Verification of Balance Tolerances.
 - b. 21940-11, Mechanical Vibration - Rotor Balancing - Part 11: Procedures and Tolerances for Rotors with Rigid Behavior.
 7. National Electrical Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
 - b. ICS 6, Enclosures for Industrial Control and System.
 - c. MG 1, Motors and Generators.
 8. International Electrical Testing Association (NETA):
 - a. ATS, Acceptance Testing Specification for Electrical Power Distribution Equipment and Systems.
 9. National Fire Protection Association (NFPA):
 - a. 70, National Electrical Code (NEC):
 10. National Institute for Certification in Engineering Technologies (NICET).
 11. National Institute of Standards and Technology (NIST).
 12. Occupational Safety and Health Administration (OSHA):
 - a. 29 CFR 1926, Safety and Health Regulations for Construction, referred to herein as OSHA Standards.
 13. Underwriters Laboratories, Inc. (UL).
 - a. 508, Standard for Safety Industrial Control Equipment.
 - b. 508A, Standard for Safety Industrial Control Panels.
 - c. 698A, Standard for Industrial Control Panels Relating to Hazardous (Classified) Locations.
 14. Vibration Institute.
- B. Electrical Equipment and Connections Testing Program:
1. Testing Firm:
 - a. An independent firm, provided by the Seller, performing, as the sole or principal part of its business for a minimum of 10 years, the inspection, testing, calibration, and adjusting of systems.
 - b. Must have an established monitoring and testing equipment calibration program with accuracy traceable in an unbroken chain, according to NIST.
 2. Field Personnel:
 - a. Minimum of 1 year field experience covering all phases of electrical equipment inspection, testing, and calibration.
 - b. Relay test technician having previous experience with testing and calibration of relays of the same manufacturer and type used on project and proficient in setting and testing the types of protection elements used.
 - c. Supervisor certified by NETA or NICET.
 3. Analysis Personnel:
 - a. Minimum 3 years combined field testing and data analysis experience.
 - b. Supervisor certified by NETA or NICET.

C. Miscellaneous:

1. A single manufacturer of a "product" shall be selected and utilized uniformly throughout project even if:
 - a. More than one manufacturer is listed for a given "product" in Specifications.
 - b. No manufacturer is listed.
2. Equipment, electrical assemblies, related electrical wiring, instrumentation, controls, and system components shall fully comply with specific NEC requirements related to area classification and to NEMA 250 and NEMA ICS 6 designations shown on Electrical Power Drawings and defined in the Electrical specifications Division 26.
3. Variable speed equipment applications: The driven equipment manufacturer shall have single source responsibility for coordination of the equipment and VFD system and verify their compatibility.

1.3 DEFINITIONS

A. Products: At times throughout this specification the term Products will be used and is intended to include:

1. New items for incorporation in the Work, whether purchased by Seller or Buyer for the project or taken from previously purchased stock. New items may also include existing materials or components required for reuse.
2. The terms material, equipment, machinery, components, subsystem, system, hardware, software, and terms of similar intent are not intended to change the meaning of such other terms used in the Contract Documents as those terms are self-explanatory and have well recognized meanings in the construction industry.
3. Items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

B. Or-Equal: If, in Buyer's sole discretion, an item proposed by Seller is equivalent to or better in form, function, performance, reliability, quality, features, materials of construction, operation and maintenance cost, static and dynamic loads, general dimensional configuration, size, weight and appearance to the specified item named and is sufficiently similar to the specified item named so that no change in related Work will be required, it may be considered by Buyer as an "or equal" item.

C. Alternate: If, at the Buyer's sole discretion, an item proposed by a Manufacturer does not qualify as an "or equal" item, it will be considered a proposed "alternate."

D. Major Equipment Supports - Supports for Equipment:

1. Located on or suspended from elevated slabs with supported equipment weighing 2000 lbs. or greater, or;
2. Located on or suspended from roofs with supported equipment weighing 500 lbs. or greater, or;
3. Located on slab-on-grade or earth with supported equipment weighing 5,000 lbs. or more.

E. Equipment:

1. One or more assemblies capable of performing a complete function.
2. Mechanical, electrical, instrumentation or other devices requiring an electrical, pneumatic, electronic or hydraulic connection.
3. Not limited to items specifically referenced in "Equipment" articles within individual specifications.

F. Installer or Applicator:

1. Installer or applicator is the person actually installing or applying the product in the field at the project site.
2. Installer and applicator are synonymous.

1.4 SUBMITTALS

A. Shop Drawings:

1. General For All Equipment:
 - a. See Section 01 33 00, Submittals, for requirements for the mechanics and administration of the submittal process.
 - b. Data sheets that include manufacturer's name and complete product model number.
 - 1) Clearly identify all optional accessories that are included.
 - c. Acknowledgement that products submitted comply with the requirements of the standards referenced.
 - d. Manufacturer's delivery, storage, handling, and installation instructions.
 - e. Equipment identification utilizing numbering system and name utilized in Drawings.
 - f. Equipment installation details:
 - 1) Location of anchorage.
 - 2) Type, size, and materials of construction of anchorage.
 - 3) Anchorage setting templates.
 - 4) Manufacturer's installation instructions.
 - g. Equipment area classification rating.
 - h. Shipping and operating weight.
 - i. Equipment physical characteristics:
 - 1) Dimensions (both horizontal and vertical).
 - 2) Materials of construction and construction details.
 - j. Equipment factory primer and paint data.
 - k. Manufacturer's recommended spare parts list.
 - l. Equipment lining and coatings.
 - m. Equipment utility requirements include air, natural gas, electricity, and water.
 - n. Ladders and platforms provided with equipment:
 - 1) Certification that all components comply fully with OSHA requirements.
 - 2) Full details of construction/fabrication.
 - 3) Scaled plan and sections showing relationship to equipment.
 - 4)
 - o. Electrical Gear:
 - 1) Unless specified in a narrow-scope specification section, provide the following:

- a) Equipment ratings: Voltage, continuous current, kVA, watts, short circuit with stand, etc., as applicable.
 - 2) Control Panels:
 - 3) Panel Construction:
 - a) Point-to-point ladder diagrams.
 - b) Scaled panel face and subpanel layout.
 - c) Technical product data on panel components.
 - d) Panel and subpanel dimensions and weights.
 - e) Panel access openings.
 - f) Nameplate schedule.
 - g) Panel anchorage.
 - h) Short Circuit Current Rating (SCCR) nameplate marking per NFPA 70. Include any required calculations.
- 2. Systems Schematics and Data:
 - a. Provide system schematics where required in system specifications.
 - 1) Acknowledge all system components being supplied as part of the system.
 - 2) Utilize equipment tag numbers defined in the Contract Documents for all components.
 - 3) Provide technical data for each system component showing compliance with the Contract Document requirements.
- 3. Qualifications for:
 - a. Electrical equipment and connections testing firm and personnel.
- 4. Equipment Monitoring and Testing plans, in accordance with Part 3 of this Specification Section:
 - a. Electrical equipment and connection testing.
- B. Factory Test Reports:
 - 1. Equipment performance tests.
 - a. As listed in individual equipment specifications.
- C. Contract Closeout Information:
 - 1. Operation and Maintenance Data:
 - a. See Section 01 33 04, Operation and Maintenance Manuals, for requirements for the mechanics, administration, and the content of Operation and Maintenance Manual submittals.
- D. Informational Submittals:
 - 1. Notification, at least one week in advance, that testing will be conducted at factory.
 - 2. Certification from equipment manufacturer that all manufacturer-supplied control panels that interface in any way with other controls or panels have been submitted to and coordinated with the supplier/installer of those interfacing systems.
 - 3. Submit sample Manufacturer's Field Service Report (MFSR). Report shall use manufacturer's standard report or use the form in the Exhibits and have at least the following information:

- a. Certification that equipment has been installed properly, has been initially started up, has been calibrated and/or adjusted as required, and is ready for operation.
 - b. Certification for major equipment supports that equipment foundation design loads shown on the Drawings or specified have been compared to actual loads exhibited by equipment provided for this Project and that said design loadings are equal to or greater than the loads produced by the equipment provided.
 - c. Motor test reports.
 - d. Field noise testing reports if such testing is specified.
 - e. Preliminary field quality control testing format to be used as a basis for final field quality control reporting.
 - f. Provide three bound final written reports documenting, vibration monitoring and testing for specified equipment.
 - 1) Include the acceptance criteria of all equipment tested.
 - 2) Provide individual tabbed sections for information associated with each piece of tested equipment.
 - g. Certification prior to Project closeout that electrical panel drawings for manufacturer- supplied control panels truly represent panel wiring including any field-made modifications.
 - h. Testing and monitoring reports in accordance with Part 3 of this specification section.
4. Submit completed MFSR for each piece of equipment supplied.

1.5 ALTERNATE AND "OR EQUAL" PRODUCTS

- A. Whenever an item is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular manufacturer, the specification or description is intended to establish the type, function and quality required. Unless the specification or description contains or is followed by words reading that "no like," "no equivalent," "no substitution," or "no alternate" is permitted, then alternates for that item may be accepted by Buyer under the following circumstances:
1. "Or Equal": If in Buyer's sole discretion an item of Material or Equipment proposed by Seller is equivalent to or better in form, function, performance, reliability, quality, features, materials of construction, operation and maintenance cost, static and dynamic loads, general dimensional configuration, size, weight and appearance to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Buyer as an "or equal" item. The Buyer will consider proposals by way of technical submittals for "alternate" and "or equal" materials, equipment, and/or methods other than those specified only when such proposals are accompanied by full and complete technical submittals which allow the Engineer to evaluate proposed "alternate" and "or equal" products and recommend their acceptance or rejection to Buyer.
 - a. Submit two sets of information, clearly identified by specification section and product or system. Failure to submit the requested information shall be considered appropriate cause for rejection of the "or equal." Any ambiguities shall also be cause for rejecting an "or equal."

- b. Submit, as a minimum the following:
- 1) All information listed in the specifications specifying the product or system and not listed below.
 - 2) Complete description of the equipment, system, process, or function including a list of system components, features, dimensional and weight information on separate components and assemblies, drawings, catalog information and cuts, manufacturer's specifications, including materials.
 - 3) All differences between the specified product or system and the specifications and the proposed "or equal" shall be clearly stated in writing. The proposed "or equal" supplier shall perform a paragraph-by-paragraph review of the Specifications comparing the "or equal" with the specifications. The proposed "or equal" Supplier shall perform a detailed review of all Drawings associated with the proposed "or equal" offering. Any differences with respect to the Specifications and Drawings shall be clearly identified and completely described. Any differences shall be appropriately indexed by Specification section paragraph/subparagraph number and/or Drawing number including applicable plan, section, and/or detail designation.
 - 4) Utility requirements for each component such as water, power air, etc.
 - 5) Functional description of any internal instrumentation and control supplied.
 - 6) List of parameters monitored, controlled, and alarmed.
 - 7) Addresses and phone numbers of nearest service centers and a listing of the manufacturer's or manufacturer's representative's services available at these locations.
 - 8) Addresses and phone numbers for the nearest parts warehouses capable of providing full parts replacement and/or repair services shall be provided.
 - 9) A list of installations where similar equipment by the manufacturer has been in service for a minimum of 5 years; include contact name, telephone number, mailing address, and the names of the engineer, owner, and installation contractor.
 - 10) Detailed information on all changes or modifications necessary to adapt the equipment or system to the arrangement shown and/or functions described on the Drawings and in the Specifications.
 - 11) Any additional space requirements necessary to provide the minimum clear space around the equipment as shown.
 - 12) Any requested exceptions to the Contract Documents.
 - 13) Effect on construction schedule if "or equal" accepted.
2. "Alternate" Items: If in Buyer's sole discretion an item of Material or Equipment proposed by Manufacturer does not qualify as an "or equal" item, it will be considered a proposed "alternate."
- a. Seller shall submit sufficient information to allow Buyer to determine that the item of Material or Equipment proposed is an acceptable "alternate" item.
 - 1) Requests for review of proposed "alternate" items of Material or Equipment will not be accepted by Buyer from anyone other than Seller. If Seller wishes to furnish or use a "alternate" item of Material or Equipment,

- Seller shall first make written application to Buyer for acceptance thereof, certifying that the proposed “alternate” will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified.
- 2) The application will state the extent, if any, to which the evaluation and acceptance of the proposed “alternate” will prejudice Seller's timely achievement of Project Milestones, whether or not acceptance of the “alternate” for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Buyer for work on the Project) to adapt the design to the proposed “alternate” and whether or not incorporation or use of the “alternate” in connection with the Work is subject to payment of any license fee or royalty.
 - 3) All variations of the proposed “alternate” from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs (Seller's responsibility) or credits due the Buyer that will result directly or indirectly from acceptance of such “alternate”, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by Buyer in evaluating the proposed “alternate”. Buyer may require Seller to furnish additional data about the proposed “alternate.”
3. Engineer’s Evaluation:
- a. The Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal. The Engineer will be the sole judge of acceptability.
 - 1) No “or equal” or “alternate” item will be purchased or manufactured without Engineer ’s prior written acceptance which will be evidenced by approved shop drawings and an approved Change Order.
 - 2) Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any approved "or equal" or “alternate”.
 - 3) Engineer will record time required by Engineer and its Consultants in evaluating “alternate” proposed or submitted and in making changes in the Contract Documents (or in the provisions of any other direct contract with Buyer for work on the Project) occasioned thereby. Whether or not Engineer accepts a “alternate” item so proposed or submitted by Seller, Seller shall reimburse Buyer by way of a deductive change order for the charges of Engineer for evaluating each such proposed “alternate” and “or-equal” items.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Provide manufacturer's standard Products suitable for required service conditions unless otherwise specified in the specifications.

- B. Like Products furnished and installed in the Work shall be of the same manufacturer and of the same series or family of models to achieve standardization for appearance, operation and maintenance, spare parts and replacement, and manufacturer's services and shall implement the same or similar process instrumentation and control functions.
- C. Equipment, Components, Systems, and Subsystems:
 - 1. Design and manufacture with due regard for health and safety of operation, maintenance, and accessibility, durability of parts, and comply with applicable OSHA, state, and local health and safety regulations.
- D. Provide Products listed by UL wherever standards have been established by that agency.
- E. Product Finish:
 - 1. Provide manufacturer's standard finish and color, except where a specific finish and color is indicated in the Contract Documents.
 - 2. If manufacturer has no standard color, provide Equipment with ANSI No. 61, light gray color. In accordance with Section 09 90 00, Painting, and individual specification sections.
 - 3. Submittal shall demonstrate manufacturer's standard factory finish is compatible with field coatings as specified in 09 90 00, Painting.
- F. Special Tools and Accessories:
 - 1. Furnish all accessories required to place each item of Equipment in full operation. Accessory items include, but are not limited to, adequate oil and grease (as required for first lubrication of Equipment after field testing), light bulbs, fuses, special tools, and other spare parts as required.
- G. Provide interchangeable components of the same manufacturer, for similar components, unless otherwise specified.
- H. Manufacturer's Nameplate:
 - 1. Provide manufacturer's nameplate on all Equipment. The nameplate shall be fabricated of corrosion resistant material and shall be securely fastened to the Equipment. Information shall be permanently inscribed with clear lettering. Painted lettering will not be acceptable. Information on the nameplate shall include the following as a minimum: manufacturer; model number; serial number; rated capacity, horsepower, power requirements, electrical characteristics; and enclosure type.
- I. Spare Parts:
 - 1. Furnish to the Buyer through the Construction Manager as required by the specifications, complete, prior to Buyer Beneficial Occupancy, Substantial Completion, or Final Acceptance, whichever occurs first.
- J. Submit request for substitution in accordance with Section 01 25 13, Product Substitutions.

2.2 FABRICATION

- A. Design, fabricate, and assemble equipment in accordance with modern engineering and shop practices.
- B. Manufacture individual parts to USA standard sizes and gages so that repair parts, furnished at any time, can be installed in field.
- C. Furnish like parts of duplicate units to be interchangeable.
- D. Ensure that equipment has not been in service at any time prior to delivery, except as required by tests.
- E. Furnish equipment which requires periodic internal inspection or adjustment with access panels which will not require disassembly of guards, or equipment or similar major efforts.
 - 1. Quick opening but sound, securable access ports or windows shall be provided for inspection of chains, belts, or similar items.
- F. Fabricate equipment which will be subject to corrosive environment in such a way as to avoid back to back placement of surfaces that cannot be properly prepared and painted.
 - 1. When such back to back fabrication cannot be avoided, provide continuous welds to seal such surfaces from contact with corrosive environment.
 - 2. Where continuous welds are not practical, after painting seal the back to back surfaces from the environment in accordance with Section 07 92 00, Joint Sealers.
- G. Control Panels Engineered and Provided With the Equipment by the Manufacturer:
 - 1. Manufacturer's standard design for components and control logic unless specific requirements are specified in the specific equipment specification section.
 - 2. NEMA or IEC rated components are acceptable, whichever is used in the manufacturer's standard engineered design, unless specific requirements are required in the specific equipment Specification Section.
 - 3. Affix entire assembly with a UL 508A or UL 698A label "Listed Enclosed Industrial Control Panel" prior to delivery.
 - a. Control panels without an affixed UL 508A or UL 698A label shall be rejected.
 - 4. Provide equipment or control panels with Short Circuit Current Rating (SCCR) labeling as required by NFPA 70 and other applicable codes.
 - a. Determine the SCCR rating by one of the following methods:
 - 1) Method 1: SCCR rating meets or exceeds the available fault current of the source equipment when indicated on the Drawings.
 - 2) Method 2: SCCR rating meets or exceeds the source equipment's Amp Interrupting Current (AIC) rating as indicated on the Drawings.
 - 3) Method 3: SCCR rating meets or exceeds the calculated available short circuit current at the control panel.
 - b. The source equipment is the switchboard, panelboard, motor control center or similar equipment where the control panel circuit originates.
 - c. For Method 3, provide calculations justifying the SCCR rating. Utilize source equipment available fault current or AIC rating as indicated on the Drawings.

2.3 SHOP OR FACTORY PAINT FINISHES

A. Electrical Equipment:

- Provide factory-applied paint coating system(s) for all electrical equipment components.

2.4 SOURCE QUALITY CONTROL

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 65 50
PRODUCT DELIVERY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Preparation of products for shipment.
 - 2. Delivery and inspection.
- B. Related Specification Sections include but are not necessarily limited to:
 - 1. Specification Section 00 21 63 - Instructions to Bidders for Procurement Contracts
 - 2. Specification Section 00 41 63 - Bid Form for Procurement Contracts
 - 3. Specification Section 00 43 14 - Bid Bond (Damages Form)
 - 4. Specification Section 00 45 13 - Qualifications Statement
 - 5. Requirements of Technical Specifications
- C. Payment:
 - 1. No payment will be made to Seller for equipment or materials not properly stored, maintained, insured and without approved Shop Drawings.
 - a. Previous payments for items will be deducted from subsequent progress estimate(s) if proper storage and maintenance procedures are not observed.

1.2 PREPARATION FOR SHIPMENT

- A. Seller shall factory assemble products prior to shipment, where applicable. Matchmark or tag separate parts and assemblies to facilitate field assembly. Cover machined and unpainted parts that may be damaged by the elements with a strippable protective coating.
- B. Seller shall package products to facilitate handling and protect from damage during shipping, handling, and storage. Mark or tag outside of each package or crate to indicate its purchase order number, bill of lading number, contents by name, Project contract name and number, Seller, equipment number, and approximate weight. Include complete packing lists and Bills of Materials with each shipment.
- C. Seller shall include with shipment any Spare Parts, Special Tools, Test Equipment, Expendables, and Maintenance Materials:
 - 1. Properly package materials to avoid damage, in original cartons insofar as possible. Replace parts damaged or otherwise inoperable.
 - 2. Firmly fix to, and prominently display on, each package:
 - a. Minimum 3-inch by 6-inch manila shipping tag with the following information printed clearly:
 - 1. Manufacturer's part description and number.
 - 2. Manufacturer's part description and number.
 - 3. Equipment number
 - 4. Quantity of parts in package
 - 5. Equipment manufacturer

6. Applicable specification section
 7. Project name
 3. Deliver materials to site or off-site storage area as directed by the Engineer.
 4. Notify Engineer 24 hours in advance of arrival of all deliveries.
- D. Seller shall protect all Products from exposure to the elements and keep thoroughly dry and dust free at all times. Protect painted surfaces against impact, abrasion, discoloration, or other damage. Grease or oil all bearings and similar items.
- E. Buyer requires a minimum seven-day advance notice of shipment from Seller. Upon receipt of Seller's advance notice of shipment, the Seller shall promptly notify Engineer of anticipated date and place of Equipment arrival.
- F. Shop Test Results:
1. Reviewed and accepted by Engineer before product shipment as required in individual specification sections.

1.3 DELIVERY AND INSPECTION

- A. Seller procured Materials and Equipment will be inspected by the Seller. Inspect Materials and Equipment for signs of any deleterious effects resulting from shipment and/or storage. Do not install Material or Equipment showing such effects. Remove damaged Material or Equipment from the site and expedite delivery of identical new Material or Equipment. Delays to the Work resulting from Material or Equipment damage which necessitates procurement of new products will be considered delays within Seller's control.
- B. Deliver products F.O.B. the job site in accordance with the accepted current project schedule and coordinate to avoid conflict with Work and conditions at the site. Deliver anchor bolts, embedded items, and templates sufficiently early to permit setting prior to placement of structural concrete. Coordinate deliveries with Engineer and Project Schedule to avoid long-term storage on site.
- C. Deliver products in undamaged condition, in original container or packaging, with identifying labels intact and legible. Include on the label the date of manufacture and shelf life, where applicable. Include UL labels on products so specified.
- D. Buyer-furnished Materials will be inspected jointly by the Engineer and the Seller upon delivery or turnover to Seller. Once accepted in writing by the Seller, the Seller will assume all storage, handling and insurance responsibilities for these Buyer-furnished Materials.
- E. Should the Buyer, or Buyer's representative, choose to conduct an inspection of the construction operations onsite, at an off-site manufacturing facility, at an off-site storage facility, or any operation related to the Work, the following conditions shall be provided by the Seller:
1. Buyer shall have the full cooperation and assistance of the Seller, supplier, manufacturer, warehouse, or other persons with whom the Seller has contracted.
 2. Buyer shall have the full access to the facilities to be inspected, at all reasonable times.

3. If required by the Buyer, the Seller shall arrange for safe access, adequate and conveniently located office or working space, and any assistance that may be reasonably needed for conducting these inspections.
4. Spare parts used during commissioning must be replaced before final acceptance of associated equipment.
5. Any vendor-supplied equipment scheduled for storage shall be maintained while in storage on behalf of Buyer. Warranty shall be extended accordingly.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION – (NOT USED)

END OF SECTION

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SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1 – GENERAL

1.1 DESCRIPTION

A. Scope:

1. This Section includes general requirements for storing and protecting materials and equipment.

1.2 STORAGE

A. Prior to delivery of the Goods to the Point of Destination and at all times when the Goods are in Seller’s care, comply with the following:

1. Store and protect the Goods in accordance with manufacturer’s recommendations and the Procurement Contract Documents.
2. Seller shall make all arrangements and provisions necessary for, and pay all costs for, storing the Goods.
3. Store materials and equipment neatly and compactly in locations that cause minimum inconvenience to Buyer, Engineer, Seller, public travel, tenants, and occupants of adjoining property.
4. Arrange storage in manner to provide easy access for inspection by Engineer and resident project representative (RPR).

C. Storage Location:

1. Environmentally controlled storage areas at the Point of Destination for the Goods is limited and may not be available.
2. Do not store the Goods in structures being constructed unless approved by Engineer in writing.

D. Protection of Stored Materials:

1. Store the Goods to ensure preservation of quality and fitness of the Goods, including proper protection against damage by freezing, moisture, and with outdoor ambient air high temperatures as high as 120 degrees F; temperature and humidity inside crates, containers, storage sheds, and packaging may be significantly higher than the outdoor ambient air temperature.
2. Store in indoor, climate-controlled storage areas all materials and equipment subject to damage by moisture, humidity, heat, cold, and other elements, unless otherwise acceptable to Engineer.
3. When placing orders for equipment and controls containing computer chips, electronics, and solid-state devices, Seller shall obtain, coordinate, and comply with specific temperature and humidity limitations on materials and equipment, because temperature inside cabinets and components stored in warm temperatures can approach 200 degrees F.

4. Seller shall be fully responsible for loss or damage (including theft) to stored materials and equipment prior to Buyer's acceptance at the point of Destination or other delivery location mutually agreed upon by the parties.
 5. Do not open manufacturer's containers until time of installation, unless recommended by the manufacturer or otherwise specified in the Procurement Contract Documents.
 6. Comply with requirements of Article 1.3 of this Section.
- B. Following delivery of the Goods to the Point of Destination or other delivery location mutually agreed upon by Buyer and Seller, responsibility for storing the Goods will be Buyer's, unless otherwise agreed upon by Buyer and Seller.

1.3 PROTECTION – GENERAL

- A. The Goods shall be boxed, crated, or otherwise completely enclosed and protected during shipping, handling, and storage, in accordance with Section 01 65 00, Product Delivery Requirements.
- B. Prior to delivery of the Goods to the Point of Destination and at all times when the Goods are in Seller's care, Seller shall:
1. Store the Goods off the ground or floor on raised supports such as skids or pallets.
 2. Protect painted surfaces against impact, abrasion, discoloration, and other damage. Painted equipment surfaces that are damaged or marred shall be repainted in their entirety in accordance with equipment manufacturer and paint manufacturer requirements, to the satisfaction of Engineer.
 3. Protect electrical equipment, controls, and instrumentation against moisture, water damage, humidity, heat, cold, and dust. Space heaters provided in equipment shall be connected and operating at all times until equipment is placed in operation and permanently connected.

1.4 FULLY PROTECTED STORAGE

- A. Store the Goods on supports in buildings that have concrete or wooden flooring, roof, and fully-closed walls on all sides. Covering with visquine plastic sheeting or similar material in space without floor, roof, and walls is not acceptable. Comply with the following:
1. Provide heated storage for materials and equipment that could be damaged by low temperatures or freezing.
 2. Provide air-conditioned storage for materials and equipment that could be damaged by high temperatures or humidity.
 3. Protect mechanical and electrical equipment from being contaminated by dust, dirt, and moisture.
 4. Maintain humidity at levels recommended by manufacturers for electrical and electronic equipment.

B. Storage of Major Equipment:

1. Storage of the equipment indicated below shall comply with this Paragraph 1.4.B of this Section:
 - a. Electrical substation and plant-wide generator equipment, spare parts, and extra materials.
2. Storage Responsibility:
 - a. When storage is required by Seller based on production, testing, and shipping schedules, include all costs for storing the Goods and performing required in-storage maintenance. Buyer will not pay Seller additional costs for Seller-required storage.
 - b. For storage required by Buyer, include costs for storing Goods for up to three months after the associated Procurement Contract Time for delivery of the Goods (as indicated in the Agreement, as may be amended by Change Order), including performing required in-storage maintenance.
 - c. Should Buyer require additional storage time beyond that indicated above, the provisions of Paragraph 1.4.B.5.b of this Section, shall apply.
3. Storage conditions shall comply with requirements of this Section regardless of storage location.
4. When the Goods are stored by Seller before requesting payment for delivery of the Goods (e.g., Goods are stored at Seller's option because of Seller's production, testing, or shipping schedules):
 - a. Storage location is Seller's option. Goods are not eligible for payment until delivered to the Point of Destination, unless mutually agreed upon by the parties.
 - b. Seller is responsible for costs of unloading the Goods at the storage location; for reloading at storage location, and for transport to the Point of Destination.
5. When the Goods are stored at request of Buyer:
 - a. Initial Three-Month Storage:
 - 1) Provisions of Paragraph 1.4.B.2 of this Section shall apply.
 - b. Storage Greater than Three Months:
 - 1) When directed by Engineer in writing, storage shall be in third-party owned, bonded, insured, climate-controlled warehouse in western New York as paid for by Buyer's construction Seller.
 - c. When the Goods are so stored, comply with requirements of Paragraph 1.6.C of this Section.

C. Observation of Stored Goods by Engineer:

1. General:
 - a. When Goods are suitably stored but not yet received at the Point of Destination, Engineer will visit the storage location and verify the extent, condition, and storage environment of the stored Goods.
 - b. When the Goods are stored for more than two months, such visits to storage location will be not less than once every two months.

1.5 HAZARDOUS MATERIALS AND EQUIPMENT

- A. Prevent contamination of personnel, storage areas, and the Point of Destination. Comply with Laws and Regulations, manufacturer's instructions, and other provisions of the Procurement Contract Documents.

1.6 MAINTENANCE OF STORAGE

- A. Mechanical and electrical Goods requiring long-term storage shall have complete manufacturer's instructions for servicing each item, with notice of enclosed instructions shown on exterior of container or package.
- B. On a scheduled basis, periodically inspect stored materials and equipment to ensure that:
 - 1. Condition and status of storage facilities is adequate to provide required storage conditions.
 - 2. Required environmental conditions are maintained on continuing basis.
 - 3. Materials and equipment exposed to elements are not adversely affected.
 - 4. Space heaters that are part of electrical equipment shall be connected and operated continuously until equipment is placed in service and permanently connected.
- C. When the Goods are stored by others after delivery to the Point of Destination or other delivery location mutually agreed to by Buyer and Seller, and Goods are stored for a period of time equal to or greater than time requiring periodic inspection and maintenance in Seller's published storage instructions, Seller shall:
 - 1. Visit the storage location at appropriate intervals complying with Seller's published storage instructions and perform appropriate inspections and maintenance on the stored Goods.
 - 2. Restore protective packaging and other protective systems and coatings.
 - 3. Submit written report of such inspection and maintenance to Engineer through the Buyer's construction Seller to whom the Procurement Contract has been assigned.
 - 4. Compensation for such inspections, maintenance, and reporting shall be by Buyer's construction Seller to whom Procurement Contract is assigned.

1.7 MICROPROCESSORS, PANELS, AND INSTRUMENTATION STORAGE

- A. Store control panels, microprocessor-based equipment, electronics, and other devices subject to damage or decreased useful life because of temperatures below 40 degrees F or above 100 degrees F, relative humidity above 90 percent, or exposure to rain or exposure to blowing dust in climate-controlled storage space.
- B. General:
 - 1. Storage shall be in an insured, protected, climate-controlled storage facility whose location is acceptable to Buyer, Seller, and Engineer.

2. Buyer and Engineer have the right to observe or inspect materials and equipment during normal working hours.
 3. Place inside each control panel or device a desiccant, volatile corrosion inhibitor blocks (VCI), moisture indicator, and maximum-minimum indicating thermometer.
 4. Check panels and equipment not less than once per month. Replace desiccant, VCI, and moisture indicator as often as required, or every six months, whichever occurs first.
 5. Certified record of daily maximum and minimum temperature and humidity in storage facility shall be available for inspection by Buyer and Engineer. Certified record of monthly inspection, noting maximum and minimum temperature for month, condition of desiccant, VCI, and moisture indicator, shall be made available to Buyer and Engineer upon request.
- C. Costs for storing climate-sensitive materials and equipment prior to delivery of the Goods to the Point of Destination or other location mutually agreed upon to Buyer and Seller shall be paid by Seller. Replace panels and devices damaged during storage, or for which storage temperatures or humidity range has been exceeded, at no additional cost to Buyer. Delays resulting from such replacement are causes within Seller's control.

1.8 RECORDS

- A. Keep up-to-date account of materials and equipment in storage to facilitate preparation of Applications for Payment, if the Procurement Contract Documents provide for payment for materials and equipment delivered and suitably stored at location other than the Point of Destination as agreed to in writing.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

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SECTION 01 71 16

MANUFACTURER ACCEPTANCE OF CONDITIONS

PART 1 - GENERAL

1.1 SUMMARY OF WORK

- A. This section defines manufacturer's requirements for equipment start-up, testing and training.
- B. Training under this section is limited to Plant Maintenance staff only. Product-specific operator training to be included based on Buyer's input.
- C. Plant Maintenance staff is divided into the following functional groups:
 - 1. Instrument Techs
 - 2. Electricians
- D. Manufacturer's training shall be structured to provide focused training to each of these functional groups. This will include development and delivery of separate training materials for each functional group.
- E. Training content for each functional group shall be tailored for each functional group audience. Format of Course Outline/Lesson Plan is to follow examples provided at the end of this section.

1.2 DEFINITIONS

- A. Refer to the Contract Provisions.
- B. Person-Day:
 - 1. One person for eight continuous working hours regardless of time of day exclusive of travel time to and from the site.
- C. Seller:
 - 1. The party under separate contract with Buyer to furnish identified equipment.
- D. Time Periods:
 - 1. Those given in Technical Specifications for field services by manufacturers' representatives and each type of field service to be provided, as further described in Article 6, are approximate and may be redistributed by the Buyer, at its sole discretion, to meet the needs of the work. This contract is based upon the Buyer's purchasing of the amounts of time for each component of work, and the Buyer shall be entitled to receive the total of the number of days listed for all field activities for any such purposes it may deem necessary or appropriate.

1.3 SUBMITTALS

- A. Initial Training Plan:
 - 1. Submit no later than 120 Days before Substantial Completion.
- B. Final Training Plan:
 - 1. Revise and resubmit following receipt of comments on Initial Training Plan.
- C. Quality Control Submittals: When specified in the individual Specifications, submit:
 - 1. Manufacturer's Certificate of Proper Installation appended to this section.
 - 2. Testing Reports: For all Shop, Acceptance and Performance Testing required by the Contract Documents and performed.
- D. Resume of manufacturer's representative for Seller-supplied equipment shall be submitted for acceptance and record.

1.4 QUALIFICATION OF MANUFACTURER'S REPRESENTATIVE

- A. The manufacturer's representative shall be an authorized representative of the equipment manufacturer, factory trained, and experienced in the technical applications, installation, operation, and maintenance of respective equipment, subsystem, or system. Representatives are subject to acceptance by Buyer and Consulting Engineer. No substitute representatives will be allowed unless prior written approval by Engineer has been given.

1.5 FULFILLMENT OF SPECIFIED MINIMUM SERVICES

- A. Where manufacturers' services are specified, furnish manufacturer's qualified representative.
 - 1. Where time is taken in excess of that stated in the Specifications by manufacturers' representative for reasons beyond the control of the Buyer, additional time required to perform the specified services shall be considered incidental work.
 - 2. Where time taken by manufacturers' representative to perform the specified services is less than that stated in the Specifications, the value of the remaining time shall be credited to the Buyer.
 - 3. Where time is taken by manufacturers' representative to perform additional services beyond the scope of that stated in the specification, the value of the surplus time shall be added to the contract by a change order.
- B. Seller will schedule and coordinate with the Construction Manager all furnished equipment manufacturer on-site services to avoid conflicting with other on-site testing or other manufacturer's on-site services.
 - 1. Determine that all conditions necessary to require manufacturer services have been met before requesting same. Verify and coordinate with the Construction Manager.
- C. Only those days of service approved by Construction Manager will be credited to fulfill the specified minimum services. Manufacturers' representative shall document all time spent on site with the Construction Manager.
- D. Unless specified otherwise, manufacturer's on-site services shall include, as a minimum:
 - 1. Taking the lead role in conducting respective equipment acceptance testing, performance testing, and startup activities until product acceptance by the Buyer.

2. Training of Buyer's personnel in the operation and maintenance of respective equipment as required herein.
3. Completion of manufacturer's Certificate of Proper Installation (form enclosed at end of this section) with applicable certificates for proper installation, testing and service.
4. Reporting to the Construction Manager any unusual circumstances that occur during installation and testing that may require additional manufacturer representative time at the jobsite which would cause the stipulated time in the contract to be exceeded.

1.6 TRAINING SCHEDULE

- A. The Seller will propose a training schedule for equipment furnished under this contract by the Seller. The Construction Manager will assist the Seller by coordinating the scheduling of manufacturer's representative services provided by Buyer-furnished equipment suppliers.
- B. The Seller's schedule will identify all equipment and systems provided under this contract that require training services of manufacturers' representatives and show:
 1. Estimated training dates to allow for multiple sessions for each functional maintenance area.
 2. Actual dates for each training session will be determined by the Buyer, Construction Manager, and Seller.
- C. Adjust training schedule to ensure training of appropriate personnel as deemed necessary by Buyer, and to allow full participation by manufacturers' representatives. Adjust schedule for interruptions in operability of equipment.

1.7 TRAINING PLAN

- A. Initial Training Plan: Submit the following for each proposed course:
 1. Equipment Reference: Identify spec section, equipment type, location, model name and number, and quantity.
 2. Supporting Documentation: Confirm that all applicable O&M data has been submitted for record.
 3. Audience: Identify which Maintenance Functional Group the training is intended to cover.
 4. Overall Learning Objectives: Describe what each maintenance group should be able to do after the training.
 5. Training Time: Identify total length of training for each maintenance group.
 6. Course Outline: Provide a breakout of training by topics per Section 01 75 00, Facility Startup, for start and end times, instructor, and location.
 7. Lesson Plan: Provide detailed description of lesson objectives and sub-topics, for each topic listed in Course Outline.
- B. Final Training Plan: Submit the following after the training coordination meeting with the training schedule.
 1. Updated Items 1 through 7 from above.
 2. Resumes of instructors providing training.
 3. Draft training schedule.

4. Presentation Materials: Provide copies of all planned hand-outs, and presentation (PPT) slides.
5. Support Needs: These include audio-visual equipment, white boards, and other equipment to be supplied by the Authority.

1.8 TRAINING COORDINATION MEETING

- A. Following receipt of the Final Training Plan, a training coordination meeting will be conducted by the Construction Manager to discuss the training plan associated with the equipment being provided. The purpose of this meeting will be to:
 1. Review the final training plans of both the supplier(s) (if any) and Seller(s).
 2. Finalize training schedule based upon Buyer, Seller(s), Supplier (if any), and Construction Manager input on the:
 - a. Status of equipment installation and readiness for testing and operation.
 - b. Status of Buyer personnel and facility availability for training.
 - c. Status of required training, testing, and startup deliverables.
 - d. Requirements of the Contract Documents for Buyer personnel training, testing, and startup.
 3. Incorporate the above into the Project Schedule for testing and startup of the equipment/sub-system/system/facility.
- B. The following shall have the required representatives at this meeting:
 1. Construction Manager (CM).
 2. Consulting Engineer (FDC).
 3. Buyer (ALCOSAN).
 4. Program Manager (if any).
 5. Supplier (if any).
 6. Seller (and Subcontractors as appropriate).

1.9 TRAINING OWNER'S PERSONNEL

- A. Furnish training personnel in accordance with Article 1.4 of this section.
- B. Provide both detailed classroom and job site hands-on training to Buyer's personnel on operation and maintenance of equipment.
- C. Pre-Startup Training:
 1. Coordinate training sessions with Buyer's operating personnel and manufacturers' representatives, and with submission of operation and maintenance manuals.
 2. Complete at least 21 days prior to actual startup.
- D. Post-Startup Training:
 1. If required in specifications, furnish and coordinate training of Buyer's operating personnel by respective manufacturer's representatives.

1.10 SUPPLEMENTS

- A. The supplements listed below, following the end of this section, are part of this specification:
 1. Appendix A: Course Outline/Lesson Plan Example

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 MANUFACTURER REPRESENTATIVE FIELD INSPECTIONS

- A. This applies to Seller furnished Equipment and Buyer-furnished equipment. If so, specified in the Contract Documents.
- B. The purpose of the manufacturer representative's field inspections is to assure the Work has been constructed and/or installed in accordance with the Contract Documents including the design Drawings, Specifications, and any manufacturer's recommendations. The Seller shall coordinate all inspections through the .
- C. The manufacturers' representative shall exercise particular care to verify all component interconnecting facilities and such other Items of a critical nature to the proper and safe operation of the Work are in place, protected or otherwise ready for start-up and initial operations.
- D. The manufacturers' representative's inspections shall include, but will not be limited to, the following points as applicable: soundness of construction and/or installed equipment, if any (without cracked or otherwise damaged parts); completeness in all details, as specified; correctness of setting, alignment and relative arrangement of various parts; adequacy and correctness of all interface connections, utilities and necessary support facilities.
- E. All defective or deficient construction, materials, components or workmanship disclosed through these inspections and tests shall be repaired, replaced or corrected immediately under the supervision of the manufacturer's representative, or provisions shall be made by the Seller for their prompt repair, replacement or correction. The remedial work shall be done at the expense of the responsible party as determined by the Buyer.
- F. No electrical power shall be turned on to any of the work until the manufacturer's representative has inspected the construction and/or installed items and certified that the construction and/or installation is satisfactory; that the electrical power may be applied; and that nothing in the construction and/or installation shall negate any warranty which covers any portion of the work, and the manufacturer representative has submitted a signed writing verifying the above.

(continued)

END OF SECTION

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SECTION 01 78 36
WARRANTIES AND GUARANTEES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Execute and provide notarized Project Warranty on form furnished at end of section.
- B. Warranties specified in Division 26 shall begin at Substantial Completion of the Work, or some portion of it, when the Work warranted is placed into operational service by the Buyer. Warranties shall not start when equipment and material is delivered to the site or installed.
- C. When possible, warranties for the Work, or some portion if the Work, shall run concurrently.
 - 1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to the Buyer.
 - 2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for the Buyer.
- D. Manufacturer's disclaimers and limitations on product warranties do not relieve Seller of obligations under requirements of Contract Documents.
- E. Manufacturer's Warranties:
 - 1. Provide for products, equipment, systems and installations required by Division 26 of Contract Documents for duration indicated.
 - 2. Where manufacturer's standard warranties or guarantees or both expire before duration required by other sections of the Contract Documents, obtain and pay for extensions as part of Contract Price at no additional cost to the Buyer.
- F. Special Warranties:
 - 1. Refer to Division 26 sections for specific content requirements and particular requirements for submitting special warranties.
 - 2. Provide written Special Warranties for products, equipment, systems, installations, and joint responsibilities as noted and required by Division 26 sections of Contract Documents for duration indicated.
 - 3. Prepare a written document that contains appropriate terms and identification, ready for execution.
 - a. Modified and properly executed Manufacturer's standard form to include project specific information.
 - b. Submit draft for approval before final execution.
 - 1) See Section 01 33 00, Submittals.
- G. Provide Warranties, Special Warranties and Guarantees prior to final payment.
 - 1. Provide in electronic data format.
 - a. Coordinate format with Buyer.

H. Warranties, Special Warranties and Guarantees required by Contract Documents shall commence on date of Substantial Completion of Work unless otherwise indicated in Certificate of Substantial Completion.

I. Special Warranties may be required, as part of the approval process, for products accepted as 'Or-Equals' or 'Substitutions'.

1.2 SUBMITTALS

A. Reference Section 01 33 00, Submittals, for hard copy and electronic submittal protocols.

1.3 JOB CONDITIONS

A. If for any reason, Seller cannot warrant or guarantee or both any portion of Work using products or construction methods indicated or required by other sections of Contract Documents, notify Construction Manager in writing during bid period, and before contracts are awarded, indicating reasons and names of products and data on substitutions that can be warranted or guaranteed or both.

1. Should Seller fail to notify Construction Manager, Seller will be considered as having agreed to warrant or guarantee the Work indicated.
2. If condition was unforeseen, buried, or submerged, prior to award of the Contract, the Seller shall be responsible for negotiation of a modified warranty or guarantee or both with the CM.

PART 2 - PRODUCTS – (NOT USED)

PART 3 - EXECUTION

3.1 PROJECT WARRANTY

- A. Execute and provide notarized Project Warranty on form furnished at end of the section.
1. Provide Seller's name, address, signature and date.
 2. Notarial Act and notarization:
 - a. Warranty document is required to be signed, dated, and sealed with Notary Public seal or stamp in accordance with state and territorial notary laws.

3.2 PRODUCT, EQUIPMENT AND SYSTEM WARRANTIES AND GUARANTEES

- A. Submit for approval warranties and guarantees or both required by Division 26 of Contract Documents.
1. Identify by specification section, with each warranty, guarantee, or both clearly labeled.
 - a. Identify in each warranty as a minimum:
 1. Project name and address.
 2. Equipment/materials under warranty
 3. Start and end dates of warranty
 4. Contact information for local Service Provider.

2. Identify each warranty or guarantee or both in manner consistent with names and identification numbers used in Contract Documents.
3. Submit to Buyer prior to final payment.

END OF SECTION

PROJECT WARRANTY

PROJECT: _____ PROJECT NO.: _____

BUYER: _____

DATE OF SUBSTANTIAL COMPLETION: _____

As indicated on Certificate of Substantial Completion

Seller warrants to Buyer that Work is free from defects not inherent in the quality required or permitted, and that Work conforms with requirements of Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. Seller’s warranty excludes remedy for damage or defect caused by abuse, modifications not executed by Seller, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage.

If, within one-year after the date of Substantial Completion of Work or designated portion thereof, or by terms of an applicable Special Warranty required by Contract Documents, any of the Work is found to be not in accordance with requirements of Contract Documents, the Seller shall correct it promptly after receipt of written notice from Buyer to do so unless Buyer has previously given Seller a written acceptance of such condition. Buyer shall give such notice promptly after discovery of the condition.

The above shall not be construed to establish a period of limitation with respect to other obligations which Seller might have under Contract Documents. Establishment of one-year period for correction of Work relates only to specific obligation of Seller to correct Work, and has no relationship to time within which obligation to comply with Contract Documents may be sought to be enforced, nor to time within which proceedings may be commenced to establish Seller’s liability with respect to Seller’s obligations other than specifically to correct Work.

SELLER: _____

ADDRESS: _____

BY: _____

SIGNATURE: _____ TITLE: _____

DATE: _____

Subscribed and sworn to me this ____ day of _____ in the year of _____.

NOTARY PUBLIC: _____

SIGNATURE: _____ LOCATION: _____

My Commission Expires: _____

END OF DOCUMENT

SECTION 01 78 39

CONTRACT CLOSEOUT AND EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. All documents required by Contract Documents, including but not limited to:
 - 1. Contract Drawings.
 - 2. Project Manual and specifications.
 - 3. Addenda.
 - 4. Shop drawings.
 - 5. Product data.
 - 6. Samples and mock-ups.
 - 7. Project Information.
 - 8. Change documents.
 - 9. Request for Information responses, directives, clarifications, interpretations, etc.
 - 10. Field test records.
 - 11. Warranties.
- B. Field Documents:
 - 1. Complete set of all documents required for construction.
 - 2. Used for construction of project.
- C. Periodic Update Documents:
 - 1. Complete separate set of all documents required for construction, with exception of samples and mock-ups, used for posting and updating on weekly basis.
 - 2. Do not use for construction of project.
- D. Project Record Documents:
 - 1. Complete set of all documents required for construction, with exception of samples and mock-ups, for updating at end of project.

1.2 SUBMITTALS

- A. Quality Control Submittals:
 - 1. The Seller shall submit, electronically via eBuilder®, for maintenance and markup of as-built documentation on this contract prior to issuance of the Notice to Proceed.
- B. Contract Closeout Submittals:
 - 1. Submit as required under the Contract Provisions and Section 01 33 00, Submittals, prior to a request for Certificate for Substantial Completion or Final Acceptance.
- C. Contract closeout submittals shall include record documents, as-builts, approved startup testing and commissioning documents; operation and maintenance manuals, spare parts, and equipment training as required.

1.3 RECORD DOCUMENTS

A. Definition:

1. Record Drawings and As-Built Drawings (including Technical Specifications) as required under the Contract Provisions.

B. Quality Assurance:

1. Furnish qualified and experienced person, whose duty and responsibility shall be to maintain all contract as-built documents. The Seller shall employ a Professional Land Surveyor (PLS) licensed in the State of Pennsylvania, having performed similar work and whose qualifications and performance shall be subject to the approval of the Construction Manager. The PLS shall be responsible for coordinating and documenting factual information, including, but not limited to horizontal coordinates and vertical elevations, with regards to all new and existing underground facilities, appurtenances, and other underground structures, equipment and other work, within all contract as-built documents, both concealed and visible. All information for as-built documents shall provide pertinent information and data such that a three-dimensional model of the project can be generated from the field information provided.
2. Accuracy of Records:
 - a. Coordinate changes within all contract as-built documents, making legible and accurate entries on each page of specifications, each sheet of the Drawings, and all other contract documents where such entry is required to show change.
 - b. Purpose of as-built documents is to document factual information regarding aspects of work, both concealed and visible, and to enable future modification of work to proceed without lengthy and expensive site measurement, investigation, and examination.
3. Record information concurrently with construction progress and within 24 hours after receipt of information indicating that a change has occurred. Do not cover or conceal work until required information is recorded.
4. Prior to submitting a request for a progress payment, obtain the Construction Manager's review and approval of the current status of the as-built documents and drawings. Failure to properly maintain, update, and submit as-built documentation may result in a deferral by the Construction Manager to recommend the whole or any part of the Seller's Application for Payment, either partial or final.

1.4 RELEASES FROM AGREEMENTS

- A. Furnish Buyer with written releases from property Buyers or public agencies where side agreements or special easements have been made, or where the Seller's operations have not been kept within the Buyer's construction right-of-way.
- B. Furnish Buyer with written releases from any or all subSellers or suppliers or the like who performed work or supplied labor, materials or services pursuant.
- C. In the event the Seller(s) is unable to secure written releases, inform the Buyer of the reasons:

1. The Buyer or designated representatives will examine the site and/or work, and Buyer will direct Seller(s) to complete work that may be necessary to satisfy terms of the agreement.
2. Should Seller(s) refuse to perform this work, the Buyer reserves the right to have it done by separate contract and deduct the cost of same from the Contract Price or require the Seller(s) to furnish a satisfactory Bond in a sum to cover legal claims for damages.
3. When the Buyer is satisfied that work has been completed in agreement with the Contract Documents and terms of easements, the right is reserved to waive the requirement for written release if:
 - 1) Seller's failure to obtain such statement is due to the grantor's refusal to sign, and this refusal is not based upon any legitimate claims that Seller has failed to fulfill the terms of the easement, or
 - 2) Seller is unable to contact or has had undue hardship in contacting the grantor.

PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 MAINTENANCE OF AS-BUILT DOCUMENTS AND RECORD DOCUMENTS

- A. As-Built: Drawings and Technical Specifications:
 1. Promptly following Award of Contract, the Seller(s) shall secure from the Buyer, at no cost to Seller, one complete set of Contract Documents.
 2. Delete Engineer title block and seal from all documents.
 3. Label or stamp each as-built document with title "AS-BUILT DOCUMENTS" in neat large printed letters.
 4. Record any revisions and/or new information concurrently with the construction progress and within 24 hours after receiving information that a change has occurred. Do not cover or conceal work until required information is recorded.
- B. Record Shop Drawings: All final shop drawings shall be submitted with a label or stamp stating "RECORD SHOP DRAWINGS" in neat large letters.
 1. Procedure:
 - a. Seller(s) shall make all corrections and add full information on a set of the originally approved shop drawings and furnish to the Buyer through the Construction Manager.
 - b. The Seller shall submit Record Shop Drawings/Certified Vendor Drawings to the Construction Manager through e-Builder upon completion of the project.
 - c. Mark drawings "Record Shop Drawings" and all changes made, and notes added shall be clearly indicated and keyed to a legend of revisions made to the Drawings.

- C. Preservation:
 - 1. Maintain all record and as-built documents in a clean, dry, legible condition and in good order. Do not use record or as-built documents for construction purposes.
 - 2. Make record and as-built documents and samples available at all times for observation by Construction Manager and Engineer.
- D. Making Entries on As-Built Drawings (including Technical Specifications):
 - 1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe any changes by graphic line and note as required.
 - a. Color Coding:
 - 1) Use Green when showing information deleted from documents.
 - 2) Use Red when showing information added to documents.
 - 3) Use Blue to add notes and then circle added notes in blue.
 - 2. Initial and date all entries.
 - 3. Call attention to any changes by drawing a "cloud" around the area or areas affected.
 - 4. Dimensions on Schematic Layouts: Show on as-built drawings, by dimension, the centerline of each run of items as are described in the previous subparagraphs above.
 - a. Clearly identify items with accurate notes such as "cast iron drain," "galv. water," and the like.
 - b. Show, by symbol or note, the vertical location of the item ("under slab," "in ceiling plenum," "exposed," and the like).
 - c. Make all identifications so descriptive that they may be related reliably to the Technical Specifications.
 - 5. Technical Specifications: Legibly record and reference corrections and updates to reflect final installation, including, but not limited to:
 - a. Approved changes in materials, equipment or construction procedures. Make reference to the document (RFI, CO, Addendum, Shop Drawing Submittal, etc.) that authorized the change.
 - b. Note all changes in materials and equipment design, performance and maintenance criteria.

3.2 POSTING PRIOR TO PROJECT

- A. After Contract is executed, but prior to start of construction, obtain Contract Drawings and Project Manual/Specifications that will be used for Field Documents and Periodic Update Documents.
- B. Obtain copies of all addenda and post to all above documents

3.3 ELECTRONIC RECORD DOCUMENTS

- A. If the Seller wishes to maintain and submit as-built drawings electronically (CADD) they shall obtain the approval of the Construction Manager, Buyer and Engineer and agree upon a procedure acceptable to these parties and consistent with the requirements of this specification.

END OF SECTION

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SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. Seller shall provide all labor, materials, equipment, and incidentals shown, specified, and required to furnish and install identification for electrical apparatus.

1.2 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with the following:

1. NEC Article 110, Requirements for Electrical Installation.
2. 40 CFR 1910.145 (OSHA) – Specification for Accident Prevention Signs and Tags.
3. NFPA 70E, Electrical Safety in the Workplace.

1.3 SUBMITTALS

A. Prepare all submittals per Section 01 33 00 – Submittal Procedures.

B. Action Submittals: Submit the following:

1. Shop Drawings: Submit the following:
 - a. Complete description and listing of proposed electrical identification and electrical identification devices for associated equipment or systems.
2. Product Data:
 - a. Manufacturer's literature, cut sheets, specifications, dimensions, and technical data for all products proposed under this Section.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

A. Engraved Identification Devices (Nameplates and Legend Plates):

1. Nameplates:
 - a. Laminated thermoset plastic, 1/16-inch thick, engraved condensed block black lettering on white background, square corners, and beveled front edges.
 - b. Size: As required.
 - c. Letter Size: Minimum 3/16-inch.
 - d. Nameplates one inch or less in height shall have one mounting hole at each end. Nameplates greater than one inch in height shall have mounting holes in the four corners.
2. Legend Plates:
 - a. Legend plates for pushbuttons, pilot lights, selector switches, and other panel-mounted devices shall be large size with dimensions of

approximately 2-7/16 inches wide by 2-13/32 inches tall (Allen Bradley large automotive size), plastic, custom engraved with black letters on white background.

- 1) Provide standard-size legend plates where devices are mounted on motor control centers and spacing of devices precludes using automotive-size legend plates.
 - b. Lettering size and line weight shall be the same for all legend plates on the same panel or enclosure. Maximum size shall be 1/4-inch and minimum size shall be 1/8-inch.
- B. Safety Signs and Voltage Markers:
1. Provide high voltage signs for equipment operating over 600 volts.
 2. High-Voltage Safety Signs for Outdoor Applications:
 - a. Products and Manufacturers: Provide one of the following:
 - 1) B-120-45471 by Brady.
 - 2) Or equal.
 - b. Unless otherwise shown or indicated, high voltage safety signs shall be not less than 10 inches high by 14 inches wide of fiberglass reinforced plastic and shall comply with 40 CFR 1910.145. Signs shall resist fading from exposure to temperature extremes, ultraviolet light, abrasive, and corrosive environments, and shall read, “DANGER – HIGH VOLTAGE – KEEP OUT”.
 - c. Mounting hardware shall be Type 316 stainless steel.

2.2 FABRICATION

- A. Engraved Identification Devices (Nameplates and Legend Plates):
1. Nameplate and legend plate text is preliminary and subject to change pending final review and approval of nomenclature by Engineer after start-up and testing.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide electrical identification in accordance with manufacturer recommendations and as required for proper identification of equipment and materials.
- B. Engraved Identification Devices (Nameplates and Legend Plates):
1. Unless otherwise indicated in the Procurement Contract Documents, attach permanent nameplates with permanent adhesive and with 3/16-inch diameter, round head, stainless steel machine screws into drilled and tapped holes.
 2. Provide nameplate with 1.5-inch-high letters to identify each cabinet, panel, or enclosure as shown or indicated.
 3. Provide nameplates with 1/2-inch-high letters to identify each junction and terminal box.
 4. On switchgear, provide nameplates for each main and feeder circuit including control fuses, and for each indicating light and instrument.

- a. Provide nameplate with 1.5-inch-high letters giving switchgear designation, voltage rating, ampere rating, short circuit rating, manufacturer's name, general order number, and item number.
- b. Identify individual door for each compartment with nameplate giving item designation and circuit number.
5. Except conduit, all electrical appurtenances including lighting panels, convenience outlets, fixtures, and lighting switches, shall be provided with nameplates indicating appropriate circuit breaker number(s).
6. Push Buttons:
 - a. Provide legend plates for identification of functions.
 - b. Provide nameplates for identification of controlled equipment.
 - c. Provide red buttons for stop function.
 - d. Provide black buttons for other functions.
7. Pilot Lights:
 - a. Provide legend plates for identification of functions.
 - b. Provide nameplates for identification of controlled equipment.
 - c. Provide lens colors as follows:
 - 1) Stopped, Open.
 - a) Green.
 - 2) Running, Closed.
 - a) Red.
 - 3) Alarm.
 - a) Amber.
 - 4) Power.
 - a) Blue.
 - 5) White.
 - a) Status.
8. Selector Switches:
 - a. Provide legend plates for identification of functions.
 - b. Provide nameplates for identification of controlled equipment.
9. Panel Mounted Instruments:
 - a. Provide nameplates for identification of function.
10. Interiors of Cabinets, Panels, Terminal Boxes, and Other Enclosures:
 - a. Provide nameplates for identification.
 - b. Provide individual wire tags for identification of internal wiring inside each cabinet, console, panel, terminal box or enclosure, as shown on approved Shop Drawings and Seller's other submittals.
 - c. Provide each item inside cabinet, console, panel, terminal box, or enclosure with laminated plastic nameplate as shown on approved Shop Drawings and Seller's other submittals. Install nameplates with adhesive.
 - d. Interior items requiring nameplates include:
 - 1) Terminal blocks and strips.
 - 2) Bus bars.
 - 3) Relays.
 - 4) Rear of face-mounted items.
 - 5) Rear of door-mounted items.

- 6) Interior mounted items that require identification when mounted externally.
- C. Safety Signs and Voltage Markers:
1. Provide safety signs and voltage markers on and around electrical equipment.
 - a. Install rigid safety signs using stainless steel fasteners.
 - b. Clean surfaces before applying pressure-sensitive signs and markers.
 2. Install high voltage safety signs on all equipment doors providing access to uninsulated conductors, including terminal devices, greater than 600 volts.

END OF SECTION

SECTION 26 13 26.1

23kV MEDIUM-VOLTAGE SWITCHGEAR

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. Contractor shall provide all labor, materials, equipment, services, and incidentals as shown, specified, and required to furnish medium-voltage metal clad switchgear, circuit breaker type.
2. This scope of work shall include the supply of the following equipment, collectively referred to as SWGR009-650:
 - a. Metal enclosed load break switch section with load side grounding jaws, designed for bottom line-side entry cable.
 - b. Metal clad Utility metering cabinet section consisting of provisions for utility VT's, CT's and metering equipment.
 - c. Metal clad breaker section consisting of a vacuum breaker and protective relaying, with bottom entry for outgoing load side cable.

B. Related Sections:

1. Section 26 05 53, Identification for Electrical Systems.

1.2 REFERENCES

A. Standards referenced in this Section are:

1. ANSI/IEEE C37.010, Application Guide for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis (includes supplements ANSI/IEEE C37.010b and ANSI/IEEE C37.010d).
2. IEEE C37.04, Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis.
3. ANSI/IEEE C37.06, AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis - Preferred Ratings and Related Required Capabilities.
4. IEEE C37.09, Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis.
5. IEEE C37.11, Requirements for Electrical Control for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis.
6. ANSI C37.20.2, Standard for Metal-clad Switchgear.
7. IEEE C37.90, Standard for Relays and Relay Systems Associated with Electric Power Apparatus.
8. ANSI/NEMA C37.55, Medium-Voltage Metal-Clad Assemblies - Conformance Test Procedures.
9. ANSI/NETA ATS, Acceptance Testing Specifications for Electrical Power Equipment and Systems.

10. ISO 9000, Quality Management Systems – Fundamentals and Vocabulary.
11. ISO 9001, Quality Management Systems – Requirements.

1.3 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer:
 - a. Manufacturer shall have experience producing substantially similar equipment to that specified and shall be able to document at least five installations in satisfactory operation.
 - b. For equipment specified, manufacturer shall be ISO 9000 and ISO 9001 certified.
 - c. Field Quality Control: Perform field acceptance testing of the medium-voltage switchgear. Manufacturer shall have experience in inspecting and testing of medium-voltage switchgear and be a member company of NETA.
 - d. Test Equipment, Calibration and Reporting: Test equipment, instrument calibration, and test reports shall be in accordance with ANSI/NETA ATS.

1.4 SUBMITTALS

A. Prepare all submittals per Section 01 33 00 – Submittals.

B. Action Submittals: Submit the following:

1. Shop Drawings:
 - a. Outline, summary sheets and equipment schedules.
 - b. Unit control schematics and elementary wiring diagrams showing numbered terminal points and interconnections to other units.
 - c. Three-line diagrams.
 - d. Dimensional information, including front elevation and floor plans.
 - e. Construction details of enclosures with conduit entry locations and connection details between assemblies.
 - f. Key interlock scheme and sequence of operation.
2. Product Data:
 - a. Technical specifications with assembly and component ratings.
 - b. Technical data on protective relaying.
 - c. Catalog cuts, components list, and nameplate schedule.
3. Testing Plans: Thirty days in advance of actual factory and field testing, submit proposed testing procedures, methods, and apparatus.

C. Informational Submittals: Submit the following:

1. Manufacturer's Instructions: Instructions for handling, storing, installing, and start-up.
2. Source Quality Control Submittals: Reports of completed factory testing, including testing procedures used and testing results.

3. Field Quality Control Submittals: Reports of completed field testing, including testing procedures used and testing results.
 4. Manufacturer's Reports: Reports of visits to Site by manufacturer's technical service representative, including descriptions of problems encountered and problem resolutions implemented.
 5. Qualifications Statements:
 - a. Manufacturer's qualifications and experience when requested by Engineer, including previous similar installations.
- C: Closeout Submittals: Submit the following:
6. Operations and Maintenance Data:
 - a. Submit complete installation, operation and maintenance manuals including test reports, maintenance data and schedules, description of operation, and spare parts information.
 - b. Manuals shall include record drawings of control schematics, including point-to-point wiring diagrams for all wiring internal to the switchgear line up.
 - c. Submit operation and maintenance manuals in accordance with Section 01 33 04, Operations and Maintenance Manuals.
- D. Maintenance Material Submittals: Furnish the following:
1. Spare Parts and Maintenance Materials:
 - a. Furnish, tag, and box for shipment and long term storage the following spare parts and special tools for each medium-voltage switchgear lineup:

Item	Quantity per Medium-Voltage Switchgear Lineup
1) Circuit breaker: 1200 Amps	One
2) Manual ground and test device	One
3) Handle tool for manually charging breaker closing spring and manually opening shutter	One
4) Levering cranks for moving the breakers between test and connected positions	Two
5) Test jumper for operating the breaker while out of its compartment	One
6) Breaker lifting devices or mechanisms for lifting breaker on or off compartment	One complete set
7) Rail clamps for clamping breaker on extended rails	One complete set
8) Protective relay	One per each type used
9) Control relay	Five of each type used
10) Pilot light	Two per ten of each type used

11) Fuses	Two set of each type and size used
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- b. Furnish list of additional recommended spare parts for operating period of one year. Describe each part, quantity recommended, and current unit price.
- c. Package spare parts in suitable containers bearing labels clearly indicating contents and equipment with which they are to be used.
- d. Provide single transport dolly for transporting circuit breaker outside its compartment. Dolly shall be suitable for transporting circuit breakers from medium-voltage metal clad switchgear provided under this Contract.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Shipping sections shall be designed to be shipped by truck, rail, or ship. Indoor sections shall be bolted to skids. Breakers and accessories shall be packaged and shipped separately.
- B. Medium-voltage switchgear shall be equipped to be handled by crane. Where cranes are not available switchgear shall be suitable for placement on rollers using jacks to raise and lower the groups.

PART 2 - PRODUCTS

2.1 SYSTEM PERFORMANCE

- A. Provide medium-voltage switchgear in accordance with arrangement indicated in Section 26 13 26.3. Switchgear shall be a metal-enclosed assembly of breaker housings, auxiliary housings, and vacuum circuit breakers assembled with individual vertical steel sections bolted together to form a rigid metal-clad assembly.
- B. Performance Criteria: Ratings for medium-voltage switchgear lineup shall be:
 - 1. 23 kV KV nominal.
 - 2. 125 kV KV BIL.
 - 3. 1200 amperes, main bus, continuous.
 - 4. Short circuit ratings:
 - a. 1250 MVA class nominal three-phase (31.5 kA short time rating at 23 kV).
 - 5. Short circuit current capability of breakers shall be in accordance with ANSI/IEEE C37.06.
 - 6. MVA shall have 30 kA symmetrical integrated short circuit rating, rated for 1200A continuous and 600A load break rating.

2.2 MANUFACTURERS

- A. Manufacturer: Provide products of one of the following:
 - 1. Eaton.

2. ABB

2.3 CONSTRUCTION

- A. Design, construct, and test medium-voltage switchgear in accordance with the following standards.
 - 1. Metal clad portion: ANSI/IEEE C37.010, IEEE C37.04, IEEE C37.09, IEEE C37.11, ANSI C37.20.2 and ANSI/NEMA C37.55.
 - 2. Metal enclosed portion: ANSI/IEEE C37.20.3.
- B. Utility compartment and breaker compartment shall be metal clad construction. Load break switch section shall be metal enclosed construction.
- C. Switchgear shall be installed within an outdoor rated enclosure. Refer to Section 26 13 26.3 for existing 23kV switchgear details. Enclosure exterior dimensions shall not exceed 160" x 125".
- D. Control:
 - 1. Each lineup which contains more than one device that utilizes an ethernet connection, such as a power meter or protective relay, shall be provided with an ethernet switch. Provide 10%, minimum 1, spare ports of the switch.
 - 2. Provide a door mounted combination receptacle and programming port.
- E. Buses:
 - 1. Buses shall be copper with tin plated connections. Ground bus shall be 1/4-inch by 2-inch minimum. Power and ground buses shall run the length of the medium-voltage switchgear.
 - 2. Power bus supports, bus, and interconnections shall withstand stresses associated with short-circuit currents up through the close and latch rating of circuit breakers. Bus work momentary rating shall equal or exceed short circuit rating of circuit breakers.
 - 3. Main bus shall have epoxy, flame retardant, track-resistant insulation. Bus supports between units shall be glass polyester.
 - 4. Bus joints shall be plated, bolted, and insulated with boots.
 - 5. Ground bus shall be tin plated and shall have a 4/0 connector at each end.
- F. Metal Clad Structure:
 - 1. Each vertical section shall be capable of stacking breakers two high and auxiliaries four high.
 - 2. Each vertical steel unit shall be of a self-contained and self-supported structure having one or more individual breaker or instrument compartments, a centralized bus compartment, and a rear cabling compartment segregated from the bus sections. Equip rear compartments with hinged access doors secured with a minimum of three bolts each and captured nuts.
 - 3. Equip each individual breaker compartment to house removable breaker assembly. Breaker levering mechanism shall be cell mounted and include all interlocks to render breaker trip-free during levering. A ground contact shall

ground the breaker between operating and test positions. Recess circuit breaker stationary primary disconnecting contacts within insulating tubes. Grounded safety shutters shall automatically cover stationary contacts when breaker element is withdrawn from the connected position. Provide draw-out type assembly with a mechanical interlock to prevent moving breaker into or out of operating position unless breaker is tripped. Breaker rails shall allow withdrawal of breaker for inspection.

4. Cable compartment shall be at rear of breaker compartment. Rear cover sheet shall be bolted to the frame and be easily removed by removing bolts. Compartment shall have ample space for cables, stress cones, potheads, current transformers, and other related components. Provide barriers to isolate circuit terminations when two breakers are in the same vertical section.
5. Enclose main buses in a metal compartment with removable covers for accessibility. Design end bus compartments to allow future extension of bus.
6. Auxiliary compartments shall be used to mount potential transformers, control power transformers, and miscellaneous devices. Where rollout trays are provided to mount potential or control power transformers, equip movable carriage with primary and secondary disconnecting devices, grounding devices, and a safety barrier.
7. Equip enclosure front with nameplates for identification of equipment and operating functions. Nameplates shall be in accordance with Section 26 05 53, Identification for Electrical Systems.

2.4 CIRCUIT BREAKERS AND DEVICES

A. Circuit Breakers:

1. Power breakers shall be vacuum, draw-out type, three-pole, 60 Hertz, with voltage and interrupting class as specified, and continuous current ratings in accordance with the Drawings.
2. Operation: Breaker shall be electrically operated by a motor-charged, spring type stored energy mechanism. Mechanism shall be front accessible and be charged by an electric motor. Include provisions to charge mechanism by a manual handle. Breaker control voltage shall be 125-volt DC close and trip.
3. Circuit breakers shall have interlocks as follows:
 - a. Trip or prevent closing of breaker upon insertion or removal from housing.
 - b. To discharge stored energy mechanism upon insertion or removal from housing.
4. Circuit breakers shall have mechanical indicators for:
 - a. Positive indication of breaker open or closed position.
 - b. Positive indication of breaker closing spring charged or discharged.
 - c. Positive indication of breaker test, connect, or disconnect position.
5. Breaker shall be horizontal draw-out type capable of being withdrawn on wheels on rails with provisions for padlocking in test and disconnect position. Primary disconnecting contacts shall be silver-plated copper. Each breaker shall contain three vacuum interrupters mounted separately. Breaker front

- panel shall be removable for inspection. Secondary contacts shall be silver-plated and automatically engage in breaker operating position.
6. Provide circuit breakers with control devices for operation and indication. Devices shall include fuses, auxiliary contacts, and other components as required for open-close-trip operation. Each circuit breaker compartment door shall include open-close status lights. Mount circuit breaker control switches remotely, on breaker control panel specified.
 7. Termination Lugs: Incoming line and feeder cable lugs shall be two-hole compression copper terminals suitable for cables indicated on Drawings.

B. Instrument Transformers:

1. Current transformers and potential transformers quantities and ratios shall be in accordance with the Drawings.
 - a. Provide one set of 600:5, C200 multi-ratio CT's installed on the load side of the switchgear. This set of CT's will be used for transformer differential protection.
 - b. Provide two sets of 1200:5, C200 multi-ratio CT's installed on the line side of the switchgear. One set shall be used for overcurrent protection and the second set shall be for future use.
 - c. Provide provisions for Utility-supplied multi-ratio CT's to be installed on the line side of the switchgear.
2. Current transformers shall be 600V, 10KV BIL suitable for relaying and metering medium-voltage metal clad switchgear applications and mounting in the breaker compartment. Circuit transformers shall be accessible for inspection and maintenance and allow addition or changing without removing high voltage insulated connections.
3. Current transformers shall have a continuous thermal current rating factor of 1.33 or greater at 30 degrees C ambient. Current transformers shall have a short time thermal rating of 75 times or greater rated current for one second. Mechanical ratings shall equal the close and latch rating of circuit breakers.
4. Current transformers accuracy class shall be in accordance with IEEE C57.13.
5. Current transformers used for differential protection shall have the same ratio, same secondary excitation characteristics, and same manufacturer type.
6. Potential transformers shall be draw-out type in rollout carriages and equipped with current limiting fuses both on primary and secondary sides. Potential transformers shall be automatically disconnected from the power source as access door is opened or carriage withdrawn. Locate potential transformers and fuses either in auxiliary compartment of the vertical section or in a separate auxiliary unit as required.
 - a. Provide provisions for a Utility-supplied, 23kV/120V potential transformer to be installed on the line side of the switchgear.
7. Insulate potential transformers for full voltage and BIL rating of medium-voltage metal clad switchgear. Potential transformers shall have a 0.3 percent ANSI accuracy classification and a thermal rating at 30 degrees C ambient of 750VA for 5 KV applications and 1500VA for applications above.

8. Current and potential transformer secondaries shall be grounded. Secondary leads of each current transformer shall be wired directly to shorting type terminal blocks.

C. Protective Relays:

1. Over-current Protective Device: Where indicated on Drawings, provide each circuit with the following multi-function over-current protective device.
 - a. Over-current protective device shall be a multi-function trip unit that monitors phase and ground currents and makes trip decisions from operator selectable protective functions. Unit shall have a front panel and display for monitoring and programming functions.
 - b. Protective features shall include:
 - 1) True RMS sensing of each phase and ground current.
 - 2) Phase and ground over current protection with long delay setting and time, short delay setting, and time and instantaneous setting.
 - 3) Four selectable long time curve slopes.
 - 4) Independent instantaneous and time over-current trip contacts.
 - 5) Phase and ground zone selective interlocking.
 - c. Display functions shall include:
 - 1) Individual phase currents.
 - 2) Ground current.
 - 3) Magnitude and phase of trip current.
 - 4) Peak current each phase and ground since last reset.
 - 5) Current transformer ratio.
 - 6) Cause of trip.
 - d. Relays shall be configured so that any trip condition will cause the “trip” indicator on the relay to illuminate.
 - e. Equip over-current protective device with the following output capability:
 - 1) Dry contacts for trip, trip alarm, and protection off.
 - 2) Communication capability via RS-485, ModBus RTU Protocol.
2. Manual Transfer Selector device: provide a selector switch to direct control of the circuit breaker between local control and remote control.
3. Locking-Out Relay: provide a locking out relay that is independent of the breaker protective relay, to be used in conjunction with the main over-current protective device.
4. Manufacturers:
 - a. Eaton EDR-5000.
 - b. Or Equal.

D. Programming of protective devices:

1. Settings for instantaneous and time overcurrent and ground fault (ANSI functions 50/51 phase and 50/51 ground) will be provided by Owner.
2. Functions to be activated shall be as shown on the Drawings, as specified, or as required. Functions may also be selected for activation under this Section.
3. Preliminary settings for active functions, except ANSI 50/51, shall be provided under this Section.

4. Configuration of the relay system parameters, such as PT configuration and ratios and CT ratios, shall be provided under this Section.
5. Generation of the electronic configuration (native format) files shall be provided under this Section.
6. Loading of the electronic configuration file into the relay shall be provided by the equipment manufacturer representative during on-site setup, inspection, and field testing.

E. Metal Enclosed Air Interrupter Switch:

1. A non-fused disconnect switch shall be included for the incoming line and located in a separate incoming section.
 - a. Rating: Three-pole, 1200 ampere continuous. Switch shall be capable of interrupting full rated load.
 - b. Operation: Manually-operated interrupter switch, stored energy, gang-operated, quick-make/quick-break type, with separate main and arcing contacts and arc quenching chambers. Switch speed of opening and closing shall be independent of operator action. Provide auxiliary contacts to indicate when switch is in open and closed positions.
 - c. The disconnect switch shall include grounding jaws which automatically ground the load side of the switch when opened.
 - d. The Duty-cycle fault closing minimum rating shall be 30 kA symmetrical.
 - e. Provide a window for viewing of switch-blade positions while the door is closed.
 - f. Provide interlocks to prevent:
 - 1) Switch closing with switch compartment door open.
 - 2) Opening of switch door when switch is closed.

F. Auxiliary Components:

1. Control Wiring: Control wiring shall be stranded, tinned copper, Type SIS, rated 600 volts. Terminate wire with crimp type insulated ring or spade terminals. Armor or enclose control wires in grounded metal troughs where they pass through primary compartments.
2. Control Power Source, DC: Provide medium-voltage metal clad switchgear for use with an external 125 Vdc control power source.
3. Circuit Breaker Control Panel: Provide medium-voltage metal clad switchgear with a NEMA 12 circuit breaker control panel for manual control of circuit breakers. Provide control panel with an Open-Trip control switch and Open and Close status lights for each circuit breaker.
4. Remote Breaker Racking Device: Equip each breaker compartment door for breaker racking. The 120-volt racking mechanism shall be mounted and remotely operated without opening compartment door. Equip mechanism with a motor, cord, and plug attachment, and a control switch with control cord 20 feet long and plug.
5. Stand Alone Remote Operator's Panel: provide a remote operator's panel for the circuit breaker which consists of a pistol grip Trip/Close operator with indication.

6. Lightning arrestors, station class, 18 KV on line side of medium-voltage switchgear or incoming breaker.

2.5 MAIN METERING DEVICE

- A. Provide a main meter device as shown on Drawings.
 1. Microprocessor-based monitoring device shall provide complete electrical metering in one package.
 2. Mount monitoring device on the compartment door to allow operator access to meter menu and display.
 3. Device shall include trend analysis, event logging, and recording. Device shall include the following direct reading metered values:
 - a. Volts: 0.2 percent accuracy.
 - b. Amperes: 0.2 percent accuracy
 - c. Watts, Vars and VA: 0.5 percent accuracy
 - d. Power Factor: 1.0 percent accuracy
 - e. Frequency: 0.05 percent accuracy
 - f. Watt, and VA Hours: 0.5 percent accuracy
 - g. Var Hours: 1.0 percent accuracy
 - h. Watt, Var and VA Demand: 0.4 percent accuracy
 - i. THD-Voltage: 50th harmonic
 - j. THD-Current: 50th harmonic
 - k. Individual Ampere Harmonics: 50th harmonic
 - l. Individual Voltage Harmonics: 50th harmonic
 4. Metering device shall have the following:
 - a. Trend analysis that shall display minimum and maximum values for each metered parameter with date and time of each occurrence.
 - b. Input range of device shall accommodate external current transformers with ranges from 100/5 to 5000/5 and potential transformers from a ratio of 120:120 to 500,000:120.
 - c. Alarm contacts rated five amps at 120 VAC.
 - d. Three analog outputs programmable to reflect each metered parameter, except kilowatt hours and kilovar hours.
 - e. Communication capability, using Modbus TCP/IP protocol.
 - f. Ethernet port for communication with remote systems.
 - g. Door mounted display.
 5. Draw control power from monitored incoming AC line. Device shall have non-volatile memory and shall not require battery backup. During power failure, device shall retain preset parameters.

2.6 NON WALK-IN OUTDOOR ENCLOSURE

- A. Entire medium-voltage switchgear shall be enclosed in outdoor enclosure assembled as a gasketed, ventilated, weatherproof, rodent-proof, non walk-in type structure, rated NEMA 3R. The exterior dimensions of the enclosure shall not exceed 160" x 125".

- A. Perform factory tests on equipment prior to shipment, consisting of manufacturer's standard tests, which shall include:
 - 1. Production tests on circuit breakers, medium-voltage metal clad switchgear assembly, and components in accordance with ANSI C37. 09.
 - 2. Physical inspection of all components and wiring checks.
 - 3. Breaker operation, device functional tests, and sequencing of control circuits.
 - 4. Primary, control, and secondary wiring dielectric tests.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine conditions under which the Work is to be installed and notify Engineer in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Terminations and Appurtenances:
 - 1. Provide terminations, lugs, and required appurtenances to properly terminate power supplies.
 - 2. Provide control wiring terminations and appurtenances necessary to complete the installation of control and monitoring devices.

3.3 FIELD QUALITY CONTROL

- A. Site Tests
 - 1. Provide field testing and inspection of medium-voltage switchgear. After installation, inspect, adjust, and test switchgear. Testing and inspection shall be in accordance with manufacturer's recommendations and be performed by manufacturer's factory-trained representative. Manufacturer's representative shall inform Owner and Engineer when equipment has been correctly installed. Do not energize equipment without permission of Owner.
 - 2. Perform the following tests and checks before energizing equipment:
 - a. Verify proper installation of medium-voltage metal clad switchgear and protective device settings.
 - b. Inspect all mechanical and electrical interlocks and breakers for proper operation.
 - c. Check tightness of bolted connections. Torque to manufacturer's requirements.
 - d. Measure insulation resistance of each bus section phase-to-phase and phase-to-ground.
 - e. Measure insulation resistance of each circuit breaker pole-to-pole and from pole-to-ground.
 - f. Perform other tests and adjustments recommended by equipment manufacturer.

3. Qualified, factory-trained service representative, from protective relay manufacturer shall perform calibration, settings, and programming of actual protective devices provided.
4. Provide acceptance testing of medium-voltage switchgear. Inspect and test each switchgear. Testing and inspection shall be performed by independent testing firm, after completion of field testing specified in Paragraph 3.3.A 1 of this Section.
 - a. Visual and Mechanical Inspection: Inspect each medium-voltage switchgear in accordance with ANSI/NETA ATS, including:
 - 1) Inspect for physical, electrical, and mechanical condition.
 - 2) Check for proper anchorage, required area clearances, physical damage, and proper alignment.
 - 3) Inspect all bolted connections for high resistance.
 - 4) Check electrical and mechanical interlock systems for proper operation.
 - 5) Perform mechanical operational tests on each circuit breaker and its operating mechanism.
 - 6) Measure and adjust as required circuit breaker mounting provisions.
 - 7) Inspect protective relay components, check for freedom of movement, proper travel and alignment, and tightness of mounting hardware and plugs.
 - 8) Clean entire switchgear.
 - b. Electrical Tests: Perform electrical testing of each medium-voltage switchgear in accordance with ANSI/NETA ATS, including performing:
 - 1) Ground-resistance tests.
 - 2) Insulation-resistance tests on each bus section, phase-to-phase and phase-to-ground.
 - 3) An over-potential test on each bus section, each phase-to-ground.
 - 4) Insulation-resistance tests on each breaker. Test each pole, phase-to-phase and phase-to-ground.
 - 5) Minimum pickup voltage tests on trip and close coils.
 - 6) Trip each circuit breaker by operating each protective device.
 - 7) Vacuum bottle integrity test across each vacuum bottle with breaker in open position.
 - 8) Contact-resistance test on each breaker.
 - 9) Control and metering wiring performance test.
 - 10) parameters and timing tests on protective relays.

B. Manufacturer's Services

1. Unloading and Installation: Manufacturer's factory-trained representative shall be present during unloading of the equipment and installation in equipment's final location. Representative shall train installing personnel in advance in proper handling and rigging of equipment. This shall be at least 1 eight-hour day.
2. Manufacturer's factory-trained representative shall test system as specified in Paragraph 3.3.A of this Section. Representative shall operate and test system

in presence of Engineer and verify that equipment conforms to requirements. This shall be at least 1 eight-hour day.

3. Manufacturer's factory-trained representative shall adjust system to initial settings as specified in Article 3.4 of this Section.
4. Representative shall revisit the Site as often as necessary until all deficiencies are corrected, prior to readiness for final payment.
5. Provide services of manufacturer's factory-trained representatives to correct defective Work within 72 hours of notification by Owner during correction period specified in the General Conditions and Supplementary Conditions.
6. Replacement parts or equipment installed during correction period shall be equal to or better than original.
7. Training: Furnish services of qualified factory trained specialists from manufacturer to instruct Owner's operations and maintenance personnel in recommended operation and maintenance of materials and equipment.
8. All costs, including expenses for travel, lodging, meals and incidentals, and cost of travel time, for visits to the Site shall be included in the Contract Price.
9. Setup and program power metering.
10. Setup and program the protective relays.

3.4 ADJUSTING

- A. Calibrate, set, and program protective devices. Coordinate protective devices furnished per Owner requirements.

++ END OF SECTION ++

SECTION 26 13 26.2

15kV MEDIUM-VOLTAGE METAL CLAD SWITCHGEAR

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. Contractor shall provide all labor, materials, equipment, services, and incidentals as shown, specified, and required to furnish medium-voltage metal clad switchgear, circuit breaker type.
2. This scope of work shall include the supply of the following equipment:
 - a. SWGR009-650: metal clad switchgear unit consisting of one main vacuum circuit breaker and protective relaying, with bottom entry for line and load cable.

B. Related Sections:

1. Section 26 05 53, Identification for Electrical Systems.

1.2 REFERENCES

A. Standards referenced in this Section are:

1. ANSI/IEEE C37.010, Application Guide for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis (includes supplements ANSI/IEEE C37.010b and ANSI/IEEE C37.010d).
2. IEEE C37.04, Rating Structure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis.
3. ANSI/IEEE C37.06, AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis - Preferred Ratings and Related Required Capabilities.
4. IEEE C37.09, Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis.
5. IEEE C37.11, Requirements for Electrical Control for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis.
6. ANSI C37.20.2, Standard for Metal-clad Switchgear.
7. IEEE C37.90, Standard for Relays and Relay Systems Associated with Electric Power Apparatus.
8. ANSI/NEMA C37.55, Medium-Voltage Metal-Clad Assemblies - Conformance Test Procedures.
9. ANSI/NETA ATS, Acceptance Testing Specifications for Electrical Power Equipment and Systems.
10. ISO 9000, Quality Management Systems – Fundamentals and Vocabulary.
11. ISO 9001, Quality Management Systems – Requirements.

1.3 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Manufacturer:
 - a. Manufacturer shall have experience producing substantially similar equipment to that specified and shall be able to document at least five installations in satisfactory operation.
 - b. For equipment specified, manufacturer shall be ISO 9000 and ISO 9001 certified.
 - 2. Testing Services:
 - a. Field Quality Control: Perform field acceptance testing of the medium-voltage metal clad switchgear. Manufacturer shall have experience in inspecting and testing of medium-voltage metal clad switchgear and be a member company of NETA.
 - b. Test Equipment, Calibration and Reporting: Test equipment, instrument calibration, and test reports shall be in accordance with ANSI/NETA ATS.

1.4 SUBMITTALS

- A. Prepare all submittals per Section 01 33 00 – Submittals.
- B. Action Submittals: Submit the following:
 - 1. Shop Drawings:
 - a. Outline, summary sheets and equipment schedules.
 - b. Unit control schematics and elementary wiring diagrams showing numbered terminal points and interconnections to other units.
 - c. Three-line diagrams.
 - d. Dimensional information, including front elevation and floor plans.
 - e. Construction details of enclosures with conduit entry locations and connection details between assemblies.
 - f. Key interlock scheme and sequence of operation.
 - 2. Product Data:
 - a. Technical specifications with assembly and component ratings.
 - b. Time current curves for protective devices.
 - c. Catalog cuts, components list, and nameplate schedule.
 - 3. Testing Plans: Thirty days in advance of actual factory and field testing, submit proposed testing procedures, methods, and apparatus.
- C. Informational Submittals: Submit the following:
 - 1. Manufacturer's Instructions: Instructions for handling, storing, installing, and start-up.
 - 2. Source Quality Control Submittals: Reports of completed factory testing, including testing procedures used and testing results.
 - 3. Field Quality Control Submittals: Reports of completed field testing, including testing procedures used and testing results.

4. Manufacturer's Reports: Reports of visits to Site by manufacturer's technical service representative, including descriptions of problems encountered and problem resolutions implemented.
 5. Qualifications Statements:
 - a. Manufacturer's qualifications and experience when requested by Engineer, including previous similar installations.
 - b. Independent testing firm.
- C: Closeout Submittals: Submit the following:
6. Operations and Maintenance Data:
 - a. Submit complete installation, operation and maintenance manuals including test reports, maintenance data and schedules, description of operation, and spare parts information.
 - b. Manuals shall include record drawings of control schematics, including point-to-point wiring diagrams.
- D. Maintenance Material Submittals: Furnish the following:
1. Spare Parts and Maintenance Materials:
 - a. Furnish, tag, and box for shipment and long term storage the following spare parts and special tools for each medium-voltage metal clad switchgear lineup:

Item	Quantity per Medium-Voltage Metal Clad Switchgear Lineup
1) Circuit breaker: 1200 Amps	One
2) Manual ground and test device	One
3) Handle tool for manually charging breaker closing spring and manually opening shutter	One
4) Levering cranks for moving the breakers between test and connected positions	Two
5) Test jumper for operating the breaker while out of its compartment	One
6) Breaker lifting devices or mechanisms for lifting breaker on or off compartment	One complete set
7) Rail clamps for clamping breaker on extended rails	One complete set
8) Protective relay	One per each type used
9) Control relay	Five of each type used
10) Pilot light	Two per ten of each type used
11) Fuses	Two set of each type and size used

- b. Furnish list of additional recommended spare parts for operating period of one year. Describe each part, quantity recommended, and current unit price.
- c. Package spare parts in suitable containers bearing labels clearly indicating contents and equipment with which they are to be used.
- d. Provide single transport dolly for transporting circuit breaker outside its compartment. Dolly shall be suitable for transporting circuit breakers from medium-voltage metal clad switchgear provided under this Contract.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Shipping sections shall be designed to be shipped by truck, rail, or ship. Indoor sections shall be bolted to skids. Breakers and accessories shall be packaged and shipped separately.
- B. Medium-voltage metal clad switchgear shall be equipped to be handled by crane. Where cranes are not available switchgear shall be suitable for placement on rollers using jacks to raise and lower the groups.

PART 2 - PRODUCTS

2.1 SYSTEM PERFORMANCE

- A. Provide medium-voltage metal clad switchgear in accordance with arrangement indicated in Section 26 13 26.3. Switchgear shall be a metal-enclosed assembly of breaker housings, auxiliary housings, and vacuum circuit breakers assembled with individual vertical steel sections bolted together to form a rigid metal-clad assembly.
- B. Performance Criteria: Ratings for medium-voltage metal clad switchgear lineup shall be:
 - 1. 13.8 kV KV nominal.
 - 2. 15 kV KV maximum design.
 - 3. 125 kV KV BIL.
 - 4. 1200 amperes, main bus, continuous.
 - 5. Short circuit ratings:
 - a. 750 MVA class nominal three-phase.
 - 6. Short circuit current capability of breakers shall be in accordance with ANSI/IEEE C37.06.

2.2 MANUFACTURERS

- A. Manufacturer: Provide products of one of the following:
 - 1. Eaton
 - 2. ABB

2.3 CONSTRUCTION

- A. Design, construct, and test medium-voltage metal clad switchgear in accordance with the following standards.
 - 1. ANSI/IEEE C37.010, IEEE C37.04, IEEE C37.09, IEEE C37.11, ANSI C37.20.2 and ANSI/NEMA C37.55.
- B. Medium-voltage metal clad switchgear structure shall be metal-enclosed, dead front, free standing, dust resistant, and fabricated of code gauge steel.
- C. Control:
 - 1. Each lineup which contains more than one device that utilizes an ethernet connection, such as a power meter or protective relay, shall be provided with an ethernet switch. Provide 10%, minimum 1, spare ports of the switch.
 - 2. Provide a door mounted combination receptacle and programming port.
- D. Buses:
 - 1. Switchgear shall include provisions for future expansion via connection to a provided line cross bus.
 - 2. Buses shall be copper with tin plated connections. Ground bus shall be 1/4-inch by 2-inch minimum. Power and ground buses shall run the length of the medium-voltage metal clad switchgear.
 - 3. Power bus supports, bus, and interconnections shall withstand stresses associated with short-circuit currents up through the close and latch rating of circuit breakers. Bus work momentary rating shall equal or exceed short circuit rating of circuit breakers.
 - 4. Main bus shall have epoxy, flame retardant, track-resistant insulation. Bus supports between units shall be glass polyester.
 - 5. Bus joints shall be plated, bolted, and insulated with boots.
 - 6. Ground bus shall be tin plated and shall have a 4/0 connector at each end.
- E. Structure:
 - 1. Each vertical section shall be capable of stacking breakers two high and auxiliaries four high.
 - 2. Each vertical steel unit shall be of a self-contained and self-supported structure having one or more individual breaker or instrument compartments, a centralized bus compartment, and a rear cabling compartment segregated from the bus sections. Equip rear compartments with hinged access doors secured with a minimum of three bolts each and captured nuts.
 - 3. Equip each individual breaker compartment to house removable breaker assembly. Breaker levering mechanism shall be cell mounted and include all interlocks to render breaker trip-free during levering. A ground contact shall ground the breaker between operating and test positions. Recess circuit breaker stationary primary disconnecting contacts within insulating tubes. Grounded safety shutters shall automatically cover stationary contacts when breaker element is withdrawn from the connected position. Provide draw-out

type assembly with a mechanical interlock to prevent moving breaker into or out of operating position unless breaker is tripped. Breaker rails shall allow withdrawal of breaker for inspection.

4. Cable compartment shall be at rear of breaker compartment. Rear cover sheet shall be bolted to the frame and be easily removed by removing bolts. Compartment shall have ample space for cables, stress cones, potheads, current transformers, and other related components. Provide barriers to isolate circuit terminations when two breakers are in the same vertical section.
5. Enclose main buses in a metal compartment with removable covers for accessibility. Design end bus compartments to allow future extension of bus.
6. Auxiliary compartments shall be used to mount potential transformers, control power transformers, and miscellaneous devices. Where rollout trays are provided to mount potential or control power transformers, equip movable carriage with primary and secondary disconnecting devices, grounding devices, and a safety barrier.
7. Equip enclosure front with nameplates for identification of equipment and operating functions. Nameplates shall be in accordance with Section 26 05 53, Identification for Electrical Systems.

2.4 CIRCUIT BREAKERS AND DEVICES

A. Circuit Breakers:

1. Power breakers shall be vacuum, draw-out type, three-pole, 60 Hertz, with voltage and interrupting class as specified, and continuous current ratings in accordance with the Drawings.
2. Operation: Breaker shall be electrically operated by a motor-charged, spring type stored energy mechanism. Mechanism shall be front accessible and be charged by an electric motor. Include provisions to charge mechanism by a manual handle.
3. Breaker control voltage shall be 125-volt DC close and trip.
4. Circuit breakers shall have interlocks as follows:
 - a. Trip or prevent closing of breaker upon insertion or removal from housing.
 - b. To discharge stored energy mechanism upon insertion or removal from housing.
5. Circuit breakers shall have mechanical indicators for:
 - a. Positive indication of breaker open or closed position.
 - b. Positive indication of breaker closing spring charged or discharged.
 - c. Positive indication of breaker test, connect, or disconnect position.
6. Breaker shall be horizontal draw-out type capable of being withdrawn on wheels on rails with provisions for padlocking in test and disconnect position. Primary disconnecting contacts shall be silver-plated copper. Each breaker shall contain three vacuum interrupters mounted separately. Breaker front panel shall be removable for inspection. Secondary contacts shall be silver-plated and automatically engage in breaker operating position.
7. Provide circuit breakers with control devices for operation and indication. Devices shall include fuses, auxiliary contacts, and other components as

required for open-close-trip operation. Each circuit breaker compartment door shall include open-close status lights. Mount circuit breaker control switches remotely, on breaker control panel specified.

8. Termination Lugs: Incoming line and feeder cable lugs shall be two-hole compression copper terminals suitable for cables indicated on Drawings.

B. Instrument Transformers:

1. Current transformers and potential transformers quantities and ratios shall be in accordance with the Drawings.
 - a. Provide one set of 1200:5, C200 multi-ratio CT's installed on the load side of the switchgear. This set of CT's will be used for transformer differential protection.
 - b. Provide two sets of 1200:5, C200 multi-ratio CT's installed on the line side of the switchgear. One set shall be used for overcurrent protection and the second set shall be used for bus differential protection.
2. Current transformers shall be 600V, 10KV BIL suitable for relaying and metering medium-voltage metal clad switchgear applications and mounting in the breaker compartment. Circuit transformers shall be accessible for inspection and maintenance and allow addition or changing without removing high voltage insulated connections.
3. Current transformers shall have a continuous thermal current rating factor of 1.33 or greater at 30 degrees C ambient. Current transformers shall have a short time thermal rating of 75 times or greater rated current for one second. Mechanical ratings shall equal the close and latch rating of circuit breakers.
4. Current transformers accuracy class shall be in accordance with IEEE C57.13.
5. Current transformers used for differential protection shall have the same ratio, same secondary excitation characteristics, and same manufacturer type.
6. Potential transformers shall be draw-out type in rollout carriages and equipped with current limiting fuses both on primary and secondary sides. Potential transformers shall be automatically disconnected from the power source as access door is opened or carriage withdrawn. Locate potential transformers and fuses either in auxiliary compartment of the vertical section or in a separate auxiliary unit as required.
 - a. Provide a 14.4kV/120V potential transformer on the line side of the switchgear, which shall be used for overcurrent protection.
7. Insulate potential transformers for full voltage and BIL rating of medium-voltage metal clad switchgear. Potential transformers shall have a 0.3 percent ANSI accuracy classification and a thermal rating at 30 degrees C ambient of 750VA for 5 KV applications and 1500VA for applications above.
8. Current and potential transformer secondaries shall be grounded. Secondary leads of each current transformer shall be wired directly to shorting type terminal blocks.

C. Protective Relays:

1. Over-current Protective Device: Where indicated on Drawings, provide each circuit with the following multi-function over-current protective device.

- a. Over-current protective device shall be a multi-function trip unit that monitors phase and ground currents and makes trip decisions from operator selectable protective functions. Unit shall have a front panel and display for monitoring and programming functions.
- b. Protective features shall include:
 - 1) True RMS sensing of each phase and ground current.
 - 2) Phase and ground over current protection with long delay setting and time, short delay setting, and time and instantaneous setting.
 - 3) Four selectable long time curve slopes.
 - 4) Independent instantaneous and time over-current trip contacts.
 - 5) Phase and ground zone selective interlocking.
- c. Display functions shall include:
 - 1) Individual phase currents.
 - 2) Ground current.
 - 3) Magnitude and phase of trip current.
 - 4) Peak current each phase and ground since last reset.
 - 5) Current transformer ratio.
 - 6) Cause of trip.
- d. Relays shall be configured so that any trip condition will cause the “trip” indicator on the relay to illuminate.
- e. Equip over-current protective device with the following output capability:
 - 1) Dry contacts for trip, trip alarm, and protection off.
 - 2) Communication capability via RS-485, ModBus RTU Protocol.
2. Include a Bus differential relay for future use.
3. Include a Transformer differential relay for future use.
4. Manual Transfer Selector device: provide a selector switch to direct control of the circuit breaker between local control and remote control.
5. Locking-Out Relays: provide separate locking out devices to be used in conjunction with each of the following:
 - a. Overcurrent protection
 - b. Transformer Differential protection
 - c. Bus Differential protection
6. Manufacturers:
 - a. Eaton EDR-5000.
 - b. Or Equal.

D. Programming of protective devices:

1. Settings for instantaneous and time overcurrent and ground fault (ANSI functions 50/51 phase and 50/51 ground) will be provided by Owner.
2. Functions to be activated shall be as shown on the Drawings, as specified, or as required. Functions may also be selected for activation under this Section.
3. Preliminary settings for active functions, except ANSI 50/51, shall be provided under this Section.
4. Configuration of the relay system parameters, such as PT configuration and ratios and CT ratios, shall be provided under this Section.
5. Generation of the electronic configuration (native format) files shall be provided under this Section.

6. Loading of the electronic configuration file into the relay shall be provided by the equipment manufacturer representative during on-site setup, inspection, and field testing.

E. Auxiliary Components:

1. Control Wiring: Control wiring shall be stranded, tinned copper, Type SIS, rated 600 volts. Terminate wire with crimp type insulated ring or spade terminals. Armor or enclose control wires in grounded metal troughs where they pass through primary compartments.
2. Control Power Source, DC: Provide medium-voltage metal clad switchgear with a 125 Vdc control power source consisting of a storage battery and associated charger. Battery system shall be in accordance with requirements specified in this Section.
3. Circuit Breaker Control Panel: Provide medium-voltage metal clad switchgear with a NEMA 12 circuit breaker control panel for manual control of circuit breakers. Provide control panel with an Open-Trip control switch and Open and Close status lights for each circuit breaker.
4. Remote Breaker Racking Device: Equip each breaker compartment door for breaker racking. The 120-volt racking mechanism shall be mounted and remotely operated without opening compartment door. Equip mechanism with a motor, cord, and plug attachment, and a control switch with control cord 20 feet long and plug.
5. Stand Alone Remote Operator's Panel: provide a remote operator's panel for the circuit breaker which consists of a pistol grip Trip/Close operator with indication.
6. Lightning arrestors, station class, 12 KV on line side of medium-voltage metal clad switchgear or incoming breaker.

2.5 MAIN METERING DEVICE

- A. Provide a main meter device as shown on Drawings.
 1. Microprocessor-based monitoring device shall provide complete electrical metering in one package.
 2. Mount monitoring device on the compartment door to allow operator access to meter menu and display.
 3. Device shall include trend analysis, event logging, and recording. Device shall include the following direct reading metered values:
 - a. Volts: 0.2 percent accuracy.
 - b. Amperes: 0.2 percent accuracy
 - c. Watts, Vars and VA: 0.5 percent accuracy
 - d. Power Factor: 1.0 percent accuracy
 - e. Frequency: 0.05 percent accuracy
 - f. Watt, and VA Hours: 0.5 percent accuracy
 - g. Var Hours: 1.0 percent accuracy
 - h. Watt, Var and VA Demand: 0.4 percent accuracy
 - i. THD-Voltage: 50th harmonic
 - j. THD-Current: 50th harmonic

- k. Individual Ampere Harmonics: 50th harmonic
- l. Individual Voltage Harmonics: 50th harmonic
- 4. Metering device shall have the following:
 - a. Trend analysis that shall display minimum and maximum values for each metered parameter with date and time of each occurrence.
 - b. Input range of device shall accommodate external current transformers with ranges from 100/5 to 5000/5 and potential transformers from a ratio of 120:120 to 500,000:120.
 - c. Alarm contacts rated five amps at 120 VAC.
 - d. Three analog outputs programmable to reflect each metered parameter, except kilowatt hours and kilovar hours.
 - e. Communication capability, using Modbus TCP/IP protocol.
 - f. Ethernet port for communication with remote systems.
 - g. Door mounted display.
- 5. Draw control power from monitored incoming AC line. Device shall have non-volatile memory and shall not require battery backup. During power failure, device shall retain preset parameters.

2.6 NON WALK-IN OUTDOOR ENCLOSURE

- A. Entire medium-voltage metal clad switchgear shall be enclosed in outdoor enclosure assembled as a gasketed, ventilated, weatherproof, rodent-proof, non walk-in type structure, rated NEMA 3R, installed at location shown on Drawings.
- B. Enclosure material shall be steel, 18 gauge minimum. Enclosure shall be equipped with rear doors for access to terminations and include nameplates for equipment identification. Nameplates shall be in accordance with Section 26 05 53, Identification for Electrical Systems.
- C. Equip enclosure with the following:
 - 1. Insulation, including top and sides.
 - 2. Ventilation by an exhaust fan and louvered openings provided with suitable screen or grill to retard entrance of dust, rodents, and foreign material.
 - 3. Key lockable doors with panic hardware.
 - 4. Space heaters and thermostat for each medium-voltage metal clad switchgear compartment. Heaters shall be rated 240 volt and operated at 120 volt.
 - 5. Convenience receptacles, fluorescent lights, outdoor weatherproof lights, and three-way switches.
 - 6. Thermostatically controlled electric heaters, one at each entrance.
 - 7. Ancillary power transformer, with primary and secondary circuit protection, distribution panel board, and thermostatically controlled electric space heater. Locate components to be readily accessible within medium-voltage metal clad switchgear.
 - 8. Equipment in walk-in enclosure shall be pre-wired at factory. Equip panel board with circuits required for medium-voltage metal clad switchgear accessories.

D. Coatings for enclosures are specified in this Section.

2.7 IDENTIFICATION

- A. Provide control wiring and internal device identification for each compartment, including:
1. Identify all control conductors with permanent type wire markers. Identify each wire by a unique number and attached to wire at each termination point.
 2. Identify all control devices with permanent type markers. Identify each device by a unique number and attached to each device.
 3. Numbering system for each wire and control device shall be identified on wiring diagrams and shall reflect actual designations used in the Work.

2.8 FINISHING

- A. Thoroughly clean medium-voltage metal clad switchgear metal surfaces, provide surface preparation in accordance with paint manufacturer's recommendations, and provide one coat of standard primer. Surfaces located indoors shall be given one shop coats of standard finish. Provide exterior surfaces located outdoors two shop coats of standard finish. Color of finishing coats shall be ANSI No. 61, "light gray".

2.9 SOURCE QUALITY CONTROL

- A. Perform factory tests on equipment prior to shipment, consisting of manufacturer's standard tests, which shall include:
1. Production tests on circuit breakers, medium-voltage metal clad switchgear assembly, and components in accordance with ANSI C37. 09.
 2. Physical inspection of all components and wiring checks.
 3. Breaker operation, device functional tests, and sequencing of control circuits.
 4. Primary, control, and secondary wiring dielectric tests.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine conditions under which the Work is to be installed and notify Engineer in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Terminations and Appurtenances:
1. Provide terminations, lugs, and required appurtenances to properly terminate power supplies.
 2. Provide control wiring terminations and appurtenances necessary to complete the installation of control and monitoring devices.

3.3 FIELD QUALITY CONTROL

A. Site Tests

1. Provide field testing and inspection of medium-voltage metal clad switchgear. After installation, inspect, adjust, and test switchgear. Testing and inspection shall be in accordance with manufacturer's recommendations and be performed by manufacturer's factory-trained representative. Manufacturer's representative shall inform Owner and Engineer when equipment has been correctly installed. Do not energize equipment without permission of Owner.
2. Perform the following tests and checks before energizing equipment:
 - a. Verify proper installation of medium-voltage metal clad switchgear and protective device settings.
 - b. Inspect all mechanical and electrical interlocks and breakers for proper operation.
 - c. Check tightness of bolted connections. Torque to manufacturer's requirements.
 - d. Measure insulation resistance of each bus section phase-to-phase and phase-to-ground.
 - e. Measure insulation resistance of each circuit breaker pole-to-pole and from pole-to-ground.
 - f. Perform other tests and adjustments recommended by equipment manufacturer.
3. Qualified, factory-trained service representative, from protective relay manufacturer shall perform calibration, settings, and programming of actual protective devices provided.
4. Provide acceptance testing of medium-voltage metal clad switchgear. Inspect and test each switchgear. Testing and inspection shall be performed by independent testing firm, after completion of field testing specified in Paragraph 3.3.A 1 of this Section.
 - a. Visual and Mechanical Inspection: Inspect each medium-voltage metal clad switchgear in accordance with ANSI/NETA ATS, including:
 - 1) Inspect for physical, electrical, and mechanical condition.
 - 2) Check for proper anchorage, required area clearances, physical damage, and proper alignment.
 - 3) Inspect all bolted connections for high resistance.
 - 4) Check electrical and mechanical interlock systems for proper operation.
 - 5) Perform mechanical operational tests on each circuit breaker and its operating mechanism.
 - 6) Measure and adjust as required circuit breaker mounting provisions.
 - 7) Inspect protective relay components, check for freedom of movement, proper travel and alignment, and tightness of mounting hardware and plugs.
 - 8) Clean entire switchgear.

- b. Electrical Tests: Perform electrical testing of each medium-voltage metal clad switchgear in accordance with ANSI/NETA ATS, including performing:
 - 1) Ground-resistance tests.
 - 2) Insulation-resistance tests on each bus section, phase-to-phase and phase-to-ground.
 - 3) An over-potential test on each bus section, each phase-to-ground.
 - 4) Insulation-resistance tests on each breaker. Test each pole, phase-to-phase and phase-to-ground.
 - 5) Minimum pickup voltage tests on trip and close coils.
 - 6) Trip each circuit breaker by operating each protective device.
 - 7) Vacuum bottle integrity test across each vacuum bottle with breaker in open position.
 - 8) Contact-resistance test on each breaker.
 - 9) Control and metering wiring performance test.
 - 10) parameters and timing tests on protective relays.

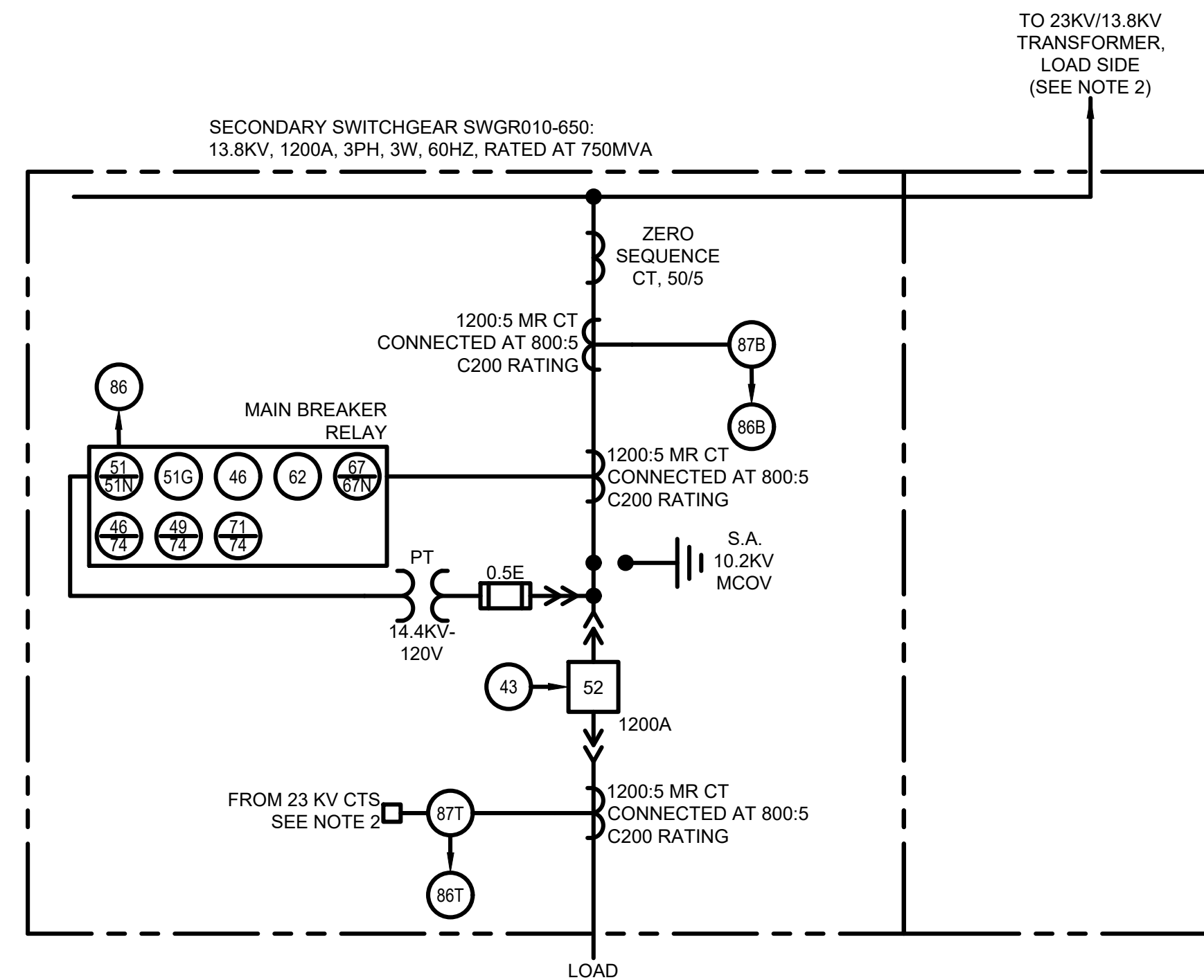
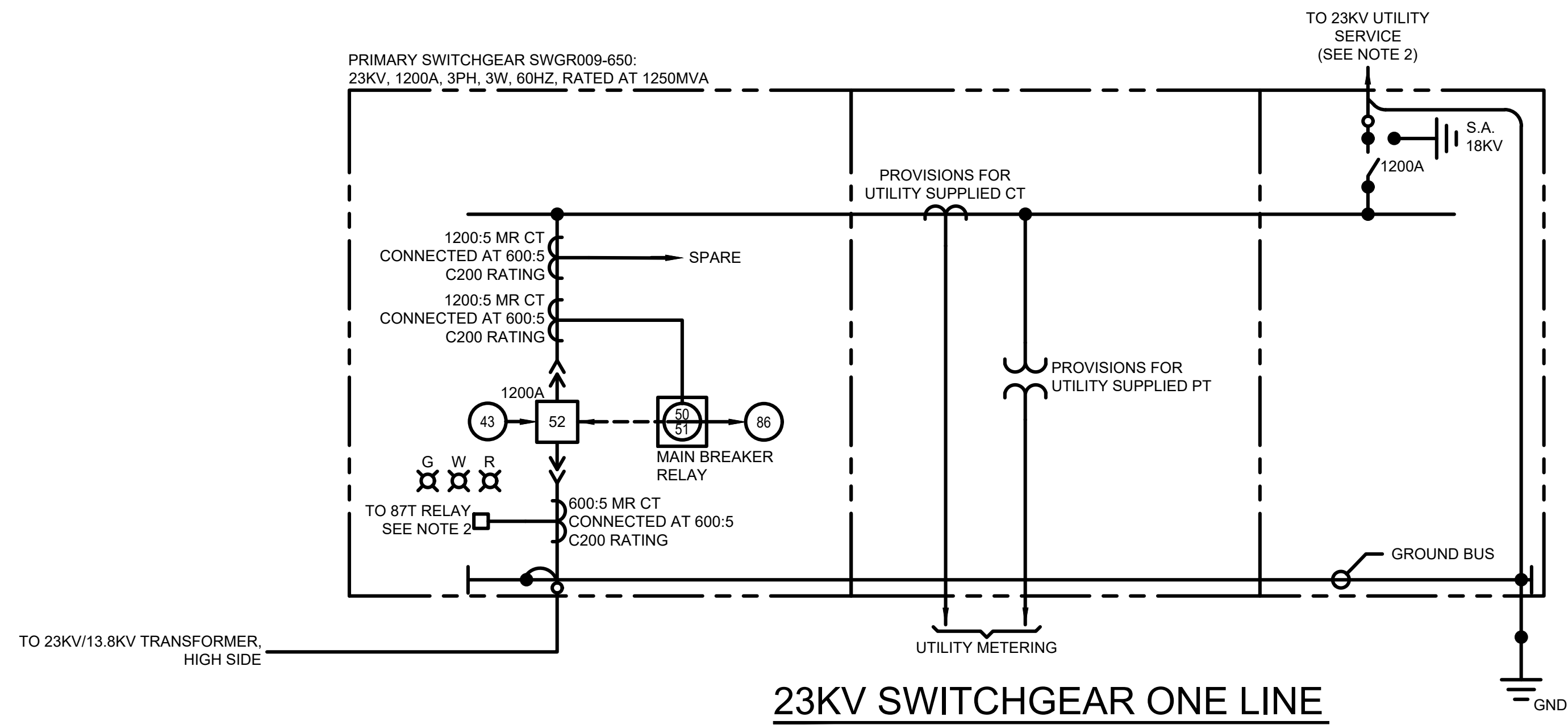
B. Manufacturer's Services

- 1. Unloading and Installation: Manufacturer's factory-trained representative shall be present during unloading of the equipment and installation in equipment's final location. Representative shall train installing personnel in advance in proper handling and rigging of equipment. This shall be at least 1 eight-hour day.
- 2. Manufacturer's factory-trained representative shall test system as specified in Paragraph 3.3.A of this Section. Representative shall operate and test system in presence of Engineer and verify that equipment conforms to requirements. This shall be at least 1 eight-hour day.
- 3. Manufacturer's factory-trained representative shall adjust system to initial settings as specified in Article 3.4 of this Section.
- 4. Representative shall revisit the Site as often as necessary until all deficiencies are corrected, prior to readiness for final payment.
- 5. Provide services of manufacturer's factory-trained representatives to correct defective Work within 72 hours of notification by Owner during correction period specified in the General Conditions and Supplementary Conditions.
- 6. Replacement parts or equipment installed during correction period shall be equal to or better than original.
- 7. Training: Furnish services of qualified factory trained specialists from manufacturer to instruct Owner's operations and maintenance personnel in recommended operation and maintenance of materials and equipment.
- 8. All costs, including expenses for travel, lodging, meals and incidentals, and cost of travel time, for visits to the Site shall be included in the Contract Price.
- 9. Setup and program power metering.
- 10. Setup and program the protective relays.

3.4 ADJUSTING

- A. Calibrate, set, and program protective devices. Coordinate protective devices furnished under this Section per Owner requirements.

+ + END OF SECTION + +



- NOTES:
- EQUIPMENT SHOWN IS PART OF PRE-PURCHASE BY OWNER, TO BE INSTALLED BY OTHERS.
 - CONDUIT AND WIRING SHALL BE INSTALLED BY OTHERS.

Designed by:	REVISION		
	REV No.	DATE	DESCRIPTION
H. PAAL	3/27/24	ISSUED FOR BID	APPV
Drawn by:			
J. LIGHT			
Checked by:			
J. SIDOTI			



ARLETTA SCOTT WILLIAMS
EXECUTIVE DIRECTOR, ALCOSAN

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ALLEGHENY COUNTY SANITARY AUTHORITY
WASTEWATER TREATMENT PLANT

OHIO RIVER TUNNEL SUBSTATION 23KV AND 13.8KV SWITCHGEAR
PRE-PURCHASE

SECTION 26 13 21.3
23KV AND 13.8KV SWITCHGEAR ONE LINES

Contract:	1801
CAD File Name:	26 13 21.3.dwg
Date:	2/26/2024
FIGURE 1	