

**CITY OF RIPLEY
JACKSON COUNTY, WEST VIRGINIA**

EMERGENCY DAM REPAIR PROJECT

ADDENDUM #1

JUNE 6, 2019

Thrasher Project #101-010-01242

To Whom It May Concern:

A NON-MANDATORY pre-bid conference was held on Wednesday, May 29, 2019 at 2:00 pm for the above referenced project. This addendum addresses questions that were asked at that Pre-Bid conference and up to Tuesday, June 4, 2019, along with clarifications on this project. The sign in sheet from the pre-bid conference has been included with this addendum. The Bid opening for this project remains the same scheduled for 2:00 pm, L.P.T. on Wednesday, June 12, 2019.

QUESTIONS AND RESPONSES:

QUESTION

1. Was it mandatory to attend the Pre-Bid Conference?

RESPONSE

No. Contractors that did not attend the pre-bid may bid the project.

QUESTION

2. Do Davis Bacon Wages apply to this project?

RESPONSE

No. This project is completely funded by the United States Department of Agriculture Rural Development (USDA-RD) Emergency Community Water Assistance Grants (ECWAG) and Infrastructure Jobs and Development Council (IJDC). Davis Bacon Wages do not apply.

QUESTION

3. Does American Iron and Steel (AIS) apply to this project?

RESPONSE

Yes. American Iron and Steel is a requirement for this project

QUESTION

4. How soon can the Contract be awarded after the bid opening?

RESPONSE

The hold time is 90 days. However, the Contract is expected to be awarded as soon as possible after the bid opening.

QUESTION

5. Are there any B&O Taxes for this project?

RESPONSE

Yes. B&O Taxes are 1.2%. Subcontractors are also subject to the B&O Taxes.

QUESTION

6. Are there any Building Permits required for this project?

RESPONSE

No.

QUESTION

7. Is an office trailer required for the Owner / Engineer?

RESPONSE

No.

QUESTION

8. Is a project sign required for this project?

RESPONSE

Yes, a project sign is required. See EJCDC C-800 (Rev. 1), Guide to the Preparation of Supplementary Conditions – Attachment “C”.

QUESTION

9. Have all properties and rights-of-ways been obtained for the project?

RESPONSE

No properties or rights-of-ways are required for this project. All property to be worked on and access to and from the construction site are owned by the City of Ripley.

QUESTION

10. What is the Engineer's estimated cost of construction?

RESPONSE

The Engineer's opinion of probable cost for the project is approximately \$375,000.00.

QUESTION

11. Is there an estimated date for closing?

RESPONSE

The Owner and Engineer anticipate closing on the financing and awarding the Contract as soon as possible. The Contract does have a 90-day bid hold, but if bids are within the financing, the Owner intends to award the Contract in a timely manner.

QUESTION

12. Has the City of Ripley acquired any permits associated with the project? If so, are copies of the permits available for review?

RESPONSE

The City has either acquired, or are in the middle of acquiring, all permits associated with the project. Copies of the permits are not available for review at this time, but will be made available to the awarded Contractor.

QUESTION

13. Does the quantity of "80 CY Reinforced Class B Concrete" include installation of the concrete as part of the dam repairs/construction? Does the CY cost include concrete framing, dowing rebar, and dam construction?

RESPONSE

See Specification 012000 – Price and Payment which has been included with this addendum.

QUESTION

14. In reference to the quantity of “30 Day Bypass Pumping,” what type of “bypass” means does the City of Ripley anticipated? Does the City of Ripley anticipate only pumping?

RESPONSE

It is anticipated that bypass pipe will be used in lieu of bypass pumping through the majority of the construction. However, the Contractor may need to pump Mill Creek around the temporary impoundment and low-head dam during times of construction. The bypass pump will also be needed to dewater the area below coffer dam. Therefore, Ripley will ONLY pay for up to 30 days of any bypass pumping required.

QUESTION

15. What is the scoring mechanism used to score contractors that are certified as, or are using, certified minority subcontractors. Are there specific grading mechanisms in the qualification provisions?

RESPONSE

There is no scoring mechanism or specific grading mechanism in the Qualification Provisions.

QUESTION

16. Section 011000 – SUMMARY, Part 1, Section 1.9, Subsection D, Item 6 of the Contract Documents and Detailed Specifications states, “The Contractor shall furnish the Engineer copies of the working drawings for approval and for construction purposes, and upon completion of the work the original tracings of working drawings shall be delivered to the Engineer. The drawings are to be on tracing paper, in ink or in pencil. The size of all drawings and prints shall be 22 inches by 34 inches or 24 inches by 36 inches, including margins.” Is this item applicable to this contract?

RESPONSE

This section is applicable to the contract. The Contractor is expected to keep working drawings and generate a set of record drawings which will be furnished to the Engineer at the completion of the project. The size of the drawings furnished to the Engineer shall be 22 inches by 34 inches or 24 inches by 36 inches.

QUESTION

17. Does the Owner have a current NPDES Permit for the site or the temporary site work? If so, is it presently available to the contractors? Is there any analytical data available associated with the NPDES Permit?

RESPONSE

The Ripley Water Works has an existing permit to withdraw water from the site of the water intake. However, an NPDES Permit for temporary site work is not required for this project.

CLARIFICATIONS:

1. EJCDC C-410 Bid Form has been revised with reference to Page 5, 7.01 A. A Note has been added regarding American Iron and Steel Certification from RUS Bulletin 1780-35. Also, Bid item #9 quantity was reduced to 30 days. **YOU MUST USE THE REVISED BID FORM INCLUDED WITH THIS ADDENDUM WHEN PREPARING YOUR BID PACKAGE.**
2. EJCDC C-520 (Rev. 1), Agreement Between Owner and Contractor for Construction Contract has been revised with reference to Page 3, 6.02, 95 percent was changed to 90 percent for Paragraphs a and b. The section is included with this addendum.
3. Specification Section C-800 - Supplementary Conditions has been revised to include Attachment F (Exhibit C) and Attachment G (Exhibit D). Exhibit C has been removed from Specification Section AISR. Exhibit D has been removed from the RUS – West Virginia Supplemental General Conditions.
4. Specification Section AISR – American Iron and Steel Requirements has been revised to include Exhibit E, Exhibit F and Exhibit G from RUS Bulletin 1780-35.
5. Specification Section 012000 – Price and Payment has been included with this addendum.
6. Specification Section 0125000 – Substitution Procedures has been included with this addendum.
7. Specification Section 013000 – Administrative Requirements has been included with this addendum.
8. Specification Section 013216 – Construction Progress Schedule has been included with this addendum.
9. Specification Section 013300 – Submittal Procedures has been included with this addendum.
10. Specification Section 014000 – Quality Requirements has been included with this addendum.

11. Specification Section 016000 – Product Requirements has been included with this addendum.
12. Specification Section 017000 – Execution and Closeout Requirements has been included with this addendum.
13. Specification Section 019100 – Commissioning has been included with this addendum.

If you have any other questions or comments, please feel free to contact myself or David Watson at (304) 326-6113 at your earliest convenience.

Sincerely,

THE THRASHER GROUP, INC.



DANIEL E. FERRELL, P.E.
Project Manager



- Enclosures:
- Pre-Bid Conference Sign-In Sheet
 - Index
 - EJCDC C-410 Bid Form
 - EJCDC C-520 (Rev. 1), Agreement Between Owner and Contractor for Construction Contract
 - RUS Bulletin 1780-35 Exhibit E
 - RUS Bulletin 1780-35 Exhibit F
 - RUS Bulletin 1780-35 Exhibit G
 - EJCDC C-800 (Rev. 1), Guide to the Preparation of Supplementary Conditions
 - Attachment F (Exhibit C)
 - Attachment G (Exhibit D)
 - Specification Section – 012000
 - Specification Section – 012500
 - Specification Section – 013000
 - Specification Section – 013216
 - Specification Section – 013300
 - Specification Section – 014000
 - Specification Section – 016000
 - Specification Section – 017000
 - Specification Section – 019100

**CITY OF RIPLEY
JACKSON COUNTY, WEST VIRGINIA
EMERGENCY DAM REPAIR**

PRE-BID CONFERENCE

Wednesday, May 29, 2019

Thrasher Project #101-010-01242

Name	Representing	Phone #	Email Address
Jerry Kuhens	Bentzel Corp	304-650-2371	jerry.kuhens@bentzelcorp.com
Matt Spradling	Benchmark Construction Co. Inc.	304-881-1735	Tim@BMCW.com
J.F. McCoy	Conrad Morgan	304-834-7414	JPMccoy@conradmorganllc.com
Tim Bailey	Conrad Morgan	304-546-3611	tbailey@conradmorganllc.com
DAVID LAWMAN	KANAWHA STONE CO.	304-755-8271	david.lawman@kanawhastone.com
Dru Wheeler	Landcore Builders	304-390-4097	druwheeler@landcorebuilders.com
MICHAEL SHERMELLE	DAVHILL CONSTRUCTION	304-632-1600	rdanhill@dstmail.com
Chad Billeter	Thrasher	304-624-4108	cbilleter@thrashergroup.com
Carolyn Lader	City of Ripley	304-532-0548	mayor@cityofripley.org

Name	Representing	Phone #	Email Address
Lynn McCauley	Ripley Utilities Bd		lmmccauley@suddenlink.net
Bobbi Ferrell	Ripley Utility Board	304.531.1100	bobbiburgessferrell@gmail.com
Fred Rader	MOVRC	304.422-4993	fred.rader@movrc.org
Elani Brick	Thrasher	304 624 4108	Ebrick@thetrashergroup.com
Matt Anderson	City of Ripley	301-372-3482	
Chris Pecka	City of Ripley	304-372-3482	

**CITY OF RIPLEY
JACKSON COUNTY, WEST VIRGINIA
FOR THE
EMERGENCY DAM REPAIR**

- I N D E X -

BIDDING DOCUMENTS

Advertisement for Bids	C-111
Instructions to Bidders	C-200
Bid Opening Requirements	BOR
Bid Forms	C-410

CONDITIONS OF WORK

Notice of Award	C-510
Agreement	C-520
Certificate of Owner's Attorney and Agency Concurrence	GC-A
Engineer's Certification of Final Plans and Specifications	GC-B
Performance Bond	C-610
Payment Bond	C-615
Notice to Proceed	C-550
Contractors Application for Payment	C-620
Change Order	C-941
Field Order	C-942
Work Change Directive	C-940
Certificate of Substantial Completion	C-625
General Conditions	C-700
Supplementary Conditions	C-800
RUS – WV Supplemental General Conditions	RUS

Additional Supplemental General Conditions ASGC

American Iron and Steel AISR

TECHNICAL SPECIFICATIONS

Summary 011000

Price and Payment Procedures 012000

Substitution Procedures 012500

Administrative Requirements 013000

Construction Progress Schedule 013216

Submittal Procedures 013300

Quality Requirements 014000

Product Requirements 016000

Execution and Closeout Requirements 017000

Commissioning 019100

Maintenance of Concrete 030100

Cast-In-Place Concrete 033000

Site Clearing 311000

Excavation 312316

Rock Removal 312316.26

Dewatering 312319

Flowable Fill 312323.33

Erosion and Sedimentation Controls 312500

**CITY OF RIPLEY
JACKSON COUNTY, WEST VIRGINIA
PROPOSED
EMERGENCY DAM REPAIR
THRASHER PROJECT #101-010-01242**

BID FORM

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

*City of Ripley
203 South Church Street
Ripley, WV 25271*

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

Addendum No.

Addendum Date

_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work and including all AIS requirements.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect

- to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
 - F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
 - G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
 - H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
 - I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
 - J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

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

- 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

GENERAL

The Bidder shall take notice of and shall be responsible for any local or state taxes levied and applicable, and the cost for the same shall be included as part of the submitted Bid.

The total Bid cost stated includes a complete operating installation including furnishing and installation of any and all changes or additions in plans, piping, mechanical work, additional electrical work, accessories, controls, etc. necessary to accommodate alternative equipment systems or materials used in construction.

BID PROPOSAL

The Bidder agrees to perform all required Work described in the detailed Specifications and as shown on the Plans for the complete construction and placing in satisfactory operation the Emergency Dam Repair. The Project "Sequence of Construction" has been detailed in the Drawings and Specification Division 1, Project Summary, Section 1010, Part-2 Execution. The Bidder agrees to perform all the Work proposed for the total of the following Bid prices.

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

**PROPOSED
 EMERGENCY DAM REPAIR
 FOR THE
 CITY OF RIPLEY
 JACKSON COUNTY, WEST VIRGINIA
 THRASHER PROJECT #101-010-01242**

BID SCHEDULE

NOTE: Bid Unit PRICE amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern. Bids shall include sales tax and all other applicable taxes and fees.

Item	Quantity	Description with Unit Price Written	Unit Price	Total Price
1	LS	Mobilization/Demobilization		
			Dollars	
			Cents	
2	LS	Erosion and Sediment Control		
			Dollars	
			Cents	

Item	Quantity	Description with Unit Price Written	Unit Price	Total Price
3	20 CY	Debris Removal	Dollars Cents	
4	80 LF	Temporary Impoundment with Bypass	Dollars Cents	
5	40 CY	Unclassified Excavation	Dollars Cents	
6	50 CY	Unclassified Rock Excavation	Dollars Cents	
7	80 CY	Reinforced Class B Concrete	Dollars Cents	
8	50 CY	Flowable Fill/Grout	Dollars Cents	
9	30 Day	Bypass Pumping	Dollars Cents	
TOTAL BID:				
(\$ _____)				

(Amounts are to be shown in both words and figures. In case of discrepancy, the amount shown in words will govern.)

NOTE: THE CONTRACTOR'S UNIT PRICES SHALL INCLUDE PURCHASE AND INSTALLATION, COMPLETE IN PLACE, PER BID ITEM IN ACCORDANCE WITH THE DETAILED SPECIFICATIONS.

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

METHOD OF AWARD

If at the time this contract is to be awarded, the lowest total bid submitted by a qualified, responsible Bidder does not exceed the amount of funds then estimated by the Owner, as available to finance the contract, the construction contract will be awarded. If such bids exceed such amount, the Owner may reject all bids.

The owner may award the contract on the Total Bid submitted by a qualified responsible Bidder less the amount(s) of the Deductive Alternate(s) subtracted in numerical order, as listed in the contract to produce the lowest bid within the funds available for financing.

- A. Unit prices have been computed in accordance with paragraph 13.03.A of the General Conditions.
- B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Bid Opening Requirements

Note: Bid Opening Requirements (BOR-12) includes the American Iron and Steel Certification which needs to be filled out and signed by the Contractor. This certification also references two (2) attachments located in the Supplemental General Conditions (C-800) which were issued as part of RUS Bulletin 1780-35.

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature]

[Printed name]

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

Attest:

[Signature]

[Printed name]

Title:

Submittal Date:

Address for giving notices:

Telephone Number:

Fax Number:

Contact Name and e-mail address:

Bidder's License No.:

(where applicable)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between City of Ripley (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Emergency Dam Repair

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Emergency Dam Repair

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by The Thrasher Group, Inc.

3.02 The Owner has retained The Thrasher Group, Inc. (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 75 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 90 days after the date when the Contract Times commence to run.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of

requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$500.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$500.00 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

4.04 *Special Damages* [DELETED]

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Work other than Unit Price Work, a lump sum of: \$ As described in Bid Form.

All specific cash allowances are included in the above price in accordance with Paragraph 13.02 of the General Conditions.

- B. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

Unit Price Work					
Item No.	Description	Unit	Estimated Quantity	Unit Price	Extended Price
	As described in Bid Form				
Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities)					\$

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

- C. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) \$ As described in Bid Form.
- D. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 30* day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 90 percent of Work completed (with the balance being retainage); ~~if the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and~~
 - b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
 - B. Upon Substantial Completion of the entire construction to be provided under the contract documents, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 100 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

* Unless adjusted at the Pre Construction Conference.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

- 7.01 All amounts not paid when due shall bear interest at the rate of 1.5 percent per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
 - F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 - G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
 - H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
 - I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
 - J. Contractor’s entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 7, inclusive).
 2. Performance bond (pages C-610-1 to C-610-3, inclusive).
 3. Payment bond (pages C-615-1 to C-615-3, inclusive).
 4. Other bonds.
 - a. (pages to , inclusive).
 5. General Conditions (pages C-700-1 to C-700-65, inclusive).
 6. Supplementary Conditions (pages C-800-1 to C-800-23, inclusive).
 7. RUS – WV Supplemental General Conditions
 8. Additional Supplemental General Conditions
 9. Specifications as listed in the table of contents of the Project Manual.
 10. Drawings As Noted on Index Sheet of the Plans.
 11. Addenda (numbers to , inclusive).
 12. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages C-410-1 to C-410- , inclusive).
 13. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an

assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 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 Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner 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 Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

OWNER:

CONTRACTOR:

City of Ripley

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____

(where applicable)

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

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

ATTACHMENT F
GENERAL (PRIME) CONTRACTOR'S CERTIFICATION
OF COMPLIANCE

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GENERAL (PRIME) CONTRACTOR'S CERTIFICATION OF COMPLIANCE WITH PROVISIONS OF THE AMERICAN IRON AND STEEL REQUIREMENTS OF SECTION 746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017 (DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

DATE:

RE: PROJECT NAME
APPLICANT
CONTRACT NUMBER

I hereby certify that to the best of my knowledge and belief all iron and steel products installed for this project by my company and by any and all subcontractors and manufacturers my company has contracted with for this project comply with Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference or are the subject of a waiver approved by the Secretary of Agriculture or designee.

This certification is to be submitted upon completion of the project to the project engineer.

Name of Construction Company (PRINT)

By Authorized Representative (SIGNATURE)

Title

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ATTACHMENT G
EXAMPLE OF A MANUFACTURER'S CERTIFICATION
LETTER OF COMPLIANCE

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EXAMPLE OF A MANUFACTURER'S CERTIFICATION LETTER OF COMPLIANCE WITH PROVISIONS OF THE AMERICAN IRON AND STEEL (AIS) REQUIREMENTS OF SECTION 746 OF TITLE VII OF THE CONSOLIDATED APPROPRIATIONS ACT OF 2017 (DIVISION A - AGRICULTURE, RURAL DEVELOPMENT, FOOD AND DRUG ADMINISTRATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2017) AND SUBSEQUENT STATUTES MANDATING DOMESTIC PREFERENCE

Date:

Company Name:

Company Address:

Subject: AIS Step Certification for Project (X), Owner's Name, and Contract Number

I, (company representative), certify that the (melting, bending, galvanizing, cutting, etc.) processes for (manufacturing or fabricating) the following products and/or material shipped or provided for the subject project is in full compliance with the AIS requirement as mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 (Division A - Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2017) and subsequent statutes mandating domestic preference.

Item, Products and/or Materials, and location of delivery (City, State):

- 1.
- 2.

Such processes for AIS took place at the following location:

(City, State)

This certification is to be submitted upon request to interested parties (e.g. municipalities, consulting engineers, general contractors, etc.)

If any of the above compliance statements change while providing materials to this project, please immediately notify the person(s) who is requesting to use your product(s).

Authorized Company Representative Signature

(Note: *Authorized signature shall be manufacturer's representative not the material distributor or supplier*)

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EXAMPLES OF MUNICIPAL CASTINGS (*includes but not limited to*):

Access Hatches;
Ballast Screen;
Benches (Iron or Steel);
Bollards;
Cast Bases;
Cast Iron Hinged Hatches, Square and Rectangular;
Cast Iron Riser Rings;
Catch Basin Inlet;
Cleanout/Monument Boxes;
Construction Covers and Frames;
Curb and Corner Guards;
Curb Openings;
Detectable Warning Plates;
Downspout Shoes (Boot, Inlet);
Drainage Grates, Frames and Curb Inlets;
Inlets;
Junction Boxes;
Lampposts;
Manhole Covers, Rings and Frames, Risers;
Meter Boxes;
Service Boxes;
Steel Hinged Hatches, Square and Rectangular;
Steel Riser Rings;
Trash receptacles;
Tree Grates;
Tree Guards;
Trench Grates; and
Valve Boxes, Covers and Risers.

EXAMPLES OF CONSTRUCTION MATERIALS (*includes but not limited to*):

Wire rod, bar, angles
Concrete reinforcing bar, wire, wire cloth
Wire rope and cables
Tubing
Framing
Joists
Trusses
Fasteners (i.e., nuts and bolts)
Welding rods
Decking
Grating
Railings
Stairs
Access ramps
Fire escapes
Ladders
Wall panels
Dome structures
Roofing
Ductwork
Surface drains
Cable hanging systems
Manhole steps
Fencing and fence tubing
Guardrails
Doors
Stationary screens

EXAMPLES OF NON-CONSTRUCTION MATERIALS – *(includes but not limited to):*
(NOTE: *includes appurtenances necessary for their intended use and operation and are not subject to AIS*)

Pumps
Motors
Gear reducers
Drives (including variable frequency drives (VFDs))
Electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators)
Mixers
Gates (e.g. sluice and slide gates)
Motorized screens (such as traveling screens)
Blowers/aeration equipment
Compressors
Meters (flow and water meters)
Sensors
Controls and switches
Supervisory control Data acquisition (SCADA)
Membrane bioreactor systems
Membrane filtration systems (includes RO package plants)
Filters
Clarifier arms and clarifier mechanisms
Rakes
Grinders
Disinfection systems
Presses (including belt presses)
Conveyors
Cranes
HVAC (excluding ductwork)
Water heaters
Heat exchangers
Generators
Cabinetry and housings (such as electrical boxes/enclosures)
Lighting fixtures
Electrical conduit
Emergency life systems
Metal office furniture
Shelving
Laboratory equipment
Analytical instrumentation
Dewatering equipment.

SECTION 012000 - PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Schedule of Values.
- B. Application for Payment.
- C. Change procedures.
- D. Defect assessment.
- E. Measurement and Payment.
- F. Alternates.

1.3 SCHEDULE OF VALUES

- A. Submit printed schedule on Progress Estimate schedule on EJCDC C-620.
- B. Submit Schedule of Values in duplicate within twenty (20) days after date established in Notice to Proceed.
- C. Format: Identify each line item with number and title of major Specification Section. Contractor shall submit a balanced Schedule of Values. The total value of activities shall equal the identifiable Contract Price. The Schedule of Values shall be accompanied by a proposed cash flow for the duration of the Project. Line items shall be broken down as appropriate and listed as units. Overhead and profit shall be prorated to all the activities.
 - 1. Unless otherwise specified, the Schedule of Values shall include the following percentages for each of the listed activities:
 - a. Mobilization, Bonds, Insurance, and Demobilization: no greater than 5 percent
 - b. As-Built Drawings: no less than 1 percent
 - c. Punchlist: no less than 2 percent
 - d. Final Bound O&M Manuals: no less than 1 percent
 - e. All Spare Parts Values not specifically assigned elsewhere: no less than 0.5 percent

- f. Testing: no less than 1 percent
 - 2. Schedules whose non-equipment related cash flow exceeds 10 percent of the total Contract amount (exclusive of equipment) in any one (1) month, or 45 percent of the total Contract amount (exclusive of equipment) in any three (3) consecutive months shall be deemed unacceptable and require revision. Exceptions may be granted at the discretion of the Engineer for unusual circumstances or non-routine construction.
 - 3. If, in the opinion of Engineer or Owner, the Schedule of Values is unbalanced, Contractor shall submit documentation substantiating the cost allocations of those activities believed to be unbalanced. No pay requests will be accepted until the Schedule of Values submittals has been marked "No Exceptions Taken" or "Make Corrections Noted" by Engineer.
- D. Include within each line item, direct proportional amount of Contractor's overhead and profit.
 - E. Revise schedule to list approved Change Orders with each Application for Payment.
- 1.4 APPLICATION FOR PAYMENT
- A. Submit five (5) copies of each Application for Payment on EJCDC C-620 – Contractor's Application for Payment.
 - B. Content and Format: Use Schedule of Values for listing items in Application for Payment.
 - C. Submit updated construction schedule and payment schedule with each Application for Payment.
 - D. Payment Period: Submit at intervals stipulated in the Agreement.
 - E. Submit submittals with transmittal letter as specified in Section 013300 - Submittal Procedures.
 - F. Substantiating Data: When Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
 - 1. Current construction photographs
 - 2. Partial release of Liens from major Subcontractors and vendors.
 - 3. Record Documents as specified in Section 017000 - Execution and Closeout Requirements, for review by Owner, which will be returned to Contractor.
 - 4. Affidavits attesting to off-Site stored products.
 - 5. Construction Progress Schedule, revised and current as specified in Section 013300 - Submittal Procedures.

1.5 CHANGE PROCEDURES

- A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

- B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Engineer of any error, inconsistency, omission, or apparent discrepancy.
- C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for liaison with Engineer; establish procedures for handling queries and clarifications.
 - 1. Use Request for Information Form for requesting interpretations (provided by Engineer upon request).
 - 2. Engineer may respond with a direct answer on the Request for Information form, separate Engineer Response, EJCDC C-942 - Field Order, or EJCDC C-940 - Work Change Directive Form.
- D. Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on EJCDC C-942.
- E. Engineer may issue Notice of Change including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change with stipulation of overtime Work required and with the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within ten (10) days.
- F. Contractor may propose changes by submitting a request for change to Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change and the effect on Contract Sum/Price and Contract Time with full documentation and a statement describing effect on the Work by separate or other Contractors.
- G. Stipulated Sum/Price Change Order: Based on Proposal Request or Work Change Directive and Contractor's maximum price quotation or Contractor's request for Change Order as approved by Engineer.
- H. Unit Price Change Order: For Contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of that which are not predetermined, execute Work under Work Directive Change. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- I. Work Change Directive: Engineer may issue directive, on EJCDC C-940 - Work Change Directive, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.
- J. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.
- K. Maintain detailed records of Work done on time and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs for changes in the Work.

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- L. Document each quotation for change in Project Cost or Time with sufficient data to allow evaluation of quotation.
- M. Change Order Forms: EJCDC C-941 - Change Order.
- N. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.
- O. Correlation of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
 - 2. Promptly revise Progress Schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of Work affected by the change, and resubmit.
 - 3. Promptly enter changes in Record Documents.

1.6 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of Engineer or Owner, it is not practical to remove and replace the Work, Engineer or Owner will direct appropriate remedy or adjust payment.
- C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Owner.
- D. Defective Work will be partially repaired according to instructions of Engineer, and unit sum/price will be adjusted to new sum/price at discretion of Owner.
- E. Individual Specification Sections may modify these options or may identify specific formula or percentage sum/price reduction.
- F. Authority of Owner to assess defects and identify payment adjustments is final.
- G. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from transporting vehicle.
 - 4. Products placed beyond lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected products.

1.7 MEASUREMENT AND PAYMENT

- A. General Requirements

1. Contractor shall take measurements and compute quantities. Resident Project Representative and Engineer will verify measurements and quantities.
 2. Unit Quantities: Quantities and measurements indicated on Bid Form are for Contract purposes only. Actual quantities provided shall determine payment.
 - a. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at Contracted unit sum/prices.
 - b. When actual Work requires 25 percent or greater change in quantity than those quantities indicated, Owner or Contractor may claim a Contract Price adjustment.
 3. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application, or installation of item of the Work; overhead and profit.
 4. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.
- B. Measurement of Quantities
1. Weigh Scales: Inspected, tested, and certified by applicable West Virginia weights and measures department within past year.
 2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
 3. Metering Devices: Inspected, tested, and certified by applicable West Virginia department within past year.
 4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel, or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
 5. Measurement by Volume: Measured by cubic dimension using mean length, width, and height or thickness.
 6. Measurement by Area: Measured by square dimension using mean length and width or radius.
 7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
 8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.
- C. Unit Price Schedule [SAMPLE]:
1. Bid Item 1 – Mobilization/Demobilization
 - a. This item shall include the performance of construction preparatory operations, including the movement of equipment and personnel to and from the Project Site, establishment and decommissioning of Contractor's Field Office, storage buildings, and other facilities necessary to conduct Work under this Contract.
 - b. Payment shall be made at the lump sum (LS) price Bid for Mobilization/Demobilization, but in no case shall the total lump sum Bid Price exceed 5 percent of the total Bid.
 - c. Partial Payments of the lump sum Bid amount for mobilization/demobilization shall be as follows:

- 1) One-fourth of the amount Bid for Mobilization/Demobilization will be released to the Contractor as the first estimate payable, not less than fifteen (15) days after the start of Work at the Project Site.
 - 2) The second one-fourth of the amount Bid for Mobilization/Demobilization shall be released with the estimate payable thirty (30) days after the first estimate.
 - 3) The third one-fourth of the amount Bid for Mobilization/Demobilization shall be released with the estimate payable thirty (30) days later than the estimate in which the second one-fourth has been paid.
 - 4) The final one-fourth of the amount Bid for Mobilization/Demobilization shall be released with the final payment.
 - 5) No reduction will be made, nor any increase be made, in the lump sum mobilization item amount regardless of decreased or increases in the final total Contract amount or for any other cause.
2. Bid Item 2 – Erosion and Sedimentation Controls
- a. The cost for this Work shall be a lump sum.
 - b. This Bid item shall include all costs associated with erosion and sedimentation controls including all materials and labor for installation, maintenance, and removal.
 - c. The cost of this Work shall be paid for at the lump sum Bid price for all erosion and sedimentation controls at all locations directly and/or indirectly disturbed by the Work.
3. Bid Item 3 – Debris Removals
- a. The cost for this Work shall be per cubic yard.
 - b. This Bid item shall include all costs associated with removing debris from Mill Creek as required for construction of the project. Unit Bid Cost shall include all required equipment, labor, trucking, disposal, and tipping fees.
4. Bid Item 4 – Temporary Impoundment with Bypass
- a. The cost of this Work shall be per linear foot.
 - b. This Bid item shall include all costs associated with the impoundment required for construction of the project. Unit Bid cost shall include all required equipment labor, material, piping, coffer dam, pipe supports, and welding. Unit Bid cost shall also include cost for dismantling and removing impoundment materials installed.
5. Bid Item 5 – Unclassified Excavation
- a. The cost for this Work shall be per cubic yard.
 - b. This Bid item shall include all costs associated with unclassified excavation required for construction of the project. Unit Bid cost shall includes all required equipment, labor, material, and bracing. Unit Bid cost shall also includes cost for disposing of excavated material.
6. Bid Item 6 – Unclassified Rock Excavation

- a. The cost for this Work shall be per cubic yard.
 - b. This Bid item shall include all costs associated with unclassified rock excavation required for construction of the project. Unit Bid cost shall include all required equipment, labor, material, and bracing. Unit Bid cost shall include cost for disposing of excavated material.
7. Bid Item 7 – Reinforced Class B Concrete
- a. The cost for this Work shall be per cubic yard.
 - b. This Bid item shall include all costs associated with reinforced Class B Concrete required for construction of the project. Unit Bid cost shall include all required equipment, labor, material, framing, rebar, placement, pumping, and trucking costs. Unit Bid cost shall also include cost for plasticizer or air entraining agents required.
8. Bid Item 8 – Flowable Fill/Grout
- a. The cost for this Work shall be per cubic yard.
 - b. This Bid item shall include all costs associated with flowable fill/grout required for construction of the project. Unit Bid cost shall include all required equipment, labor, material, placement, pumping, and trucking costs.
9. Bid Item 9 – Bypass Pumping
- a. The cost of this Work shall be per day.
 - b. This Bid item shall include all costs associated with bypass pumping required for construction of the project. Unit Bid cost shall include all required equipment, labor, material, pumps, installation, piping, fuel, plugs, operating, and maintaining the bypass pump system. Unit Bid cost shall also include cost for dismantling and removing bypass pumping materials.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012000

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements
 - 1. Section 016000 - Product Requirements.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.4 SUBMITTALS

- A. Substitution Requests: Submit three (3) copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use Contractor's standard form.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.

- f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.
 - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within ten (10) days of receipt of a request for substitution. Engineer will notify Contractor of acceptance or rejection of proposed substitution within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Engineer's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than fifteen (15) days prior to time required for preparation and review of related submittals.
 1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied:

- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
- b. Requested substitution will not adversely affect Contractor's construction schedule.
- c. Requested substitution has received necessary approvals of authorities having jurisdiction.
- d. Requested substitution is compatible with other portions of the Work.
- e. Requested substitution has been coordinated with other portions of the Work.
- f. Requested substitution provides specified warranty.
- g. If requested substitution involves more than one Contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all Contractors involved.

B. Substitutions for Convenience: Not allowed.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 013000 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Coordination and Project conditions.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Closeout meeting.
- F. Alteration procedures.

1.3 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of various Sections of Contract Documents to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify that utility requirements and characteristics of operating equipment are compatible with existing utilities. Conduct pot holing or other utility locates as required to coordinate Work and avoid conflict with existing utilities.
- C. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing operating equipment in service.
- D. Coordination Meetings: In addition to other meetings specified in this Section, hold coordination meetings with personnel and Subcontractors to ensure coordination of Work.
- E. Coordinate completion and clean-up of Work of separate Sections in preparation for Substantial Completion.

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1.4 PRECONSTRUCTION MEETING

- A. Engineer will schedule and preside over meeting after Notice of Award.
- B. Attendance Required: Engineer, Owner, Resident Project Representative, appropriate governmental agency representatives, utility representatives, major Subcontractors, and Contractor.
- C. Minimum Agenda
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, list of products, Schedule of Values, and Progress Schedule.
 - 5. Designation of personnel representing parties in Contract and Engineer.
 - 6. Communication procedures.
 - 7. Procedures and processing of requests for interpretations, field decisions, Field Orders, submittals, substitutions, Applications for Payments, proposal request, Change Orders, and Contract closeout procedures.
 - 8. Review of proposed Work Schedule.
 - 9. Critical Work sequencing.
 - 10. Safety.
- D. Engineer shall record minutes and distribute copies to participants within two (2) days after meeting, with two (2) copies each to Engineer, Engineer's Resident Project Representative (RPR), Owner, Contractor, and those affected by decisions made.

1.5 SITE MOBILIZATION MEETING

- A. Engineer will schedule and preside over meeting at Project Site prior to Contractor occupancy.
- B. Attendance Required: Engineer, Engineer's RPR, Owner, Contractor, Contractor's superintendent, special consultants, and major Subcontractors.
- C. Minimum Agenda
 - 1. Use of premises by Owner and Contractor.
 - 2. Owner's requirements.
 - 3. Construction facilities and controls.
 - 4. Temporary utilities.
 - 5. Survey and layout.
 - 6. Security and housekeeping procedures.
 - 7. Schedules.
 - 8. Procedures for testing.
 - 9. Procedures for maintaining record documents.
 - 10. Requirements for startup of equipment.
 - 11. Inspection and acceptance of equipment put into service during construction period.

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- D. Engineer shall record minutes and distribute copies to participants within two (2) days after meeting, with two (2) copies each to Engineer, Owner, and those affected by decisions made.

1.6 PROGRESS MEETINGS

- A. Engineer shall schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside over meetings.
- C. Attendance Required: Owner, Engineer, Engineer's RPR, Contractor, major Subcontractors, Suppliers, and others as appropriate to agenda topics for each meeting.
- D. Minimum Agenda
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems impeding planned progress.
 - 5. Review of submittal schedule and status of submittals.
 - 6. Review of off-Site fabrication and delivery schedules.
 - 7. Maintenance of Progress Schedule.
 - 8. Corrective measures to regain projected schedules.
 - 9. Planned progress during succeeding Work period.
 - 10. Coordination of projected progress.
 - 11. Maintenance of quality and Work standards.
 - 12. Effect of proposed changes on Progress Schedule and coordination.
 - 13. Other business relating to Work.
- E. Engineer shall record minutes and distribute copies to participants within two (2) days after meeting with two (2) copies each to Engineer, Owner, and those affected by decisions made.

1.7 CLOSEOUT MEETING

- A. Engineer shall schedule Project closeout meeting prior to startup with sufficient time to prepare for requesting Substantial Completion. Engineer shall preside over meeting and be responsible for minutes.
- B. Attendance Required: Owner, Engineer, Engineer's RPR, Contractor, major Subcontractors, Suppliers, and others appropriate to agenda.
- C. Engineer shall record minutes and distribute copies to participants within two (2) days after meeting, with two (2) copies each to Engineer, Owner, and those affected by decisions made.
- D. Minimum Agenda

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1. Start-up of facilities and systems.
2. Operations and maintenance manuals.
3. Testing, adjusting, and balancing.
4. System demonstration and observation.
5. Operation and maintenance instructions for Owner's personnel.
6. Contractor's inspection of Work.
7. Engineer preparation of a "punch list".
8. Procedure to request Engineer inspection to determine date of Substantial Completion.
9. Completion time for correcting deficiencies.
10. Inspections by authorities having jurisdiction.
11. Certificate of Occupancy and transfer of insurance responsibilities.
12. Partial release of retainage.
13. Final cleaning.
14. Preparation for final inspection.
15. Closeout Submittals:
 - a. Project record documents.
 - b. Operating and maintenance documents.
 - c. Operating and maintenance materials.
 - d. Affidavits.
 - e. Taxes.
16. Final Application for Payment.
17. Contractor's demobilization of Site.
18. Maintenance.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ALTERATION PROCEDURES

- A. Materials: As specified in product Sections; match existing products with new products for patching and extending Work.
- B. Employ skilled and experienced installer to perform alteration and renovation Work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion. Comply with Section 017000 - Execution and Closeout Requirements
- D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to permit installation of new Work and finishes.

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- G. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.
- H. Remove, cut, and patch Work to minimize damage and to permit restoring products and finishes to original or specified condition.
- I. Where new Work abuts or aligns with existing Work, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- J. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections.
- K. Finish surfaces as specified in individual product Sections.

END OF SECTION 013000

SECTION 013216 - CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Submittals.
- B. Bar chart schedules.
- C. Review and evaluation.
- D. Updating schedules.
- E. Distribution.

1.3 SUBMITTALS

- A. The Contractor shall submit to the Engineer five (5) days prior to the preconstruction conference a proposed preliminary Gantt chart defining planned operation for Work.
- B. The Contractor shall participate in review of preliminary and complete Gantt chart jointly with Engineer and Owner at the preconstruction conference.
- C. Within five (5) days after joint review of proposed preliminary Gantt chart, the Contractor shall submit draft of proposed completed Gantt chart to the Engineer for review. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.
- D. Submit updated network schedules with each Application for Payment.
- E. Submit one (1) reproducible version and one (1) electronic version.
- F. Submit schedule under transmittal letter form specified in Section 013300 - Submittal Procedures.
- G. Schedule Updates
 - 1. Overall percent complete, projected and actual.
 - 2. Completion progress by listed activity and sub activity, to within five (5) days prior to submittal.

3. Changes in Work scope and activities modified since submittal.
4. Delays in submittals or resubmittals, deliveries, or Work.
5. Adjusted or modified sequences of Work.
6. Other identifiable changes.
7. Revised projections of progress and completion.

H. Narrative Progress Report

1. Submit with each monthly submission of Progress Schedule.
2. Summary of Work completed during the past period between reports.
3. Work planned during the next period.
4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.
5. Current and anticipated delaying factors and estimated impact on other activities and completion Milestones.
6. Corrective action taken or proposed.

1.4 BAR CHART SCHEDULES

A. Format: Bar chart Schedule, to include at least:

1. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:
 - a. Subcontract Work.
 - b. Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
 - c. Move-in and other preliminary activities.
 - d. Equipment and equipment system test and startup activities.
 - e. Project closeout and cleanup.
 - f. Work sequences, constraints, and Milestones.
2. Listings identified by Specification Section number.
3. Identification of the following:
 - a. Horizontal time frame by year, month, and week.
 - b. Duration, early start, and completion for each activity and sub activity.
 - c. Critical activities and Project float.
 - d. Subschedules to further define critical portions of Work.

1.5 REVIEW AND EVALUATION

- A. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.
- B. After review, revise schedules incorporating results of review, and resubmit within ten (10) days.

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1.6 UPDATING SCHEDULES

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Annotate schedules to depict current status of Work.
- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Upon approval of a Change Order, include the change in the next schedule submittal.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect.
- G. Unless otherwise specified, schedules shall be updated and submitted monthly with Application for Payment.

1.7 DISTRIBUTION

- A. Following joint review, distribute copies of updated schedules to Contractor's Project Site file, to Subcontractors, Suppliers, Engineer, Owner, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013216

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical Samples that require Engineer's responsive action.
- B. Informational Submittals: Written and graphic information and physical Samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTALS

- A. Schedule of Submittals: Submit a Schedule of Submittals, arranged in chronological order by required dates established by the construction schedule. Include time required for review, ordering, manufacturing, fabrication and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections. Submittals shall be provided for all equipment provided for the project.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Engineer's Digital Data Files: Electronic copies of digital data files (PDF) of the Contract Drawings will be provided by Engineer for Contractor's use in preparing submittals.
 - 1. Engineer will furnish Contractor one (1) set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
 - a. Engineer makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.

- b. Contractor shall execute a data licensing agreement in a form acceptable to Owner and Engineer.
 - c. Digital data drawing files (PDF) will be provided to the Contractor if required in writing and a waiver provided by the Engineer has been signed by the Contractor.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow twenty (20) days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow twenty (20) days for review of each resubmittal.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 inches by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Engineer.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Engineer.
 - d. Name of Contractor.
 - e. Name of Subcontractor.
 - f. Name of Supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

- i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Engineer observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- a. Submit four (4) copies of submittal to concurrent reviewer in addition to specified number of copies to Engineer.
5. One (1) Electronic Copy: One (1) electronic copy (either via CD, flash drive, email, etc.) of all submitted information shall be transmitted with submittals for review and comment. The electronic file shall include a copy of all submitted data.
6. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Engineer will return without review submittals received from sources other than Contractor.
- a. Transmittal Form for Paper Submittals: Use sample form provided at the end of this Specification section or provide locations on Contractor's form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Engineer.
 - 6) Name of Contractor.
 - 7) Name of firm or entity that prepared submittal.
 - 8) Names of Subcontractor, manufacturer, and Supplier.
 - 9) Category and type of submittal.
 - 10) Submittal purpose and description.
 - 11) Specification Section number and title.
 - 12) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 13) Drawing number and detail references, as appropriate.
 - 14) Indication of full or partial submittal.
 - 15) Transmittal number, numbered consecutively.
 - 16) Submittal and transmittal distribution record.
 - 17) Remarks.
 - 18) Signature of transmitter.
- E. Options: Identify options requiring selection by Engineer.
- F. Deviations: Identify deviations from the Contract Documents on submittals.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.

2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Engineer's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, Subcontractors, Suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project Site. Use only final action submittals that are marked with the No Exceptions Taken.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements

1. Action Submittals: Submit seven (7) paper copies of each submittal unless otherwise indicated. Engineer will return three (3) copies.
2. Informational Submittals: Submit three (3) paper copies of each submittal unless otherwise indicated. Engineer will not return copies.
3. Submit one (1) copy of all submittals via email as PDF electronic files.
4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product Specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.

- C. Shop Drawings/Submittals: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data. Submittals shall be prepared and submitted for all equipment provided on the project.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as a minimum (Submittals shall also include all data specified in their respective individual specification sections):
 - a. A copy of this specification section and the referencing section and all other applicable specification sections governing the pump, drive and driver, supports and specified appurtenances. The specification copies shall be complete with addendum updates included, with each paragraph check-marked to indicate specification compliance or marked to indicate requested deviations from specification requirements. Check marks shall denote full compliance with a paragraph as a whole. If deviations from the specifications are indicated and, therefore requested by the Contractor, each deviation shall be underlined and denoted by a number in the margin to the right of the identified paragraph. The remaining portions of the paragraph not underlined will signify compliance on the part of the Contractor with the specifications. The submittal shall be accompanied by a detailed, written justification for each deviation. Failure to include a copy of the marked-up specification sections, along with justification(s) for any requested deviations to the specification requirements, with the submittal shall be sufficient cause for rejection of the entire submittal with no further consideration.
 - b. Identification of products. All data not pertaining to the specific project shall be deleted or marked out.
 - c. Schedules.
 - d. Compliance with specified standards.
 - e. Notation of coordination requirements.
 - f. Notation of dimensions established by field measurement.
 - g. Relationship and attachment to adjoining construction clearly indicated.
 - h. Seal and signature of professional Engineer if specified.
 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-½ inches by 11 inches, but no larger than 30 inches by 42 inches.
 3. Submit Shop Drawings/Submittals in the following format:
 - a. Five (5) hard copies and one (1) PDF electronic file via flash drive.
- D. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 - Quality Requirements.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.
- F. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

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- G. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- H. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Engineer.
- B. Contractor's Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ENGINEER'S ACTION

- A. General: Engineer will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Owner Submittal Review: The Engineer will provide one (1) copy of each submittal to the Owner for their review and comments. Upon receiving comments, the Engineer will proceed with Item C.
- C. Action Submittals: Engineer will review each submittal, make marks to indicate corrections or revisions required, and return it. Engineer will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- D. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- E. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

Submittal Transmittal Form attached

END OF SECTION 013300

SUBMITTAL TRANSMITTAL

Submittal Description: _____

Submittal No.:¹ _____

Spec Section or Drawing Number: _____

OWNER:	Routing	Sent	Received
	Contractor/CM		
PROJECT:	CM/Engineer		
	Engineer/CM		
CONTRACTOR:	CM/Contractor		

We are sending you Attached Under separate cover via _____
 Submittals for review and comment Product data for information only

Remarks: _____

Item	Copies	Date	Section No.	Description	Review action	Reviewer initials	Review comments attached

Reviewer Action= NET = No exceptions taken; MCN = Make corrections noted; R&R = Revise and resubmit; R = Rejected Attach additional sheets if necessary.

Contractor

Certify either A or B:

- A. We have verified that the material or equipment contained in this submittal meets all the requirements, including coordination with all related Work, specified (no exceptions).
- B. We have verified that the material or equipment contained in this submittal meets all the requirements specified except for the attached deviations.

No.	Deviation
Certified by: _____	
Contractor's Signature	

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Added per Addendum #1
June 6, 2019
101-010-01242

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide Quality-Assurance and Quality-Control Services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
 - 3. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies, and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include Contract enforcement activities performed by Engineer.
- C. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- D. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

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- E. Field Quality-Control Testing: Tests and inspections that are performed on-Site for installation of the Work and for completed Work.
- F. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- G. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-Subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- H. Experienced: When used with an entity or individual, “experienced” means having successfully completed a minimum of five (5) previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with (2) two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. Testing Agency Qualifications: For testing agencies specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.

4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 5. Other required items indicated in individual Specification Sections.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and Regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling Work similar in material, design, and extent to that indicated for this Project, whose Work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional Engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing Engineering services of the kind indicated. Engineering services are defined as those performed

for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.

- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.8 QUALITY CONTROL

- A. Owner Responsibilities: The Owner shall conduct any quality control testing in addition to all testing required by the Contractor including duplicate testing to confirm Contractor's test results, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2. Costs for retesting and re-inspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: All specified tests and inspections are the Contractor's responsibility including soils, concrete, pipe, manholes, and equipment. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least twenty-four (24) hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where Quality-Control Services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

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4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- D. **Retesting/Re-inspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide Quality-Control Services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. **Testing Agency Responsibilities:** Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar Quality-Control Services through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project Site.
- G. **Coordination:** Coordinate sequence of activities to accommodate required Quality-Assurance and Quality-Control Services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Engineer.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project Site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
- B. Protect construction exposed by or for Quality-Control Service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for Quality-Control Services.

END OF SECTION 014000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements
 - 1. Section 012500 - Substitution Procedures.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material", "equipment", "system", and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product", including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the Specification.

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1.4 SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within one (1) week of receipt of a comparable product request. Engineer will notify Contractor of approval or rejection of proposed comparable product request within fifteen (15) days of receipt of request, or seven (7) days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 - Submittal Procedures.
 - b. Use product specified if Engineer does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 - Submittal Procedures. Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling
 - 1. Schedule delivery to minimize long-term storage at Project Site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project Site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.

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3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 1. Manufacturer's Warranty: Provide written warranty furnished by individual manufacturer for a particular product and specifically endorsed by said manufacturer, to Owner.
 2. Special Warranty: Provide written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using the indicated form, properly executed.
 3. Refer to other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017000 - Execution and Closeout Procedures.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

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4. Where products are accompanied by the term “as selected”, Engineer will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.

B. Product Selection Procedures

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with the requirements. Comparable products or substitutions for Contractor’s convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor’s convenience will not be considered.
3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor’s convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in “Comparable Products” Article of this Section for consideration of an unnamed product.
4. Manufacturers
 - a. Restricted List: Where Specifications include a list of manufacturers’ names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor’s convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in “Comparable Products” Article of this Section for consideration of an unnamed manufacturer’s product.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Engineer will consider Contractor’s request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Engineer may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, which it is consistent with the Contract Documents, and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of Engineers and owners, if requested.
5. The Contractor is responsible for the full cost of any approved revisions to the Drawings which are requested by the Contractor for a comparable product.
6. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Field Engineering.
- B. Closeout procedures.
- C. Starting of systems.
- D. Demonstration and instructions.
- E. Project record documents.
- F. Product warranties and product bonds.
- G. Examination.
- H. Preparation.
- I. Execution.
- J. Protecting installed construction.
- K. Final cleaning.
- L. Repair of work.

1.3 FIELD ENGINEERING

- A. Employ land surveyor registered in State of West Virginia and acceptable to Engineer.
- B. Locate and protect survey control and reference points. Promptly notify Engineer of discrepancies discovered.
- C. Control datum for survey is established by Owner-provided survey indicated on Drawings.
- D. Verify setbacks and easements; confirm Drawing dimensions and elevations.

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- E. Provide field Engineering services. Establish elevations, lines, and levels using recognized Engineering survey practices.
- F. Maintain complete and accurate log of control and survey Work as Work progresses.
- G. Protect survey control points prior to starting Site Work; preserve permanent reference points during construction.
- H. Promptly report to Engineer loss or destruction of reference point or relocation required because of changes in grades or other reasons.
- I. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Engineer.

1.4 CLOSEOUT PROCEDURES

- A. Prerequisites to Substantial Completion: Complete following items before requesting Certification of Substantial Completion, either for entire Work or for portions of Work:

- 1. Submit maintenance manuals, Project record documents, digital images of construction photographs, and other similar final record data in compliance with this Section.
- 2. Obtain and submit releases enabling Owner's full, unrestricted use of Project and access to services and utilities. Include certificate of occupancy, operating certificates, and similar releases from authorities having jurisdiction and utility companies.
- 3. Deliver tools, spare parts, extra stocks of material, and similar physical items to Owner.
- 4. Discontinue or change over and remove temporary facilities and services from Project Site, along with construction tools, mockups, and similar elements.
- 5. Perform final cleaning according to this Section.

- B. Substantial Completion Inspection

- 1. When Contractor considers Work to be substantially complete, submit to Engineer:
 - a. Written certificate that Work, or designated portion, is substantially complete.
- 2. Within seven (7) days after receipt of request for Substantial Completion, Engineer will make inspection to determine whether Work or designated portion is substantially complete.
- 3. Should Engineer determine that Work is not substantially complete:
 - a. Engineer will promptly notify Contractor in writing, stating reasons for its opinion.
 - b. Contractor shall remedy deficiencies in Work and send second written request for Substantial Completion to Engineer.
 - c. Engineer will re-inspect Work.
 - d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.
- 4. When Engineer finds that Work is substantially complete, Engineer will:

- a. Prepare Certificate of Substantial Completion on EJCDC C-625 - Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected as verified and amended by Engineer and Owner (final punch list).
 - b. Punch list shall include all incomplete items. Items shall be completed prior to the issuance of Final Completion.
 - c. Submit Certificate to Owner and Contractor for their written acceptance of responsibilities assigned to them in Certificate.
 5. After Work is substantially complete, Contractor shall:
 - a. Allow Owner occupancy of Project under provisions stated in Certificate of Substantial Completion.
 - b. Complete Work listed for completion or correction within time period stipulated.
- C. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.
 1. When Contractor considers Work to be complete, submit written certification that:
 - a. Contract Documents have been reviewed.
 - b. Work has been examined for compliance with Contract Documents.
 - c. Work has been completed according to Contract Documents.
 - d. Work is completed and ready for final inspection.
 2. Submittals: Submit following:
 - a. Final punch list indicating all items have been completed or corrected.
 - b. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.
 - c. Specified warranties, workmanship/maintenance bonds, maintenance agreements, and other similar documents.
 - d. Accounting statement for final changes to Contract Sum.
 - e. Contractor's affidavit of payment of debts and claims.
 - f. Contractor affidavit of release of Liens.
 - g. Consent of surety to final payment.
 3. Perform final cleaning for Contractor-soiled areas according to this Section.
- D. Final Completion Inspection:
 1. Within seven (7) days after receipt of request for final inspection, Engineer will make inspection to determine whether Work or designated portion is complete.
 2. Should Engineer consider Work to be incomplete or defective:
 - a. Engineer will promptly notify Contractor in writing, listing incomplete or defective Work.
 - b. Contractor shall remedy stated deficiencies and send second written request to Engineer that Work is complete.
 - c. Engineer will re-inspect Work.

- d. Redo and Inspection of Deficient Work: Repeated until Work passes Engineer's inspection.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain on Site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Record Drawings.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record, at each product Section, description of actual products installed, including the following:
 - 1. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction as follows:
 - 1. Include Contract modifications such as Addenda, supplementary instructions, change directives, Field Orders, minor changes in the Work, and Change Orders.
 - 2. Include locations of concealed elements of the Work.
 - 3. Identify depth of buried utility lines and provide dimensions showing distances from permanent facility components that are parallel to utilities.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Drawings.
- G. Submit marked-up paper copy documents to Engineer with claim for final Application for Payment.
- H. Submit PDF electronic files of marked-up documents to Engineer with claim for final Application for Payment.

1.6 MAINTENANCE SERVICE

- A. Furnish service and maintenance of components indicated in Specification Sections for one (1) year from date of Substantial Completion.
- B. Include systematic examination, adjustment, and lubrication of components. Repair or replace

PART 2 - EXECUTION

2.1 EXAMINATION

- A. Verify that existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual Specification Sections.

2.2 EXECUTION

- A. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.
- B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.
- D. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
 - 1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.
 - 2. Physically separate products in place, provide electrical insulation, or provide protective coatings to prevent galvanic action or corrosion between dissimilar metals.
- E. Adjust operating products and equipment to ensure smooth and unhindered operation.
- F. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.
- G. Execute Work by methods to avoid damage to other Work and to provide proper surfaces to receive patching and finishing.
- H. Cut masonry and concrete materials using masonry saw or core drill.
- I. Restore Work with new products according to requirements of Contract Documents.
- J. Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.
- K. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection.

2.3 . FINAL CLEANING

- A. Execute final cleaning prior to final Project assessment.
- B. Clean equipment and fixtures to sanitary condition with appropriate cleaning materials.
- C. Clean debris from drainage systems.
- D. Clean Site; sweep paved areas.
- E. Remove waste and surplus materials, rubbish, and construction facilities from Site.

PART 3 - EXECUTION (Not Used)

END OF SECTION 017000

SECTION 019100 - COMMISSIONING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions, Division 01, and all related Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Commissioning description.
 - 2. Submittals.
 - 3. Closeout Submittals.
 - 4. Commissioning responsibilities.
 - 5. Commissioning meetings.
 - 6. Commissioning reports.
 - 7. Sequencing.
 - 8. Scheduling.
 - 9. Examination.
 - 10. Verification check and startup procedures.
 - 11. Functional performance test procedures.
 - 12. Function performance test methods.
 - 13. Deficiencies and test approvals.
 - 14. Demonstration.

1.3 COMMISSIONING DESCRIPTION

- A. Commissioning: Systematic process of ensuring systems perform interactively according to design intent and Owner's operational needs. Commissioning process encompasses and coordinates system documentation, equipment startup, control system calibration, testing and balancing, performance testing and training, and verification of actual performance.
- B. Commissioning does not relieve Contractor of responsibility to provide finished and fully functioning Project.
- C. Commissioning Process Overview and General Order of Commissioning Tasks:
 - 1. Commissioning begins with initial commissioning meeting.
 - 2. Conduct progress commissioning meetings throughout construction to plan, scope, coordinate, and schedule future activities and to resolve problems.

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3. Contractor's Commissioning Authority works with Engineer to develop startup drawings and startup documentation formats, including verification checklists to be completed by installers, during verification check and startup process.
4. Equipment and system installers execute and document verification checklists and perform verification check and startup. Commissioning Authority verifies that checklists and startup were completed according to approved drawings.
5. Commissioning Authority develops specific equipment and system functional performance test procedures. Equipment and system installers and Contractor review procedures.
6. Equipment and system installers execute procedures under direction of and documentation by Commissioning Authority.
7. Items of noncompliance in material, installation, or setup are corrected at Contractor's expense, and system is retested.
8. Commissioning is completed before Substantial Completion.
9. Deferred testing is conducted as specified.

1.4 SUBMITTALS

- A. Section 013300 - Submittal Procedures contains requirements for submittals.
- B. Qualification Data: Submit the following prior to start of Work:
 1. Contractor's Commissioning Authority: Contractor shall designate his or her commissioning authority and provide the name, address, and telephone number, and name of responsible officer.
 2. Commissioning plan detailing Contractors drawings to place new Work into service without disrupting service.

1.5 CLOSEOUT SUBMITTALS

- A. Section 017000 - Execution and Closeout Requirements contains requirements for closeout submittals.
- B. Commissioning Report: Commissioning Authority will submit one (1) copy of commissioning report including the following:
 1. Executive summary with list and roles of participants, brief Project description, overview of commissioning and testing scope, and general description of testing and verification methods.

1.6 COMMISSIONING RESPONSIBILITIES

- A. Responsibilities indicated for Owner, Engineer, and Contractor's Commissioning Authority are provided only to clarify commissioning process.
- B. Engineer Responsibilities

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1. Perform Site observation of each system immediately before system startup.
2. Furnish design narratives and sequence documentation requested by Commissioning Authority.
3. Coordinate resolution of design issues affecting system performance identified during commissioning.
4. Coordinate resolution of system deficiencies identified during commissioning, according to Contract Documents.

C. Contractor's Commissioning Authority Responsibilities

1. Basic Responsibilities

- a. Coordinate, direct, and approve commissioning Work.
- b. Develop and coordinate execution of commissioning plan. Revise commissioning plan to suit Project conditions.
- c. Schedule commissioning Work with Contractor for inclusion in Progress Schedule.
- d. Plan and conduct commissioning meetings.
- e. Request and review commissioning submittals required to perform commissioning tasks.
- f. Write and distribute verification tests and checklists.
- g. Develop verification check and startup plan in cooperation with Contractor and equipment and system installers.
- h. Attend Project progress meetings. Review meeting minutes. Resolve potential conflicts with commissioning activities.
- i. Observe system installations.
- j. Document that systems are installed and perform according to design intent and Contract Documents.
- k. Notify Engineer of deficiencies.
- l. Coordinate and supervise required seasonal or deferred testing and deficiency corrections.
- m. Oversee and approve content and adequacy of Owner's personnel training.
- n. Review and approve operation and maintenance manuals.
- o. Compile commissioning record and testing data manual.
- p. Provide final commissioning report.

2. Detailed Responsibilities

- a. Witness and document each piping and other system testing, cleaning, and flushing.
- b. Approve verification tests and checklist completion by reviewing verification checklist reports, Site observation, and spot checking.
- c. Approve system startup by reviewing startup reports and Site observation.
- d. Oversee functional testing of control system. Approve control system for use for test and balance operations.
- e. Approve air and water system balancing by reviewing completed reports, Site observation, and spot testing.
- f. Analyze functional performance trend logs and monitor data to verify performance.

- g. Coordinate, witness, and approve manual functional performance tests performed by equipment and system installers. Coordinate retesting until satisfactory performance is achieved.
- h. Maintain deficiency and resolution log and separate testing record. Submit progress reports and test results with recommended actions to Owner.
- i. Review documentation for factory and other performance tests that Commissioning Authority does not oversee. Determine what additional testing and documentation is required to comply with Contract Documents.
- j. Review equipment warranties to ensure Owner's responsibilities are defined.
- k. Return to Site minimum of one (1) month before expiration of warranty period.
 - 1) Review with Owner's personnel the current system operation and condition of outstanding issues related to original and seasonal commissioning.
 - 2) Interview Owner's personnel to identify problems or concerns regarding system operation.
 - 3) Make suggestions for improvements.
 - 4) Identify deficiencies covered by warranty or original construction Contract.
 - 5) Assist Owner's personnel to develop reports, documents, and requests for services to remedy outstanding problems.

3. Commissioning Authority may not:

- a. Release, revoke, alter, or enlarge on requirements of Contract Documents.
- b. Approve or accept any portion of the Work.
- c. Assume duties of Contractor or Engineer.
- d. Stop the Work.

D. Owner Responsibilities

- 1. Arrange for Owner's personnel to attend commissioning activities and training sessions according to commissioning plan.
- 2. Approve commissioning Work completion.
- 3. Ensure seasonal or deferred testing and deficiency issues are addressed.

E. Contractor Responsibilities

- 1. Facilitate coordination of commissioning Work by Commissioning Authority.
- 2. Attend commissioning meetings.
- 3. Cooperate with Commissioning Authority, and provide access to the Work and to manufacturers' facilities.
- 4. Require system installers to execute test to review and provide comments on functional test procedures.
- 5. Provide temporary facilities as specified in Section 015000 - Temporary Facilities and Controls for Commissioning Authority's exclusive use for documentation and instrument storage and preparation of reports.
- 6. Furnish qualified personnel to assist in completing commissioning.
- 7. Furnish manufacturer's qualified field representatives as specified in Section 014000 - Quality Requirements and individual Specification Sections to assist in completing commissioning.

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8. Ensure equipment and system installers execute commissioning responsibilities according to Contract Documents and Progress Schedule.
9. Coordinate Owner's personnel training.
10. Ensure equipment and system installers execute seasonal and deferred functional performance testing, witnessed by Commissioning Authority.
11. Ensure system installers correct deficiencies, and make necessary adjustments to record documents for issues identified in seasonal testing.

1.7 COMMISSIONING MEETINGS

- A. Section 013000 - Administrative Requirements contains requirements for progress meetings.
- B. Contractor's Commissioning Authority will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

1.8 COMMISSIONING REPORTS

- A. Commissioning Authority Reports: Submit reports regularly to Owner, Engineer, and Contractor. Include the following:
 1. Progress reports.
 2. Scheduling changes.
 3. Observation reports of specific commissioning activities.
 4. Testing progress and approvals.
 5. Deficiencies and deficiency resolution reports.

1.9 SEQUENCING

- A. Section 011000 - Summary contains requirements for sequencing.
- B. Sequence Work to complete commissioning, except for functional testing and Owner's Employees, before Substantial Completion.
- C. Sequence Work to achieve functional completion before final completion. Complete the following for the system indicated to be commissioned to achieve functional completion:
 1. Complete and sign startup and verification checklist documentation.
 2. Submit final approved test.
 3. Complete functional testing.
 4. Complete training of Owner Employees.
 5. Correct identified deficiencies or obtain approval by Owner to exclude deficiencies from functional completion.

1.10 SCHEDULING

- A. Section 013000 - Administrative Requirements and Section 013216 - Construction Progress Schedule contains requirements for scheduling.

- B. Schedule Work to allow adequate time for commissioning activities.

PART 2 - EXECUTION

2.1 EXAMINATION

- A. Section 013000 - Administrative Requirements contains requirements for verification of existing conditions before starting Work.
- B. Verify equipment and systems are installed according to individual Specification Sections.
- C. Verify utility and power connections are complete and services operational.

2.2 VERIFICATION CHECK AND STARTUP PROCEDURES

- A. Notify Commissioning Authority and schedule verification check and startup activities with each party required to complete verification check and startup a minimum of four (4) weeks in advance.
- B. Verification Check and Startup
 1. Perform verification check and startup according to approved verification check and startup plan.
 2. Complete each procedure in sequence performed by party assigned to each procedure.
 3. Record completion of each procedure. Indicate results of procedure where required. Sign and date plan by individual performing procedure.
 4. Identify items not completed successfully.
 5. Sign and date plan indicating completion of entire plan.
 6. Submit executed plan to Commissioning Authority within two (2) days of completion.
- C. Deficiencies and Approvals
 1. Commissioning Authority will review verification check and startup reports and issue deficiency report or approval.
 2. Correct deficiencies and resubmit updated verification check and startup report with statement indicating corrections made for Commissioning Authority approval.
 3. Repeat process until verification check and startup report are approved.
 4. Costs for incomplete verification check and startup items that later cause deficiencies or delays during functional tests may be charged to party responsible for incomplete item.

2.3 FUNCTIONAL PERFORMANCE TEST PROCEDURES

- A. Complete the following before performing functional tests:
 1. Verification check and startup.
 2. Obtain approval from Commissioning Authority for use for test and balance operations.

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- B. Notify Commissioning Authority of completion of verification check and startup activities.
- C. Commissioning Authority will direct, witness, and document results of functional performance tests.
- D. Demonstrate that each piece of equipment and system is operating according to documented design intent and Contract Documents.
 - 1. Conduct testing proceeding from components, to subsystems, to systems.
 - 2. Bring equipment and systems to condition capable full dynamic operation.
 - 3. Verify performance of individual components and systems.
 - 4. Verify performance of interactions between systems.
 - 5. Identify and correct areas of deficient performance.

2.4 FUNCTIONAL PERFORMANCE TEST METHODS

- A. Commissioning Authority may require alternate or additional method other than specified method.
- B. Commissioning Authority will determine test method when method is not specified.
- C. Simulated Conditions: Simulating conditions, not by overwritten values, is permitted. Timing tests to use real conditions is encouraged wherever practical.

2.5 DEFICIENCIES AND TEST APPROVALS

A. Deficiencies

- 1. Contractor's Commissioning Authority will record and report deficiencies to Owner.
- 2. Minor deficiencies may be corrected during tests at Commissioning Authority's discretion. Deficiency and resolution will be documented on procedure form.
- 3. Failure to attend scheduled verification check, startup, or functional performance test will be considered deficiency.
- 4. When deficiency is identified, Contractor's Commissioning Authority will discuss issue with party executing test.
 - a. When party executing test accepts responsibility to correct deficiency:
 - 1) Commissioning Authority documents deficiency and executing party's response.
 - 2) Commissioning Authority submits deficiency report to Owner, and party executing test.
 - 3) Party executing test corrects deficiency, signs statement of correction on deficiency form certifying equipment is ready for retesting, and submits form to Commissioning Authority.
 - 4) Commissioning Authority reschedules test, and test is repeated until satisfactory performance is achieved.

- b. When party executing test disputes deficiency or responsibility for deficiency:
 - 1) Commissioning Authority documents deficiency and executing party's response.
 - 2) Commissioning Authority submits deficiency report to Owner, party executing test, and party believed to be responsible for deficiency.
 - 3) Commissioning Authority negotiates resolution with parties involved and refers continuing disputes to Engineer for resolution according to Contract Documents.
 - 4) Commissioning Authority documents resolution process.
 - 5) When resolution is decided, appropriate party corrects deficiency, signs statement of correction on deficiency form certifying equipment is ready for retesting, and submits form to Commissioning Authority.
 - 6) Commissioning Authority reschedules test, and test is repeated until satisfactory performance is achieved.

B. Retesting Costs

- 1. When verification check and startup or functional performance test deficiency is discovered requiring rescheduling or retesting:
 - a. Owner will deduct additional testing compensation from final payment due to Contractor.

C. Provide written report to Commissioning Authority before each scheduled commissioning meeting concerning status of each deficiency. Include explanations of disagreements with resolution proposals for each discrepancy.

- 1. Commissioning Authority will retain original deficiency forms until end of Project.

2.6 DEMONSTRATION

- A. Section 017000 - Execution and Closeout Requirements contains requirements for demonstration and training.
- B. Demonstrate equipment and systems and train Owner's personnel as specified in individual equipment and system Specifications.
 - 1. Commissioning Authority will interview Owner's personnel to determine special needs and areas where training will be most valuable.
- C. Commissioning Authority will develop criteria for determining training was satisfactorily completed, including attending some training sessions.
 - 1. Commissioning Authority will make recommendation to Owner regarding approval of training.
- D. Commissioning Authority will make video recording of training sessions, catalog recordings, and furnish one set of recordings for inclusion with operation and maintenance manuals.

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PART 3 - EXECUTION (Not Used)

END OF SECTION 019100