

CONTRACT DOCUMENTS and TECHNICAL SPECIFICATIONS

FOR

2021 SYSTEM IMPROVEMENT - CONTRACT NO. 1  
PARKSVILLE WATER DISTRICT

BOYLE COUNTY, KENTUCKY

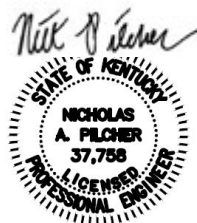
FEBRUARY 2026

Prepared By:

HMB Project #4337.00



3 HMB Circle, US 460  
Frankfort, Kentucky 40601  
(502) 695-9800





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**ADVERTISEMENT FOR BIDS**  
**Parksville Water District**  
**Boyle County, Kentucky**  
**2021 System Improvements – 4337.00 Contract 1**

**General Notice**

**Parksville Water District** (Owner) is requesting Bids for the construction of the following Project:

**2021 System Improvements**  
**4337.00 Contract 1**

Bids for the construction of the Project will be received at the **Parksville Water District** located at **10711 Lebanon Rd, Parksville, KY 40464**, until **Thursday, February 19<sup>th</sup> at 9:00 AM** local time. At that time the Bids received will be **publicly** opened and read.

The Project includes the following Work:

**Water Line Construction at 5 Locations throughout Parksville Water District territory – 3", 4", and 6" PVC Water Main, HDPE Creek Crossings, road bores, a master meter vault, valves, and other necessary items as shown on the Drawings and Specifications.**

Bids are requested for the following Contract: **2021 System Improvements 4337.00 Contract 1**

Owner anticipates that the Project's total bid price will be approximately **\$800,000**. The Project has an expected duration of **120** days.

**Obtaining the Bidding Documents**

The Issuing Office for the Bidding Documents is:

**Lynn Imaging**  
**328 Old Vine Street, Lexington, KY 40507**  
**11460 Bluegrass Parkway, Louisville, KY 40299**  
**Lynnimaging.com**

Prospective Bidders may obtain the Bidding Documents at the Issuing Office on Monday through Friday between the hours of **8:00 am – 5:00 pm**, or on the website [Lynnimaging.com](http://Lynnimaging.com), and may obtain copies of the Bidding Documents from the Issuing Office as described below. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including addenda, if any, obtained from sources other than the Issuing Office.

Printed copies of the Bidding Documents may be obtained from the Issuing Office by paying **\$250** for each set. **The phone number for LYNN IMAGING is (859) 226 – 5850.**

Bidding Documents may be purchased from the Issuing Office during the hours indicated above or from the website indicated above. Cost does not include shipping charges. Upon Issuing Office's receipt of payment, printed Bidding Documents or electronic documents will be sent via the prospective Bidder's delivery service. The shipping charge amount will depend on the shipping method chosen.

### **Pre-bid Conference**

There shall be no pre-bid conference.

### **Instructions to Bidders**

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

### **Domestic Preference**

**This project is subject to the Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58, §§ 70901-70953. Absent an approved waiver, all iron, steel, manufactured products, and construction materials used in this project must be produced in the United States.**

**The following waivers apply to this Contract:**

**BABAA De Minimis, Small Grants, and Minor Components**

**This Advertisement is issued by:**

Owner: **Parkville Water District**

By: **Debbie Webb**

Title: **Manager**

Date: **2/7/2026**



# INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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## ARTICLE 1—DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders.
  - B. **Domestic Preference**— **The Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58, §§ 70901-70953.**

## ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 ~~Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder register as a plan holder with the Issuing Office at such website, and obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.~~
- 2.04 Bidder may register as a plan holder and obtain complete sets of Bidding Documents, in the number and format stated in the Advertisement or invitation to bid, from the Issuing Office. Bidders may rely that sets of Bidding Documents obtained from the Issuing Office are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.
- 2.05 ~~Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or~~

~~Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.~~

## 2.06 *Electronic Documents*

- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.
1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version **[10.0]** or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.
- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.
- ~~C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.~~
- ~~1. Electronic Documents that are available in native file format include:
    - a. **[List documents that will be made available to Contractor]**~~
  - ~~2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.~~
  - ~~3. Unless the Contract Documents explicitly identify that such information will be available to the Successful Bidder (Contractor), nothing herein will create an obligation on the part of the Owner or Engineer to provide or create such information, and the Contractor is not entitled to rely on the availability of such information in the preparation of its Bid or pricing of the Work. In all cases, the Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.~~
  - ~~4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.~~

## ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within 7 days of Owner's request, Bidder must submit the following information:
- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
  - B. Completion of Qualification Statement (if requested)
  - C. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
  - D. Bidder's state or other contractor license number, if applicable.
  - E. Subcontractor and Supplier qualification information.
  - F. Other required information regarding qualifications.
- 3.02 ~~Prospective Bidders must submit required information regarding their qualifications by [insert deadline for prequalification submittals]. Owner will review the submitted information to determine which contractors are qualified to bid on the Work. Owner will issue an Addendum listing those contractors that Owner has determined to be qualified to construct the project. Bids will only be accepted from listed contractors. The information that each prospective Bidder must submit to seek prequalification includes the following:~~
- ~~A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.~~
  - ~~B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.~~
  - ~~C. Prospective Bidder's state or other contractor license number, if applicable.~~
  - ~~D. Subcontractor and Supplier qualification information.~~
  - ~~E. Other required information regarding qualifications.~~
- Deleted**
- 3.03 ~~Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:~~
- ~~A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.~~
  - ~~B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.~~
  - ~~C. Bidder's state or other contractor license number, if applicable.~~
  - ~~D. Subcontractor and Supplier qualification information.~~
  - ~~E. Other required information regarding qualifications.~~

- 3.04 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.05 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

#### **ARTICLE 4—PRE-BID CONFERENCE**

- 4.01 ~~A pre-bid conference will not be conducted for this Project.~~
- 4.02 A non-mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.
- 4.03 ~~A mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Proposals will not be accepted from Bidders who do not attend the conference. It is each Bidder's responsibility to sign in at the pre-bid conference to verify its participation. Bidders must sign in using the name of the organization that will be submitting a Bid. A list of qualified Bidders that attended the pre-bid conference and are eligible to submit a Bid for this Project will be issued in an Addendum.~~
- 4.04 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

#### **ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE**

##### 5.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

##### 5.02 *Existing Site Conditions*

###### ~~A. *Subsurface and Physical Conditions; Hazardous Environmental Conditions*~~

- ~~1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:~~
- ~~a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.~~
- ~~b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.~~

- ~~c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.~~
    - ~~d. Technical Data contained in such reports and drawings.~~
  - ~~2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.~~
  - 3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
  - ~~4. Geotechnical Baseline Report/Geotechnical Data Report: The Bidding Documents contain a Geotechnical Baseline Report (GBR) and Geotechnical Data Report (GDR).~~
    - ~~a. As set forth in the Supplementary Conditions, the GBR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations ("Baseline Conditions"). The GBR is a Contract Document.~~
    - ~~b. The Baseline Conditions in the GBR are intended to reduce uncertainty and the degree of contingency in submitted Bids. However, Bidders cannot rely solely on the Baseline Conditions. Bids should be based on a comprehensive approach that includes an independent review and analysis of the GBR, all other Contract Documents, Technical Data, other available information, and observable surface conditions. Not all potential subsurface conditions are baselined.~~
    - ~~c. Nothing in the GBR is intended to relieve Bidders of the responsibility to make their own determinations regarding construction costs, bidding strategies, and Bid prices, nor of the responsibility to select and be responsible for the means, methods, techniques, sequences, and procedures of construction, and for safety precautions and programs incident thereto.~~
    - ~~d. As set forth in the Supplementary Conditions, the GDR is a Contract Document containing data prepared by or for the Owner in support of the GBR.~~
- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

### 5.03 *Other Site-related Documents*

- ~~A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A, the following other documents relating to conditions at or adjacent to the Site are known to Owner and made available to Bidders for reference:~~
  - ~~1. **[List of other Site-related documents].**~~

~~Owner will make copies of these other Site-related documents available to any Bidder on request.~~

- ~~B. Owner has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.~~
- ~~C. The other Site-related documents are not part of the Contract Documents.~~
- ~~D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.~~
- E. No other Site-related documents are available.

#### 5.04 *Site Visit and Testing by Bidders*

- A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.
- B. A Site visit is scheduled following the pre-bid conference. Maps to the Site will be available at the pre-Bid conference.
- ~~C. A Site visit is scheduled for [designate, date, time and location]. Maps to the Site will be made available upon request.~~
- D. Bidders visiting the Site are required to arrange their own transportation to the Site.
- E. All access to the Site other than during a regularly scheduled Site visit must be coordinated through the following Owner or Engineer contact for visiting the Site: **Engineer : (502)695-9800**. Bidder must conduct the required Site visit during normal working hours.
- F. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- G. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.
- H. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- I. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.06 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

**ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS**

6.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

**ARTICLE 7—INTERPRETATIONS AND ADDENDA**

7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.

7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:

A. **Questions shall be directed to:**

**Nick Pilcher, PE**  
[npilcher@hmbpe.com](mailto:npilcher@hmbpe.com)

**Submittal of questions shall include following identifiers:**  
**2021 System Improvements – Contract 1**  
**HMB Project No. 4337.00**

7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.

7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract

Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

#### ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **5%** percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents. **Bid security must be at least 5% of the Bidder's maximum Bid price.**
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner's damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

#### ARTICLE 9—CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.
- 9.02 ~~Bidder must set forth in the Bid the time by which Bidder must achieve Substantial Completion, subject to the restrictions established in Paragraph 13.07 of these Instructions. The Owner will take Bidder's time commitment regarding Substantial Completion into consideration during the evaluation of Bids, and it will be necessary for the apparent Successful Bidder to satisfy Owner that it will be able to achieve Substantial Completion within the time such Bidder has designated in the Bid. [If applicable include the following: Bidder must also set forth in the Bid its commitments regarding the achievement of Milestones and readiness for final payment.]~~ The Successful Bidder's time commitments will be entered into the Agreement or incorporated in the Agreement by reference to the specific terms of the Bid.
- Deleted**
- 9.03 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

## ARTICLE 10—SUBSTITUTE AND “OR EQUAL” ITEMS

10.01 ~~The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.~~

### Deleted

10.02 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. **Each such request shall include the Manufacturer’s Certification for Compliance with Domestic Preference requirements. Refer to the suggested Manufacturer’s Certification provided in these construction Contract Documents.** The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner. **Substitutes and “or-equal” materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.05 and 7.06 of the General Conditions after the Effective Date of the Contract. Each such request shall include Manufacturer’s Certification letter to document compliance with Domestic Preference requirements Refer to Manufacturer’s Certification Letter provided in these Contract Documents.**

10.03 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

## ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 ~~A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.~~

### Deleted

11.02 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work within five days after Bid opening:

#### A. Not required

- 11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.
- 11.05 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.07A.**

## **ARTICLE 12—PREPARATION OF BID**

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.

- 12.06 A Bid by an individual must show the Bidder's name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

#### **ARTICLE 13—BASIS OF BID**

##### **13.01 *Lump-Sum***

~~A.—Bidders must submit a Bid on a lump-sum basis as set forth in the Bid Form.~~

##### **13.02 *Base Bid with Alternates***

~~A.—Bidders must submit a Bid on a lump-sum basis for the base Bid and include a separate price for each alternate described in the Bidding Documents and as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.~~

~~B.—In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form.~~

##### **13.03 *Sectional Bids***

~~A.—Bidders may submit a Bid on any individual section or any combination of sections, as set forth in the Bid Form.~~

~~B.—Submission of a Bid on any section signifies Bidder's willingness to enter into a Contract for that section alone at the price offered.~~

~~C.—If Bidder submits Bids on individual sections and a Bid based on a combination of those sections, such combined Bid need not be the sum of the Bids on the individual sections.~~

~~D.—Bidders offering a Bid on one or more sections must be capable of completing the Work covered by those sections within the time period stated in the Agreement.~~

#### 13.04 ~~Cost-Plus-Fee Bids~~

- ~~A. Bidders must submit a Bid on the Contractor's fee, which must be in addition to compensation for Cost of the Work. Such fee must be either (1) a fixed fee, (2) percentages of specified categories of costs, or (3) a percentage applicable to the Cost of the Work as a whole, as set forth in the Bid Form.~~
- ~~B. If the Contractor's fee, as set forth in the Bid Form, is to be based on percentages of categories of cost, or on a percentage applicable to the Cost of the Work as a whole, then Bidders must enter a maximum amount limiting the total fee if required by the Bid Form to do so.~~
- ~~C. Bidders must submit a Bid on the Guaranteed Maximum Price, setting a maximum amount on the compensable Cost of the Work plus Contractor's fee, if required by the Bid Form to do so.~~

#### **Deleted**

#### 13.05 *Unit Price*

- A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

#### 13.06 *Allowances*

- A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

#### 13.07 *Price-Plus-Time Bids*

- ~~A. The Owner will consider the time of Substantial Completion commitment made by the Bidder in the comparison of Bids.~~
- ~~B. Bidder must designate the number of days required to achieve Substantial Completion of the Work and enter that number in the Bid Form as the total number of calendar days to substantially complete the Work.~~
- ~~C. The total number of calendar days for Substantial Completion designated by Bidder must be less than or equal to a maximum of [number], but not less than the minimum of [number]. If Bidder purports to designate a time for Substantial Completion that is less than the allowed minimum, or greater than the allowed maximum, Owner will reject the Bid as nonresponsive.~~

- ~~D. The Agreement as executed will contain the Substantial Completion time designated in Successful Bidder's Bid, and the Contractor will be assessed liquidated damages at the rate stated in the Agreement for failure to attain Substantial Completion within that time.~~
- ~~E. Bidder must also designate the time in which it will achieve Milestones, and achieve readiness for final payment. Such time commitments must be consistent with the "Time of Substantial Completion" to which Bidder commits. The Agreement as executed will contain, as binding Contract Times, Successful Bidder's time commitments regarding Milestones, as applicable, and readiness for final payment.~~

**Deleted**

**ARTICLE 14—SUBMITTAL OF BID**

- 14.01 The Bidding Documents include one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 2 of the Bid Form.
- 14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the location designated in the Advertisement.
- 14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

**ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID**

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid,

and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

#### **ARTICLE 16—OPENING OF BIDS**

- 16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.
- 16.02 ~~Bids will be opened privately.~~

#### **ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

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

#### **ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.
- 18.05 *Evaluation of Bids*
- A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- ~~B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner will announce to all bidders a "Base Bid plus alternates" budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.~~

- C. ~~For determination of the apparent low Bidder(s) when sectional bids are submitted, Bids will be compared on the basis of the aggregate of the Bids for separate sections and the Bids for combined sections that result in the lowest total amount for all of the Work.~~
- D. For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
- E. ~~For the determination of the apparent low Bidder when cost plus fee bids are submitted, Bids will be compared on the basis of the Guaranteed Maximum Price set forth by Bidder on the Bid Form.~~

#### **Deleted**

- F. ~~Bid prices will be compared after adjusting for differences in time of Substantial Completion (total number of calendar days to substantially complete the Work) designated by Bidders. The adjusting amount will be determined at the rate set forth in the Agreement for liquidated damages for failing to achieve Substantial Completion, or such other amount that Owner has designated in the Bid Form.~~
  - 1. ~~The method for calculating the lowest bid for comparison will be the summation of the Bid price shown in the Bid Form plus the product of the Bidder specified time of Substantial Completion in calendar days times the rate for liquidated damages [or other Owner designated daily rate] in dollars per day.~~
  - 2. ~~This procedure is only used to determine the lowest bid for comparison and contractor selection purposes. The Contract Price for compensation and payment purposes remains the Bid price shown in the Bid Form.~~

#### **Deleted**

- 18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

### **ARTICLE 19—BONDS AND INSURANCE**

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.
- 19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

### **ARTICLE 20—SIGNING OF AGREEMENT**

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as

identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

**ARTICLE 21 — SALES AND USE TAXES**

21.01 ~~Owner is exempt from [name of state] state sales and use taxes on materials and equipment to be incorporated in the Work. (Exemption No. [number]). Said taxes must not be included in the Bid. Refer to Paragraph SC 7.10 of the Supplementary Conditions for additional information.~~

**ARTICLE 22 — CONTRACTS TO BE ASSIGNED**

**ARTICLE 23 — FEDERAL REQUIREMENTS**

23.01 **If the contract price is in excess of \$100,000, provisions of the Contract Work Hours and Safety Standards Act at 29 CFR 5.5(b) apply.**

23.02 **Federal requirements at Article 19 of the Supplementary Conditions apply to this Contract.**



# BID FORM FOR CONSTRUCTION CONTRACT

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

## ARTICLE 1—OWNER AND BIDDER

- 1.01 This Bid is submitted to: **Parksville Water District**
- 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—ATTACHMENTS TO THIS BID

- 2.01 The following documents are submitted with and made a condition of this Bid:
  - A. Required Bid security;
  - B. List of Proposed Subcontractors;
  - C. List of Proposed Suppliers;
  - D. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;
  - E. Contractor’s license number as evidence of Bidder’s State Contractor’s License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;
  - F. Required Bidder Qualification Statement with supporting data; ~~and~~
  - ~~G. [List other documents and edit above as pertinent].~~
  - G. **If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in the Supplementary Conditions of the Construction Contract (EJCDC C-800);**
  - H. **If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);**
  - I. **If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q Exhibit A-1, Certification for Contracts, Grants, and Loans.**

## ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

- 3.01 *Lump-Sum Bids*
  - ~~A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with any Unit Prices indicated in Paragraph 3.02:~~
    - ~~1. Lump Sum Price (Single Lump Sum)~~

Lump Sum Bid Price	\$
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2. Lump Sum Price (Base Bid and Alternates)

Lump Sum Bid Price for Base Bid	\$
Alternate A <del>[Add]</del> <del>[Deduct]</del>	\$
Alternate B <del>[Add]</del> <del>[Deduct]</del>	\$

3. Lump Sum Price (Sectional Lump Sum Bids)

Lump Sum Bid Price for Section I only	\$
Lump Sum Bid Price for Section II only	\$
Lump Sum Bid Price for Section I and II	\$

B. All specified cash allowance(s) are included in the price(s) set forth below, and have been computed in accordance with Paragraph 13.02 of the General Conditions.

Lump Sum for Cash Allowance 1	\$
Lump Sum for Cash Allowance 2	\$
Lump Sum for Cash Allowance 3	\$
Total for all Lump Sum for Cash Allowances	\$

C. All specified contingency allowances are included in the price(s) set forth below, and have been computed in accordance with Paragraph 13.02 of the General Conditions.

Lump Sum Contingency Allowance 1	\$
Lump Sum Contingency Allowance 2	\$
Lump Sum Contingency Allowance 3	\$
Total for all Lump Sum Contingency Allowances	\$

3.02 Unit Price Bids

A. Bidder will perform the following Work at the indicated unit prices:

Item No.	Description	Unit	Est. Quantity	Bid Unit Price	Bid Amount
1	Road Crossing by Open Cut, 6" Steel Encasement Pipe, Furnishing and Installing, Including Unclassified Excavation, Backfill, and Pavement Replacement (Water Pipe Not Included)	LF	110	\$	\$
2	Road Crossing by Open Cut, 8" Steel Encasement Pipe, Furnishing and Installing, Including Unclassified Excavation, Backfill, and Pavement Replacement (Water Pipe Not Included)	LF	40	\$	\$
3	Cash Road Creek Crossing - 4" HDPE DR 9 by Directional Bore, 3" PVC (SDR 17 Class 250), including all boring, water main installation, fittings, and restraints	LS	1	\$	\$
4	Cash Road Creek Crossing - 4" HDPE DR 9 by Directional Bore, 3" PVC (SDR 17 Class 250), including all boring, water main installation, fittings, and restraints	LS	1	\$	\$
5	#9-M Crushed Stone Bedding in Areas of Rock Excavation	LF	800	\$	\$
6	8" Steel Encasement Pipe by Bore & Jack, Furnishing and Installing, Including Unclassified Boring and Jacking (Water Pipe Not Included)	LF	120	\$	\$
7	12" Steel Encasement Pipe by Bore & Jack, Furnishing and Installing, Including Unclassified Boring and Jacking (Water Pipe Not Included)	LF	95	\$	\$
8	Gravel Driveway Crossing by Open Cut, 6" Steel Encasement Pipe, Furnishing and Installing, Including Unclassified Excavation, and Backfill (Water Pipe Not Included)	LF	220	\$	\$
9	Gravel Driveway Crossing by Open Cut, 8" Steel Encasement Pipe, Furnishing and Installing, Including Unclassified Excavation, and Backfill (Water Pipe Not Included)	LF	40	\$	\$
10	Master Meter Vault – Complete in Place, Furnishing and Installing, Including Unclassified Excavation, and Backfill	LS	1	\$	\$
11	3-Inch Gate Valve and Box, Conc. Pad, Complete in Place	EA	10	\$	\$
12	4-Inch Gate Valve and Box, Conc. Pad, Complete in Place	EA	5	\$	\$
13	6-Inch Gate Valve and Box, Conc. Pad, Complete in Place	EA	4	\$	\$
14	Single Nozzle Blowoff Hydrant, Conc. Pad, Complete in Place	EA	5	\$	\$
15	Additional ¾" PE Service Tubing Complete in Place, Including Required Fittings and Appurtenances	LF	40	\$	\$
16	Air Release Valve and Box, Conc. Pad, Complete in Place	EA	1	\$	\$
17	Short Side Customer Service Reconnection	EA	13	\$	\$

EJCDC® C-410, Bid Form for Construction Contract.

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Modified to include RD edits from RUS Bulletin 1780-26 (6/16/2020).

18	Long Side Customer Service Reconnection	EA	17	\$	\$
19	3" Water Main Wet Tap Complete in Place, Including Required Fittings	EA	2	\$	\$
20	4" Water Main Wet Tap Complete in Place, Including Required Fittings	EA	2	\$	\$
21	Cut and Cap Existing 2-Inch Water Line	EA	3	\$	\$
22	Cut and Cap Existing 3-Inch Water Line	EA	2	\$	\$
23	Cut and Cap Existing 6-Inch Water Line	EA	1	\$	\$
24	3" Water Main Direct Connection, Complete in Place, Including Restrained Coupling Adapter and All Required Fittings	EA	2	\$	\$
25	4" Water Main Direct Connection, Complete in Place, Including Restrained Coupling Adapter and All Required Fittings	EA	3	\$	\$
26	6" Water Main Direct Connection, Complete in Place, Including Restrained Coupling Adapter and All Required Fittings	EA	2	\$	\$
27	3-Inch PVC, SDR 17 Class 250 Water Main, furnishing. Trenching, installing and backfilling (Unclassified Excavation)	LF	5781	\$	\$
28	4-Inch PVC, SDR 17 Class 250 Water Main, furnishing. Trenching, installing and backfilling (Unclassified Excavation)	LF	2445	\$	\$
29	6-Inch PVC, SDR 17 Class 250 Water Main, furnishing. Trenching, installing and backfilling (Unclassified Excavation)	LF	1154	\$	\$
30	Bypass meter, complete in place, Including Meter Pit and All Required Fittings	EA	2	\$	\$
31	Cleanup & Restoration	LF	9380	\$ 3.00	\$ 28,140.00
32	Mobilization / Demobilization	LS	1	\$	\$
33	Video Tape Project Area (Must Be Completed Prior to Mobilization to Site)	LS	1	\$	\$
34	Traffic Control	LS	1	\$	\$
Total of All Unit Price Bid Items				\$	

B. 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 Work will be based on actual quantities, determined as provided in the Contract Documents.
3. bidding shall be considered based upon the base bid price

3.03 *Total Base Bid Price (Lump Sum and Unit Prices)*

Total Base Bid Price (Total of all Lump Sum and Unit Price Bids)	\$
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3.04 *Alternative #1 Unit Price Bids – Owner reserves the right to remove a portion of work based upon base bid prices received.*

A. Bidder will remove the following Work from the base bid price at the indicated unit prices (unit prices must match the unit prices indicated in Section 3.02):

Item No.	Description: All Work on Sheet 6	Unit	Est. Quantity	Bid Unit Price	Bid Amount
2	Road Crossing by Open Cut, 8" Steel Encasement Pipe, Furnishing and Installing, Including Unclassified Excavation, Backfill, and Pavement Replacement (Water Pipe Not Included)	LF	40	\$	\$
6	8" Steel Encasement Pipe by Bore & Jack, Furnishing and Installing, Including Unclassified Boring and Jacking (Water Pipe Not Included)	LF	120	\$	\$
11	3-Inch Gate Valve and Box, Conc. Pad, Complete in Place	EA	1	\$	\$
12	4-Inch Gate Valve and Box, Conc. Pad, Complete in Place	EA	2	\$	\$
14	Single Nozzle Blowoff Hydrant, Conc. Pad, Complete in Place	EA	1	\$	\$
17	Short Side Customer Service Reconnection	EA	2	\$	\$
18	Long Side Customer Service Reconnection	EA	1	\$	\$
20	4" Water Main Wet Tap Complete in Place, Including Required Fittings	EA	1	\$	\$
22	Cut and Cap Existing 3-Inch water line	EA	2	\$	\$
24	3" Water Main Direct Connection, Complete in Place, Including Restrained Coupling Adapter and All Required Fittings	EA	1	\$	\$
27	3-Inch PVC, SDR 17 Class 250 Water Main, furnishing. Trenching, installing and backfilling (Unclassified Excavation)	LF	10	\$	\$
28	4-Inch PVC, SDR 17 Class 250 Water Main, furnishing. Trenching, installing and backfilling (Unclassified Excavation)	LF	1168	\$	\$
31	Cleanup & Restoration	LF	1178	\$ 3.00	\$ 3,534.00
Total of All Unit Price Bid Items		\$			

3.05 *Total Deductive Alternative #1 Bid Price (Lump Sum and Unit Prices)*

Total Alternative #1 Bid Price (Total of all Lump Sum and Unit Price Bids)	\$
---	----

3.06 *Alternative #2 Unit Price Bids - Owner reserves the right to remove a portion of work based upon base bid prices received.*

A. Bidder will remove the following Work from the base bid price at the indicated unit prices (unit prices must match the unit prices indicated in Section 3.02):

Item No.	Description: All Work on Sheet 5	Unit	Est. Quantity	Bid Unit Price	Bid Amount
9	Gravel Driveway Crossing by Open Cut, 8" Steel Encasement Pipe, Furnishing and Installing, Including Unclassified Excavation, and Backfill (Water Pipe Not Included)	LF	40	\$	\$
10	Master Meter Vault – Complete in Place, Furnishing and Installing, Including Unclassified Excavation, and Backfill	LS	1	\$	\$
12	4-Inch Gate Valve and Box, Conc. Pad, Complete in Place	EA	1	\$	\$
17	Short Side Customer Service Reconnection	EA	2	\$	\$
18	Long Side Customer Service Reconnection	EA	1	\$	\$
21	Cut and Cap Existing 2-Inch water line	EA	1	\$	\$
25	4" Water Main Direct Connection, Complete in Place, Including Restrained Coupling Adapter and All Required Fittings	EA	1	\$	\$
28	4-Inch PVC, SDR 17 Class 250 Water Main, furnishing. Trenching, installing and backfilling (Unclassified Excavation)	LF	1277	\$	\$
31	Cleanup & Restoration	LF	1277	\$ 3.00	\$ 3,831.00
Total of All Unit Price Bid Items		\$			

3.07 *Total Deductive Alternative #2 Bid Price (Lump Sum and Unit Prices)*

Total Alternative #2 Bid Price (Total of all Lump Sum and Unit Price Bids)	\$
---	----

**ARTICLE 4—BASIS OF BID—COST PLUS FEE**

4.01 *Contractor’s Fee*

- A. ~~Contractor’s fee will be [number] percent of the Cost of the Work. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions.~~
  - 1. ~~The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed \$[insert cap amount], subject to increases or decreases for changes in the Work.~~
- B. ~~Contractor’s fee will be determined by applying the following percentages to the various portions of the Cost of the Work as defined in Article 13 of the General Conditions. No fee will be payable on the basis of costs itemized as excluded in Paragraph 13.01.C of the General Conditions:~~

Costs	Percent
Payroll costs (See Paragraph 13.01.B.1, General Conditions)	
Materials and Installed Equipment cost (GC 13.01.B.2)	
Amounts to be paid to Subcontractors (GC 13.01.B.3)	
Amount to be paid to special consultants (GC 13.01.B.4)	
Other costs (GC 13.01.B.5)	

- 1. ~~The maximum amount payable by Owner as a percentage fee (Guaranteed Maximum Fee) will not exceed \$[insert cap amount], subject to increases or decreases for changes in the Work.~~
- C. ~~Contractor’s fee will be the fixed sum of \$[number].~~

4.02 *Guaranteed Maximum Price*

- A. ~~The Guaranteed Maximum Price to Owner of the Cost of the Work including Contractor’s Fee will not exceed \$[Bidder fill in GMP].~~

Deleted

**ARTICLE 5—PRICE PLUS TIME BID**

5.01 *Price-Plus-Time Contract Award (Stipulated Price Contract)*

- A. ~~The Bidder to which an award of the Contract will be made will be determined in part on the basis of the Total Bid Price and the total number of calendar days to substantially complete the Work, in accordance with the following:~~

	Description		Amount
A	1. Total Bid Price		\$[number]
	2. Total number of calendar days to substantially complete the Work	[number] days	
	3. Liquidated Damages Rate (from Agreement)	\$[number]/day	
B	4. Adjustment Amount (2 x 3)		\$[number]
A+B	5. Amount for Comparison of Bids		\$[number]

~~B. The purpose of the process in the table above is only to calculate the lowest price plus time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is the Total Bid Price.~~

~~C. Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.~~

5.02 ~~Price-Plus-Time Contract Award (Cost Plus Fee with Guaranteed Maximum Price Contract)~~

~~A. The Bidder to which an award of Contract will be made will be determined in part on the basis of the Guaranteed Maximum Price and the total number of calendar days to substantially complete the Work, in accordance with the following:~~

	Description		Amount
A	1. Guaranteed Maximum Price		\${number}
	2. Total number of calendar days to substantially complete the Work	{number} days	
	3. Liquidated Damages Rate (from Agreement)	\${number}/day	
B	4. Adjustment Amount (2 x 3)		\${number}
A+B	5. Amount for Comparison of Bids		\${number}

~~B. The purpose of the process in the table above is only to calculate the lowest price plus time (A+B) bid amount for bid comparison purposes. The price for completion of the Work (the Contract Price) is based on the cost of the Work, plus a fee, subject to a guaranteed maximum price, as set forth in the Agreement.~~

~~C. Bonds required under Paragraph 6.01 of the General Conditions will be based on the Contract Price.~~

Deleted

**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 agrees that the Work will be substantially complete on or before **[Bidder inserts date]**, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **[Bidder inserts date]**.

Deleted

6.03 Bidder agrees that the Work will be substantially complete within **[Bidder inserts number]** calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within **[Bidder inserts number]** calendar days after the date when the Contract Times commence to run.

Deleted

6.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 7—BIDDER’S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA**

7.01 *Bid Acceptance Period*

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

7.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

7.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

**ARTICLE 8—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS**

8.01 *Bidder’s Representations*

- A. In submitting this Bid, Bidder represents the following:
  1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
  2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work, **including all Domestic Preference requirements.**
  4. ~~Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.~~
  5. ~~Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.~~
  6. 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 the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and

procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Bidder 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.
8. 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.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

#### 8.02 *Bidder's Certifications*

##### A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
  - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
  - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
  - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
  - d. 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.

BIDDER hereby submits this Bid as set forth above:

Bidder:

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

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

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

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

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

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

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

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

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

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

Address for giving notices:

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

Bidder's Contact:

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

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

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

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

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Bidder's Contractor License No.: (if applicable) \_\_\_\_\_



## BID BOND (PENAL SUM FORM)

<b>Bidder</b> Name: <b>[Full formal name of Bidder]</b> Address <i>(principal place of business)</i> : <b>[Address of Bidder's principal place of business]</b>	<b>Surety</b> Name: <b>[Full formal name of Surety]</b> Address <i>(principal place of business)</i> : <b>[Address of Surety's principal place of business]</b>
<b>Owner</b> Name: <b>Parksville Water District</b> Address <i>(principal place of business)</i> : <b>10711 Lebanon Rd,                  Parksville, KY 40464</b>	<b>Bid</b> Project <i>(name and location)</i> : <b>2021 System Improvements-Contract I</b>  Bid Due Date: <b>[Enter date bid is due]</b>
<b>Bond</b> Penal Sum: <b>[Amount]</b> Date of Bond: <b>[Date]</b>	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder _____ <i>(Full formal name of Bidder)</i>	Surety _____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

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

**ARTICLE 1—GENERAL INFORMATION**

1.01 Provide contact information for the Business:

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

1.02 Provide information on the Business’s organizational structure:

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

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

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

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

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

**ARTICLE 2—LICENSING**

2.01 Provide information regarding licensure for Business:

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

**ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS**

3.01 Provide information regarding Business’s Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
<input type="checkbox"/> Disadvantaged Business Enterprise		
<input type="checkbox"/> Minority Business Enterprise		
<input type="checkbox"/> Woman-Owned Business Enterprise		
<input type="checkbox"/> Small Business Enterprise		
<input type="checkbox"/> Disabled Business Enterprise		
<input type="checkbox"/> Veteran-Owned Business Enterprise		
<input type="checkbox"/> Service-Disabled Veteran-Owned Business		
<input type="checkbox"/> HUBZone Business (Historically Underutilized) Business		
<input type="checkbox"/> Other		
<input type="checkbox"/> None		

**ARTICLE 4—SAFETY**

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

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

4.02 Provide Worker’s Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year									
Company	EMR	TRFR	MH	EMR	TRFR	MH	EMR	TRFR	MH

**ARTICLE 5—FINANCIAL**

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

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

**ARTICLE 6—SURETY INFORMATION**

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

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

**ARTICLE 7—INSURANCE**

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

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

**ARTICLE 8—CONSTRUCTION EXPERIENCE**

8.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	
Estimate of revenue for the current year:	
Estimate of revenue for the previous year:	

8.02 Provide information regarding the Business’s previous contracting experience.

Years of experience with projects like the proposed project:		
As a general contractor:		As a joint venturer:
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:		
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been barred from contracting by any local, state, or federal agency within the last 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been released from a bid in the past 5 years? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Defaulted on a project or failed to complete any contract awarded to it? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Refused to construct or refused to provide materials defined in the contract documents or in a change order? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Been a party to any currently pending litigation or arbitration? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Provide full details in a separate attachment if the response to any of these questions is Yes.		

8.03 List all projects currently under contract in Schedule A and provide indicated information.

8.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business’s experience with projects similar in type and cost of construction.

8.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business’s key leaders as well.

**ARTICLE 9—REQUIRED ATTACHMENTS**

9.01 Provide the following information with the Statement of Qualifications:

- A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.
- B. Diverse Business Certifications if required by Paragraph 3.01.
- C. Certification of Business’s safety performance if required by Paragraph 4.02.
- D. Financial statements as required by Paragraph 5.01.

- E. Attachments providing additional information as required by Paragraph 8.02.
- F. Schedule A (Current Projects) as required by Paragraph 8.03.
- G. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 8.04.
- H. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 8.05.
- I. Additional items as pertinent.

This Statement of Qualifications is offered by:

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

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

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

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

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

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

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

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

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

Address for giving notices:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Designated Representative:

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

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

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

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

**Schedule A—Current Projects**

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

**Schedule B—Previous Experience with Similar Projects**

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

**Schedule B—Previous Experience with Similar Projects**

Name of Organization					
Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner			Project Name		
General Description of Project					
Project Cost			Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager	
Name					
Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

**Schedule C—Key Individuals**

<b>Project Manager</b>			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
<b>Project Superintendent</b>			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

<b>Safety Manager</b>			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	
<b>Quality Control Manager</b>			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS  
FOR CERTIFICATIONS OF NON-SEGREGATED FACILITIES**

A certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32F.R. 7439, May 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$ 10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Date \_\_\_\_\_

\_\_\_\_\_  
*(Signature of Bidder or Prospective Contractor)*

\_\_\_\_\_  
*Address (including Zip Code)*





**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion  
 Lower Tier Covered Transactions**

*The following statement is made in accordance with the Privacy Act of 1974 (5 U.S.C. § 552a, as amended). This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, and 2 CFR §§ 180.300, 180.335, Participants' responsibilities. The regulations were amended and published on August 31, 2005, in 70 Fed. Reg. 51865-51880. Copies of the regulations may be obtained by contacting the Department of Agriculture agency offering the proposed covered transaction.*

*According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0505-0027. The time required to complete this information collection is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The provisions of appropriate criminal or civil fraud, privacy, and other statutes may be applicable to the information provided.*

***(Read instructions on page two before completing certification.)***

- A. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency;
- B. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

ORGANIZATION NAME	PR/AWARD NUMBER OR PROJECT NAME
NAME(S) AND TITLE(S) OF AUTHORIZED REPRESENTATIVE(S)	
SIGNATURE	DATE

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the State or local Agency that administers the program or contact USDA through the Telecommunications Relay Service at 711 (voice and TTY). Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

USDA is an equal opportunity provider, employer, and lender.

### *Instructions for Certification*

- (1) By signing and submitting this form, the prospective lower tier participant is providing the certification set out on page 1 in accordance with these instructions.
- (2) The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies, including suspension or debarment.
- (3) The prospective lower tier participant must provide immediate written notice to the person(s) to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (4) The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549, at 2 CFR Parts 180 and 417. You may contact the Department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.
- (5) The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it may not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the Department or agency with which this transaction originated.
- (6) The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- (7) A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the General Services Administration's System for Award Management Exclusions database.
- (8) Nothing contained in the foregoing shall be construed to require establishment of a system of records to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- (9) Except for transactions authorized under paragraph (5) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the Department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant or Federal loan, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant or loan.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant or loan, the undersigned shall complete and submit Standard Form - LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

\_\_\_\_\_  
(name)

\_\_\_\_\_  
(date)

\_\_\_\_\_  
(title)

oOo



**NOTICE OF AWARD**

Date of Issuance:

Owner: **Parksville Water District**

Owner’s Project No.:

Engineer: **HMB Professional Engineers, LLC**

Engineer’s Project No.: **4337.00**

Project: **2021 System Improvements**

Contract Name: **Contract I – Water Line Replacement**

Bidder:

Bidder’s Address:

You are notified that Owner has accepted your Bid dated [date] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

**Water Line Construction at 5 Locations throughout Parksville Water District territory – 3”, 4”, and 6” PVC Water Main, HDPE Creek Crossings, road bores, a master meter vault, valves, and other necessary items as shown on the Drawings and Specifications.**

The Contract Price of the awarded Contract is \$... Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

1 unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner **7** counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: **Parksville Water District**

By (signature): \_\_\_\_\_

Name (printed): Debbie Webb

Title: Manager

Copy: Engineer

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

This Agreement is by and between **Parkville Water District** (“Owner”) and **[name of contracting entity]** (“Contractor”).

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

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:

**Water Line Construction at 5 Locations throughout Parkville Water District territory – 3”, 4”, and 6” PVC Water Main, HDPE Creek Crossings, road bores, a master meter vault, valves, and other necessary items as shown on the Drawings and Specifications.**

## **ARTICLE 2—THE PROJECT**

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **2021 System Improvement – Contract I**

## **ARTICLE 3—ENGINEER**

3.01 The Owner has retained **HMB Professional Engineers, LLC.** (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by **HMB Professional Engineers, LLC.**

## **ARTICLE 4—CONTRACT TIMES**

4.01 *Time is 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: Dates*~~

~~A. The Work will be substantially complete on or before **[date]**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **[date]**.~~

4.03 *Contract Times: Days*

A. The Work will be substantially complete within **[120]** 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 **[270]** days after the date when the Contract Times commence to run.

#### 4.04 *Milestones*

~~A. Parts of the Work must be substantially completed on or before the following Milestone(s):~~

- ~~1. Milestone 1 **[event & date/days]**~~
- ~~2. Milestone 2 **[event & date/days]**~~
- ~~3. Milestone 3 **[event & date/days]**~~

#### 4.05 *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 Contract Times, as duly modified. 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 **\$1,500** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified 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 **\$1,500** for each day that expires after such time until the Work is completed and ready for final payment.
3. ~~*Milestones:* Contractor shall pay Owner **[\$number]** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for achievement of Milestone 1, until Milestone 1 is achieved, or until the time specified for Substantial Completion is reached, at which time the rate indicated in Paragraph 4.05.A.1 will apply, rather than the Milestone rate.~~
4. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

~~C. *Bonus:* Contractor and Owner further recognize the Owner will realize financial and other benefits if the Work is completed prior to the time specified for Substantial Completion. Accordingly, Owner and Contractor agree that as a bonus for early completion, Owner shall pay Contractor **[\$number]** for each day prior to the time specified above for Substantial Completion (as duly adjusted pursuant to the Contract) that the Work is substantially complete. The maximum value of the bonus will be limited to **[\$number]**.~~

#### **Deleted**

4.06 *Special Damages*

- A. Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor’s failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.
- C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

**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 \$[number].~~  
~~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
				\$	\$
				\$	\$
				\$	\$
				\$	\$
				\$	\$
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) \$[number].
- 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 the basis of Contractor's Applications for Payment on or about the **3<sup>rd</sup> business** 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. ~~[number]~~**95** percent of the value of the Work completed (with the balance being retainage).

- 1) ~~If 50 percent or more of the Work has been 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~~

**Deleted**

- b. ~~[number]~~**95** 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 construction Contract Documents**, Owner shall pay an amount sufficient to increase total payments to Contractor to **100** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **200** 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.

6.03 *Final Payment*

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

6.04 *Consent of Surety*

- A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05 *Interest*

- A. All amounts not paid when due will bear interest at the rate of **1.0** percent per annum.

**ARTICLE 7—CONTRACT DOCUMENTS**

7.01 *Contents*

- A. The Contract Documents consist of all of the following:
  - 1. This Agreement.
  - 2. Bonds:
    - a. Performance bond (together with power of attorney).
    - b. Payment bond (together with power of attorney).
  - 3. General Conditions.
  - 4. Supplementary Conditions.
  - 5. Specifications as listed in the table of contents of the project manual (copy of list attached).
  - 6. Drawings (not attached but incorporated by reference) consisting of **[number]** sheets with each sheet bearing the following general title: **PARKSVILLE WATER DISTRICT SYSTEM UPGRADES**.
  - ~~7. Drawings listed on the attached sheet index.~~
  - 8. Addenda (numbers **[number]** to **[number]**, inclusive).
  - 9. Exhibits to this Agreement (enumerated as follows):
    - a. **Contractor's Bid**
  - 10. 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.
    - e. Warranty Bond, if any.
- B. The Contract Documents listed in Paragraph 7.01.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 7.

- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

## **ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS**

### **8.01 Contractor's Representations**

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
  2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
  4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
  5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
  6. 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 Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
  7. 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.
  8. 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.
  9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. 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.

#### 8.02 *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 8.02:
  1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the 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.

#### 8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), 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 **[indicate date on which Contract becomes effective]** (which is the Effective Date of the Contract).

Owner:

**Parksville Water District**

*(typed or printed name of organization)*

By: \_\_\_\_\_

*(individual's signature)*

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

*(date signed)*

Name: **Debbie Webb**

*(typed or printed)*

Title: **Manager**

*(typed or printed)*

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

*(individual's signature)*

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

*(typed or printed)*

Address for giving notices:

Parksville Water District

10711 Lebanon Rd P.O. Box 9

Parksville, KY 40464

Designated Representative:

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

*(typed or printed)*

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

*(typed or printed)*

Address: \_\_\_\_\_

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

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

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

Contractor:

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

By: \_\_\_\_\_

*(individual's signature)*

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

*(date signed)*

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

*(typed or printed)*

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

*(typed or printed)*

*(If [Type of Entity] is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*

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

*(individual's signature)*

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

*(typed or printed)*

Address for giving notices:

Designated Representative:

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

*(typed or printed)*

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

*(typed or printed)*

Address: \_\_\_\_\_

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

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

License No.: \_\_\_\_\_

*(where applicable)*

State: \_\_\_\_\_

## NOTICE TO PROCEED

Owner: Parkville Water District Owner's Project No.: \_\_\_\_\_  
Engineer: HMB Professional Engineers, LLC. Engineer's Project No.: 4337.00  
Contractor: \_\_\_\_\_ Contractor's Project No.: \_\_\_\_\_  
Project: 2021 System Improvements – Contract I  
Contract Name: \_\_\_\_\_  
Effective Date of Contract: \_\_\_\_\_

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on **[date Contract Times are to start]** pursuant to Paragraph 4.01 of the General Conditions.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date.

In accordance with the Agreement: **[Select one of the following two alternatives, insert dates or number of days, and delete the other alternative.]**

The date by which Substantial Completion must be achieved is **[date for Substantial Completion, from Agreement]**, and the date by which readiness for final payment must be achieved is **[date for readiness, from Agreement]**.

**[or]**

The number of days to achieve Substantial Completion is **[number of days, from Agreement]** from the date stated above for the commencement of the Contract Times, resulting in a date for Substantial Completion of **[date, calculated from commencement date above]**; and the number of days to achieve readiness for final payment is **[number of days, from Agreement]** from the commencement date of the Contract Times, resulting in a date for readiness for final payment of **[date, calculated from commencement date above]**.

Before starting any Work at the Site, Contractor must comply with the following:

**[Note any access limitations, security procedures, or other restrictions]**

Owner: Parkville Water District  
By (signature): \_\_\_\_\_  
Name (printed): Debbie Webb  
Title: Manager  
Date Issued: \_\_\_\_\_  
Copy: Engineer



## PERFORMANCE BOND

<p><b>Contractor</b></p> <p>Name: <b>[Full formal name of Contractor]</b></p> <p>Address <i>(principal place of business)</i>:  <b>[Address of Contractor's principal place of business]</b></p>	<p><b>Surety</b></p> <p>Name: <b>[Full formal name of Surety]</b></p> <p>Address <i>(principal place of business)</i>:  <b>[Address of Surety's principal place of business]</b></p>
<p><b>Owner</b></p> <p>Name: <b>Parksville Water District</b></p> <p>Mailing address <i>(principal place of business)</i>:  <b>10711 Lebanon Rd</b>  <b>Parksville, KY 40464</b></p>	<p><b>Contract</b></p> <p>Description <i>(name and location)</i>:  <b>2021 System Improvements – Contract I</b>  <b>Boyle County, Kentucky</b></p> <p>Contract Price: <b>[ ]</b></p> <p>Effective Date of Contract: <b>[Date from Contract]</b></p>
<p><b>Bond</b></p> <p>Bond Amount: <b>[Amount]</b></p> <p>Date of Bond: <b>[Date]</b></p> <p><i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form:  <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

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

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

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

- 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
  - 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
  - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
  - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**

## PAYMENT BOND

<p><b>Contractor</b></p> <p>Name: <b>[Full formal name of Contractor]</b></p> <p>Address (<i>principal place of business</i>):  <b>[Address of Contractor's principal place of business]</b></p>	<p><b>Surety</b></p> <p>Name: <b>[Full formal name of Surety]</b></p> <p>Address (<i>principal place of business</i>):  <b>[Address of Surety's principal place of business]</b></p>
<p><b>Owner</b></p> <p>Name: <b>Parksville Water District</b></p> <p>Mailing address (<i>principal place of business</i>):  <b>10711 Lebanon Rd  Parksville, KY 40464</b></p>	<p><b>Contract</b></p> <p>Description (<i>name and location</i>):  <b>2021 System Improvements – Contract I  Boyles County, KY</b></p> <p>Contract Price:</p> <p>Effective Date of Contract: <b>[Date, from Contract]</b></p>
<p><b>Bond</b></p> <p>Bond Amount: <b>[Amount]</b></p> <p>Date of Bond: <b>[Date]</b></p> <p><i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form:  <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

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

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

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
  - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
  - 16.1.7. The total amount of previous payments received by the Claimant; and
  - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
- 16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
- 16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- 16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**

ATTACHMENT A.1 – CERTIFICATE OF OWNER’S ATTORNEY AND AGENCY  
CONCURRENCE

**ATTACHMENT A.1 – CERTIFICATE OF OWNER’S ATTORNEY AND AGENCY  
CONCURRENCE**

**Notes to User:**

1. *This attachment consists of two certificates, on a single page, to be attached to the Contract and signed upon execution.*
2. *The first is a certificate to be signed by the Owner’s attorney and the second is the concurrence to be signed by the State Engineer.*
3. *This page is to be inserted after the Agreement between Owner and Contractor for Construction Contract (Stipulated Price) (EJCDC C-520, 2018) in the Construction Contract Documents.*
4. *When the EJCDC C-522 Contract for Construction of a Small Project is used, attach this page to the C-522 document.*

**CERTIFICATE OF OWNER’S ATTORNEY**

PROJECT NAME:

CONTRACTOR NAME AND CONTRACT NUMBER:

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I, the undersigned, \_\_\_\_\_, the duly authorized and acting legal representative of

\_\_\_\_\_, do hereby certify as follows: I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

---

---

Name

Date

ATTACHMENT A.1 – CERTIFICATE OF OWNER’S ATTORNEY AND AGENCY  
CONCURRENCE

**AGENCY CONCURRENCE**

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

---

Agency Representative

Date

---

Name

**Contractor's Application for Payment**

<b>Owner:</b> _____	<b>Owner's Project No.:</b> _____
<b>Engineer:</b> _____	<b>Engineer's Project No.:</b> _____
<b>Contractor:</b> _____	<b>Contractor's Project No.:</b> _____
<b>Project:</b> _____	
<b>Contract:</b> _____	

**Application No.:** \_\_\_\_\_ **Application Date:** \_\_\_\_\_

**Application Period:** From \_\_\_\_\_ to \_\_\_\_\_

1. Original Contract Price	\$	-
2. Net change by Change Orders	\$	-
3. Current Contract Price (Line 1 + Line 2)	\$	-
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	-
5. Retainage		
a. _____ X \$ _____ - Work Completed =	\$	-
b. _____ X \$ _____ - Stored Materials =	\$	-
c. Total Retainage (Line 5.a + Line 5.b)	\$	-
6. Amount eligible to date (Line 4 - Line 5.c)	\$	-
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application	\$	-
9. Balance to finish, including retainage (Line 3 - Line 4 + Line 5.c)	\$	-

**Contractor's Certification**

The undersigned Contractor certifies, to the best of its knowledge, the following:

(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;

(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such liens, security interest, or encumbrances); and

(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

**Contractor:** \_\_\_\_\_

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

<b>Recommended by Engineer</b>	<b>Approved by Owner</b>
<b>By:</b> _____	<b>By:</b> _____
<b>Title:</b> _____	<b>Title:</b> _____
<b>Date:</b> _____	<b>Date:</b> _____
<b>Approved by Funding Agency</b>	
<b>By:</b> _____	<b>By:</b> _____
<b>Title:</b> _____	<b>Title:</b> _____
<b>Date:</b> _____	<b>Date:</b> _____

**Progress Estimate - Lump Sum Work**

**Contractor's Application for Payment**

Owner: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Contract: \_\_\_\_\_

Owner's Project No.: \_\_\_\_\_  
 Engineer's Project No.: \_\_\_\_\_  
 Contractor's Project No.: \_\_\_\_\_

Application No.: \_\_\_\_\_ Application Period: From \_\_\_\_\_ to \_\_\_\_\_ Application Date: \_\_\_\_\_

A Item No.	B Description	C Scheduled Value (\$)	D + E Work Completed		F Materials Currently Stored (not in D or E) (\$)	G Work Completed and Materials Stored to Date (D + E + F) (\$)	H % of Scheduled Value (G / C) (%)	I Balance to Finish (C - G) (\$)
			(D + E) From Previous Application (\$)	This Period (\$)				
Original Contract								
						-		-
						-		-
						-		-
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						-		-
<b>Original Contract Totals</b>		\$ -	\$ -	\$ -	\$ -	\$ -		\$ -



**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

Owner: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Contract: \_\_\_\_\_

Owner's Project No.: \_\_\_\_\_  
 Engineer's Project No.: \_\_\_\_\_  
 Contractor's Project No.: \_\_\_\_\_

Application No.: \_\_\_\_\_ Application Period: From \_\_\_\_\_ to \_\_\_\_\_ Application Date: \_\_\_\_\_

A	B	C	D	E	F	G	H	I	J	K	L
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (I / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
<b>Original Contract</b>											
					-		-		-		-
					-		-		-		-
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					-		-		-		-
<b>Original Contract Totals</b>					\$ -		\$ -	\$ -	\$ -		\$ -

**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

Owner: \_\_\_\_\_  
 Engineer: \_\_\_\_\_  
 Contractor: \_\_\_\_\_  
 Project: \_\_\_\_\_  
 Contract: \_\_\_\_\_

Owner's Project No.: \_\_\_\_\_  
 Engineer's Project No.: \_\_\_\_\_  
 Contractor's Project No.: \_\_\_\_\_

Application No.: \_\_\_\_\_ Application Period: From \_\_\_\_\_ to \_\_\_\_\_ Application Date: \_\_\_\_\_

A	B	C	D	E	F	G	H	I	J	K	L
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (I / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
<b>Change Orders</b>											
					-		-		-		-
					-		-		-		-
					-		-		-		-
					-		-		-		-
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					-		-		-		-
					-		-		-		-
					-		-		-		-
<b>Change Order Totals</b>					\$ -		\$ -	\$ -	\$ -		\$ -
<b>Original Contract and Change Orders</b>											
<b>Project Totals</b>					\$ -		\$ -	\$ -	\$ -		\$ -



# CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: \_\_\_\_\_ Owner's Project No.: \_\_\_\_\_  
Engineer: \_\_\_\_\_ Engineer's Project No.: \_\_\_\_\_  
Contractor: \_\_\_\_\_ Contractor's Project No.: \_\_\_\_\_  
Project: \_\_\_\_\_  
Contract Name: \_\_\_\_\_

This  Preliminary  Final Certificate of Substantial Completion applies to:

All Work  The following specified portions of the Work:

**[Describe the portion of the work for which Certificate of Substantial Completion is issued]**

Date of Substantial Completion: **[Enter date, as determined by Engineer]**

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities:  None  As follows:

**[List amendments to Owner's Responsibilities]**

Amendments to Contractor's Responsibilities:  None  As follows:

**[List amendments to Contractor's Responsibilities]**

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

**[List attachments such as punch list; other documents]**

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

Engineer

By *(signature)*: \_\_\_\_\_

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

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



**NOTICE OF ACCEPTABILITY OF WORK**

Owner: **Parkville Water District** Owner's Project No.:  
Engineer: **HMB Professional Engineers, LLC.** Engineer's Project No.: **4337.00**  
Contractor: Contractor's Project No.:  
Project:  
Contract Name:  
Notice Date: Effective Date of the Construction Contract:

The Engineer hereby gives notice to the Owner and Contractor that Engineer recommends final payment to Contractor, and that the Work furnished and performed by Contractor under the Construction Contract is acceptable, expressly subject to the provisions of the Construction Contract's Contract Documents ("Contract Documents") and of the Agreement between Owner and Engineer for Professional Services dated **[date of professional services agreement]** ("Owner-Engineer Agreement"). This Notice of Acceptability of Work (Notice) is made expressly subject to the following terms and conditions to which all who receive and rely on said Notice agree:

1. This Notice has been prepared with the skill and care ordinarily used by members of the engineering profession practicing under similar conditions at the same time and in the same locality.
2. This Notice reflects and is an expression of the Engineer's professional opinion.
3. This Notice has been prepared to the best of Engineer's knowledge, information, and belief as of the Notice Date.
4. This Notice is based entirely on and expressly limited by the scope of services Engineer has been employed by Owner to perform or furnish during construction of the Project (including observation of the Contractor's Work) under the Owner-Engineer Agreement, and applies only to facts that are within Engineer's knowledge or could reasonably have been ascertained by Engineer as a result of carrying out the responsibilities specifically assigned to Engineer under such Owner-Engineer Agreement.
5. This Notice is not a guarantee or warranty of Contractor's performance under the Construction Contract, an acceptance of Work that is not in accordance with the Contract Documents, including but not limited to defective Work discovered after final inspection, nor an assumption of responsibility for any failure of Contractor to furnish and perform the Work thereunder in accordance with the Contract Documents, or to otherwise comply with the Contract Documents or the terms of any special guarantees specified therein.
6. This Notice does not relieve Contractor of any surviving obligations under the Construction Contract, and is subject to Owner's reservations of rights with respect to completion and final payment.

Engineer

By *(signature)*: \_\_\_\_\_

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

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



# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
  2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
  3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
  4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
  5. *Bidder*—An individual or entity that submits a Bid to Owner.
  6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
  7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
  8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
  9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
  10. *Claim*
    - a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

- requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
  - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
  - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
  12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
  13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
  14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
  15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
  16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
  17. *Cost of the Work*—See Paragraph 13.01 for definition.
  18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
  19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
  20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
  21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
  - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
  - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
  - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
  - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
  - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
  2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2—PRELIMINARY MATTERS**

### **2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance***

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### **2.02 *Copies of Documents***

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

### **2.03 *Before Starting Construction***

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
  - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  - 2. a preliminary Schedule of Submittals; and
  - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.
  - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
  - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
  - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.
  - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

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

## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

### 3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will 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.
- G. Nothing in the Contract Documents creates:
  - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
  - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

### 3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

#### B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
  - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
  - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

### 3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

### 3.05 *Reuse of Documents*

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

## **ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK**

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

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

### 4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

### 4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
  - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
  - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal weather conditions;
  - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
  - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
  2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
  3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
  2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
  3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
  4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
  5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

## **ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS**

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
  - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

### 5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;
  2. is of such a nature as to require a change in the Drawings or Specifications;
  3. differs materially from that shown or indicated in the Contract Documents; or
  4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
  - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
  - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
- a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
  - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
  - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

#### 5.05 *Underground Facilities*

- A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
  2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
  4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
  2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
  3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
  4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
  - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
  - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
  3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
  4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

#### 5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings:* The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

- of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 6—BONDS AND INSURANCE**

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

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

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

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

#### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
- F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.
- H. Contractor shall require:
  - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
  - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
- I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
- K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
  - 1. include at least the specific coverages required;
  - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
  - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;
  - 4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and
  - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
  - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
  - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
  - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

#### 6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

#### 6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
  2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

#### 7.04 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### 7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
      - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
  - 3) has a proven record of performance and availability of responsive service; and
  - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

#### 7.06 Substitutes

- A. *Contractor's Request; Governing Criteria:* Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
  2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:
  - a. will certify that the proposed substitute item will:
    - 1) perform adequately the functions and achieve the results called for by the general design;
    - 2) be similar in substance to the item specified; and
    - 3) be suited to the same use as the item specified.
  - b. will state:
    - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;
    - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and
    - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
  - c. will identify:
    - 1) all variations of the proposed substitute item from the item specified; and
    - 2) available engineering, sales, maintenance, repair, and replacement services.
  - d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

#### 7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

#### 7.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

#### 7.11 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

#### 7.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

### 7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

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

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
    - a. Contractor shall submit the number of copies required in the Specifications.
    - b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.
  2. *Samples*
    - a. Contractor shall submit the number of Samples required in the Specifications.
    - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.
  3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
  2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.
  3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
  4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

*D. Resubmittal Procedures for Shop Drawings and Samples*

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

*E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
  - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
  - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
  - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
  2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
  2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
1. Observations by Engineer;
  2. Recommendation by Engineer or payment by Owner of any progress or final payment;
  3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. Use or occupancy of the Work or any part thereof by Owner;
  5. Any review and approval of a Shop Drawing or Sample submittal;
  6. The issuance of a notice of acceptability by Engineer;
  7. The end of the correction period established in Paragraph 15.08;
  8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
  - 1. Checking for conformance with the requirements of this Paragraph 7.19;
  - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
  - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

## **ARTICLE 8—OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

#### 8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
  - 1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
  - 2. An itemization of the specific matters to be covered by such authority and responsibility; and
  - 3. The extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

#### 8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
  - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
  - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9—OWNER'S RESPONSIBILITIES**

### **9.01 *Communications to Contractor***

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

### **9.02 *Replacement of Engineer***

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

### **9.03 *Furnish Data***

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

### **9.04 *Pay When Due***

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
  - B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
  - C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *Limitations on Owner's Responsibilities*
- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
  - B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

## ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

### 10.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

### 10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

### 10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

### 10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

## ARTICLE 11—CHANGES TO THE CONTRACT

### 11.01 *Amending and Supplementing the Contract*

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

### 11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

### 11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
  - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
  - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

#### 11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

#### 11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
  2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
  3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
1. A mutually acceptable fixed fee; or
  2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
    - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
    - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
    - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
    - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

#### 11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

#### 11.09 *Change Proposals*

A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

#### B. *Change Proposal Procedures*

1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
  - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
  - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

#### 11.10 *Notification to Surety*

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

### **ARTICLE 12—CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
  1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
  3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
  4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
  - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **13.01 *Cost of the Work***

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.
  2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.
  3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
  4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.
  5. Other costs consisting of the following:
    - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
    - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
- 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
- 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
  - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
  - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
    - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
    - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

### 13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
  2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance:* Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

### 13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
  - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
  - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

**ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK**

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
  2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
  3. by manufacturers of equipment furnished under the Contract Documents;
  4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
  5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

#### 14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

#### 14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
  - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
  - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

#### 14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

**14.07** *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

**ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

**15.01** *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
  - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work;
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

**D. *Payment Becomes Due***

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

**E. *Reductions in Payment by Owner***

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. The Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. The Contract Price has been reduced by Change Orders;
  - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
  - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
  - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

#### 15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

#### 15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### 15.06 *Final Payment*

##### A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

#### 15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such adjacent areas;
  - 2. correct such defective Work;
  - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

## **ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## **ARTICLE 17—FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
  2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
  2. agree with the other party to submit the dispute to another dispute resolution process; or
  3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18—MISCELLANEOUS**

### **18.01 *Giving Notice***

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

### **18.02 *Computation of Times***

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

18.03 *Cumulative Remedies*

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

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party 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.

18.09 *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.

18.10 *Headings*

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



# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

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

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

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

#### SC-1.01.A.8 – Add the following at the end of the Paragraph:

The Change Order form to be used on this Project is EJCDC C-941 (2018). Agency approval is required before Change Orders are effective.

#### SC-1.01.A.30 – Add the following at the end of the Paragraph:

For the purposes of Rural Development, this term is synonymous with the term "applicant" as defined in 7 CFR 1780.7 (a) (1), (2) and (3) and is an entity receiving financial assistance from the federal programs.

#### SC-1.01.A.50 – Add the following at the end of the Paragraph:

The Work Change Directive form to be used on this Project is EJCDC C-940 (2018). Agency approval is required before a Work Change Directive is issued.

#### SC-1.01.A.51 – Add the following new paragraph immediately after Paragraph 1.01.A.50:

51. Agency - The Project is financed in whole or in part by USDA Rural Utilities Service pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). The Rural Utilities Service programs are administered through the USDA Rural Development offices; therefore, the Agency for these documents is USDA Rural Development.

#### SC-1.01.A.52 – Add the following new paragraph with the title "Domestic Preference Definitions" immediately after Paragraph 1.01.A.51:

52.a *Build America, Buy America Act (BABAA)* - Requirements mandated by Title IX of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58, §§ 70901-70953-58 mandating domestic preference that all iron and steel, manufactured products, and construction materials are produced in the United States.

52.b *Construction Materials* - Those articles, materials, or supplies — other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives— that are or consist primarily of: non-ferrous metals, plastic and polymer- based products, glass, lumber or drywall.

**52.c Contractor's Certification** - Documentation submitted by the Contractor upon Substantial Completion of the Contract that all iron and steel, manufactured products, and construction materials are produced in the United States.

**52.d De Minimis** - Materials and products that represent a small portion of an infrastructure project, specifically no more than 5% of the project costs up to a maximum of \$1,000,000,

**52.e Domestic Preference** - The Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58, §§ 70901-70953.

**52.f Engineer's Certification** - Documentation submitted by the Engineer that Drawings, Specifications, and Bidding Documents comply with Domestic Preference requirements.

**52.g Manufactured Product** – Items assembled out of components, or otherwise made or processed from raw materials into finished products. Manufactured products must be manufactured (assembled) in the United States, and the cost of components that were mined, produced, or manufactured in the United States must be greater than 55 percent of the total cost of all components of the product.

**52.h Manufacturer's Certification** - Documentation provided by the Manufacturer stating that Domestic Preference requirements have been satisfied for all provided items. If items are purchased via a Supplier, distributor, vendor, etc. from the Manufacturer directly, then the Supplier, distributor, vendor, etc. will be responsible for obtaining and providing these certifications to the parties purchasing the products.

**52.i Minor Components** - Components *within* an iron and/or steel product otherwise compliant with the Domestic Preference requirements. This waiver, typically used by Manufacturers, allows use of non-domestically produced miscellaneous Minor Components comprising up to five percent of the total material cost of an otherwise domestically produced iron and steel product. However, unless a separate waiver for a product has been approved, all other iron and steel components in said product must still meet the Domestic Preference requirements. This waiver does not exempt the whole product from the Domestic Preference requirements only Minor Components within said product and the iron or steel components of the product must be produced domestically.

**52.j Primarily Iron or Steel** - A product is made of greater than 50 percent iron or Steel on a materials cost basis.

## ARTICLE 2—PRELIMINARY MATTERS

### 2.02 *Copies of Documents*

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

**Owner shall furnish to Contractor five printed copies of the Contract Documents (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF).**

### 2.06 *Electronic Transmittals*

**SC-2.06.B – Delete Paragraphs 2.06.B and replace it with the term *[Deleted]*.**

## ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

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

**SC-4.01.A – Amend the last sentence of Paragraph 4.01.A by striking out the following words:**

**In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.**

### 4.05 *Delays in Contractor's Progress*

**SC-4.05.C.2 – Amend Paragraph 4.05.C.2 by striking out the following text: “Abnormal weather conditions;” and inserting the following text:**

**Abnormal Weather Conditions;**

**SC-4.05.C.5 – Paragraph is mandatory for WWD projects.**

**SC-4.05.C.5.a – Add the following at the end of this paragraph:**

**Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered abnormal weather conditions. Requests for time extensions due to abnormal weather conditions will be submitted to the Engineer within five days of the end of the abnormal weather condition event. It is the responsibility of the Contractor to provide the information listed in SC 4.05.C.5.b.**

**SC-4.05.C.5.b – Add the following subparagraph:**

**The existence of abnormal weather conditions will be determined on a month-by-month basis in accordance with the following:**

- 1) Every workday on which one or more of the following conditions exist will be considered a “bad weather day”:
  - i) Total precipitation (as rain equivalent) occurring between 7:00 p.m. on the preceding day (regardless of whether such preceding day is a workday) through 7:00 p.m. on the workday in question equals or exceeds **[0.35 inch per day]** of precipitation (as rain equivalent, based on the snow/rain conversion indicated in the table entitled Foreseeable Bad Weather Days; such table is hereby incorporated in this SC-4.05.C by reference.
  - ii) Ambient outdoor air temperature at 11:00 a.m. is equal to or less than the following low temperature threshold: **[less than or equal to 30]** degrees Fahrenheit; or, at 3:00 p.m. the ambient outdoor temperature is equal to or greater than the following high temperature threshold: **[more than or equal to 85]** degrees Fahrenheit.
- 2) Determination of actual bad weather days during performance of the Work will be based on the weather records measured and recorded by **[Somerset, KY Weather Station]** weather monitoring station at **[Somerset, KY]**.
- 3) Contractor shall anticipate the number of foreseeable bad weather days per month indicated in the table in Exhibit **[B]**—Foreseeable Bad Weather Days.
- 4) In each month, every bad weather day exceeding the number of foreseeable bad weather days established in the table in Exhibit **[B]**—Foreseeable Bad Weather Days will be considered as “abnormal weather conditions.” The existence of abnormal weather conditions will not relieve Contractor of the obligation to demonstrate and document that delays caused by abnormal weather are specific to the planned work activities or that such activities thus delayed were on Contractor’s then-current Progress Schedule’s critical path for the Project.

## **ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS**

### *5.03 Subsurface and Physical Conditions*

#### **SC-5.03 – Delete Paragraphs 5.03.A and 5.03.B in their entirety and insert the following:**

- A. No reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.**

5.06 *Hazardous Environmental Conditions at Site*

SC-5.06 – Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

**ARTICLE 6—BONDS AND INSURANCE**

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 – Disregard EJCDC Guidance Notes – Performance and Payment Bonds, Note 1. Performance and Payment Bonds are required for WWD projects.

SC-6.01 – EJCDC Guidance Notes – “Other Bonds,” Warranty Bond, Note 1. RD does not require a Warranty Bond, and RD will not accept a Warranty Bond in place of a Performance and Payment Bond. The decision to include a Warranty Bond is made by the Owner and their counsel. Please refer to EJCDC for guidance.

6.03 *Contractor’s Insurance*

SC-6.03 – Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: None
- E. *Workers’ Compensation and Employer’s Liability:* Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance, including, as applicable, United States Longshoreman and Harbor Workers’ Compensation Act, Jones Act, stop-gap employer’s liability coverage for monopolistic states, and foreign voluntary workers’ compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers’ Compensation and Related Policies	Policy limits of not less than:
<b>Workers’ Compensation</b>	
State	Statutory
Applicable Federal (e.g., Longshoreman’s)	Statutory
Foreign voluntary workers’ compensation (employer’s responsibility coverage), if applicable	Statutory
<b>Jones Act (if applicable)</b>	
Bodily injury by accident—each accident	\$NA
Bodily injury by disease—aggregate	\$NA
<b>Employer’s Liability</b>	

<b>Workers' Compensation and Related Policies</b>	<b>Policy limits of not less than:</b>
<b>Bodily injury, each accident</b>	<b>\$2,000,000</b>
<b>Bodily injury by disease, each employee</b>	<b>\$2,000,000</b>
<b>Bodily injury / disease aggregate</b>	<b>\$2,000,000</b>
<b>Stop-gap Liability Coverage</b>	
<b>For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:</b>	<b>\$NA</b>

- F. *Commercial General Liability—Claims Covered:*** Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
  2. damages insured by reasonably available personal injury liability coverage, and
  3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:*** Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
    - a. Such insurance must be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
  4. Underground, explosion, and collapse coverage.
  5. Personal injury coverage.
  6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
  7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

H. **Commercial General Liability—Excluded Content:** The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
2. Any exclusion for water intrusion or water damage.
3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
4. Any exclusion of coverage relating to earth subsidence or movement.
5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
6. Any limitation or exclusion based on the nature of Contractor’s work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. **Commercial General Liability—Minimum Policy Limits**

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

J. **Automobile Liability:** Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

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

K. **Umbrella or Excess Liability:** Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The

coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	\$5,000,000
General Aggregate	\$5,000,000

- L. **Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:** Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of \$[specify amount] after accounting for partial attribution of its limits to underlying policies, as allowed above.
- M. **Contractor’s Pollution Liability Insurance:** Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor’s Pollution Liability	Policy limits of not less than:
Each Occurrence/Claim	\$NA
General Aggregate	\$NA

- N. **Contractor’s Professional Liability Insurance:** If Contractor will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

Contractor’s Professional Liability	Policy limits of not less than:
Each Claim	\$1,000,000
Annual Aggregate	\$1,000,000

- O. **Railroad Protective Liability Insurance:** Prior to commencing any Work within 50 feet of railroad-owned and controlled property, Contractor shall (1) endorse its commercial general liability policy with ISO CG 24 17, removing the contractual liability exclusion for work within 50 feet of a railroad, (2) purchase and maintain railroad protective liability insurance meeting the following requirements, (3) furnish a copy of the endorsement to

EJCDC® C-800, Supplementary Conditions of the Construction Contract.

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Modified to include RD edits from RUS Bulletin 1780-26 (6/16/2020).

Owner, and (4) submit a copy of the railroad protective policy and other railroad-required documentation to the railroad, and notify Owner of such submittal.

[Insert additional specific requirements, commonly set by the railroad, here.]

Railroad Protective Liability Insurance	Policy limits of not less than:
Each Claim	\$NA
Aggregate	\$NA

- P. **Unmanned Aerial Vehicle Liability Insurance:** If Contractor uses unmanned aerial vehicles (UAV—commonly referred to as drones) at the Site or in support of any aspect of the Work, Contractor shall obtain UAV liability insurance in the amounts stated; name Owner, Engineer, and all individuals and entities identified in the Supplementary Conditions as additional insureds; and provide a certificate to Owner confirming Contractor’s compliance with this requirement. Such insurance will provide coverage for property damage, bodily injury or death, and invasion of privacy.

Unmanned Aerial Vehicle Liability Insurance	Policy limits of not less than:
Each Claim	\$
General Aggregate	\$

- Q. **Other Required Insurance:** None

6.04 *Builder’s Risk and Other Property Insurance*

SC-6.04 – Supplement Paragraph 6.04 of the General Conditions with the following provisions:

- F. **Builder’s Risk Requirements:** The builder’s risk insurance must:
1. be written on a builder’s risk “all risk” policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).
    - a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.
    - b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder’s risk policies,

by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.

2. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).
4. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
5. extend to cover damage or loss to insured property while in transit.
6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.
7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.
8. include performance/hot testing and start-up, if applicable.
9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.
10. include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds." In addition to Owner, Contractor, and Subcontractors of every tier, include as insureds the following:
  - a. None
11. include, in addition to the Contract Price amount, the value of the following equipment and materials to be installed by the Contractor but furnished by the Owner or third parties:
  - a. [Here list or provide cross-reference to specific items of Owner-furnished (or third-party furnished) equipment, and purchase value; do not list items whose value is already included in the Contract Price.]

12. If debris removal in connection with repair or replacement of insured property is subject to a coverage sublimit.

- G. ***Builder's Risk and Other Property Insurance Deductibles:*** The purchaser of any required builder's risk, installation floater, or other property insurance will be responsible for costs not covered because of the application of a policy deductible.

## ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

### 7.03 *Labor; Working Hours*

SC-7.03.C – Delete Paragraph 7.03.C in its entirety, and insert the following:

- C. In the absence of any Laws or Regulations to the contrary, Contractor may perform the Work on holidays, during any or all hours of the day, and on any or all days of the week, at Contractor's sole discretion.

### 7.04 *Services, Materials, and Equipment*

SC-7.04.D – Add the following new paragraph immediately after Paragraph 7.04.C:

- D. All products must meet Domestic Preference requirements.

SC-7.04.E – Add the following new paragraph immediately after Paragraph 7.04.D:

- E. For projects utilizing a *De Minimis* waiver, Contractor shall maintain an itemized list of non-domestically produced components and ensure that the cost is less than 5% of total project cost for project up to a maximum of \$1,000,000.

### 7.05 *"Or Equals"*

SC-7.05.A – Amend the third sentence of Paragraph 7.05.A by striking out the following words:

Unless the specifications or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted.

SC-7.05.A.1.a.3 – Amend the last sentence of Paragraph a.3 by striking out "and;" and adding a period at the end of Paragraph a.3.

SC-7.05.A.1.a.4 – Delete paragraph in its entirety and insert "Deleted."

SC-7.05.B – Add the following at the end of paragraph:

Contractor shall include a Manufacturer's Certification or waiver for compliance with Domestic Preference requirements and supporting data, as applicable. Refer to Sample Language for Manufacturer's Certification provided in these Contract Documents.

### 7.06 *Substitutes*

SC-7.06.A.3.a.2 – Remove "and" from the end of paragraph.

SC-7.06.A.3.a.3 – Add "; and" to the end of paragraph.

**SC-7.06.A.3.a.4 – Add the following new paragraph immediately after Paragraph 7.06.A.3.a.3:**

**4) Comply with Domestic Preference requirements by providing Manufacturer’s Certification or waiver , as applicable. Refer to Sample Language for Manufacturers’ Certification provided in these Contract Documents.**

*7.07 Concerning Subcontractors and Suppliers*

**SC-7.07.A – Amend by adding the following to the end of the paragraph:**

**The total amount of work subcontracted by the Contractor shall not exceed fifty percent of the Contract price without prior approval from the Owner, Engineer and Agency.**

**SC-7.07.B – Delete paragraph in its entirety and insert "Deleted".**

**SC-7.07.E – Delete the second sentence of paragraph and insert the following in its place:**

**Owner may not require that Contractor use a specific replacement.**

*7.12 Record Documents*

**SC-7.12 A – Amend paragraph by adding the following after “written interpretations and clarifications,”:**

**Manufacturers’ Certifications,**

*7.16 Submittals*

**SC-7.16.A.1.c – Amend paragraph by deleting the last period and adding:**

**, including Manufacturer’s Certification, or waiver for any item in the submittal subject to Domestic Preference requirements. Refer to the Sample Language for Manufacturers’ Certification provided in these Contract Documents.**

**SC-7.16.C.9 – Add new paragraph immediately after Paragraph 7.16.C.8:**

**9. Engineer’s review and approval of a Shop Drawing or Sample shall include review of Manufacturers’ Certifications and any waivers in order to document compliance with Domestic Preference requirements, as applicable.**

*7.17 Contractor’s General Warranty and Guarantee*

**SC-7.17.F – Add new paragraph immediately after Paragraph 7.17.E:**

**F. Contractor shall certify upon Substantial Completion that all Work and Materials have complied with Domestic Preference requirements. Contractor shall provide Certification to Owner and Engineer. Refer to the Sample Language for Contractor’s Certification provided in these Contract Documents.**

## ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

### 10.03 *Resident Project Representative*

#### SC-10.03 – Add the following new paragraphs immediately after Paragraph 10.03.B:

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:
1. ***Conferences and Meetings:*** Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
  2. ***Safety Compliance:*** Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
  3. ***Liaison***
    - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
    - c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
  4. ***Review of Work; Defective Work***
    - a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
    - b. Observe whether any Work in place appears to be defective.
    - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
  5. ***Inspections and Tests***
    - a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
    - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
  6. ***Payment Requests:*** Review Applications for Payment with Contractor.
  7. ***Completion***
    - a. Participate in Engineer's visits regarding Substantial Completion.

- b. Assist in the preparation of a punch list of items to be completed or corrected.
  - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
  - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will not:
- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
  - 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
  - 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
  - 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.
  - 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
  - 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
  - 7. Authorize Owner to occupy the Project in whole or in part.

## ARTICLE 11—CHANGES TO THE CONTRACT

Delete the sentence "No suggested Supplementary Conditions in this Article."

### 11.02 *Change Orders*

**SC-11.02.C – Add new paragraph immediately after Paragraph 11.02.B:**

- C. The Engineer or Owner shall contact the Agency for concurrence on each Change Order prior to issuance. All Contract Change Orders must be concurred on (signed) by Agency before they are effective.

### 11.03 *Work Change Directives*

**SC-11.03.A.2 – Add new Paragraph 11.03.A.2 immediately after Paragraph 11.03.A, which shall be renamed Paragraph 11.03.A.1:**

2. The Engineer or Owner shall contact the Agency for concurrence on each Work Change Directive prior to issuance. Once authorized by Owner, a copy of each Work Change Directive shall be provided by Engineer to the Agency.

11.05 *Owner-Authorized Changes in the Work*

**SC-11.05.B – Add the following at the end of this paragraph:**

**For Owner-authorized changes in the Work, the Contractor will provide the Manufacturer’s Certification, or waiver, for materials subject to Domestic Preference requirements except when sole-source is specified, in which case the Engineer will provide the Manufacturer’s Certification, or waiver.**

11.09 *Change Proposals*

**SC-11.09.B.2.c – Add new paragraph immediately after Paragraph 11.09.B.2.b:**

- c. For change orders involving materials subject to Domestic Preference requirements, Contractor shall include a Manufacturer’s Certification or waiver, as applicable. Refer to the Sample Language for Manufacturer’s Certification provided in these Contract Documents.

## **ARTICLE 12—CLAIMS**

No suggested Supplementary Conditions in this Article.

## **ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK**

13.01 *Cost of the Work*

**SC-13.01.B.5.c.(2) – Supplement Paragraph 13.01.B.5.c.(2) by adding the following sentence:**

**The equipment rental rate book that governs the included costs for the rental of machinery and equipment owned by Contractor (or a related entity) under the Cost of the Work provisions of this Contract is the most current edition of [KYTC Current Equipment Rate].**

**SC-13.01.C.2 – Supplement Paragraph 13.01.C.2 by adding the following definition of small tools and hand tools:**

- a. For purposes of this paragraph, “small tools and hand tools” means any tool or equipment whose current price if it were purchased new at retail would be less than \$1000.

13.02 *Allowance*

**SC-13.02.C – Delete paragraph in its entirety and insert “Deleted”.**

13.03 *Unit Price Work*

**SC-13.03.E – Delete paragraph in its entirety and insert the following in its place:**

**E. *Adjustments in Unit Price***

- 1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:**
  - a. the extended price of a particular item of Unit Price Work amounts to [number] percent or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than [number] percent from the estimated quantity of such item indicated in the Agreement; and**
  - b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.**
- 2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.**
- 3. Adjusted unit prices will apply to all units of that item.**

**ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK**

Delete the sentence “No suggested Supplementary Conditions in this Article.

14.03 *Defective Work*

**SC-14.03.G – Add new paragraph immediately after Paragraph 14.03.F:**

- G. Installation of materials that are non-compliant with Domestic Preference requirements shall be considered defective work. Contractor should ensure that Engineer has an approved Manufacturer’s Certification, or waiver, prior to any domestic preference compliant item being delivered to the project site.**

**ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD**

15.01 *Progress Payments*

**SC-15.01.B.4 – Add the following language at the end of paragraph:**

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage or invest the retainage for the benefit of the Contractor.

**SC-15.01.B.5 – Add new paragraph immediately after Paragraph 15.01.B.4:**

5. The Application for Payment form to be used on this Project is EJCDC® C-620. The Agency must approve all Applications for Payment before payment is made.

**SC-15.01.B.6 – Add new paragraph immediately after Paragraph 15.01.B.5:**

6. By submitting an Application for Payment, based in whole or in part on furnishing equipment or materials, Contractor certifies that such equipment and materials are compliant with Domestic Preference requirements. Manufacturer's Certification for material(s) satisfy these requirements. Refer to the Sample Language for Manufacturer's Certification provided in these Contract Documents.

**SC-15.01.C.2.d – Add new paragraph immediately after Paragraph 15.01.C.2.c:**

d. The materials presented for payment in an Application for Payment comply with Domestic Preference requirements.

**SC-15.01.D.1 – Delete paragraph in its entirety and insert the following in its place:**

The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

## 15.02 *Contractor's Warranty of Title*

**SC-15.02.A – Amend paragraph by striking out the following text: "7 days after."**

## 15.03 *Substantial Completion*

**SC-15.03.A – Modify by adding the following after the last sentence:**

Contractor shall also submit the Contractor's Certification of Compliance certifying that to the best of the Contractor's knowledge and belief all Iron and Steel products, Manufactured Products, and Construction Materials proposed in the Shop Drawings, Change Orders, and Partial Payment Estimates, and those installed for the Project, comply with Domestic Preference requirements.

**SC-15.03.B – Add the following new subparagraph to Paragraph 15.03.B:**

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable

to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

## **ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

No suggested Supplementary Conditions in this Article.

## **ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES**

### *17.01 Methods and Procedures*

**SC-17.02 – Add the following new paragraph immediately after Paragraph 17.01.**

#### **17.02 Arbitration**

- A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of \$100,000 or less will be settled in accordance with the American Arbitration Association’s supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.**
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.**
- C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.**
- D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.**
- E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.**
- F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party**

to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.

- G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;
  2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;
  3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and
  4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.
- H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

## ARTICLE 18—MISCELLANEOUS

### 18.08 *Assignment of Contract*

SC-18.08 – Add the following new paragraph immediately after Paragraph 18.08.A:

- B. The contract dated [date] between Owner as “buyer” and [identify seller] as “seller” for procurement of goods and special services (“procurement contract”) [is hereby] [will be] assigned to Contractor by Owner, and Contractor [accepts] [will accept] such assignment. A form documenting the assignment is attached as an exhibit to this Contract.
1. This assignment will occur on the [Effective Date of the Contract], and will relieve the Owner as “buyer” from all further obligations and liabilities under the procurement contract.
  2. Upon assignment, the “seller” will be a Subcontractor or Supplier of the Contractor, and Contractor will be responsible for seller's performance, acts, and omissions, as set

forth in Paragraph 7.07 of the General Conditions just as Contractor is responsible for all other Subcontractors and Suppliers.

3. Notwithstanding this assignment, all performance guarantees and warranties required by the procurement contract will continue to run for the benefit of the Owner and, in addition, for the benefit of the Contractor.
4. Except as noted in the procurement contract, all rights, duties and obligations of Engineer to “buyer” and “seller” under the procurement contract will cease [upon the assignment to Contractor].

SC-18.11 – Add new paragraph immediately after Paragraph 18.10:

**18.11 Tribal Sovereignty**

A. No provision of this Agreement will be construed by any of the signatories as abridging or debilitating any sovereign powers of the [*insert name of Tribe*] Tribe; affecting the trust-beneficiary relationship between the Secretary of the Interior, Tribe, and Indian landowner(s); or interfering with the government-to-government relationship between the United States and the Tribe.

SC-19 – Add the following new Article 19 immediately after Article 18:

**ARTICLE 19—FEDERAL REQUIREMENTS**

**19.01 Agency Not a Party**

A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees, is a party to this Contract.

**19.02 Contract Approval**

A. Owner and Contractor will furnish Owner’s attorney such evidence as required so that Owner’s attorney can complete and execute the “Certificate of Owner’s Attorney” before Owner submits the executed Contract Documents to Agency for approval. Refer to Certificate of Owner’s Attorney and Agency Concurrence provided in these Contract Documents.

B. Agency concurrence is required on both the Bid and the Contract before the Contract is effective.

**19.03 Conflict of Interest**

A. Contractor may not knowingly contract with a Supplier or Manufacturer if the individual or entity who prepared the Drawings and Specifications has a corporate or financial affiliation with the Supplier or Manufacturer. Owner’s officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest or other interest in or a tangible personal benefit from the Contractor. Owner’s officers, employees,

or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

#### **19.04        *Gratuities***

A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

B. In the event this Contract is terminated as provided in paragraph 19.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

#### **19.05        *Small, Minority and Women's Businesses***

A. If Contractor intends to let any subcontracts for a portion of the work, Contractor will take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. Affirmative steps will include:

1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

#### **19.06        *Anti-Kickback***

A. Contractor shall comply with the Copeland Anti-Kickback Act (40 USC 3145) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall

be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

**19.07 *Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended***

A. Contractor to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

**19.08 *Equal Employment Opportunity***

A. The Contract is considered a federally assisted construction contract. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

**19.09 *Byrd Anti-Lobbying Amendment (31 U.S.C. 1352)***

A. Contractors that apply or bid for an award exceeding \$100,000 must file the required certification (RD Instruction 1940-Q Exhibit A-1). The Contractor certifies to the Owner and every subcontractor certifies to the Contractor that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining the Contract if it is covered by 31 U.S.C. 1352. The Contractor and every subcontractor must also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

**19.10 *Environmental Requirements***

A. When constructing a Project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental conditions:

1. Wetlands – When disposing of excess, spoil, or other Construction Materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
2. Floodplains – When disposing of excess, spoil, or other Construction Materials on public or private property, Contractor shall not fill in or otherwise convert 100-year floodplain areas (Standard Flood Hazard Area) delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, e.g., alluvial soils on NRCS Soil Survey Maps.

**3. Historic Preservation - Applicants shall ensure that Contractors maintain a copy of the following inadvertent discovery plan onsite for review:**

**a. If during the course of any ground disturbance related to any Project, any post review discovery, including but not limited to, any artifacts, foundations, or other indications of past human occupation of the area are uncovered, shall be protected by complying with 36 CFR § 800.13(b)(3) and (c) and shall include the following:**

**i. All Work, including vehicular traffic, shall immediately stop within a 50 ft. radius around the area of discovery. The Contractor shall ensure barriers are established to protect the area of discovery and notify the Engineer to contact the appropriate RD personnel. The Engineer shall engage a Secretary of the Interior (SOI) qualified professional archeologist to quickly assess the nature and scope of the discovery; implement interim measures to protect the discovery from looting and vandalism; and establish broader barriers if further historic and/or precontact properties, can reasonably be expected to occur.**

**ii. The RD personnel shall notify the appropriate RD environmental staff member, the Federal Preservation Officer (FPO), and State Historic Preservation Office (SHPO) immediately. Indian tribe(s) or Native Hawaiian Organization (NHOs) that have an interest in the area of discovery shall be contacted immediately. The SHPO may require additional tribes or NHOs who may have an interest in the area of discovery also be contacted. The notification shall include an assessment of the discovery provided by the SOI qualified professional archeologist.**

**iii. When the discovery contains burial sites or human remains, the Contractor shall immediately notify the appropriate RD personnel who will contact the RD environmental staff member, FPO, and the SHPO. The relevant law enforcement authorities shall be immediately contacted by onsite personnel to reduce delay times, in accordance with tribal, state, or local laws including 36 CFR Part 800.13; 43 CFR Part 10, Subpart B; and the Advisory Council on Historic Preservation's Policy Statement Regarding treatment of Burial Sites, Human Remains, or Funerary Objects (February 23, 2007).**

**iv. When the discovery contains burial sites or human remains, all construction activities, including vehicular traffic shall stop within a 100 ft. radius of the discovery and barriers shall be established. The evaluation of human remains shall be conducted at the site of discovery by a SOI qualified professional. Remains that have been removed from their primary context and where that context may be in question**

may be retained in a secure location, pending further decisions on treatment and disposition. RD may expand this radius based on the SOI professional’s assessment of the discovery and establish broader barriers if further subsurface burial sites, or human remains can reasonably be expected to occur. RD, in consultation with the SHPO and interested tribes or NHOs, shall develop a plan for the treatment of native human remains.

v. Work may continue in other areas of the undertaking where no historic properties, burial sites, or human remains are present. If the inadvertent discovery appears to be a consequence of illegal activity such as looting, the onsite personnel shall contact the appropriate legal authorities immediately if the landowner has not already done so.

vi. Work may not resume in the area of the discovery until a notice to proceed has been issued by RD. RD shall not issue the notice to proceed until it has determined that the appropriate local protocols and consulting parties have been consulted.

vii. Inadvertent discoveries on federal and tribal land shall follow the processes required by the federal or tribal entity.

**4. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.**

**5. Mitigation Measures – The following environmental mitigation measures are required on this Project:**

Mitigation Measure	Supporting Document / Checklist Item	Notes
Erosion and sediment control during construction	<b>71 – DOW Engineer Approval of Plans &amp; Specs</b>	Erosion control details included in approved plans
Stream/wetland protection	<b>71 – DOW Engineer Approval of Plans &amp; Specs</b>	Construction near waterways must follow approved protection measures

Mitigation Measure	Supporting Document / Checklist Item	Notes
Dust, noise, and air quality management	<b>71 – DOW Engineer Approval of Plans &amp; Specs</b>	Contractor to implement BMPs as shown in approved plans
Environmental emergency response (spills, contamination)	<b>89 – Vulnerability Assessment &amp; Emergency Response Plan</b>	Plan outlines actions for environmental incidents
Operation and maintenance measures to prevent environmental harm	<b>46 – Applicant’s O&amp;M Plan</b>	Includes routine environmental safeguards for system operation
Site access and construction on environmentally sensitive property	<b>80 – Property Option/Deed</b>	Ensures mitigation measures are feasible based on site control
RD review and enforcement of mitigation	<b>73 – RD Engineer Approval of Plans &amp; Specs</b>	Confirms that mitigation measures are incorporated and enforceable

**19.11 Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708)**

A. Where applicable, for contracts awarded by the Owner in excess of \$100,000 that involve the employment of mechanics or laborers, the Contractor will comply with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, the Contractor will compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic will be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

**19.12 Debarment and Suspension (Executive Orders 12549 and 12689)**

A. A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and

Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

**19.13 Procurement of recovered materials**

A. The Contractor will comply with 2 CFR Part 200.322, “Procurement of recovered materials.”

**19.14 Domestic Preference**

A. Build America, Buy America Act (BABAA). All Iron and Steel Products, Manufactured Products, and Construction Materials used in this project must comply with the Build America, Buy America Act (BABAA) requirements mandated by Title IX of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58, §§ 70901-70953. Aggregates such as stone, sand, or gravel do not apply to BABAA

B. The following waivers apply to this Contract:

1. BABAA De Minimis, Small Grants and Minor Components
2. [add project specific waivers as applicable].

**19.15 Telecommunications and Video Surveillance Services or Equipment Prohibitions**

A. The telecommunication and video surveillance services and equipment prohibitions under 2 CFR 200.216 apply to this contract. This contract may not be used to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. Covered telecommunications equipment is:

1. Telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
2. Video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
3. Telecommunications or video surveillance services provided by such entities or using such equipment.
4. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

**EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE**

<b>Item</b>	<b>Electronic Documents</b>	<b>Transmittal Means</b>	<b>Data Format</b>	<b>Note (1)</b>
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	
<b>Notes</b>				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
<b>Key</b>				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)			
PDF	Portable Document Format readable by Adobe® Acrobat Reader Version <b>{number}</b> or later			
DWG	Autodesk® AutoCAD .dwg format Version <b>{number}</b>			
DOC	Microsoft® Word .docx format Version <b>{number}</b>			
EXC	Microsoft® Excel .xls or .xml format Version <b>{number}</b>			
DB	Microsoft® Access .mdb format Version <b>{number}</b>			

**EXHIBIT B—FORESEEABLE BAD WEATHER DAYS**

Month	Number of Foreseeable Bad Weather Days in Month Based on Precipitation as Rain Equivalent (inches) (1)	Ambient Outdoor Air Temperature (degrees F)	
		Number of Foreseeable Bad Weather Days in Month Based on Low Temperature (at 11:00 a.m.)	Number of Foreseeable Bad Weather Days in Month Based on High Temperature (at 3:00 p.m.)
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
Notes:			
1. Two inches of sleet equal one inch of rain. Five inches of wet, heavy snow equal one inch of rain. Fifteen inches of “dry” powder snow equals one inch of rain.			

## **EXHIBIT C—GEOTECHNICAL BASELINE REPORT SUPPLEMENT TO THE SUPPLEMENTARY CONDITIONS**

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### **1.01—Definitions**

SC-1.01—Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

- 1.—~~Geotechnical Baseline Report (GBR)—The interpretive report prepared by or for Owner regarding subsurface conditions at the Site, and containing specific baseline geotechnical conditions that may be anticipated or relied upon for bidding and contract administration purposes, subject to the controlling provisions of the Contract, including the GBR’s own terms. The GBR is a Contract Document.~~
- 2.—~~Geotechnical Data Report (GDR)—The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner in support of the Geotechnical Baseline Report. The GDR’s content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. The GDR does not include an interpretation of the data. If opinions, or interpretive or speculative non-factual comments or statements appear in a document that is labeled a GDR, such opinions, comments, or statements are not operative parts of the GDR and do not have contractual standing. Subject to that exception, the GDR is a Contract Document.~~

### **5.03—Subsurface and Physical Conditions**

SC 5.03—Delete Paragraph 5.03 in its entirety and replace with the following:

#### **5.03—Subsurface and Physical Conditions**

A.—~~Reports and Drawings: The Supplementary Conditions hereby identify:~~

- 1.—~~those reports of explorations and tests of subsurface conditions at or adjacent to the Site (other than any Geotechnical Data Report or Geotechnical Baseline Report) that contain Technical Data. Such reports are as follows:~~
  - a.—~~Report Title: [Exact title of the document]~~
  - b.—~~Date of Report: [Date report was issued]~~
  - c.—~~Technical Data in report upon which Contractor may rely: [Identify Technical Data (for example, “Boring Log, Test Site 3”) and specify page number or other reference where Technical Data is located within the report. List multiple Technical Data line items per entry when appropriate.]~~
- 2.—~~those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data. Such drawings are as follows:~~
  - a.—~~Drawings Title: [Exact title of the drawings]~~

- b. ~~Date of Drawings: [Date drawings were issued]~~
- c. ~~Technical Data in drawings upon which Contractor may rely: [Identify Technical Data (for example, "Plan View of Rock Outcroppings") in drawings, or state "All information in drawing" if entire content is Technical Data entitled to reliance; and specify drawing number, page number, or other reference where the Technical Data is located. List multiple Technical Data line items per entry when appropriate.]~~
3. Contractor may examine copies of reports and drawings identified immediately above that were not included with the Bidding Documents at **[location]** during regular business hours, or may request copies from Engineer, at the cost of reproduction.
- B. ~~Underground Facilities: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph SC 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.~~
- C. ~~Reliance by Contractor on Technical Data Authorized: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.~~
- D. ~~Limitations of Other Data and Documents: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:~~
1. ~~the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or~~
  2. ~~other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or~~
  3. ~~the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or~~
  4. ~~any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.~~
- E. ~~Geotechnical Baseline Report~~
1. ~~This Contract contains a Geotechnical Baseline Report ("GBR"), identified as follows: **[Example: Geotechnical Baseline Report for Northwest Interceptor, dated February 12, 2013, prepared by ABC Geotechnical Engineers, Inc., Sacramento, California]**. This Contract also contains a Geotechnical Data Report (GDR), identified as follows: **[Example: Geotechnical Data Report for Northwest Interceptor, dated June 15, 2012, prepared by ABC Geotechnical Engineers, Inc., Sacramento, California]**.~~

- ~~2. The GBR and GDR are incorporated as Contract Documents. The GBR and GDR are to be used in conjunction with other Contract Documents, including the Drawings and Specifications. If there is a conflict between the terms of the GBR and the GDR, the GBR's terms prevail.~~
- ~~3. The GBR describes certain select subsurface conditions that are anticipated to be encountered by Contractor during construction in specified locations (referred to here in the Supplementary Conditions as "Baseline Conditions"). These may include ground, geological, groundwater, and other subsurface geotechnical conditions, and baselines of anticipated Underground Facilities or subsurface structures.~~
- ~~4. The Baseline Conditions will be used to assist in the administration of the Contract's differing site conditions clause at locations where subsurface conditions have been baselined. If a condition is baselined in the GBR, then only the pertinent Baseline Conditions will be used to determine whether there is a differing site condition; and no other indication of that condition in the Contract Documents or Technical Data, or of a condition that describes, quantifies, or measures a similar characteristic of the subsurface, will be used for the differing site condition determination.~~
- ~~5. The Baseline Conditions will not be used to make differing site conditions determinations at locations that have not been baselined in the GBR, or at any location with respect to subsurface conditions that the Baseline Conditions do not address. If Underground Facilities or Hazardous Environmental Conditions are expressly addressed in the Baseline Conditions, then comparison to such Baseline Conditions will be the primary means of determining (a) whether an Underground Facility was shown or indicated with reasonable accuracy, as provided in Paragraph 5.05 of the General Conditions, or (b) whether a Hazardous Environmental Condition was shown or indicated in the Contract Documents as indicated in Paragraph 5.06.H of the General Conditions. As indicated in Paragraph SC 5.04 below, the GDR will be the primary resource for differing site conditions determinations in cases in which the GBR is inapplicable.~~
- ~~6. The descriptions of subsurface conditions provided in the GBR are based on geotechnical investigations, laboratory tests, interpretation, interpolation, extrapolation, and analyses. Neither Owner, Engineer, nor any geotechnical or other consultant warrants or guarantees that actual subsurface conditions will be as described in the GBR, nor is the GBR intended to warrant or guarantee the use of specific means or methods of construction.~~
- ~~7. The behavior of the ground during construction depends substantially upon the Contractor's selected means, methods, techniques, sequences, and procedures of construction. If ground behavior conditions are baselined in the GBR, they are based on stated assumptions regarding construction means and methods.~~
- ~~8. The GBR will not reduce or relieve Contractor of its responsibility for the planning, selection, and implementation of safety precautions and programs incident to Contractor's means, methods, techniques, sequences, and procedures of construction, or to the Work.~~

~~5.04—Differing Subsurface or Physical Conditions~~

~~SC 5.04—Delete Paragraph 5.04 in its entirety and replace with the following:~~

~~5.04—Differing Subsurface or Physical Conditions~~

~~A.—Notice: If Contractor believes that any subsurface condition that is uncovered or revealed at the Site:~~

- ~~1.—differs materially from conditions shown or indicated in the GBR; or~~
- ~~2.—differs materially from conditions shown or indicated in the GDR, to the extent the GBR is inapplicable; or~~
- ~~3.—differs materially from conditions shown or indicated in Contract Documents other than the GBR or GDR, to the extent the GBR and GDR are inapplicable; or~~
- ~~4.—to the extent the GBR and GDR are inapplicable, is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or~~
- ~~5.—to the extent the GBR and GDR are inapplicable, is of such a nature as to require a change in the Drawings or Specifications; or~~
- ~~6.—to the extent the GBR and GDR are inapplicable, is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;~~

~~then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.~~

~~B.—Engineer’s Review: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner’s obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph SC 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor’s resumption or continuation of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer’s findings, conclusions, and recommendations.~~

~~C.—Owner’s Statement to Contractor Regarding Site Condition: After receipt of Engineer’s written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption or continuation of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer’s written findings, conclusions, and recommendations, in whole or in part.~~

~~D.— *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.~~

~~E.— *Possible Price and Times Adjustments*~~

~~1.— Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:~~

~~a.— such condition must fall within any one or more of the categories described in Paragraph SC 5.04.A;~~

~~b.— with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03 of the General Conditions; and~~

~~c.— Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.~~

~~2.— Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:~~

~~a.— Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or~~

~~b.— the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or~~

~~c.— Contractor failed to give the written notice as required by Paragraph SC 5.04.A.~~

~~3.— If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment must be set forth in a Change Order.~~

~~4.— Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.~~

~~F.— *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 of the General Conditions governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 of the General Conditions governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of~~

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Exhibit C—Geotechnical Baseline Report Supplement to the Supplementary Conditions.

EJCDC® C-800, Supplementary Conditions of the Construction Contract.

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Modified to include RD edits from RUS Bulletin 1780-26 (6/16/2020).

~~Paragraphs SC 5.03 and SC 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.~~



## SPECIAL CONDITIONS

### 1. PROJECT FUNDING

CONTRACTORS bidding the project should be aware that funding is provided by Boyle County Fiscal Court's ARPA Grant, and Rural Development Loans.

There may be a delay of approximately 30 days for payment to the CONTRACTOR.

In order to try to minimize delays in funding availability, it is anticipated that quantities shall be cut off approximately on the 5th of each month. The CONTRACTOR shall be responsible for preparing partial payment estimates, reviewing estimates/quantities with the Resident Observer (RO), obtaining the RO's signature on the estimate and forwarding all documents (signed by the CONTRACTOR and RO) to the ENGINEER by approximately the 10<sup>th</sup> of the month. The OWNER and ENGINEER will in no way be held responsible for delays in payments to the CONTRACTOR if this schedule is not met.

It is anticipated that the monthly project progress meetings will be held on the third Thursday of each month at 11:00 AM at the OWNER's business office.

This schedule is subject to change in order to facilitate timely payment to the CONTRACTOR. Any changes to this procedure will be discussed with the selected CONTRACTOR at the Pre-Construction Conference.

### 2. PROJECT CONSTRUCTION OBSERVATION

The construction observation services shall be provided by the ENGINEER. The Observer shall be on the project as much as possible; however, due to meetings, etc. there may be times when he is not with the crew. Therefore, the CONTRACTOR shall not backfill any main lines and/or appurtenances, structures or other installed infrastructure until the Observer has seen and accepted the work for payment.

Any work backfilled without the Observer's knowledge and consent shall not be allowed for payment to the CONTRACTOR and shall be uncovered for inspection at no additional cost to the OWNER or ENGINEER.

3. UNCLASSIFIED EXCAVATION

All excavation is unclassified. No extra payment will be allowed for rock excavation of any kind. It is the CONTRACTOR's responsibility to make any additional investigations to determine depth, location or competency of rock within the project area.

4. CONFLICTING SECTIONS/STATEMENTS IN CONTRACT DOCUMENTS

a. General

It shall be noted that if any provisions in these Contract Documents is in conflict and/or is inconsistent with any other section or provisions, then the most stringent shall apply per the interpretation of the ENGINEER and/or OWNER.

b. Hold Period on Bids

All bids shall remain valid for a period of 90 days. Any reference to a lesser period of time is incorrect.

5. CONTRACTOR'S INSURANCE CERTIFICATE

The following wording for the cancellation clause on the insurance certificate is required:

"Should any of the above described policies be canceled before the expiration date thereof, the issuing company will mail 15 days written notice to the certificate holder named to the left."

6. FEDERAL/STATE/LOCAL REGULATIONS

The CONTRACTOR shall abide by all local and state laws or ordinances to the extent that such requirements do not conflict with federal laws or regulations. Compliance with any and all applicable laws and/or regulations is strictly the CONTRACTOR's responsibility.

7. SILTATION AND SOIL EROSION

The CONTRACTOR shall make every effort during construction to minimize siltation and soil erosion and comply with all local and state codes that pertain to this project. Any applicable permits shall be the CONTRACTOR's responsibility to obtain, at no additional cost to the OWNER.

8. PRIORITY OF CONSTRUCTION

The CONTRACTOR shall proceed from the beginning point of a line and start installing main and appurtenances and placing sections of line in service, where possible, and continuing to the end of that line.

Jumping or skipping around laying scattered sections of main shall not be permitted. When a road is completed, cleanup must commence immediately. The OWNER will hold payment on sections due to skipping; the intent is to proceed continuously toward the end of the line.

9. ROUGH CLEANUP

- a. Rough cleanup shall be performed on a daily basis concurring with the daily rate of production for pay items, amounts and/or quantities listed in the schedule of values and/or Bid Schedule.
- b. The CONTRACTOR is to provide sufficient labor and equipment for clean up as to not impede production schedules.
- c. Rough cleanup shall be defined as follows:
  1. All open ditches shall be backfilled on a daily basis.
  2. Debris (rocks, roots, timber, etc.) shall be removed from the job site on a daily basis. This material may be stockpiled with the consent of the OWNER and the ENGINEER in designated locations. Any such locations shall be arranged by the CONTRACTOR with the written consent of the property owner.
  3. Remaining backfill material (soil) shall be windrowed back on top of the ditch line, compacted and leveled giving consideration for settlement.
- d. At the direction of the ENGINEER, OWNER, or their appointed representatives, the CONTRACTOR shall readdress areas if identified as not being adequate in the initial rough cleanup process.

10. QUANTITIES OF MATERIALS

The quantities of materials listed on the Bid Schedule are estimates only and are subject to changes in the field. The CONTRACTOR shall verify these quantities before ordering materials. In the event of an under run or over run of materials, the CONTRACTOR shall

be responsible for any shipping and/or restocking fees.

11. SHOP DRAWING REVIEW

Throughout these Specifications, all reference to Shop Drawing review by the ENGINEER, should read fourteen (14) days, not 30 days or any other number of days more or less than 14.

12. CONSTRUCTION PERIOD – ADVERSE WEATHER DAYS

The CONTRACTOR is to note that there are adverse weather days included within the allotted construction time. The number of days per month already included in the Construction Period is listed below. Adverse weather conditions should be expected to be equal to or less than those listed below per month, as these would be considered normal conditions and not subject to additional time for construction due to adverse weather. Any documented adverse weather conditions beyond the amount listed below may be considered, at the request of the CONTRACTOR, for additional construction time. Adverse weather for the purposes of this Contract shall be defined as days in which precipitation exceeds 0.1” and/or the average temperature is below 32 degrees F. Days not meeting these criteria during daylight hours shall not be considered as adverse weather days.

If the CONTRACTOR’s normal operations for the project do not include weekend and holiday work, then those days may not be counted as adverse weather days, regardless of actual recorded weather conditions. Adverse weather conditions on weekends and holidays may be considered by the OWNER for a contract time adjustment provided that the CONTRACTOR has provided a minimum of four (4) working days notice to the RO, ENGINEER and OWNER of his intention to work on a weekend and/or holiday.

Any day that the CONTRACTOR mobilizes forces to the project site and the RO is required to be on site for two (2) hours or longer shall not be considered for a claim of adverse weather. Any day that the CONTRACTOR chooses not to work due to weather or site conditions, but fails to notify the RO in a timely manner, shall not be considered for a claim of adverse weather.

The CONTRACTOR is required to report any days missed due to adverse weather conditions in the previous month at the monthly Progress Meetings. No days other than those reported by the CONTRACTOR at monthly Progress Meetings shall be considered for adverse weather time extensions.

The contract documents establish the documentation requirements for adverse weather days claims by the CONTRACTOR. Any claims not in accordance with those requirements

shall not be considered.

The CONTRACTOR and the RO shall both record weather conditions at the project site on a daily basis and shall reconcile their notes and records at least weekly.

The normal adverse weather days are calculated using data from the National Oceanic and Atmospheric Administration and are as follows:

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
15	12	9	8	8	7	8	7	6	5	7	11

Days in which the CONTRACTOR does not attempt to work, and which are not satisfactorily documented as an adverse weather day, will not be considered in any request for construction time extension by the CONTRACTOR.

13. ROADWAY/DRIVEWAY CROSSINGS

All roadways or driveways crossed by installed lines shall be bored if the surface is not gravel. All State or County maintained roads shall have steel casing pipe installed by bore, unless otherwise shown on the plans. All private driveways with non-gravel surfaces shall be free bored without casing pipe, if possible.

The CONTRACTOR shall attempt to bore all non-gravel private driveways without casing pipe. If it is not possible to bore the driveway without casing pipe, the CONTRACTOR may then utilize steel casing pipe for the driveway bore. If the CONTRACTOR does not first attempt to bore without casing pipe, the CONTRACTOR shall be paid for a driveway bore without casing pipe, regardless of whether casing pipe was installed, or not.

Asphalt or concrete driveways shall be bored in all instances, unless prior approval is given, in writing, by the property owner and the OWNER.

County Roads may not be open cut nor the paving disturbed in any way without prior written approval from the Fiscal Court.

Under no circumstances shall any State roads be disturbed, crossed or cut without prior written approval from the Kentucky Transportation Cabinet.

Any gravel driveway or roadway crossed shall be backfilled entirely with crushed stone and compacted accordingly to prevent future settlement. The CONTRACTOR will be responsible for making any requested repairs to any driveway or roadway crossed on the Project throughout the one-year warranty period, to the satisfaction of the property owner and the OWNER.

14. ITEMS DELETED, REDUCED AND/OR INCREASED

The OWNER reserves the right to delete any bid item or, in the case of unit price items, delete, reduce or increase the quantities involved. Bidders shall be aware of this possibility and shall base their bids accordingly.

15. SPECIAL PROVISIONS - CLEANUP

The CONTRACTOR shall take particular notice of sections of the Contract Documents pertaining to project cleanup. It is the OWNER's intent to strictly enforce these items.

16. PROPERTY OWNER RELEASE

The OWNER reserves the right to require the CONTRACTOR to obtain a written, signed Release from any or all property owners impacted by the Work prior to final payment to the CONTRACTOR. The Release form is included in Appendix 1 and may be required from all property owners impacted by the project, regardless of whether work was performed on right-of-way or on easements.

17. VIDEOTAPING

The CONTRACTOR shall not mobilize any equipment to the site prior to presenting the ENGINEER and OWNER with fully functional DVD or USB Drive copies of the project area conditions prior to construction activities, per the technical specifications. Failure of the CONTRACTOR to provide a satisfactory video shall not prevent the construction time to start and shall not be cause for a time extension to the CONTRACTOR.

Any construction work prior to receipt and verification of the functionality of the video by the OWNER and/or ENGINEER shall not be eligible for payment to the CONTRACTOR.

Any work added to the Project via Change Order, or other means, shall also be videotaped per the specifications prior to mobilization by the CONTRACTOR to that area. Fully functional copies of the pre-construction video of added areas shall be provided to the ENGINEER and OWNER prior to mobilization.

18. BUILDER'S RISK INSURANCE

The CONTRACTOR shall secure "All Risk" type Builder's Risk Insurance for Work to be performed. Unless specifically authorized by the OWNER, the amount of such insurance

shall not be less than the Contract Price totaled in the awarded Bid. The policy shall cover not less than the losses due to fire, flood, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft and smoke during the Contract Time, and until the Work is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, the ENGINEER and the OWNER. If the Builder's Risk Insurance secured by the CONTRACTOR excludes coverage for flood damage, the CONTRACTOR shall secure the maximum amount of Federal Flood Insurance available for the Contract.

Builder's Risk Insurance shall include coverage of any stored materials for which the CONTRACTOR intends to request payment. Documentation of Builder's Risk Insurance shall be provided by the CONTRACTOR along with the Certificate of Insurance required prior to Award.

19. MBE/WBE REQUIREMENTS AS IT PERTAINS TO ALL FUNDING AGENCIES

The CONTRACTOR shall note that the OWNER intends to expedite the Award of this Contract after the lowest responsive and responsible Bidder is determined. Therefore, any and all paperwork that may be required, of the CONTRACTOR and/or any Subcontractors on the Project, with regard to MBE/WBE, or similar, requirements shall be expedited and commenced immediately upon being notified that they are the lowest responsible Bidder.

20. APPROVED EQUAL CLAUSE

- a. Any reference to a specific equipment brand name within the Specifications or Drawings shall be deemed to include "or approved equal".
- b. Delete any statement such as "No other manufacturers are acceptable" within the Specifications.

21. DISPOSAL OF TRENCH WATER

The CONTRACTOR shall not dispose of any trench water by allowing it to enter any sanitary sewer system without first obtaining written permission to do so from the owner of said system. Documentation of written permission must be provided to the ENGINEER and OWNER.

22. ELECTRICAL SERVICE(S)

The CONTRACTOR is responsible for providing all electrical service for the Project, either temporary or permanent. The CONTRACTOR shall coordinate obtaining all electrical services and required permits, and pay all fees to applicable service providers or other

agencies. Any cost of providing electrical service access to an unserved area and/or upgrade of service required for the project is the CONTRACTOR's responsibility and is included in the Bid. Contact information for local service providers may be obtained from the OWNER upon request.

23. PERMIT COMPLIANCE

Compliance with any and all permits related to the Project is strictly the responsibility of the CONTRACTOR. This includes, but is not limited to, Transportation Cabinet Encroachment Permits, Railroad Permits, Division of Water Permits and/or NPDES Permits that may apply to the Work. Copies of Permits previously obtained for the Project are either included in applicable Appendices of the Contract Documents, or are available from the OWNER and/or ENGINEER for review upon request.

24. PREVAILING WAGE RATES

Prevailing wage rates may apply to this Project and are included in the Contract Documents, if so. It is strictly the CONTRACTOR's responsibility to comply with Wage Rates requirements and to provide written documentation of compliance upon request. The ENGINEER is not responsible for monitoring compliance by the CONTRACTOR.

25. POST CONSTRUCTION VIDEO INSPECTION

The CONTRACTOR shall provide the OWNER and ENGINEER a digital copy of a CCTV Inspection of the interior of any and all gravity sewer lines installed in this Project. The CONTRACTOR shall repair any defects found prior to the final acceptance of the Work by the OWNER. Cost of post construction CCTV inspection and report shall be included in the CONTRACTOR's Bid. No additional compensation shall be awarded the CONTRACTOR for post construction inspection or any related repairs/corrections/mitigation measures required.

26. GENERAL

a. Reasonable care shall be taken by the CONTRACTOR during construction to avoid damage to existing vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees that receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing. Property owners shall be notified by the CONTRACTOR prior to any alteration to existing trees and/or landscaping on their property.

- b. CONTRACTOR shall implement Best Management Practices as described in the Kentucky Best Management Practices for Construction Activities prepared by Division of Conservation and Division of Water, Natural Resources and Environmental Protection Cabinet.

27. RECORD DRAWINGS

The CONTRACTOR shall maintain a set of plans with current mark ups showing any changes made in the field to the location, orientation, etc. of any element of the project during construction. This set of plans shall be provided to the ENGINEER at the conclusion of the project and shall be used by the ENGINEER in developing the most accurate set of construction Record Drawings possible for the OWNER. Upon request by the CONTRACTOR, the set of plans shall be returned.

28. CASING PIPE SURVEY REQUIREMENTS

The CONTRACTOR shall provide a licensed land surveyor in the State of Kentucky to determine the horizontal and vertical location of all casing pipes under State and Federal highways on projects involving Kentucky Transportation Cabinet Utility Relocations. This information shall be provided to the ENGINEER along with the CONTRACTOR's field mark ups of the drawings to assist in the development of accurate Record Drawings.

29. CONTRACTOR SURVEY REQUIREMENTS

At the conclusion of a project involving storm or sanitary sewers, the CONTRACTOR shall provide the ENGINEER with electronic survey data from a licensed Professional Land Surveyor in the state of Kentucky. The provided data shall include horizontal and elevation data for the rim, invert and any other penetrations of all structures involved in the project. The data shall be in a format and coordinate system stipulated by the ENGINEER and shall be provided to the ENGINEER prior to final payment to the CONTRACTOR.

30. PIPELINE TESTING

CONTRACTOR shall pressure test sections of water line or force main no greater than 3,500 feet in length. Gravity sewers shall be tested in sections between manholes.

Water main shall be tested in accordance with the pressures listed in the table below and the contents of the technical specifications.

<u>Pipe Classification</u>	<u>Test Pressure</u>
PVC SDR-21, Cl. 200	185 psi
PVC SDR-17, Cl. 250	215 psi
PVC C-900 DR14, Cl. 200	250 psi
Ductile Iron, Cl. 350	350 psi

31. RETAINAGE

Retainage shall be withheld in the amount of the 10% of the total amount of completed work to date, plus stored materials, on each Pay Request up until Substantial Completion. Upon Substantial Completion, the CONTRACTOR may request a reduction in Retainage to 5%. If work is satisfactory to date, the OWNER may consider the request. However, it is understood that the OWNER is under no obligation to grant such request. If granted, no further reduction of retainage shall be considered prior to the final payment to the CONTRACTOR. Further, the OWNER reserves the right to restore retainage to the full 10% at any time if the CONTRACTOR's work ceases to be satisfactory to the OWNER.

**WORK CHANGE DIRECTIVE NO.: [Number of Work Change Directive]**

Owner: **Parksville Water District** Owner's Project No.:  
Engineer: **HMB Professional Engineers, LLC.** Engineer's Project No.: **4337.00**  
Contractor: Contractor's Project No.:  
Project:  
Contract Name:  
Date Issued: Effective Date of Work Change Directive:

Contractor is directed to proceed promptly with the following change(s):

Description:

**[Description of the change to the Work]**

Attachments:

**[List documents related to the change to the Work]**

Purpose for the Work Change Directive:

**[Describe the purpose for the change to the Work]**

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

**Notes to User—Check one or both of the following**

Non-agreement on pricing of proposed change.  Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: \$ \_\_\_\_\_ **[increase] [decrease] [not yet estimated].**

Contract Time: \_\_\_\_\_ days **[increase] [decrease] [not yet estimated].**

Basis of estimated change in Contract Price:

Lump Sum  Unit Price  Cost of the Work  Other

Recommended by Engineer

Authorized by Owner

By:

\_\_\_\_\_

\_\_\_\_\_

Title:

\_\_\_\_\_

\_\_\_\_\_

Date:

\_\_\_\_\_

\_\_\_\_\_



**CHANGE ORDER NO.: [Number of Change Order]**

Owner:	Owner's Project No.:
Engineer:	Engineer's Project No.:
Contractor:	Contractor's Project No.:
Project:	
Contract Name:	
Date Issued:	Effective Date of Change Order:

The Contract is modified as follows upon execution of this Change Order:

Description:

**[Description of the change]**

Attachments:

**[List documents related to the change]**

Change in Contract Price	Change in Contract Times [State Contract Times as either a specific date or a number of days]
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
<b>[Increase] [Decrease]</b> from previously approved Change Orders No. 1 to No. <b>[Number of previous Change Order]</b> : \$ _____	<b>[Increase] [Decrease]</b> from previously approved Change Orders No.1 to No. <b>[Number of previous Change Order]</b> : Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
<b>[Increase] [Decrease]</b> this Change Order: \$ _____	<b>[Increase] [Decrease]</b> this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

Recommended by Engineer (if required)

Accepted by Contractor

By: \_\_\_\_\_

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

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

Authorized by Owner

Approved by Funding Agency (if applicable)

By: \_\_\_\_\_

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

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



**FIELD ORDER NO.: [Number of Field Order]**

Owner: \_\_\_\_\_ Owner's Project No.: \_\_\_\_\_  
Engineer: \_\_\_\_\_ Engineer's Project No.: \_\_\_\_\_  
Contractor: \_\_\_\_\_ Contractor's Project No.: \_\_\_\_\_  
Project: \_\_\_\_\_  
Contract Name: \_\_\_\_\_  
Date Issued: \_\_\_\_\_ Effective Date of Field Order: \_\_\_\_\_

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

**Reference:**

Specification Section(s): \_\_\_\_\_

Drawing(s) / Details (s): \_\_\_\_\_

**Description:**

**[Description of the change to the Work]**

**Attachments:**

**[List documents supporting change]**

**Issued by Engineer**

By: \_\_\_\_\_

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

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



ATTACHMENT A.3 – SAMPLE LANGUAGE FOR CONTRACTOR’S CERTIFICATION OF COMPLIANCE

**ATTACHMENT A.3 – SAMPLE LANGUAGE FOR CONTRACTOR’S CERTIFICATION OF COMPLIANCE**

**Notes to User:**

1. *This attachment provides sample language that the Contractor can use to certify compliance with the Build America Buy America Act (BABAA) requirements. The language can be modified.*

*Modification Example: If the project is subject to AIS, the BABAA reference should be replaced with language such as “American Iron and Steel (AIS) requirements mandated by Section 746 of Title VII of the Consolidated Appropriations Act of 2017 and subsequent annual appropriations for WWD programs.”*

2. *The certification should be on letterhead and should be signed and dated by an authorized company representative.*

3. *A certification is to be provided by Contractor to Engineer for delivery to the Owner and Agency prior to final payment.*

Project Name

Owner / Applicant

Contract Number

I hereby certify, that to the best of my knowledge and belief, all Iron and Steel products, Manufactured Products, and Construction Materials 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 the Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58, §§ 70901-70953 or are the subject of a waiver approved by the Secretary of Agriculture or designee.

\_\_\_\_\_  
Name of Contractor Authorized Representative  
Contractor Company Name  
Contractor Address

\_\_\_\_\_  
Date



**ATTACHMENT A.4 – SAMPLE LANGUAGE FOR MANUFACTURER’S  
CERTIFICATION OF COMPLIANCE**

**Notes to User:**

1. *This attachment provides sample language for the Manufacturer’s Certification of Compliance with Domestic Preference requirements.*
2. *Contractor should ensure that Engineer has an approved Manufacturers’ Certification prior to any domestic preference item being delivered to the project site.*
3. *The Manufacturer’s Certification must be on letterhead and should indicate the specific item being certified, reference which domestic preference requirement is being certified, and be signed by an authorized company representative.*
4. *The Manufacturer’s Certification may include multiple domestic preference requirements. It is important for the governing domestic preference requirement (whether AIS, BABAA or other) to be clearly included within the certification.*

Date:

Company Name:

Company  
Address:

Subject: Domestic Preference Requirement Certification for {*Owner’s Name and Project Name (City, State)*}, and Contract Number

I hereby certify that the following product(s) and / or material(s) shipped or provided for the subject project are in full compliance with the Build America, Buy America Act (BABAA) requirements under Title IX of the Infrastructure Investment and Jobs Act (IIJA), Pub. L. 117-58, §§ 70901-70953.

[List common name of items, products and/or materials]

These products and/or materials were manufactured in [Provide location(s) of manufacturing]

[Include signature of authorized representative]



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

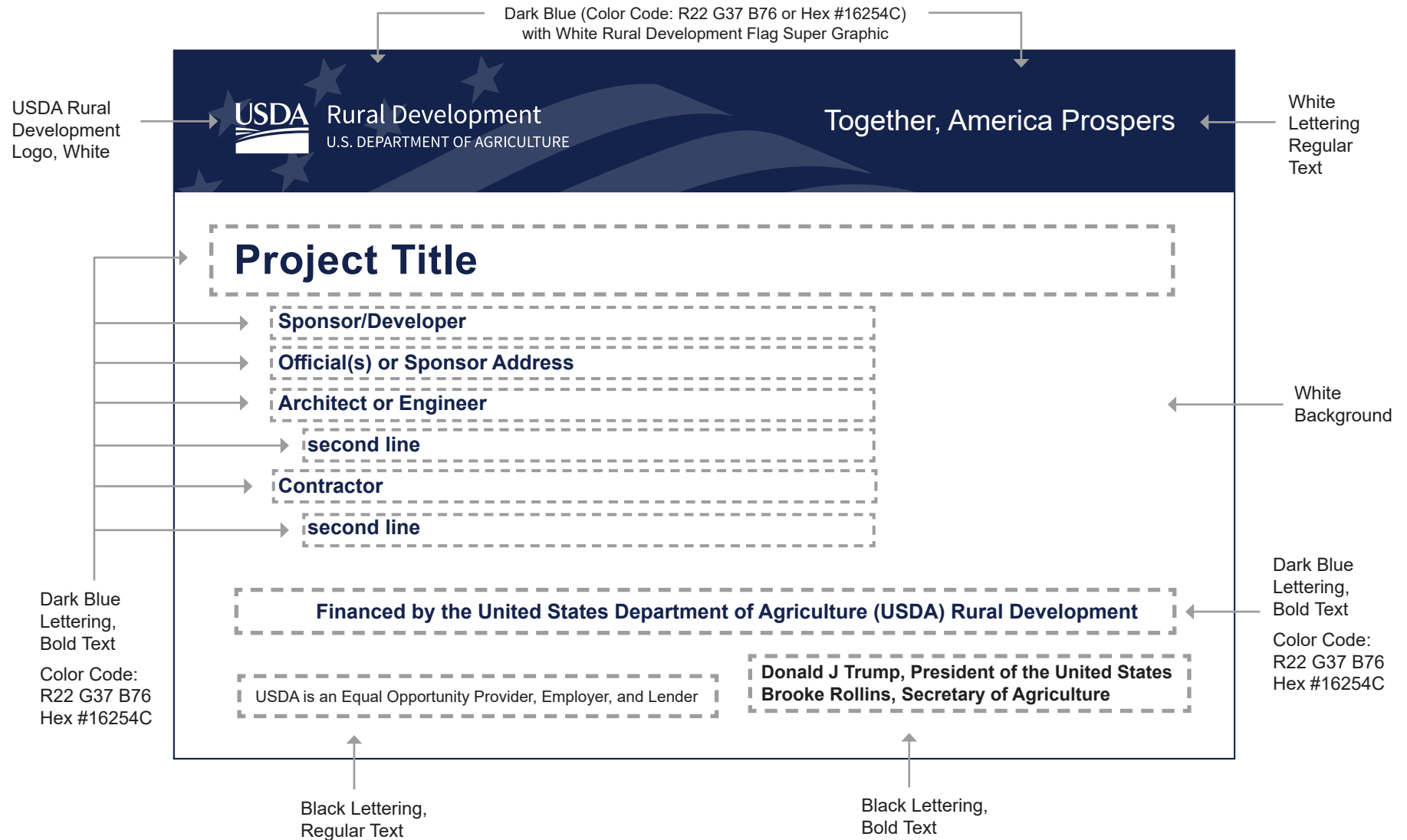
Analytical instrumentation

Dewatering equipment.



# Temporary Construction Sign for Rural Development Projects

Recommended Font: Arial



**SIGN DIMENSIONS:** 1200mm x 2400mm x 19mm (approx. 4' x 8' x 3/4")  
PLYWOOD PANEL (APA RATED A+B GRADE-EXTERIOR)



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**SECTION 01010**  
**SUMMARY OF WORK**

**PART 1 GENERAL**

**1.1 DESCRIPTION**

- A. The Work to be performed under this Contract shall consist of furnishing all labor, materials, tools, equipment and incidentals and performing all Work required to construct complete in place and ready to operate:

**WATER LINE SYSTEM IMPROVEMENTS**

- Construction at 5 Sites – Installing 3", 4", and 6" PVC Water Main, HDPE Creek Crossings, road bores, bypass meters, valves, meter vaults, appurtenances and other necessary items as shown on Drawings and Specifications.
- B. All Work described above shall be performed as shown on the Drawings and as specified.

**1.2 PROJECT LOCATION**

The equipment and materials to be furnished will be installed at the locations shown on the Drawings.

**1.3 QUANTITIES**

The OWNER reserves the right to alter the quantities of work to be performed or to extend or shorten the improvements at any time when and as found necessary, and the CONTRACTOR shall perform the work as altered, increased or decreased. Payment for such increased or decreased quantity will be made in accordance with the Instructions to Bidders. No allowance will be made for any change in anticipated profits nor shall such changes be considered as waiving or invalidating any conditions or provisions of the Contract and Bond.

END OF SECTION



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**SECTION 01016  
OCCUPANCY**

**PART 1 GENERAL**

**1.1 PARTIAL OCCUPANCY BY OWNER**

Whenever, in the opinion of the OWNER, any section or portion of the Work or any structure is in suitable condition, it may be put into use upon the written order of the OWNER and such usage will not be held in any way as an acceptance of said Work or structure, or any part thereof, or as a waiver of any of the provisions of these Specifications and the Contract. Pending final completion and acceptance of the Work, all necessary repairs and replacements, due to defective materials or workmanship or operations of the CONTRACTOR, for any section of the Work so put into use shall be performed by the CONTRACTOR at CONTRACTOR'S own expense.

END OF SECTION



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## SECTION 01020

### VIDEOTAPING

#### **PART 1 GENERAL**

##### **1.1 DESCRIPTION OF WORK**

This Section covers the provision for the CONTRACTOR to provide all labor, materials, equipment, services and perform all operations necessary to furnish to the OWNER and ENGINEER a complete, color audio-video record of the surface features within the proposed construction's zone of influence. This record shall include, but not be limited to, all audio-video tape storage cases, tape logs and indexes. The purpose of this coverage shall be to accurately document the pre-construction condition of these features within the project area.

#### **PART 2 MATERIALS**

##### **2.1 GENERAL**

The total audio-video recording system and the procedures employed in its use shall be such as to produce a finished product that will fulfill the technical requirements of the project, as well as those more subjective requirements of high quality audio and video production. The video portion of the recording shall reproduce bright, sharp, clear pictures with accurate colors and shall be free from distortion, tearing, rolls, or any other form of picture imperfection. The audio portion of the recording shall reproduce the commentary of the camera operator with proper volume, clarity and be free from distortion. Recording speed shall be compatible for playback in SP mode.

The recording system shall utilize EIA standard video and NTSC compatible color (American TV Standard), and shall utilize digital technology.

##### **2.2 VIDEO TAPE**

The video tape furnished to the OWNER and ENGINEER shall be high energy extended still frame capable, color, DVD or USB Data Storage Drive. The video shall be new and thus shall not have been used for any previous recording. The CONTRACTOR shall provide the ENGINEER a copy of the DVD or USB Drive.

##### **2.3 VIDEO TAPE PLAYBACK COMPATIBILITY**

The recorded video tapes shall be compatible for playback with any American TV Standard DVD player, or Media Viewer.

**PART 3 EXECUTION****3.1 VIDEO CONTENT****A. General**

The recording shall contain coverage of all surface features located within the construction's zone of influence. The construction's zone of influence shall be defined (1) as the area within the permanent and temporary easements, and areas adjacent to these easements which may be affected by routine construction operations; and (2) by the direction of the ENGINEER and/or OWNER. The surface features within the construction's zone of influence shall include, but not be limited to, all roadways, pavements, curbs, driveways, sidewalks, culverts, headwalls, retaining walls, buildings, landscaping, trees, shrubbery and fences. Of particular concern shall be the existence or non-existence of any faults, fractures or defects prior to construction.

**B. Streets**

Where construction will extend in or adjacent to a street, the full width of the construction's zone of influence including the street right-of-way shall be recorded, unless otherwise authorized by the ENGINEER. The term street shall be understood to mean a highway, road, street, avenue, boulevard, lane, circle, alley, etc.

**C. Easements**

Where construction will extend through easement areas, the permanent and temporary easements and all other adjacent areas lying within the construction's zone of influence shall be recorded. The term easement shall be understood to mean all areas not defined as streets.

**3.2 ALPHA-NUMERIC DISPLAYS**

All video recordings must, by electronic means, display continuously and simultaneously generated, transparent, alpha-numeric information to include the following:

**A. Video Tape Index, Number, Project Title and General Project Location**

Each video tape shall begin with a single, multi-line, alpha-numeric display indicating the video tape index number, project title and general location of the project.

**B. Time and Date**

During the entire duration of the recordings, the time (in hours, minutes and seconds separated by colons) and date (consisting of month, day and year

separated by slashes) of recording must appear in the upper left-hand corner of the picture.

C. Name and Side of Street or Easement

During the entire duration of the recordings, the name and side of the street or easement being recorded must appear across the bottom of the picture.

D. Camera Position

During the entire duration of the recordings, the position of the camera, accurately referenced and displayed in terms of the construction's engineering stationing, shall be displayed (in standard stationing format) in the lower left-hand corner of the picture. Where no stationing appears on the engineering plans, an appropriate stationing system, acceptable to the ENGINEER and OWNER, shall be established and utilized.

### **3.3 AUDIO CONTENT**

Accompanying the video recording of each video tape shall be corresponding and simultaneously recorded audio. This audio recording, exclusively containing the commentary of the camera operator, shall assist in the maintenance of viewer orientation and in any needed identification, differentiation, clarification or objective description of the structures being shown in the video portion of the recording. The audio recording also shall be free from any conversations between the camera operator and the other production technicians.

### **3.4 VIDEO TAPE INDEXING**

A. Video Tape Identification

All video tapes and their vinyl storage cases shall be properly identified by video tape index number, project title, and general project location.

B. Video Tape Logs

Displayed on the storage case of each video tape shall be a log of that video tape's contents. That log shall describe the various segments of coverage contained on that video tape in terms of the names and sides of the streets or easements, coverage beginning and endpoints, directions of coverage and video tape player counter numbers.

C. Viewer Orientation Techniques

The audio and video portions of the recording shall maintain viewer orientation. To this end, overall establishing views and visual displays of all visible house and building addresses shall be utilized. In easements where the proposed construction location will not be readily apparent to the video tape viewer,

highly visible yellow flags shall be placed in such fashion as to clearly indicate the proposed center line of construction.

### **3.5 ENTERING PRIVATE PROPERTY**

When planning on entering private property, the CONTRACTOR shall notify the owner of such property to obtain his/her permission to do so. Should the owner of the property refuse to give his permission for said entry, the CONTRACTOR shall immediately notify the OWNER and ENGINEER, who will obtain the right to enter the property through the legal powers vested in the OWNER as a public entity. The CONTRACTOR is advised that he shall not enter any private property before permission is granted to do so, or the OWNER has notified the CONTRACTOR that he has gained the legal right to do so. The CONTRACTOR shall be liable for entry made other than as stated above.

## **PART 4 OWNER'S OPTIONS**

### **4.1 DOCUMENTATION ADDITIONS AND OMISSION**

The OWNER and/or ENGINEER shall have the authority to designate what areas may be added to or omitted from the video tape documentation.

### **4.2 SPECIFICATION DEVIATIONS**

Any deviation from the above specifications must have the written approval of the OWNER.

## **PART 5 QUALIFICATIONS**

- 5.1** The video tape documentation shall be performed by a responsible firm known to be skilled and regularly engaged in the business of pre-construction color audio-video tape documentation. The firm shall furnish such information as the OWNER and ENGINEER deem necessary to determine the ability of that firm to perform the work in accordance with the contract specifications, including a list of former clients served in the last five (5) years.

## **PART 6 COORDINATION**

- 6.1** The CONTRACTOR shall coordinate the video tape recording with the construction schedule so that those portions of the construction that will be completed first will be recorded first. Construction shall not begin in an area until acceptable video tapes have been delivered to the OWNER and ENGINEER.

**PART 7 VIDEO TAPE DELIVERY**

- 7.1** The CONTRACTOR shall deliver the video tape recordings to the OWNER and ENGINEER upon their completion as a whole, or upon request by the OWNER or ENGINEER, deliver specific video tape recordings to the OWNER and ENGINEER upon their completion. Upon delivery and acceptance of the video tapes, transfer of ownership of those video tapes shall be made to the OWNER.

**PART 8 UNACCEPTABLE DOCUMENTATION**

- 8.1** The OWNER or ENGINEER shall have the authority to reject all or any portion of the video tape documentation not conforming to specifications. Those rejected portions shall be redone by the CONTRACTOR at no additional cost to the OWNER.

END OF SECTION



**PART 1 GENERAL**

**1.1 SCOPE**

- A. Management of the Project shall be through the use of a logical method of construction planning, inspection, scheduling and cost value documentation.
- B. The work under this Section includes all surface and subsurface condition inspections and coordination by the CONTRACTOR necessary for the proper and complete performance of the Work.
- C. This Section applies to the work of every division and every section of these Specifications.

**1.2 SITE CONDITIONS**

- A. Inspection
  - 1. Prior to performing any work under a section, the CONTRACTOR shall carefully inspect the installed work of other trades and verify that all such work is complete to the point where the work under that section may properly commence.
  - 2. The CONTRACTOR shall verify that all materials, equipment and products to be installed under a section may be installed in strict accordance with the original design and pertinent reviewed shop drawings.
- B. Discrepancies
  - 1. In the event of discrepancy, immediately notify the ENGINEER.
  - 2. Do not proceed with construction in areas of discrepancy until all such discrepancies have been fully resolved.

**1.3 COORDINATION**

- A. Carefully coordinate work with all other trades and subcontractors to insure proper and adequate interface of the work of other trades and subcontractors with the work of every section of these Specifications.
- B. The CONTRACTOR shall coordinate operations with all utility companies in or

01041-2

Project Coordination

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adjacent to the area of CONTRACTOR'S work. The CONTRACTOR shall require said utilities to identify in the field their property and provide drawings as necessary to locate them.

END OF SECTION

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**SECTION 01055  
CONSTRUCTION STAKING**

**PART 1 GENERAL**

**1.1 SCOPE**

- A. Construction staking shall include all the surveying work required to layout the Work and control the location of the finished construction. The full responsibility for holding to alignment and grade shall rest upon the CONTRACTOR. All work under this Contract shall be constructed in accordance with the lines and grades on the Drawings or as given by the ENGINEER or OWNER.
- B. The OWNER will provide one bench mark and a baseline adjacent to the work site. The CONTRACTOR shall be responsible for setting offsets from these points and all other layout, staking and all other surveying required for the Work.
- C. The CONTRACTOR shall safeguard all points, stakes, grade marks, bench marks and monuments established on the Work, shall bear the cost of re-establishing same if disturbed and shall assume the entire expense of rectifying work improperly constructed due to failure to maintain and protect such established points, stakes and marks.
- D. Measurement of quantities for payment purposes which are different from Drawing dimensions is included in the Work.

**1.2 QUALITY ASSURANCE**

- A. The CONTRACTOR shall furnish documentation prepared by a surveyor currently registered in the State of Kentucky confirming that staking is being done to the lines and grades shown in the Contract Documents. This requires that the CONTRACTOR hire, at the CONTRACTOR's own expense, a currently registered surveyor, acceptable to the OWNER, to provide ongoing confirmation of construction staking.
- B. Any deviations from the Drawings shall be confirmed by the ENGINEER prior to construction.
- C. Written certification of parking lot sub-base grades by a licensed surveyor, is required prior to paving installation.
- D. Written certification of structure base grade and structure corner locations is required prior to beginning construction of the structure.
- E. Quantities for payments measured under this Contract shall be certified by the approved currently registered surveyor.

**PART 2 PRODUCTS**

**2.1 EQUIPMENT**

The CONTRACTOR shall furnish and use surveying equipment and supplies maintained in good working order.

**PART 3 EXECUTION**

**3.1 UTILITIES**

- A. Staking of utilities shall be done in accordance with generally accepted practice for the type of utility involved and as specified elsewhere in these Specifications.
- B. Storm drain lines and drainage structure bases shall be correctly located to yield the drainage structure top locations and orientations shown on the Drawings.

END OF SECTION

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**SECTION 01150  
MEASUREMENT AND PAYMENT**

**PART 1 GENERAL**

- 1.1** The CONTRACTOR shall provide all necessary labor, materials, tools, equipment, insurances, and permits, etc., and perform all other related work, as may be required for the work in accordance with the applicable terms of these Specifications and other pertinent documents, etc.
- 1.2** The cost associated with the preparation of submittal and the preparation for and attendance at all project meetings shall be incidental to the work.
- 1.3** Items shown in the plan but not expressly described herein shall be considered incidental to the work.
- 1.4** Lump sum items shall be paid upon completion and acceptance of all work covered by the item. However, CONTRACTOR may submit an application for partial payment of lump sum items. Such application shall be in writing and shall define and provide justification for desired break down of the lump sum items. The application will be reviewed by the ENGINEER in a timely manner and any concerns will be discussed with the CONTRACTOR prior to issuing written agreement with the partial payment scheme. It is recommended that Partial Payment Applications be submitted and approval sought prior to the submission of the first invoice for the project.
- 1.5** The quantities shown are estimated. Only the actual quantities required, furnished, and installed and/or removed, will be eligible for payment. No minimum(s) is/are guaranteed.
- 1.6** The CONTRACTOR will NOT be paid for any items herein in excess of the estimated quantities or for any items not contained in the proposal(s) unless the CONTRACTOR has obtained WRITTEN authorization from the ENGINEER before proceeding with the work.
- 1.7** The various phases of contractual work that are required to complete the subject project must be performed in a most expeditious manner and to the satisfaction of the ENGINEER

**PART 2 PAY ITEMS**

**2.1 VIDEOTAPING**

- A. Measurement – No measurement shall be made in the field. Work related to this item shall be considered complete when accepted by the ENGINEER. To be considered compliant with Contract Documents, a complete and fully functional video must be delivered and accepted by the ENGINEER prior to mobilization to the site by the CONTRACTOR.

- B. Payment – Payment shall be made based upon the lump sum Bid amount in the Bid Schedule. Payment shall constitute full compensation for all work necessary to comply with the Contract Documents. Full payment shall not be due until the CONTRACTOR has satisfactorily completed all videotaping directed by the ENGINEER.

## 2.2 WATER LINES

- A. Measurement - Measurement for the length of pipe to be included for payment at the unit prices bid for all sizes shall be the actual length laid in the trench measured along the centerline of the pipe and including the lengths of all fittings in the line. Measurement shall begin at the ends of existing pipes, valves or fittings to which the new pipe is connected, or such other point as may be designated on the plans.
- B. Payment - Payment for installing only water pipelines complete in place will be made at the contract unit price bid per linear foot for water pipe of the various sizes and classifications. No pay item has been established for fittings, reducers, restraint joints, thrust blocking, trenching, installation of pipe, backfill, tracer tape, tracer wire, disinfecting and testing for the water line, daily rough cleanup of the work site and trenching, rock removal, together with other incidental and related work necessary for the completion of the water main installation except valves, valve boxes, pavement replacement and such other bid items shall be paid for separately, if included as a pay item on the bid proposal. Any items or appurtenances required for water line installation in accordance with the contract documents that do not have specific bid items shall be considered incidental and shall be included in the unit price bid for water lines.

## 2.3 TAPPING SLEEVE AND VALVE CONNECTION

- A. Measurement – Tapping Sleeve and Valve wet tap connections to existing lines shall be sized as shown on plans and include tapping tee, tapping valve, valve box and all required materials and equipment. This item will be measured by an actual count of tapping sleeves and valves of various sizes installed, tested, sterilized and accepted.
- B. Payment – Tapping Sleeve and Valve connections to existing lines installed and accepted will be paid for on the basis of the unit price per each and payment shall constitute full compensation for furnishing, hauling, installing complete in place, testing and sterilizing, for excavation, preparation of bed and backfilling, thrust blocking and for the furnishing of all equipment, tools and incidentals necessary to complete the item in accordance with the Contract Documents.

## 2.4 HDPE DIRECTIONAL BORE CREEK CROSSING

- A. Measurement – Creek crossings of various sizes, installed in locations as directed by the plans, shall be measured as a lump sum upon complete installation. Completion shall require the installation of HDPE by directional drilling, casing pipe (if required), carrier pipe, transition to PVC, and include all required fittings, restraints, and anchors, and be sized according to the plans.
- B. Payment – Payment for installing directional bore creek crossings complete in place will be made at the lump sum contract unit price bid for each individual creek crossing installed in accordance with the Contract Documents. Payment for installing each creek crossing shall constitute full compensation for fittings, fusing HDPE pipe, directional drilling, reaming, installing of HDPE pipe, tracer wire and tape, backfill, disinfecting and testing, together with any and all other incidental and related work necessary for the completion of the directional bore creek crossing in accordance with the Contract Documents.

## 2.5 DEAD CAPS

- A. Measurement – Dead Caps will be measured by an actual count of each size and type installed and accepted. The unit price bid for this item shall include cutting of existing water lines and installation of a dead cap, and providing a concrete thrust block and other fittings as covered by Specifications and Plans.
- B. Payment – Dead Cap installed and accepted will be paid on the basis of the unit price per each and payment shall constitute full compensation for furnishing all materials and supplies, and installing complete, testing, excavation and for the furnishing of all equipment, tools and incidentals necessary to complete the item.

## 2.6 CONNECTION TO EXISTING LINES

- A. Measurement – Connections to existing lines shall be sized as shown on plans and include all fittings, gaskets, thrust blocks, deadman anchors, and all required materials and equipment. Connections do not include gate valves. Measurement of Connections to existing water lines shall be by an actual count of connections of the various sizes made. The number, variety, material, etc. of all required fittings shall not be measured and shall be considered incidental to the required Work. It is the CONTRACTOR's responsibility to determine what materials, fittings, etc are required and to provide and install them as needed in accordance with the Contract Documents and subject to the OWNER's approval.

- B. Payment - Connections to existing lines installed and accepted will be paid for on the basis of the unit price bid for the various sized connections. This price shall constitute payment for furnishing, hauling, installing complete in place, testing and sterilizing, excavation, preparation of bed and backfilling, thrust blocking and for furnishing of all equipment, tools and incidentals necessary to complete the item.

## 2.7 VALVES

- A. Measurement – Valves will be measured by actual count on each size and type of valve installed in the complete Work.
- B. Payment – Payment for installing only valves of the various sizes and classifications, accessories, adapters, extension stems, valve boxes with lids, concrete collar or other required appurtenances, shall be made on the basis of the contract unit prices bid. Such payment shall constitute full compensations for installing the valves complete in place and in full accordance with Plans and Specifications.

Removal of existing valves is considered to be incidental to the Work.

## 2.8 EXCAVATION

All excavation (including rock excavation) is unclassified and is incidental to the installation of water mains and appurtenances and no extra compensation will be due to the CONTRACTOR for additional excavation of any kind.

## 2.9 CASING PIPE BY BORE & JACK

- A. Measurement - Measurement of casing pipe installed under pavement, railroad tracks, structures or other places by bore and jack shall be by the linear foot and shall be the centerline length of the steel casing pipe installed and accepted.
- B. Payment - Payment shall be made on the basis of the contract unit price bid for various diameters. This price shall constitute payment for furnishing and installing casing pipe by boring and jacking, end seals and spacers; including all labor, tools and equipment. Payment for the water line to be installed in the casing pipe shall be paid for at applicable unit price bid.

## 2.10 CRUSHED STONE

- A. Measurement - Measurement of crushed stone for payment shall be based on linear feet of gravel replaced and shall be full depth of trench. Measurement shall be equal to the length, in linear feet, of stone installed on the trench surface as measured along the centerline of the installed water main. Minimum width shall be equal to the nominal diameter of pipe installed plus 3'-6". This item will be paid for based upon amount disturbed and only a one time payment.

Crushed stone used for bedding water mains in rock excavation shall be based on tons of stone placed in accordance with the Contract Documents and Details. Payment shall be based upon amount distributed and only a one time payment. Crushed stone used for backfilling around valves and fire hydrants shall be included in the unit price for valves or fire hydrants.

Crushed stone used as base material or backfill for pavement replacement also will not be measured for payment inasmuch as payment for this material will be included in the payment for pavement replacement.

- B. Payment - Payment for crushed stone, measured as provided above, shall constitute full compensation for furnishing, hauling, placing and compacting the stone as specified in the Contract Documents and will be a one-time payment. No additional compensation will be due to the CONTRACTOR for additional stone added to compensate for settlement or other factors.

## 2.11 MASTER METER VAULT

- A. Measurement – Measurement shall be determined as furnishing and complete installation in place of a master meter vault as determined in the bid schedule and shown in the plans. The vault shall include all required valves, fittings, bypass piping, tees, and appurtenances.
- B. Payment - Payment shall be at the lump sum price as bid in the Bid Schedule for a complete and functional system as described in the Contract Documents and shall constitute full compensation for all installation of the vault, check valve, and meter, in addition to all incidental items including tees, bypass piping, fittings, materials, accessories, equipment, drain to daylight, and appurtenances.

**2.12 BY-PASS METER**

- A. Measurement – By-pass meters will be measured by an actual count of each size and type installed, tested, disinfected and accepted. The unit price bid for this item shall include saddles, corporation stop, curb stops, yoke, meter, meter box lid, meter box, pressure regulator (if required), valve, valve box, service tubing or copper service tubing, as required, etc., as covered by Specifications and Plans.
- B. Payment – By-pass meters placed and accepted, measured as provided above, will be paid for at the contract unit price per each, which price and payment shall constitute full compensation for furnishing, hauling and installing complete, testing and disinfection, for excavation, preparation of bed and backfilling, and for the furnishing of all equipment, tools, and incidentals necessary to complete the item.

**2.13 CONCRETE INSTALLATION**

- A. Measurement - Measurement for Concrete Installation shall be a lump sum for the completion of a concrete cap to be installed as cover for the existing water line as described on the Drawings.
- B. Payment - Payment shall be made on the basis of the contract lump sum bid for Concrete Installation.

**2.14 TRACER WIRE AND MARKING TAPE**

- A. Measurement – Measurement for copper tracer wire, marking tape, and boxes to be included in the unit price for water main installation (by conventional, bore, and directional drill, inclusive to lump sum bid price of creek crossings) that will be taped or otherwise secured to the pipe, installed in valve boxes, etc.
- B. Payment - Payment shall be included in the unit price of water mains and creek crossings for a complete functioning system, including sealed splices, taping to pipe and connections/installations in valve boxes, marking tape installed above the pipe at a depth of approximately 18” etc. This price shall constitute payment for furnishing and installing tracer wire and marking tape including all labor, tools, materials and equipment.

**2.15 FIRE HYDRANTS / FLUSH HYDRANTS**

- A. Measurement - Measurement of hydrants for payment shall be made by actual count of type of hydrant provided in the completed and accepted installation.

- B. Payment - Payment for hydrants complete in place shall be based on the contract unit prices bid. Such payment shall constitute compensation in full for hydrants complete in place with the necessary barrel and stem extensions, concrete base and kicker, valve, valve box and the required crushed stone for drainage as shown in the standard details and described in the Contract Documents.

The CONTRACTOR shall note that the OWNER will provide one (1) fire hydrant only to the CONTRACTOR. The CONTRACTOR is responsible for all other materials and appurtenances required, as well as the material, labor and equipment required for installation in accordance with the Contract Documents, including up to 15 feet of 6" pipe.

## **2.16 FINAL CLEANUP AND RESTORATION**

- A. Measurement - Cleanup and Restoration shall be priced by linear foot for the total project area, including at bore sites, graveled areas, and paved areas. No measurement shall occur and the item shall be considered complete when the OWNER agrees that the project sites have been restored to conditions equal to or better than before disturbance due to construction. Disputes as to pre-construction conditions shall be settled by review of the pre-construction video provided by the CONTRACTOR.
- B. Payment - Payment for Cleanup and Restoration will be made at the unit bid price stated in the Bid Schedule. Payment for Cleanup and Restoration shall constitute full compensation for removal of all rock, excess dirt, grading, seeding and strawing, together with other incidental and related work necessary for the final cleanup as determined by the ENGINEER or OWNER. The CONTRACTOR shall be responsible for final cleanup to address areas of settlement and reseed and straw as directed by the ENGINEER or OWNER prior to final release of retainage. The CONTRACTOR shall also be responsible for returning to the Project to re-address any areas where clean up becomes reasonably unacceptable to the OWNER during the one-year warranty period.

## **2.17 ROAD CROSSING CASING PIPE BY OPEN CUT**

- A. Measurement - Measurement of casing pipe installed under pavement by open cut shall be by the linear foot and shall be the centerline length of the steel casing pipe installed and accepted.

- B. Payment - Payment shall be made on the basis of the contract unit price bid for various diameters. This price shall constitute payment for furnishing and installing casing pipe by open cut, end seals and spacers; unclassified excavation, bedding, and pavement replacement to match existing conditions and according to the drawings and specifications; including all labor, tools and equipment. Payment for the water line to be installed in the casing pipe shall be paid for at applicable unit price bid.

## **2.18 GRAVEL DRIVEWAY CROSSING CASING PIPE BY OPEN CUT**

- A. Measurement - Measurement of casing pipe installed under gravel driveways by open cut shall be by the linear foot and shall be the centerline length of the steel casing pipe installed and accepted.
- B. Payment - Payment shall be made on the basis of the contract unit price bid for various diameters. This price shall constitute payment for furnishing and installing casing pipe by open cut, end seals and spacers; unclassified excavation, bedding, and gravel replacement to match existing conditions and according to the drawings and specifications; including all labor, tools and equipment. Payment for the water line to be installed in the casing pipe shall be paid for at applicable unit price bid.

## **2.19 MOBILIZATION**

- A. Measurement – Mobilization will be considered as payable in two parts. The first phase will be considered completed when all material, equipment, tools, and any other required items have been delivered to site. The second and final phase will be considered completed when all materials, equipment, tools, vehicles, and incidentals are removed from the working area.
- B. Payment - Payment shall be made for half of the bid item amount when phase one is considered completed. Full payment will occur at the time when phase 2 is considered completed.

## **2.20 REMOVAL OF EXISTING VALVE BOXES & HYDRANTS**

No additional compensation will be made for removal of existing valve boxes & hydrants as shown on drawings. This applies to all valve boxes of any kind and material, and containing, any type of abandoned valve.

The CONTRACTOR shall return removed materials to the OWNER unless otherwise noted.

## 2.21 EXCAVATION

All excavation (including rock excavation) is unclassified and is incidental to the installation of water mains and appurtenances and no extra compensation will be due to the CONTRACTOR for additional excavation of any kind.

## 2.22 AIR RELEASE ASSEMBLIES

- A. Measurement – Air release valves shall be sized as shown on plans and include tee or saddle, manhole cover and frame, meter box, restraints, fittings and other appurtenances as shown on the Details and described in the Contract Documents. This item will be measured by an actual count of air release valves installed, tested, sterilized and accepted.
- B. Payment – Air release valve assemblies, installed and accepted will be paid for on the basis of the unit price per each size installed and payment shall constitute full compensation for furnishing, hauling, installing complete in place, testing and sterilizing, for excavation, preparation of bed and backfilling, and for the furnishing of all equipment, tools and incidentals necessary to complete the item in accordance with the Contract Documents.

## 2.23 TRAFFIC CONTROL

- A. Measurement – Measurement of Traffic Control for payment shall be one lump sum for the project. CONTRACTOR may apply for payment incrementally throughout the project as Traffic Control is accomplished.
- B. Payment – Payment shall be made on the basis of the contract lump sum for traffic control and shall constitute payment for an adequate and safe traffic control method consistent with the manual for uniform traffic control devices. This price shall constitute payment for furnishing, installing, and removing traffic control including all labor, tools, materials, and equipment.

## 2.24 SHORT SIDE CUSTOMER SERVICE RECONNECT

- A. Measurement - Reconnection of existing service connections will be measured by an actual count of each size and type of service installed, tested, disinfected and accepted, on the same side of the road as the water main installation. The unit price bid for this item shall include saddles and corporation stop, as covered by Specifications and Plans.
- B. Payment - Reconnection of existing service connections and accepted, measured as

provided above, will be paid for at the contract unit price, which price and payment shall constitute full compensation for furnishing, hauling and installing complete, testing and disinfection, for excavation, preparation of bed and backfilling, and for the furnishing of all equipment, tools, and incidentals necessary to complete the item. Payment shall also include up to 10 feet of service line from the water main to the proposed service connection and any fees, and any inspections and permits required.

## **2.25 LONG SIDE CUSTOMER SERVICE RECONNECT**

- A. Measurement - Reconnection of existing service connections will be measured by an actual count of each size and type of service installed, tested, disinfected and accepted, on the opposite side of the road as the water main installation. The unit price bid for this item shall include casing pipe, saddles and corporation stop, as covered by Specifications and Plans.
- B. Payment - Reconnection of existing service connections and accepted, measured as provided above, will be paid for at the contract unit price, which price and payment shall constitute full compensation for furnishing, hauling and installing complete, testing and disinfection, for excavation, preparation of bed and backfilling, and for the furnishing of all equipment, tools, and incidentals necessary to complete the item. Payment shall also include up to 50 feet of service line from the water main to the proposed service connection and any fees, and any inspections and permits required.

## **2.26 SERVICE PIPE**

- A. Measurement - Measurement for the length of service pipe used for service installations or re-connections included for payment at the unit prices bid shall be the actual length of various sizes installed over and above the 10 feet of service tubing that is to be included in the price bid for short side meter settings, and 50 feet of service tubing that is to be included in the price bid for long side meter settings, and existing service connection to proposed line.
- B. Payment - Payment for installing only water service lines completed will be made at the contract unit price bid per linear foot for water service pipe of the various sizes, types and classifications. Payment for installing service pipe shall constitute full compensation for excavation, installation, backfill, disinfecting, testing and other incidentals and related work necessary for the completion of the bid item in accordance with the Contract Documents.

END OF SECTION

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**SECTION 01200  
PROJECT MEETINGS**

**PART 1 GENERAL**

**1.1 SCOPE**

- A. Work under this Section includes all scheduling and administering of pre-construction and progress meetings as herein specified and necessary for the proper and complete performance of this Work.
- B. Scheduling and Administration by ENGINEER:
  - 1. Prepare agenda.
  - 2. Make physical arrangements for the meetings.
  - 3. Preside at meetings.
  - 4. Record minutes and include significant proceedings and decisions.
  - 5. Distribute copies of the minutes to participants.

**1.2 PRE-CONSTRUCTION CONFERENCE**

- A. The ENGINEER shall schedule the preconstruction conference prior to the issuance of the Notice to Proceed.
- B. Representatives of the following parties are to be in attendance at the meeting:
  - 1. ENGINEER.
  - 2. CONTRACTOR and superintendent.
  - 3. Major subcontractors.
  - 4. OWNER
- C. The agenda for the Pre-Construction Conference shall consist of the following as a minimum:
  - 1. Distribute and discuss a list of major subcontractors and a tentative construction schedule.
  - 2. Critical work sequencing.
  - 3. Designation of responsible personnel and emergency telephone numbers.

4. Processing of field decisions and Change Orders.
5. Adequacy of distribution of Contract Documents.
6. Schedule and submittal of shop drawings, product data and samples.
7. Pay request format, submittal cutoff date, pay date (if known) and retainage.
8. Procedures for maintaining record documents.
9. Use of premises, including office and storage areas and OWNER's requirements.
10. Major equipment deliveries and priorities.
11. Safety and first aid procedures.
12. Security procedures.
13. Housekeeping procedures.
14. Work hours.

END OF SECTION

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**SECTION 01340**  
**SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES**

**PART 1 GENERAL**

**1.1 SCOPE**

- A. The work under this Section includes submittal to the ENGINEER of shop drawings, product data and samples required by the various sections of these Specifications.
- B. Submittal Contents: The submittal contents required are specified in each section.
- C. The following forms shall be used for all major components of the work:
  - 1. Typical Maintenance Summary Form
  - 2. Notice of Start of Manufacturing
  - 3. Notice of Shipment of Equipment
  - 4. Notice of Schedule Impact

The forms are included at the back of this section.

- D. Definitions: Submittals are categorized as follows:
  - 1. Shop Drawings
    - a. Shop drawings shall include technical data, drawings, diagrams, procedure and methodology, performance curves, schedules, templates, patterns, test reports, calculations, instructions, measurements and similar information as applicable to the specific item for which the shop drawing is prepared.
    - b. Provide newly-prepared information, on reproducible sheets, with graphic information at accurate scale (except as otherwise indicated) or appropriate number of prints hereof, with name or preparer (firm name) indicated. The Contract Drawings shall not be traced or reproduced by any method for use as or in lieu of detail shop drawings. Show dimensions and note which are based on field measurement. Identify materials and products in the work shown. Indicate compliance with standards and special coordination requirements. Do not allow shop drawing copies without appropriate final "Action" markings by the ENGINEER to be used in connection with the Work.
    - c. Drawings shall be presented in a clear and thorough manner. Details shall be identified by reference to sheet and detail, specification section,

schedule or room numbers shown on the Contract Drawings.

- d. Minimum assembly drawings sheet size shall be 24 x 36-inches.
- e. Minimum detail sheet size shall be 8-1/2 x 11-inches.
- f. Minimum Scale:
  - (1) Assembly Drawings Sheet, Scale: 1-inch = 30 feet.
  - (2) Detail Sheet, Scale: 1/4-inch = 1 foot.

## 2. Product Data

- a. Product data includes standard printed information on materials, products and systems, not specially prepared for this Project, other than the designation of selections from among available choices printed therein.
- b. Collect required data into one submittal for each unit of work or system, and mark each copy to show which choices and options are applicable to the Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked and special coordination requirements.

## 3. Samples

- a. Samples include both fabricated and un-fabricated physical examples of materials, products and units of work, both as complete units and as smaller portions of units of work, either for limited visual inspection or, where indicated, for more detailed testing and analysis.
- b. Provide units identical with final condition of proposed materials or products for the work. Include "range" samples, not less than three units, where unavoidable variations must be expected, and describe or identify variations between units of each set. Provide full set of optional samples where the ENGINEER'S selection is required. Prepare samples to match the ENGINEER'S sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by the ENGINEER. ENGINEER will note "test" samples, except as otherwise indicated, for other requirements, which are the exclusive responsibility of the CONTRACTOR.

4. Miscellaneous submittals related directly to the Work (non-administrative) include warranties, maintenance agreements, workmanship bonds, project photographs, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the Work but not processed as shop drawings, product data or samples.

## **1.2 SPECIFIC CATEGORY REQUIREMENTS**

- A. General: Except as otherwise indicated in the individual work sections, comply with general requirements specified herein for each indicated category of submittal. Submittals shall contain:
  1. The date of submittal and the dates of any previous submittals.
  2. The Project title.
  3. Numerical submittal numbers, starting with 1.0, 2.0, etc. Revisions to be numbered 1.1, 1.2, etc.
  4. The Names of:
    - a. Contractor
    - b. Supplier
    - c. Manufacturer
  5. Identification of the product, with the Specification section number, permanent equipment tag numbers and applicable Drawing No.
  6. Field dimensions, clearly identified as such.
  7. Relation to adjacent or critical features of the Work or materials.
  8. Applicable standards, such as ASTM or Federal Specification numbers.
  9. Notification to the ENGINEER in writing, at time of submissions, of any deviations on the submittals from requirements of the Contract Documents.
  10. Identification of revisions on resubmittals.
  11. An 8 x 3-inch blank space for CONTRACTOR and ENGINEER stamps.

12. CONTRACTOR'S stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria and coordination of the information within the submittal with requirements of the Work and of Contract Documents.
13. Submittal sheets or drawings showing more than the particular item under consideration shall have all but the pertinent description of the item for which review is requested crossed out.

### **1.3 ROUTING OF SUBMITTALS**

- A. Submittals and routine correspondence shall be routed as follows:
  1. Supplier to CONTRACTOR (through representative if applicable)
  2. CONTRACTOR to ENGINEER
  3. ENGINEER to CONTRACTOR and OWNER
  4. CONTRACTOR to Supplier

### **1.4 ADDRESS FOR COMMUNICATIONS**

Engineer: HMB Professional Engineers, Inc.  
3 HMB Circle  
Frankfort, KY 40601  
OFFICE (502) 695-9800  
FAX (502) 695-9810

## **PART 2 PRODUCTS**

### **2.1 SHOP DRAWINGS**

- A. Unless otherwise specifically directed by the ENGINEER, make all shop drawings accurately to a scale sufficiently large to show all pertinent features of the item and its method of connection to the Work.
- B. Submit all shop assembly drawings, larger than 11 x 17-inches, in the form of one reproducible transparency with two opaque prints or bluelines.
- C. Submit all shop drawings, 11 x 17-inches and smaller, in the form of six opaque prints or bluelines.

- D. One reproducible for all submittals larger than 11 x 17-inches and no more than three prints of other submittals will be returned to the CONTRACTOR.

## **2.2 MANUFACTURER'S LITERATURE**

- A. Where content of submitted literature from manufacturers includes data not pertinent to this submittal, clearly indicate which portion of the contents is being submitted for the ENGINEER'S review.
- B. Submit the number of copies which are required to be returned (not to exceed three) plus three copies which will be retained by the ENGINEER.

## **2.3 SAMPLES**

- A. Samples shall illustrate materials, equipment or workmanship and established standards by which completed work is judged.
- B. Unless otherwise specifically directed by the ENGINEER, all samples shall be of the precise article proposed to be furnished.
- C. Submit all samples in the quantity which is required to be returned plus one sample which will be retained by the ENGINEER.

## **2.4 COLORS**

- A. Unless the precise color and pattern is specifically described in the Contract Documents, wherever a choice of color or pattern is available in a specified product, submit accurate color charts and pattern charts to the ENGINEER for review and selection.
- B. Unless all available colors and patterns have identical costs and identical wearing capabilities, and are identically suited to the installation, completely describe the relative costs and capabilities of each.

# **PART 3 EXECUTION**

## **3.1 CONTRACTOR'S COORDINATION OF SUBMITTALS**

- A. Prior to submittal for the ENGINEER'S review, the CONTRACTOR shall use all means necessary to fully coordinate all material, including the following procedures:
  - 1. Determine and verify all field dimensions and conditions, catalog numbers and similar data.

2. Coordinate as required with all trades and all public agencies involved.
  3. Submit a written statement of review and compliance with the requirements of all applicable technical Specifications as well as the requirements of this Section.
  4. Clearly indicate in a letter or memorandum on the manufacturer's or fabricator's letterhead, **all deviations** from the Contract Documents.
- B. Each and every copy of the shop drawings and data shall bear the CONTRACTOR'S stamp showing that they have been so checked. Shop drawings submitted to the ENGINEER without the CONTRACTOR'S stamp will be returned to the CONTRACTOR for conformance with this requirement.
- C. The Owner may backcharge the CONTRACTOR for costs associated with having to review a particular shop drawing, product data or sample more than two times to receive a "No Exceptions Taken" mark.
- D. Grouping of Submittals
1. Unless otherwise specifically permitted by the ENGINEER, make all submittals in groups containing all associated items.
  2. No review will be given to partial submittals of shop drawings for items which interconnect and/or are interdependent. It is the CONTRACTOR'S responsibility to assemble the shop drawings for all such interconnecting and/or interdependent items, check them and then make one submittal to the ENGINEER along with CONTRACTOR'S comments as to compliance, non-compliance or features requiring special attention.
- E. Schedule of Submittals: Within 30 days of Contract award and prior to any shop drawing submittal, the CONTRACTOR shall submit a schedule showing the estimated date of submittal and the desired approval date for each shop drawing anticipated. A reasonable period shall be scheduled for review and comments. Time lost due to unacceptable submittals shall be the CONTRACTOR'S responsibility and some time allowance for resubmittal shall be provided. The schedule shall provide for submittal of items which relate to one another to be submitted concurrently.

### **3.2 TIMING OF SUBMITTALS**

- A. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittal, and for placing orders and securing delivery.

- B. In scheduling, allow sufficient time for the ENGINEER'S review following the receipt of the submittal.

### **3.3 REVIEWED SHOP DRAWINGS**

#### **A. ENGINEER Review**

1. Allow a minimum of 14 days for the ENGINEER'S initial processing of each submittal requiring review and response, except allow longer periods where processing must be delayed for coordination with subsequent submittals. The ENGINEER will advise the CONTRACTOR promptly when it is determined that a submittal being processed must be delayed for coordination. Allow a minimum of two weeks for reprocessing each submittal. Advise the ENGINEER on each submittal as to whether processing time is critical to progress of the Work, and therefore the Work would be expedited if processing time could be foreshortened.
  2. Acceptable submittals will be marked "No Exceptions Taken". A minimum of three copies will be retained by the ENGINEER for ENGINEER'S and the OWNER'S use and the remaining copies will be returned to the CONTRACTOR.
  3. Submittals requiring minor corrections before the product is acceptable will be marked "Make Corrections Noted". The CONTRACTOR may order, fabricate and ship the items included in the submittals, provided the indicated corrections are made. Drawings must be resubmitted for review and marked "No Exceptions Taken" prior to installation or use of products.
  4. Submittals marked "Amend and Resubmit" must be revised to reflect required changes and the initial review procedure repeated.
  5. The "Rejected - See Remarks" notation is used to indicate products which are not acceptable. Upon return of a submittal so marked, the CONTRACTOR shall repeat the initial review procedure utilizing acceptable products.
  6. Only two copies of items marked "Amend and Resubmit" and "Rejected - See Remarks" will be reviewed and marked. One copy will be retained by the ENGINEER and the other copy with all remaining unmarked copies will be returned to the CONTRACTOR for resubmittal.
- B. No work or products shall be installed without a drawing or submittal bearing the "No Exceptions Taken" notation. The CONTRACTOR shall maintain at the job site a complete set of shop drawings bearing the ENGINEER'S stamp.
  - C. Substitutions: In the event the CONTRACTOR obtains the ENGINEER'S approval for the use of products other than those which are listed first in the Contract

Documents, the CONTRACTOR shall, at the CONTRACTOR'S own expense and using methods approved by the ENGINEER, make any changes to structures, piping and electrical work that may be necessary to accommodate these products.

- D. Use of the "No Exceptions Taken" notation on shop drawings or other submittals is general and shall not relieve the CONTRACTOR of the responsibility of furnishing products of the proper dimension, size, quality, quantity, materials and all performance characteristics, to efficiently perform the requirements and intent of the Contract Documents. The ENGINEER'S review shall not relieve the CONTRACTOR of responsibility for errors of any kind on the shop drawings. Review is intended only to assure conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The CONTRACTOR is responsible for dimensions to be confirmed and correlated at the job site. The CONTRACTOR is also responsible for information that pertains solely to the fabrication processes or to the technique of construction and for the coordination of the work of all trades.

### **3.4 RESUBMISSION REQUIREMENTS**

- A. Shop Drawings
1. Revise initial drawings as required and resubmit as specified for initial submittal, with the resubmittal number shown.
  2. Indicate on drawings all changes which have been made other than those requested by the ENGINEER.
- B. Project Data and Samples: Resubmit new data and samples as specified for initial submittal, with the resubmittal number shown.

END OF SECTION

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**SECTION 01562  
DUST CONTROL**

**PART 1 GENERAL**

**1.1 SCOPE**

Limit blowing dust caused by construction operations by applying water or employing other appropriate means or methods to maintain dust control, subject to the approval of the OWNER. As a minimum, this may require the use of a water wagon twice a day to suppress dusty conditions.

**1.2 PROTECTION OF ADJACENT PROPERTY**

- A. The Bidders shall visit the site and note the buildings, landscaping, roads, parking areas and other facilities near the Work site that may be damaged by their operations. The CONTRACTOR shall make adequate provision to fully protect the surrounding area and will be held fully responsible for all damages resulting from CONTRACTOR'S operations.
- B. Protect all existing facilities (indoors or out) from damage by dust, fumes, spray or spills (indoors or out). Protect motors, bearings, electrical gear, instrumentation and building or other surfaces from dirt, dust, welding fumes, paint spray, spills or droppings causing wear, corrosion, malfunction, failure or defacement by enclosure, sprinkling or other dust palliatives, masking and covering, exhausting or containment.

END OF SECTION



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**SECTION 01610  
TRANSPORTATION AND HANDLING**

**PART 1 GENERAL**

**1.1 SCOPE**

- A. The CONTRACTOR shall provide transportation of all equipment, materials and products furnished under these Contract Documents to the Work site. In addition, the CONTRACTOR shall provide preparation for shipment, loading, unloading, handling and preparation for installation and all other work and incidental items necessary or convenient to the CONTRACTOR for the satisfactory prosecution and completion of the Work.
- B. All equipment, materials and products damaged during transportation or handling shall be repaired or replaced by the CONTRACTOR at no additional cost to the OWNER prior to being incorporated into the Work.

**1.2 TRANSPORTATION**

- A. All equipment shall be suitably boxed, crated or otherwise protected during transportation.
- B. Where equipment will be installed using existing cranes or hoisting equipment, the CONTRACTOR shall ensure that the weights of the assembled sections do not exceed the capacity of the cranes or hoisting equipment.
- C. Small items and appurtenances such as gauges, valves, switches, instruments and probes which could be damaged during shipment shall be removed from the equipment prior to shipment, packaged and shipped separately. All openings shall be plugged or sealed to prevent the entrance of water or dirt.

**1.3 HANDLING**

- A. All equipment, materials and products shall be carefully handled to prevent damage or excessive deflections during unloading or transportation.
- B. Lifting and handling drawings and instructions furnished by the manufacturer or supplier shall be strictly followed. Eyebolts or lifting lugs furnished on the equipment shall be used in handling the equipment. Shafts and operating mechanisms shall not be used as lifting points. Spreader bars or lifting beams shall be used when the distance between lifting points exceeds that permitted by standard industry practice.

- C. Under no circumstances shall equipment or products such as pipe, structural steel, castings, reinforcement, lumber, piles, poles, etc., be thrown or rolled off of trucks onto the ground.
- D. Slings and chains shall be padded as required to prevent damage to protective coatings and finishes.

END OF SECTION

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**SECTION 01630  
SUBSTITUTIONS AND OPTIONS**

**PART 1 GENERAL**

**1.1 SCOPE**

This Section outlines the restrictions and requirements for substitutions, product and manufacturer options, and construction method options.

**1.2 DEFINITIONS**

- A. For the purposes of these Contract Documents, a "substitute item" shall be defined as one of the following:
  - 1. A product or manufacturer offered as a replacement to a specified product or manufacturer.
  - 2. A product or manufacturer offered in addition to a specified product or manufacturer.
  
- B. For the purposes of these Contract Documents, a "substitute construction method" shall be defined as one of the following:
  - 1. A mean, method, technique, sequence or procedure of construction offered as a replacement for a specified mean, method, technique, sequence or procedure of construction.
  - 2. A mean, method, technique, sequence or procedure of construction offered in addition to a specified mean, method, technique, sequence or procedure of construction.

**1.3 GENERAL**

- A. An item or construction method, which is offered where no specific product, manufacturer, mean, method, technique, sequence or procedure of construction is specified or shown on the Drawings, shall not be considered a substitute and shall be at the option of the CONTRACTOR, subject to the provisions in the Contract Documents for that item or construction method.
  
- B. For products specified only by a referenced standard, the CONTRACTOR may select any product by any manufacturer, which meets the requirements of the Specifications, unless indicated otherwise in the Contract Documents.

- C. If the manufacturer is named on the Drawings or in the Specifications as an acceptable manufacturer, products of that manufacturer meeting all requirements of the Specifications and Drawings are acceptable.
- D. Whenever the ENGINEER'S design is based on a specific product of a particular manufacturer, that manufacturer will be shown on the Drawings and/or listed first in the list of approved manufacturers in the Specifications. Any Bidder intending to furnish products of other than the first listed manufacturer, or furnish substitute items, shall
  - 1. Verify that the item being furnished will fit in the space allowed, perform the same functions and have the same capabilities as the item specified.
  - 2. Include in its Bid the cost of all accessory items which may be required by the other listed substitute product,
  - 3. Include the cost of any architectural, structural, mechanical, piping, electrical or other modifications required, and
  - 4. Include the cost of required additional work by the ENGINEER, if any, to accommodate the item.

#### **1.4 APPROVALS**

- A. Approval, of a substitution as an acceptable manufacturer, of the ENGINEER is dependent on determination that the product offered
  - 1. is essentially equal in function, performance, quality of manufacture, ease of maintenance, reliability, service life and other criteria to that on which the design is based, and
  - 2. will require no major modifications to structures, electrical systems, control systems or piping systems.

#### **1.5 SUBSTITUTIONS AND OPTIONS**

- A. See Bid Schedule for allowance of substitutions.
- B. After Notice to Proceed
  - 1. Substitute items will be considered for acceptable manufacturers in the Specification.

2. Where items are specified by referenced standard or specified as indicated in Article 1.3, Paragraph A. above, such items shall be submitted to the ENGINEER for review.
  3. The CONTRACTOR shall submit shop drawings on the substitute item for the ENGINEER'S review in accordance with the Section 01340.
- C. Prior to Opening of Bids
1. No consideration or approvals will be made for products specified by a referenced standard, or specified as indicated in Article 1.3, Paragraph A. above. Such consideration may occur only after the Notice to Proceed.
  2. No consideration or approvals will be made for products being offered where the term "equal to" precedes the name of an approved product. Such substitution consideration may occur only after the Notice to Proceed.

END OF SECTION



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**SECTION 01710  
CLEANING**

**PART 1 GENERAL**

**1.1 SCOPE**

This Section covers the general cleaning which the CONTRACTOR shall be required to perform both during construction and the final cleaning required before final acceptance of the Project unless otherwise shown on the Drawings or specified elsewhere in these Specifications.

**1.2 QUALITY ASSURANCE**

- A. The CONTRACTOR shall daily, and more often if necessary, conduct inspections verifying that requirements of cleanliness are being met.
- B. The CONTRACTOR shall, in addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

**1.3 HAZARDOUS MATERIAL AND WASTE**

- A. The CONTRACTOR shall handle hazardous waste and materials in accordance with applicable local, state, and federal regulations. Waste shall also be disposed of in WFLA approved landfills as applicable.
- B. The CONTRACTOR shall prevent accumulation of wastes which create hazardous conditions.
- C. Burning or burying rubbish and waste materials on the site shall not be allowed.
- D. Disposal of hazardous wastes or materials into sanitary or storm sewers shall not be allowed.

**1.4 DISPOSAL OF SURPLUS MATERIALS**

Unless otherwise shown on the Drawings, specified or directed, the CONTRACTOR shall legally dispose of all surplus materials and equipment from demolition off the Project site, and shall provide suitable off-site disposal site, or utilize a site designated by the OWNER.

**PART 2 PRODUCTS**

**2.1 CLEANING MATERIALS AND EQUIPMENT**

The CONTRACTOR shall provide all required personnel, equipment and materials needed to maintain the specified standard of cleanliness.

**2.2 COMPATIBILITY**

The CONTRACTOR shall use only the cleaning materials, methods and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the

material or as approved by the ENGINEER or OWNER.

### **PART 3 EXECUTION**

#### **3.1 PROGRESS CLEANING**

##### **A. General**

1. The CONTRACTOR shall not allow the accumulation of scrap, debris, waste material and other items not required for construction of this Work.
2. The CONTRACTOR shall, at least once each week, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
3. The CONTRACTOR shall provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.

##### **B. Site**

1. Daily, and more often if necessary, the CONTRACTOR shall inspect the site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
2. The CONTRACTOR shall restack materials stored on site weekly, or as often as necessary, in order to maintain a neat and orderly work area free of safety hazards.
3. At all times maintain the site in a neat and orderly condition which meets the approval of the ENGINEER.

#### **3.2 FINAL CLEANING**

- A. Definitions: Unless otherwise specifically specified, "clean" for the purpose of this Article shall be interpreted as the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.
- B. General: Prior to completion of the Work, the CONTRACTOR shall remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in 3.01 above.
- C. Site: Unless otherwise specifically directed by the ENGINEER or OWNER, the CONTRACTOR shall hose down all paved areas on the site and all public sidewalks directly adjacent to the site; rake clean other surfaces of the grounds and completely remove all resultant debris.

- D. Post-Construction Cleanup: The CONTRACTOR shall remove all evidence of temporary construction facilities, haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, or any other evidence of construction, as directed by the ENGINEER or OWNER.
- E. Restoration of Landscape Damage: Any landscape feature damaged by the CONTRACTOR shall be restored as nearly as possible to its original condition at the CONTRACTOR'S expense. The ENGINEER and/or OWNER will decide what method of restoration shall be used.
- F. Timing: The CONTRACTOR shall schedule final cleaning as approved by the ENGINEER to enable the OWNER to accept the Project.

### **3.3 CLEANING DURING OWNER'S OCCUPANCY**

Should the OWNER occupy the Work, or any portion thereof, prior to its completion by the CONTRACTOR and acceptance by the OWNER, responsibilities for interim and final cleaning of the occupied spaces shall be as determined by the ENGINEER in accordance with the Supplementary Conditions of the Contract Documents.

END OF SECTION



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**SECTION 01720  
RECORD DOCUMENTS**

**PART 1 GENERAL**

**1.1 SCOPE**

- A. The work under this Section includes, but is not necessarily limited to, the compiling, maintaining, recording and submitting of project record documents as herein specified.
- B. Record documents include, but are not limited to:
  - 1. Drawings;
  - 2. Specifications;
  - 3. Change orders and other modifications to the Contract;
  - 4. ENGINEER field orders or written instructions, including Requests for Information (RFI) and Clarification Memorandums;
  - 5. Reviewed shop drawings, product data and samples;
  - 6. Test records.
- C. The CONTRACTOR shall maintain on the Project site throughout the Contract Time an up to date set of Record Drawings.

**1.2 MAINTENANCE OF DOCUMENTS AND SAMPLES**

- A. Storage
  - 1. The CONTRACTOR shall store documents and samples in the CONTRACTOR'S field office, apart from documents used for construction.
  - 2. The CONTRACTOR shall provide files and racks for storage of documents.
  - 3. The CONTRACTOR shall provide locked cabinet or secure storage space for storage of samples.
- B. The CONTRACTOR shall file documents and samples in accordance with format of these Specifications.

- C. Maintenance
  - 1. The CONTRACTOR shall maintain documents in a clean, dry, legible condition and in good order.
  - 2. The CONTRACTOR shall not use record documents for construction purposes.
  - 3. The CONTRACTOR shall maintain, at the site for the OWNER, one copy of all record documents.
- D. The CONTRACTOR shall make documents and samples available at all times for inspection by ENGINEER or OWNER.
- E. Failure to maintain the Record Documents in a satisfactory manner may be cause for withholding of a CONTRACTOR's request for payment.

### **1.3 QUALITY ASSURANCE**

- A. Unless noted otherwise, Record Drawings shall provide dimensions, distances and coordinates to the nearest 0.1 foot.
- B. Unless noted otherwise, Record Drawings shall provide elevations to the nearest 0.01 foot for all pertinent items constructed by the CONTRACTOR.

### **1.4 RECORDING**

- A. The CONTRACTOR shall label each document "PROJECT RECORD" in neat, large printed letters.
- B. Recording
  - 1. The CONTRACTOR shall record information concurrently with construction progress.
  - 2. Then CONTRACTOR shall not backfill or otherwise conceal any work until required information is recorded.

### **1.5 RECORD DRAWINGS**

- A. Record Drawings shall be reproducible, shall have a title block indicating that the drawings are Record Drawings, the name of the company preparing the Record Drawings, and the date the Record Drawings were prepared. The CONTRACTOR will be provided paper copies of the Drawings, or the CONTRACTOR may elect to provide reproducible drawings via another method approved by the ENGINEER. Reproducible shall be defined as

allowing a clear copy to be reproduced on a standard office copier, or in an electronic format printable with standard office equipment.

- B. The CONTRACTOR shall legibly mark drawings to record actual construction, including:
1. All Construction
    - a. Changes of dimension and detail.
    - b. Changes made by Requests for Information (RFI), field order, clarification memorandums or by Change Order.
    - c. Details not on original Drawings.
  2. Site Improvements, Including Underground Utilities
    - a. Horizontal and vertical locations of all exposed and underground utilities and appurtenances, both new facilities constructed and those utilities encountered, referenced to permanent surface improvements.
    - b. Location of and dimensions of roadways and parking areas, providing dimensions to back of curb when present.
    - c. The locations shall be referenced to at least two easily identifiable, permanent landmarks or benchmarks.
  3. Structures
    - a. Depths of various elements of foundation in relation to finish first floor datum or top of wall.
    - b. Location of internal and buried utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.

## **1.6 SPECIFICATIONS**

- A. The CONTRACTOR shall legibly mark each section to record:
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.

2. Changes made by Requests for Information (RFI), field order, clarification memorandums, or by Change Order.

**1.7 SUBMITTAL**

- A. At contract closeout, the CONTRACTOR shall deliver Record Documents to the ENGINEER.
- B. The CONTRACTOR shall accompany submittal with transmittal letter, in duplicate, containing:
  1. Date
  2. Project title and number
  3. CONTRACTOR'S name and address
  4. Title and number of each record document
  5. Signature of CONTRACTOR or CONTRACTOR'S authorized representative

END OF SECTION

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**SECTION 01740**  
**WARRANTIES AND BONDS**

**PART 1 GENERAL**

**1.1 PROJECT MAINTENANCE AND WARRANTY**

- A. The CONTRACTOR shall maintain and keep in good repair the Work covered by these Drawings and Specifications until acceptance by the OWNER.
- B. The CONTRACTOR shall warrant for a period of one (1) calendar year from the date of OWNER'S written acceptance of certain segments of the Work and/or OWNER'S written final acceptance of the Project, as defined in the Contract Documents, that the completed Work is free from all defects due to faulty products or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. **The Performance Bond shall remain in full force and effect throughout the warranty period.**
- C. The CONTRACTOR shall not be obligated to make replacements which become necessary because of ordinary wear and tear, or as a result of improper operation or maintenance by the OWNER, or as a result of improper work or damage by another contractor or the OWNER, or to perform any work which is normally performed by a maintenance crew during operation.
- D. In the event of multiple failures of major consequences prior to the expiration of the one year warranty described above, the affected unit shall be disassembled, inspected and modified or replaced as necessary to prevent further occurrences at no cost to the OWNER. All related components which may have been damaged or rendered non-serviceable as a consequence of the failure shall be replaced at no cost to the OWNER. A new 12 month warranty against defective or deficient design, workmanship, and materials shall commence on the day that the item is reassembled and placed back into satisfactory operation and/or successfully started up by a manufacturer's representative. As used herein, multiple failure shall be interpreted to mean two or more successive failures of the same kind in the same item or failures of the same kind in two or more items. Major failures may include, but are not limited to, cracked or broken housings, piping, or vessels, excessive deflections, bent or broken shafts, broken or chipped gear teeth, premature bearing failure, excessive wear or excessive leakage around seals. Failures which are directly and clearly traceable to operator abuse, such as

operations in conflict with published operating procedures or improper maintenance, such as substitution of unauthorized replacement parts, use of incorrect lubricants or chemicals, flagrant over-or under-lubrication and using maintenance procedures not conforming with published maintenance instructions, shall be exempted from the scope of the one year warranty. Should multiple failures occur in a given item, all products of the same size and type shall be disassembled, inspected, modified or replaced as necessary and re-warranted for one year at no cost to the OWNER.

- E. The CONTRACTOR shall, at CONTRACTOR'S own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and removals and shall perform such work or reconstruction as may be made necessary by any structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the Work performed by the CONTRACTOR. Such repair shall also include refilling of trenches, excavations or embankments which show settlement or erosion after backfilling or placement.
- F. Except as noted on the Drawings or as specified, all structures such as embankments and fences shall be returned to their original condition prior to the completion of the Contract. Any and all damage to any facility not designated for removal, resulting from the CONTRACTOR'S operations, shall be promptly repaired by the CONTRACTOR at no cost to the OWNER.
- G. The CONTRACTOR shall be responsible for all road and entrance reconstruction and repairs and maintenance of same for a period of one year from the date of written final acceptance by the OWNER. In the event the repairs and maintenance are not made immediately and it becomes necessary for the owner of the road or driveway to make such repairs, the CONTRACTOR shall reimburse the owner of the road for the cost of such repairs.
- H. In the event the CONTRACTOR fails to proceed to remedy the defects upon notification within fifteen (15) days of the date of such notice, the OWNER reserves the right to cause the required materials to be procured and the work to be done, as described in the Drawings and Specifications, and to hold the CONTRACTOR and the sureties on CONTRACTOR'S bond liable for the cost and expense thereof.
- I. Notice to CONTRACTOR for repairs and reconstruction will be made in the form of a registered letter addressed to the CONTRACTOR at CONTRACTOR'S home office.

- J. Neither the foregoing paragraphs nor any provision in the Contract Documents, nor any special guarantee time limit implies any limitation of the CONTRACTOR'S liability within the law of the place of construction.

END OF SECTION



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**SECTION 02010**  
**SUBSURFACE CONDITIONS**

**PART 1 GENERAL**

**1.1 DESCRIPTION**

- A. Investigation: The CONTRACTOR shall visit the site and become acquainted with site conditions. Prior to bidding, prospective CONTRACTORS may make their own site and subsurface investigations to satisfy themselves with site and subsurface conditions. The CONTRACTOR shall be responsible for obtaining rights of ingress and egress to private property for site and subsurface investigation and shall assume all responsibility for any damage to property caused as a result of the CONTRACTOR's investigation.
  
- B. No geotechnical investigation has been performed on this site. The CONTRACTOR is responsible for making their own determination of subsurface conditions.

END OF SECTION



**PART 1 GENERAL**

**1.1 SUMMARY**

- A. The extent of site clearing is shown on the Drawings.
- B. Site preparation includes, but is not limited to, the following:
  - 1. Protection of existing trees indicated to remain.
  - 2. Removal of trees and other vegetation.
  - 3. Topsoil stripping and stockpiling.
  - 4. Removing existing above-grade improvements.
  - 5. Removing existing below-grade improvements.
  - 6. Soil erosion and sedimentation control.
  - 7. Removal of existing miscellaneous items.
  - 8. Snow Removal
- C. Related Work Specified Elsewhere
  - 1. Earthwork, Section 02200
  - 2. Seeding, Section 02933

**1.2 PROJECT CONDITIONS**

- A. Traffic: Conduct site-clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. (All main roadways within the site boundaries will be cleared of snow, when necessary, per direction of the Construction Manager. Access to all active working areas of the property shall be provided to the satisfaction of the Construction Manager.)
- B. Protection of Existing Improvements: Provide protections necessary to prevent damage to existing improvements indicated to remain in place.
  - 1. Protect improvements on adjoining properties and on owner's property.
  - 2. Restore damaged improvements to their original condition, as acceptable to property owners or other parties or authorities having jurisdiction.
- C. Protection of Existing Trees and Vegetation: Protect existing trees and other vegetation indicated to remain in place against unnecessary cutting, breaking or skinning of roots, skinning or bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line. Provide temporary guards to protect trees and vegetation to be left standing.

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**SITE CLEARING**

1. Water trees and other vegetation to remain within limits of contract work as required to maintain their health during course of construction operations.
  2. Provide protection for roots over 1-1/2 inch in diameter that are cut during construction operations. Coat cut faces with an emulsified asphalt or other acceptable coating formulated to use on damaged plant tissues. Temporarily cover exposed roots with wet burlap to prevent roots from drying out; cover with earth as soon as possible.
  3. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations in a manner acceptable to Architect. Employ a licensed arborist to repair damage to trees and shrubs.
  4. Replace trees that cannot be repaired and restored to full-growth status, as determined by arborist.
- D. Improvements on Adjoining Property: Authority for performing removal and alteration work on property adjoining Owner's property will be obtained by Owner prior to award of contract.
1. Extent of work on adjacent property is indicated on Drawings.
- E. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated or directed.
- F. Obtain and pay for permits required for the execution of the Work.
- G. Notify corporations, companies, individuals, and local authorities owning conduits, wires, or pipes that will be affected by this Work. Arrange for removal of wires running to or on the property that will interfere with the execution of the Work.
- H. Protect and maintain conduit, drains, sewers, pipes, and wires that are to remain. Provide and maintain markers for location of underground facilities.

**1.3 EXISTING SERVICES**

- A. Indicated locations are approximate; determine exact locations before commencing Work.
- B. Arrange and pay for disconnecting, removing, capping, and plugging utility services. Notify affected utility companies in advance and obtain approval before starting this Work.

- C. Place markers to indicate location of disconnected services. Identify service lines and capping locations on Project Record Documents.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. Soil Erosion and Sedimentation Control:

- 1. Straw Bale Filters, Sediment Traps and Silt Fence: As indicated on the Drawings.
- 2. Rip Rap: Refer to Section 02720 or as indicated on the Drawings.
- 3. Temporary seeding shall be one of the following seed types according to date of installation:

<u>Seed Species</u>	<u>Rate/Acre</u>	<u>Planting Depth</u>	<u>Optimum Planting Dates</u>
Wheat or rye	150 lbs.	1" to 1-1/2"	9/15 - 10/30
Spring oats	100 lbs.	1"	3/1 - 4/15
Annual rye grass	40 lbs.	1/4"	3/1 - 5/1 & 8/1 - 9/1
German millet	40 lbs.	1" to 2"	5/1 - 6/1
Sudan grass	35 lbs.	1" to 2"	5/1 - 7/30

- 4. Mulch shall be one of the following:
  - a. Straw or hay to be dry, unchopped, free of undesirable seeds.
  - b. Wood fiber or cellulose.
  - c. Long wood fiber (excelsior).

**PART 3 EXECUTION**

**3.1 SITE CLEARING**

- A. Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions, as required, to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.

1. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
- B. Topsoil: Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 inches. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.
1. Strip topsoil to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping.
    - a. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root system.
    - b. Note: At seeding areas a minimum of 6 inches topsoil is required after final grading. Where changes in contours are indicated in these areas, topsoil is not required to be removed to its full depth if indicated finished contours will allow, or have, 6 inches of topsoil after final grading.
  2. Stockpile topsoil in storage piles in areas indicated or directed. Construct storage piles to provide free drainage of surface water. Cover storage piles, if required, to prevent wind erosion.
  3. Dispose of unsuitable or excess topsoil as specified for disposal of waste material.
  4. Spreading of stockpiled topsoil for lawn work shall be provided as Work under Section 02200, Earthwork.
- C. Removal of Improvements: Remove existing above-grade and below-grade improvements as indicated and as necessary to facilitate new construction.
1. Abandonment or removal of certain underground pipe or conduits may be indicated on mechanical or electrical drawings and is included under work of related Division 15 and 16 Sections. Removing abandoned underground piping or conduits interfering with construction is included under this Section.

### **3.2 DISPOSAL OF WASTE MATERIALS**

- A. Burning on Owner's Property: Burning is not permitted on Owner's property.

- B. Removal from Owner's Property: Remove waste materials and unsuitable or excess topsoil from Owner's property.

### **3.3 SUBSURFACE DRAINAGE LINES**

- A. Where catch basins or other underground structures are removed and drainage lines are encountered that cannot be abandoned, provide and install the necessary sewer tile so that maintenance of the lines can be assured. This will particularly apply to subsurface drainage lines which should be maintained to assure proper drainage. Obtain Architect's approval for rerouting such lines.
- B. Fill the open ends of abandoned sewers or drains encountered in excavation with concrete or masonry.

### **3.4 SOIL EROSION AND SEDIMENTATION CONTROL**

- A. Sequence of Construction Activities:
  1. CONTRACTOR shall install silt fence, sediment traps and straw bale filters, as part of initial phase of any work to insure maximum silt retention on site.
  2. Mass grade the site keeping disturbed areas to a minimum at all times. Side of swales, mounds and ponds are to be seeded and mulched immediately upon completion. Temporary seeding will be required for all disturbed areas that cannot be final seeded within a time period that will prevent slope erosion. Temporary seeding will be required on all areas to be left disturbed in excess of 30 days. All temporary seeded areas shall be straw mulched in conformance with Specification Section 02957.
  3. CONTRACTORS shall control mud accumulation on all streets surrounding project by installing stone surface at all locations where construction traffic leaves the site. Dust shall be kept to a minimum by utilizing sprinkling, calcium chloride, vegetative cover, spray or adhesives, or other approved methods.
  4. Maintain all filters and traps during construction to prevent any blockages from accumulated sediment. Clean sediment traps, filters, and fencing after each storm event and on a weekly basis. Replace all materials that are clogged or ineffective.
  5. As storm sewer lines are installed, CONTRACTOR is to install a silt barrier at each inlet and on all drainage swales at minimum 100 foot intervals.
  6. All proposed street areas shall be paved as soon as possible after subgrade is prepared.

7. Temporary erosion control and sediment controls shall be removed by the CONTRACTOR only when sufficient growth of ground cover is established to prevent further erosion.
8. Rip rap shall be placed in areas of high velocity stream flow.

B. Temporary Seeding

1. If swale banks and slopes of 4:1 or greater cannot be permanently seeded immediately after grading, temporarily seed these areas using erosion control blankets in conformance with Specification Section 02957.
2. Mulch shall be one of the following with a coverage of at least 90 percent of the soil surface:
  - a. Install straw or hay mulch at a rate of 1-1/2 to 2 tons/acre, spread by hand or machine. Anchor it immediately using one of the following methods: Crimp with mulch anchoring tool; a weighted farm disc with dull serrated blades set straight; track cleats of a bulldozer; hydromulch with short cellulose fibers; or apply liquid tackifier or cover with biodegradable netting secured with staples.
  - b. Install wood fiber or cellulose at a rate of 1 ton/acre with a hydromulcher and tacking agent.
  - c. Install long fiber wood (excelsior) at a rate of 1/2 to 3/4 ton/acre anchored in areas subject to wind. See anchoring methods described above.
3. Check for erosion damage after each storm event and on a weekly basis. Reseed and mulch as required.
4. Fertilizer: Fertilize as recommended by the soil test, working fertilizer as recommended by the soil test, working fertilizer into the soil 2 to 4 inches deep with disc or rake operated across the slope to prevent it being lost to run off. Top dress fall seeded wheat or rye seedlings with 50 pounds/acre nitrogen in February or March if nitrogen deficiency is apparent.
5. If grading occurs during December, January, or February, no seeding is to take place prior to bulk earth moving and clearing.
6. All areas along streets (approximately 25 feet behind curb) shall be seeded with permanent seed mixture as soon as grade is established. Reseeding may be required after utility companies have installed their mains.

END OF SECTION

**PART 1 GENERAL**

**1.1 DESCRIPTION OF WORK**

- A. Extent of earthwork is indicated on the Drawings.
1. Preparation of subgrade for tanks, basins, building slabs, walks, and pavements is included as part of this work.
  2. Engineered fill course for support of building or basin slabs is included as part of this work.
  3. Backfilling of tanks, basins, basements, and trenches within building lines is included as part of this work.
- B. Excavation for Mechanical/Electrical Work: Excavation and backfill required in conjunction with underground mechanical and electrical utilities and buried mechanical and electrical appurtenances is included as work of this Section.
- C. Definition: "Excavation" consists of removal of all material encountered to subgrade elevations indicated and subsequent disposal of materials removed.

**1.2 QUALITY ASSURANCE**

- A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.
- B. Testing and Inspection Services: Employ, at Contractor's expense, testing laboratory acceptable to the Owner to perform soil testing and inspection service for quality control testing during earthwork operations.

**1.3 SUBMITTALS**

- A. Test Reports-Excavating

Submit following reports directly to the Engineer from the testing services, with copy to Contractor:

1. Test reports on borrow material.
2. Verification of each footing subgrade.
3. Field density test reports.
4. One optimum moisture-maximum density curve for each type of soil encountered.
5. Report of actual unconfined compressive strength and/or results of bearing tests on each strata tested.

**1.4 JOB CONDITIONS****A. Site Information**

1. Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil bearings. It is expressly understood that Owner will not be responsible for interpretation or conclusions drawn therefrom by Contractor. Data are made available for convenience of Contractor.
2. Additional test borings and other exploratory operations may be made by Contractor at no cost to Owner.

**B. Existing Utilities:** Prior to commencement of work, the Contractor shall locate existing underground utilities in areas of the work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.**C. Use of Explosives:** The Contractor (or any of his subcontractors) shall not bring explosives onto site or use in work without prior written permission from the Owner. All activities involving explosives shall be in compliance with the rules and regulations of the Kentucky Department of Mines and Minerals, Division of Explosives and Blasting. Contractor is solely responsible for handling, storage, and use of explosive materials when their use is permitted.**D. Protection of Persons and Property**

1. Barricade open excavations occurring as part of this work and post with warning lights.
  - a. Operate warning lights as recommended by authorities having jurisdiction.
  - b. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

**PART 2 PRODUCTS****2.1 SOIL MATERIALS****A. Definitions**

1. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, SP, GC, SC, ML and CL.

2. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups MH, CH, OL, OH and PT.
3. Subbase Material: Naturally and artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand.
4. Drainage fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100 percent passing a 1-1/2-inch sieve and not more than 5 percent passing a No. 4 sieve.
5. Backfill and fill materials: Satisfactory soil materials free of debris, waste, frozen materials, vegetable, and other deleterious matter.
6. Engineered fill: (Refer to this Section, paragraph 3.7 A.1.)

### **PART 3 EXECUTION**

#### **3.1 STRIPPING AND TOPSOILING**

- A. Before excavation and grading is commenced for buildings, structures or other work described hereinafter (except pipelines and manholes), the material meeting the topsoil specification of these Specifications shall be removed from the areas affected and stock-piled. When final grading is accomplished, particularly around buildings and other structures, the topsoil shall be spread evenly over the excavated area. Rough grading above excavated areas shall have been carried approximately 6 inches below finished grade (except solid rock, where it shall be carried 12 inches below finished grade) and brought back up to grade with topsoil as set out herein.

#### **3.2 EXCAVATION**

- A. Excavation includes excavation to subgrade elevations indicated including excavation of earth, rock, bricks, wood, cinders, and other debris. All excavation of materials in the lump sum portion of the work will be unclassified and no additional payment will be made regardless of type material encountered.
- B. Excavation Classifications (Not Used)
- C. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be at Contractor's expense.
  1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to the Engineer.

2. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classifications.

D. Additional Excavation

1. When excavation has reached required subgrade elevations, notify the Engineer who will make an inspection of conditions.
  - a. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed in writing by the Engineer.
  - b. Removal of unsuitable material and its replacement as directed will be paid on basis of Contract conditions relative to changes in work.

E. Stability of Excavations

1. Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
2. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

F. Shoring and Bracing

1. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross-braces, in good serviceable condition.
  - a. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
  - b. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
  - c. Provide permanent steel sheet piling or pressure creosoted timber sheet piling wherever subsequent removal of sheet piling might permit lateral movement of soil under adjacent structures. Cut off tops as required and leave permanently in place. In the event the Owner directs the Contractor to leave shoring materials in place, the Owner will reimburse the Contractor for the reasonable cost of leaving such materials in place.

G. Dewatering: Refer to this Division, Section 02140 for dewatering requirements.

H. Material Storage

1. Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
  - a. Dispose of excess soil material and waste materials as herein specified.
- I. Excavation for Structures
  1. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.
  2. In excavating for footings and foundations, take care not to disturb bottom of excavation. All loose material shall be removed from the excavation just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.
- J. Excavation for Pavements
  1. Cut surface under pavements to comply with cross-sections, elevations, and grades as shown.
- K. Trench Excavation
  1. The Contractor shall include in his lump sum bid all trenching and backfill necessary for installation of all pipelines as planned and specified. Trenching shall include clearing and grubbing of all trash, weeds, briars, trees, stumps encountered in trenching. The Contractor shall dispose of such material at no extra cost to the Owner. Shrubs shall be removed, maintained and replanted in the same or adjacent location as the Engineer may direct. Trenching also included such items as railroad, street, road, sidewalk, pipe, and small creek crossings; cutting, moving or repairing damage to fences, posts, gates, and other surface structures regardless of whether shown on the Drawings.
  2. All existing facilities shall be protected from danger or damage while pipelines are being constructed and backfilled, and from damage due to settlement of the backfill.
  3. In the event any existing structure is damaged, repair and restoration shall be made at once and backfill shall not be replaced until this is done. Restoration and repair shall be such that the damaged structure is equal to or better than its original condition and can serve its purpose as completely as before. All such restoration and repair shall be done without extra cost to the Owner.
  4. Trenches must be dug to lines and grades shown on the Drawings. Hand trenching may be required in areas where machine trenching would result in undue damage to existing structures and facilities.

5. Excavation shall be open trenches, except where otherwise shown on the Drawings, for tunneling, boring, or jacking under structures, railroad, sidewalks and roads.
6. Sheeting and shoring of trenches shall be provided at the expense of the Contractor where necessary to protect life, property and the new or existing structures from damage or to maintain maximum permissible trench widths at top of pipe. All necessary materials, including, but not limited to, sheeting, sheet piling, trench jacks, braces, shores and stringers, shall be used to hold trench walls. Sheeting and shoring may be withdrawn as the trenches are being backfilled, after backfill has been tamped over top of the pipe at least 18 inches. If removal before backfill is completed to surface endangers adjacent structures, such as buildings, pipelines, street paving, and sidewalks, then the sheeting and shoring shall be left in place until such danger has passed, and then pulled if practical. Voids caused by sheeting withdrawal shall be backfilled and tamped. If not withdrawn, sheeting shall be cut off at least 18 inches below final surface grade, so there is no obstruction at the ground level. In the event the Owner directs the Contractor to leave shoring materials in place, the Owner will reimburse the Contractor for the reasonable cost of leaving such materials in place.
7. Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the Engineer may order stabilization by various means. Exclusive of dewatering normally required for construction, and instability caused by neglect of the Contractor, the necessary stabilization shall be paid for at unit prices established in the Contract. In the event no particular bid price is applicable, then the payment for stabilization will be negotiated.
8. The location of the pipelines and their appurtenances as shown are those intended for the final construction. However, conditions may present themselves before construction on any line is started that would indicate desirable changes in location. The Owner reserves the right to make reasonable changes in line and structure locations without extra cost, except as may be determined by extra units of materials and construction actually involved. The Owner is under no obligation to locate pipelines, so they may be excavated by machine.
9. Tunneling may be used at the Contractor's option as an alternate to open-cut trenching, at no extra cost to the Owner. The annular space between plates and excavation shall be either permanently placed pea gravel or sand, pumped grout (3 parts sand and 1-part Portland cement by volume) or other suitably installed material approved by the Engineer. Backfilling shall be kept close to the heading and completed after each day's work. Where grout is used for backfill, injection holes with threaded plugs shall be provided in linear plates at various levels and in sufficient number of effectively grout to void around the tunnel. A minimum of 3 grout holes shall be provided in each 8 feet of tunnel length. Grout shall be injected in the lower holes first, proceeding

upward as the void is filled. Plugs shall be installed after each hole is filled and grout stops shall be provided behind plates as necessary to ensure complete filling of the void. In tunneling under buildings, the Contractor will be responsible for all damage resulting from his operations and methods of excavation and backfilling. Boring may also be used at the Contractor's option as an alternate to tunneling or open-cut trenching, at no extra cost to the Owner.

10. Dig trenches to the uniform width required for the particular item to be installed, sufficiently wide to provide ample working room. Provide 6" to 9" clearance on both sides of pipe or conduit.
  - a. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.
  - b. Where rock is encountered, carry excavation 6 inches below required elevation and backfill with a 6-inch layer of crushed stone or gravel prior to installation of pipe.
  - c. For pipes or conduit 3 inches or less in nominal size and for flat-bottomed, multiple-duct conduit units, excavate to subbase depth indicated or, if not indicated, then to 4 inches below bottom of work to be supported.
  - d. For pipes or conduit 6 inches or larger in nominal size, tanks, and other mechanical/electrical work indicated to receive subbase, excavate to subbase depth indicated or, if not otherwise indicated, to 6 inches below bottom of work to be supported.
  - e. Except as otherwise indicated, excavation for exterior water-bearing piping (water, steam, condensate, drainage) so top of piping is no less than 2 feet 6 inches below finish grade.
  - f. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
  - g. Backfill trenches with concrete where trench excavations pass within 18 inches of column or wall footings and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to level of bottom of adjacent footing.
  - h. Concrete is specified in Division 3.
  - i. Do not backfill trenches until tests and inspections have been made and backfilling authorized by the Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.
  - j. For piping or conduit less than 2 feet 6 inches below surface of roadways, furnish and install steel casing pipe, minimum wall thickness of 1/4", or sufficient diameter to carry the pipe or conduit to at least two feet beyond outside edge of pavement.

L. Cold Weather Protection

1. Protect excavation bottoms against freezing when atmospheric temperature is less than 35°deg. F (1 deg. C).

### **3.3 COMPACTION**

#### **A. General**

1. Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.
  - a. Percentage of maximum density requirements: Compact soil to not less than the following percentages of maximum density for soils which exhibit a well-defined moisture density relationship (cohesive soils) determined in accordance with ASTM D698 and not less than the following percentages of relative density, determined in accordance ASTM D4253 and D4254, for soils which will not exhibit a well-defined moisture-density relationship (cohesionless soils).
  - b. Structures, building slabs and steps, pavements: Compact top 12 inches of subgrade and each layer of backfill or fill material at 95 percent standard proctor density.
  - c. Lawn or unpaved areas: Compact top 6 inches of subgrade and each layer of backfill or fill material at 90 percent standard proctor density.
  - d. Walkways: Compact top 6 inches of subgrade and each layer of backfill or fill material at 95 percent standard proctor density.

#### **B. Moisture Control**

1. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface or subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

### **3.4 BACKFILL AND FILL**

#### **A. General**

1. Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below. Backfill material shall be no larger than the specified depth of the layer to be placed and/or compacted.
  - a. In excavations, use satisfactory excavated or borrow material.
  - b. Under grassed areas, use satisfactory excavated or borrow material.
  - c. Under walks and pavements, use subbase material, or satisfactory excavated or borrow material, or combination of both.
  - d. Under steps, use subbase material.
  - e. Under building slabs, use subbase material for a minimum depth of 6 inches.
- B. Backfill excavations as promptly as work permits, but not until completion of the following:
  1. Acceptance of construction below finish grade including, where applicable, damproofing, waterproofing, and perimeter insulation.
  2. Inspection, testing, approval, and recording locations of underground utilities.
  3. Removal of concrete formwork.
  4. Removal of shoring and bracing and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities or leave in place if required.
  5. Removal of trash and debris.
  6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
- C. Ground Surface Preparation
  1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
  2. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break up ground surface, pulverize, moisture condition to optimum moisture content, and compact to required depth and percentage of maximum density.
- D. Placement and Compaction
  1. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-

operated tampers. Crushed stone shall be installed in accordance with Section 02255.

- a. Before compaction, add moisture or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- b. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.

E. Backfilling Trenches

1. Backfilling shall be accomplished as soon as practical after pipe has been laid and jointing and alignment approved. Packing of crushed rock between joints shall be the usual procedure as the laying progresses. This is in order to avoid danger of misalignment from slides, flooding or other causes. The Engineer shall be given a maximum of 24 hours for inspection before backfilling.
2. Any special requirements of the Railroad Company or Highway Department in regard to backfilling will take precedence over the following general Specifications.
3. The backfill over the pipe shall be in accordance with the standard details shown on the Drawings for bedding and backfilling pipe.
4. In case maximum permissible trench widths (as designated by the pipe manufacturer) are exceeded, the Contractor shall furnish crushed rock backfill to a minimum of 12 inches over the top of pipe at no extra cost to the Owner.
5. After the foregoing cover requirements over top of the pipe have been met, rock may be used in the backfill in pieces no larger than 12 inches in any dimension, having a volume not to exceed one-half cubic foot and to an extent not greater than one-half the backfilling materials used. If additional earth is required for backfilling, it must be obtained and placed by the Contractor. Filling with rock and earth shall proceed simultaneously, such that no voids are left in the rock. After cover requirements over top of pipe have been met, backfilling may be employed without tamping, provided caution is used in quantity per dump and uniformity of level of backfilling. Surplus material shall be uniformly ridged over trench and excess rock hauled away, with no rock over 1-1/2-inch diameter in the top 6 inches. Ridged backfill shall be confined to the width of the trench and no higher than needed for replacement of settlement of backfill.

6. In the case of street, highway, railroad, sidewalk and driveway crossings; or within any roadway paving; or about manholes, valve and meter boxes; the backfill must be mechanically tamped in not over 6-inch layers, measured loose. Alternate method of compacting backfill shall be used, if refill material is in large hard lumps (crushed rock excepted) which cannot be consolidated without leaving voids.
7. In the case of tunnels, the annular space between plates and excavation shall be either permanently placed pea gravel or sand, pump grout (3 parts sand and 1-part Portland cement by volume) or other suitably installed material approved by the Engineer. Backfilling shall be kept close to the heading and completed after each day's work. Where grout is used for backfill, injection holes with threaded plugs shall be provided in liner plates at various levels and in sufficient number to effectively grout the void around the tunnel. A minimum of 3 grout holes shall be provided in each 8 feet of tunnel length. Grout shall be injected in the lower holes first, proceeding upward as the void is filled. Plugs shall be installed after each hole is filled and grout stops shall be provided behind plates as necessary to ensure complete filling of the void.
8. Where traffic on streets, driveways, railroads, sidewalks and highways requires temporary surfacing, backfilling shall be terminated 4 inches below original ground level and 4 inches to 6 inches of dense graded aggregate shall be placed on the trench. Backfills shall be maintained easily passible to traffic at original ground level, until acceptance of project or replacement of paving or sidewalks.
9. The Contractor shall protect all sewer, gas, electric, telephone, water and drain pipes or conduits from damage while pipelines are being constructed and backfilled, and from danger due to settlement of trench backfill.
10. No extra payment shall be made for backfilling of any kind, except as specified hereinbefore. Backfilling shall be included as a part of the lump sum bid. No extra payment will be made to the Contractor for supplying outside materials for backfill.
11. On completion of the project, all backfills shall be dressed; holes filled; and surplus material hauled away. All permanent walks, street paving, roadway, etc., shall be restored and seeding and sodding performed as required.

### **3.5 GRADING**

#### **A. General**

1. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

B. Grading Outside Building Lines

1. All materials used for backfill around structures shall be of a quality acceptable to the Engineer and shall be free from large or frozen lumps, wood and other extraneous material. All spaces excavated and not occupied by footings, foundations walls or other permanent work shall be refilled with earth up to the surface of the surrounding ground, unless otherwise specified, with sufficient allowance for settlement. In making the fills and terraces around the structures, the fill shall be placed in layers not exceeding 12 inches in depth and shall be kept smooth as the work progresses. Each layer of the fill shall be rolled with an approved type roller and/or be compacted. When it is not practicable to compact sections of the fill immediately adjacent to buildings or structures by rolling, then such section shall be thoroughly compacted by means of mechanical tamping or hand tamping as may be required by the conditions encountered. All fills shall be placed so as to load structures symmetrically.
2. As set out hereinbefore, rough grading shall be held below finished grade and then the topsoil which has been stockpiled shall be evenly spread over the surface. The grading shall be brought to the levels shown on the Drawings or to the elevations established by the Engineer. Final dressing shall be accomplished by hand work or machine work, or a combination of these methods as may be necessary to produce a uniform and smooth finish to all parts of the regrade. The surface shall be free from clods greater than 2 inches in diameter. Excavated rock may be placed in the fills, but it shall be thoroughly covered. Rock placed in fills shall not be closer than 12 inches from finished grade.
3. Grade areas adjacent to building lines to drain away from structures and to prevent ponding.
  - a. Finish surfaces free from irregular surface changes, and as follows:
    - (1) Lawn or unpaved areas: Finish areas to receive topsoil to within not more than 0.10 ft. above or below required subgrade elevations.
    - (2) Walks: Shape surface of areas under walks to line, grade, and cross-section, with finish surface not more than 0.0 inch above or 1.0 inch below required subgrade elevation.
    - (3) Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than 0.0 inch above or 1 inch below required subgrade elevation.

C. Grading Surface of Fill Under Building Slabs: Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades

within a tolerance of 0.0 inch above or 1 inch below required subgrade elevation when tested with a 10 ft. straightedge.

- D. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or standard proctor density for each area classification.

### **3.6 PAVEMENT SUBBASE COURSE**

- A. General
  - 1. Subbase course consists of placing subbase material, in layers of specified thickness, over subgrade surface to support a pavement base course.
  - 2. See other Division 2 sections for paving specifications.
- B. Grade Control: During construction, maintain lines and grades including crown and cross-slope of subbase course.
- C. Shoulders
  - 1. Place shoulders along edges of subbase course to prevent lateral movement. Construct shoulders of acceptable soil materials, placed in such quantity to compact to thickness of each subbase course layer. Compact and roll at least a 12-inch width of shoulder simultaneously with compacting and rolling of each layer of subbase course.
- D. Placing
  - 1. Place subbase course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations.
  - 2. When a compacted subbase course is shown to be 6 inches thick or less, place material in a single layer. When shown to be more than 6 inches thick, place material in equal layers, except no single layer more than 6 inches or less than 3 inches in thickness when compacted.

### **3.7 BUILDING SLAB ENGINEERED FILL COURSE**

- A. General
  - 1. Engineered fill course consists of placement of crushed stone, size and type shown on drawings, in layers of indicated thickness, over subgrade surface to support concrete building slabs.

**B. Placing**

1. Place fill material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.
2. When a compacted course is shown to be 6 inches or less, place material in a single layer. When shown to be more than 6 inches thick, place material in equal layers, except no single layer shall be more than 6 inches or less than 3 inches in thickness when compacted.

**3.8 FIELD QUALITY CONTROL****A. Quality Control Testing During Construction**

1. Allow testing service to inspect and report to the Engineer on findings and approve subgrades and fill layers before further construction work is performed.
  - a. Perform field density tests in accordance with ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2992 (nuclear density method), as applicable.
  - b. Footing subgrade: For each strata of soil on which footings will be placed, conduct at least one test to verify required design bearing capacities. Subsequent verification and approval of each footing subgrade may be based on a visual comparison of each subgrade with related tested strata, when acceptable to Engineer.
  - c. Paved areas and building slab subgrade: Make at least one field density test of subgrade for every 2,000 square feet of paved area or building slab, but in no case less than three tests. In each compacted fill layer, make one field density test for every 2,000 square feet of overlaying building slab or paved area, but in no case less than three tests.
  - d. Foundation wall backfill: Take at least two field density tests, at locations and elevations as directed.
- B. If in opinion of the Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense.

**3.9 MAINTENANCE**

- A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

- B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.
- C. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work and eliminate evidence of restoration to greatest extent possible.

END OF SECTION



**HORIZONTAL DIRECTIONAL DRILLING****PART 1 GENERAL****1.1 SCOPE**

- A. The work specified in this section consists of furnishing and installing an underground water distribution pipeline using the horizontal directional drilling (HDD) method of installation, also commonly referred to as directional boring or guided horizontal boring. This work shall include all services, equipment, materials, and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration.
- B. This specification is primarily written for the installation of high density polyethylene (HDPE) pipelines. The methods and specifications herein apply, but may be modified by the Engineer as appropriate.
- C. The size and configuration of the various components of the water system shall be performed as indicated in the Drawings and in the Standard Details.

**1.2 QUALIFICATIONS**

- A. Directional drilling and pipe installation shall be done by an experienced Contractor specializing in directional drilling and whose key personnel have at least five (5) years' experience in this work.

**1.3 QUALITY ASSURANCE**

- A. This specification calls for a wide range of procedural precautions necessary to insure that the very basic, essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the Engineer's approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the work authorized by the owner.

**1.4 SUBMITTALS**

- A. **WORK PLAN:** Prior to beginning work, the Contractor must submit to the Engineer a general work plan outlining the procedure and schedule to be used to execute the project. The plan should document the thoughtful planning required to successfully complete the project.

- B. MATERIALS: Specifications on all materials to be used shall be submitted to the Engineer for approval. Materials shall include the pipe, fittings and any other item which is to be an installed component of the project.
- C. OTHER: All other permits and/or plans required of the Contractor by the District, County or affected agency including, but not limited to, temporary erosion & sediment control plan, dewatering plan, traffic control plan and trench shoring plan.

## **PART 2 MATERIALS**

**2.1** The material requirements for the pipe and fittings shall be as for High Density Polyethylene (HDPE) Pipe and Fittings. All other pipe and fitting materials shall be as required by the Contract Documents or shown on the Drawings.

### **2.2 EQUIPMENT**

- A. General: The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback of the pipe, a drilling fluid mixing & delivery system of sufficient capacity to successfully complete the installation, a guidance system to accurately guide boring operations, and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this project.
- B. Drilling Rig: The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. The hydraulic system shall be free of leaks. The rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations.
- C. Drill Head: The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.
- D. Mud Motors (if required): Mud motors shall be of adequate power to turn the required drilling tools.
- E. Drill Pipe: Shall be constructed of high quality 4130 seamless tubing, grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36 RC.

### **2.3 GUIDANCE SYSTEM**

- A. The guidance system shall be of a proven type and shall be setup and operated by personnel trained and experienced with this system. The Operator shall be aware of

any magnetic anomalies and shall consider such influences in the operation of the guidance system if using a magnetic system.

## **2.4 DRILLING FLUID (MUD) SYSTEM**

- A. **Mixing System:** A self-contained, closed, drilling fluid mixing system shall be of sufficient size to mix and deliver drilling fluid composed of bentonite clay, potable water and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The drilling fluid reservoir tank shall be sized for adequate storage of the mud. Mixing system shall continually agitate the drilling fluid during drilling operations.
- B. **Drilling Fluids:** Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 8.5 – 10 and/or as per mixing requirements of the manufacturer. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No hazardous additives may be used. Drilling fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of the bore wall.
- C. **Delivery System:** The mud pumping system shall have a minimum capacity to supply mud in accordance with the drilling equipment pull-back rating at a constant required pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used drilling fluid and drilling fluid spilled during drilling operations shall be contained and properly disposed of. A berm, minimum of 12 inches (12”) high, shall be maintained around drill rigs, drilling fluid mixing system, entry and exit pits and drilling fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps and/or vacuum truck(s) of sufficient size shall be in place to convey excess drilling fluid from containment areas to storage facilities.

## **2.5 OTHER EQUIPMENT**

- A. **Pipe Rollers:** Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull-back operations. Sufficient number of rollers shall be used to prevent excess sagging of pipe.
- B. **Restrictions:** Other devices or pipeline placement systems for providing horizontal thrust other than those previously defined in the preceding subsections shall not be used unless approved by the Engineer prior to the commencement of the work. Consideration for approval will be made on an individual basis for each specified

location. The proposed device or system will be evaluated prior to approval or rejection on its potential ability to complete the pipeline placement satisfactorily without undue stoppage and to maintain line and grade within the tolerances prescribe by the particular conditions of the project.

### **PART 3 EXECUTION**

#### **3.1 GENERAL**

- A. The Engineer must be notified 48 hours in advance of starting work. The directional bore shall not begin until the Engineer or his authorized representative is present at the job site and agrees that proper preparations and precautions for the operation have been made. The Engineer's approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion to the work as authorized under the Contract. It shall be the responsibility of the engineer to provide inspection personnel at such times as appropriate without causing undue hardship by reason of delay to the Contractor.

#### **3.2 PERSONNEL REQUIREMENTS**

- A. All personnel shall be fully trained in their respective duties as part of the directional crew and in safety. Certifications, if applicable, shall be the responsibility of the contractor, and shall be provided to the engineer.

#### **3.3 DRILLING PROCEDURE**

- A. Site Preparation: The work site as indicated on the Drawings, within the right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. The Contractor must confine all activities to the designated work areas.
- B. Drill Path Survey: The entire drill path shall be accurately surveyed by the contractor with entry and exit stakes placed in the appropriate locations within the areas indicated on the Drawings. If the Contractor is using a magnetic guidance system, the drill path will be surveyed for any surface geomagnetic variations or anomalies.
- C. Environmental Protection: The Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by the Contract Documents, state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. The Contractor shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within two hundred feet (200') of any water-body or wetland.

- D. Safety: The Contractor shall adhere to all applicable state, federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted by the contractor at least weekly with a written record of attendance and topic submitted to the Engineer.
- E. Pipe: The pipe shall be welded/fused together in one length, if space permits. Steel pipe welds will be X-rayed prior to being placed in bore hole. Pipe will be placed on pipe rollers before pulling into bore hole with rollers spaced close enough to prevent excessive sagging of pipe.
- F. Pilot Hole:
  - 1. Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over the length of 100 feet. In the event that the pilot does deviate from the bore path more than 5% of depth in 100 feet, the Contractor must notify the Engineer and the Contractor may be required to pull-back and re-drill from the location along the bore path before the deviation.
  - 2. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, the Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a March funnel and then wait another 30 minutes. If mud fracture or returns loss continues, the Contractor must cease operations and notify the Engineer. The Engineer and Contractor will discuss additional options and work then will proceed accordingly.
- G. Reaming: Upon successful completion of the pilot hole, the Contractor will ream bore the hole to a minimum of 25% greater than outside diameter of the pipe using the appropriate tools. The Contractor shall not attempt to ream, at one time, more than the drilling equipment and mud system are designed to safely handle.
- H. Pull-Back:
  - 1. After successfully reaming the bore hole to the required diameter, the Contractor will pull the pipe back through the bore hole. In front of the pipe will be a swivel to prevent torsional stresses occurring in the pipe. Once pull-back operations have commenced, operations must continue without interruption until the pipe is completely pulled into the bore hole. During pull-back operations the Contractor shall not apply more than the maximum safe pipe pull pressure at any time.
  - 2. In the event that the pipe becomes stuck, the Contractor will cease pulling operations to allow any potential hydro-lock to subside and will then continue pulling operations. If the pipe remains stuck, the Contractor must immediately notify the Engineer. The Engineer and Contractor will discuss options and work then will proceed accordingly.

### 3.4 PIPE TESTING

- A. The pipe shall be hydrostatically tested after joining into continuous lengths prior to installation and again after installation.
- B. The testing procedure and pressures shall be in accordance with the Standard Specifications.
- C. At the completion of each successful test, erosion prevention and control measures will be used during removal and discharge of the water.

### **3.5 DISINFECTION AND DECHLORINATION**

- A. Disinfection procedure must be performed according to Technical Specifications Water Mains and Accessories 02665 – Section 3.10

### **3.6 SITE RESTORATION**

- A. Following drilling operations and pipeline installation, the Contractor must demobilize equipment and restore the work-site to its original condition or as specified in the Contract Documents. All excavations must be backfilled and mechanically compacted to 95% of original density. Landscaping must be restored or replaced to its original condition. All drilling mud shall be properly disposed of by the Contractor.

### **3.7 RECORD KEEPING**

- A. The Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to the Engineer at the completion of the project. As-Built drawings prepared by the Engineer, based upon records provided by the contractor and field observations.

END OF SECTION

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**SECTION 02255**

**CRUSHED STONE AND DENSE GRADED AGGREGATE**

**PART 1 GENERAL**

**1.1 SCOPE**

- A. Furnish and install crushed stone for miscellaneous uses as shown on the Drawings, as called for in the Specifications.
- B. Sizes, types, and quality of crushed stone are specified in this Section, but its use for replacement of unsuitable material, pavement base, and similar uses is specified in detail elsewhere in the Specifications. The ENGINEER may order the use of crushed stone for purposes other than those specified in other sections, if, in his opinion, such use is advisable. Payment for same will be subject to negotiation.

**PART 2 PRODUCTS**

**2.1 MATERIALS**

- A. When referred to in these Specifications, crushed stone shall be Number 8 graded in accordance with the Kentucky Transportation Cabinet Standard Specifications, Latest Edition, unless otherwise noted.
- B. When referred to in these Specifications, dense graded aggregate (DGA) shall be Number 73 graded in accordance with the Kentucky Transportation Cabinet Standard Specifications, Latest Edition, unless otherwise noted.

**PART 3 EXECUTION**

**3.1 INSTALLATION**

- A. Crushed stone shall be placed in uniform layers not greater than 6 inches deep and shaped by power equipment to required lines, grades, cross sections, and depths. No minimum compacted density, method of compaction, or compaction equipment is required since a nominal amount of compaction effort with vibration can establish the desired intergranular locking of the aggregate under controlled placement depth. Acceptable compaction can be achieved with pneumatic-tired and tracked equipment and rollers.
- B. All compaction operation shall be performed to the satisfaction of the ENGINEER.
- C. Crushed stone shall be placed in those areas as shown on the Drawings, as may be directed by the ENGINEER and as required by the Contract Documents.

END OF SECTION



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**SECTION 02665**  
**WATER MAINS AND ACCESSORIES**

**PARKSVILLE WATER DISTRICT 2021 SYSTEM IMPROVEMENTS PROJECT SPECIFICATIONS**

**1.1 SCOPE**

- A. This Section describes products to be incorporated into the water mains and requirements for the installation and use of these items. Furnish all products and perform all labor necessary to fulfill the requirements of these Specifications.
- B. General: Supply all products and perform all work in accordance with applicable American Society for Testing and Material (ASTM), American Water Works Association (AWWA), American National Standards Institute (ANSI), or other recognized standards. Latest revisions of all standards are applicable.

**1.2 QUALIFICATIONS**

- A. If requested by the ENGINEER, submit evidence that manufacturers have consistently produced products of satisfactory quality and performance for a period of at least two years.

**1.3 SUBMITTALS**

- A. Complete shop drawings and engineering data for all products shall be submitted to the ENGINEER in accordance with the requirements of Section 01340 of these Specifications.

**1.4 TRANSPORTATION AND HANDLING**

- A. Unloading: Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings, valves and accessories. Make equipment available at all times for use in unloading. Do not drop or dump materials. Any materials dropped or dumped will be subject to rejection without additional justification. Pipe handled on skids shall not be rolled or skidded against the pipe on the ground.
- B. Handling: Handle pipe, fittings, valves and accessories carefully to prevent shock or damage. Handle pipe by rolling on skids, forklift, or front-end loader. Do not use material damaged in handling. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior coatings or internal lining of the pipe.

**1.5 OWNER FURNISHED MATERIALS – N/A**

- A. Submit with construction progress schedule, a schedule for required deliveries of Owner furnished Material.
- B. The Contractor shall coordinate material shipments with the Owner and the materials suppliers.
- C. Materials furnished by the Owner will be delivered by truck. Pipe, fittings, valves and other material to be furnished by the Owner shall be delivered to the Owner's storage yard or another site agreed upon by the Contractor and the Owner. This other site, if selected, is to be provided by the Contractor at no additional cost to the Owner.
- D. The Contractor shall maintain communication with the material suppliers, and the Owner as necessary, to keep informed as to scheduled shipment, and upon notice to the Contractor of the delivery of materials, the Contractor shall proceed without delay to unload such materials.
- E. Upon receipt of materials from the manufacturer, the Contractor shall make an inspection of such materials, checking and certifying the bill of lading, noting any discrepancies and obtaining a proper memorandum signed by the agent of the carrier for any shortage in the shipment, or for any damaged materials received. All bills of lading and any memorandum for shortage or damage of material in the shipment shall be promptly submitted to the Engineer. The Contractor shall be responsible for distribution of all materials as required to complete the Work. Materials furnished to the Contractor shall be in the custody of the Contractor from the time of receipt by the Contractor of such materials from the carrier until final acceptance of the completed Work. The Contractor shall be responsible for any loss of damage to materials furnished by the Owner.

**1.6 STORAGE AND PROTECTION**

- A. Store all pipe which cannot be distributed along the route. CONTRACTOR shall make arrangements for the use of suitable storage areas.
- B. Stored materials shall be kept safe from damage. The interior of all pipe, fittings and other appurtenances shall be kept free from dirt or foreign matter at all times. Valves and hydrants shall be drained and stored in a manner that will protect them from damage by freezing.
- C. Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tier shall be kept off the ground on timbers, rails or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. At least two rows of timbers shall be placed between tiers and chocks, affixed to

each other in order to prevent movement. The timbers shall be large enough to prevent contact between the pipe in adjacent tiers.

- D. Stored mechanical and push-on joint gaskets shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis.
- F. Mechanical-joint bolts shall be handled and stored in such a manner that will ensure proper use with respect to types and sizes.

## 1.7 QUALITY ASSURANCE

- A. The manufacturer shall provide written certification to the ENGINEER that all products furnished comply with all applicable requirements of these Specifications.

## PART 2 PRODUCTS

### 2.1 PIPING MATERIALS AND ACCESSORIES

- A. Ductile Iron Pipe (DIP)
  1. Ductile iron pipe shall be manufactured in accordance with AWWA C151 (latest edition). All pipe, except specials, shall be furnished in nominal lengths of 18 to 20 feet. Sizes will be as shown on the Drawings. All pipe shall have a minimum pressure rating as indicated in the following table, and corresponding minimum wall thickness, unless otherwise specified or shown on the Drawings:

Pipe Sizes (inches)	Pressure Class (psi)
4 - 12	350
14 - 18	250
20	250
24	200
30 - 54	250

2. Flanged pipe minimum wall thickness shall be equal to Special Class 53. Flanges shall be furnished by the pipe manufacturer.
3. Pipe and fittings shall be cement lined in accordance with AWWA C104 (latest edition). Pipe and fittings shall be furnished with a bituminous outside coating.

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WATER MAINS AND ACCESSORIES

4. Fittings shall be ductile iron and shall conform to AWWA C110 or AWWA C153 (latest edition) with a minimum rated working pressure of 250 psi or as indicated on plans.
  5. Joints
    - a. Unless shown or specified otherwise, joints shall be push-on or restrained joint type for pipe and standard mechanical, push-on or restrained joints for fittings. Push-on and mechanical joints shall conform to AWWA C111 (latest edition). Restrained joints for pipe and fittings shall be American "FLEX-RING" or "LOK-RING", Clow "SUPER-LOCK", or U.S. Pipe "TR FLEX". No field welding of restrained joint pipe will be permitted. No mega lug type restraints are allowed on 24" and 30" water line.
    - b. Restrained joint pipe (RJP) on supports shall have bolted joints and shall be specifically designed for clear spans of at least 36 feet.
    - c. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.
  6. Provide the appropriate gaskets for mechanical and flange joints. Gaskets for flange joints shall be made of 1/8-inch thick, cloth reinforced rubber; gaskets may be ring type or full-face type.
  7. Provide the necessary bolts for mechanical, restrained and flange connections. Bolts for flange connections shall be steel with American Regular unfinished square or hexagon heads. Nuts shall be steel with American Standard Regular hexagonal dimensions, all as specified in ANSI B17.2. All bolts and all nuts shall be threaded in accordance with ANSI B1.1, Coarse Thread Series, Class 2A and 2B fit. Mechanical joint glands shall be ductile iron.
  8. Acceptance will be on the basis of the ENGINEER'S inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards.
  9. If the water main is located within 200 feet radius of an underground storage tank (UST), special rubber gaskets shall be provided for the water main joints. These gaskets shall be manufactured of "nitrate rubber" material or other acceptable material possessing superior resistance to deterioration from petroleum-based products. This requirement will apply to the gaskets supplied for mechanical joints and push-on joints.
- B. Polyvinyl Chloride Pipe (PVC)
1. All PVC pipe shall have belled ends for push-on type jointing and shall conform to ASTM D 2241. The pipe shall have a Standard Dimension Ratio as indicated on the plans. Pipe shall be supplied in minimum lengths of 20 feet.

2. All fittings shall be of cast or ductile iron meeting the requirements of AWWA C110 or AWWA C153 (latest edition) with a minimum rated working pressure of 200 psi. Fittings shall be cement lined in accordance with AWWA C104. Fittings shall be furnished with a bituminous outside coating. Special adapters shall be provided as recommended by the manufacturer to adapt the PVC pipe to mechanical jointing with cast or ductile iron pipe, fittings, or valves.
3. Detection tape shall be provided over all PVC water mains.
4. Acceptance will be on the basis of the ENGINEER'S or OWNER'S inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards, including the National Sanitation Foundation. Additionally, each piece of pipe shall be stamped "NSF Approved".

C. Polyvinyl Chloride Pipe (PVC) - (C-900)

1. All PVC pipe shall have belled ends for push-on type jointing and shall conform to AWWA C900, ductile iron pipe equivalent outside diameters. **The pipe shall have a Standard Dimension Ratio (DR) of 21 and shall be capable of withstanding a working pressure of 200 psi.** Pipe shall be supplied in minimum lengths of 20 feet.
2. All fittings shall be of cast or ductile iron meeting the requirements of AWWA C110 or AWWA C153 with a minimum rated working pressure of 250 psi. Fittings shall be cement lined in accordance with AWWA C104. Fittings shall be furnished with a bituminous outside coating. Special adapters shall be provided, as recommended by the manufacturer, to adapt the PVC pipe to mechanical jointing with cast or ductile iron pipe, fittings or valves.
3. Detection tape shall be provided over all PVC water mains.
4. Acceptance will be on the basis of the ENGINEER'S inspection and the manufacturer's written certification that the pipe was manufactured and tested in accordance with the applicable standards, including the National Sanitation Foundation. Additionally, each piece of pipe shall be stamped "NSF Approved".

D. Polyethylene Pipe and Fittings

1. The CONTRACTOR shall furnish and install high density polyethylene pipe meeting these Specifications at the locations indicated on the Plans and in other sections of these Specifications.
  - a. High Density polyethylene pipe shall be manufactured and tested in conformance to the requirements of the latest revision of the American Society for Testing and Materials designation ASTM D-3350 "Polyethylene Plastic Pipe and Fittings Materials".

- b. High density Polyethylene pipe shall have a grade designation of PE 3406 and a cell classification designation of P 355434C.
- c. High density polyethylene pipe shall be joined by means of butt fusion.
- d. Fittings for high density polyethylene pipe shall be manufactured of the same materials as the pipe. Unless otherwise indicated, all fittings shall be joined to the pipe by butt fusion techniques.

## 2.2 VALVES

### A. Gate Valves (GV)

- 1. 3-Inches in Diameter and Smaller: Gate valves shall be bronze, heavy duty, rising stem, wedge type with screwed or union bonnet. Valve ends shall be threaded or solder type as appropriate. Valves shall have a minimum 200 psi working pressure for water (125 psi working pressure for steam). Valves shall be made in the U.S.A. Gate valves shall be equal to Crane No. 428 (threaded) or Crane No. 1334 (solder end).
- 2. 4-Inches Through 12-Inches in Diameter: Gate valves 4-inches through 12-inches shall be resilient wedge type conforming to the requirements of AWWA C509 rated for 200 psi working pressure.
  - a. Valves shall be provided with two O-ring stem seals with one O-ring located above and one O-ring below the stem collar. The area between the O-rings shall be filled with lubricant to provide lubrication to the thrust collar bearing surfaces each time the valve is operated. At least one anti-friction washer shall be utilized to further minimize operating torque. All seals between valve parts, such as body and bonnet, bonnet and bonnet cover, shall be flat gaskets or O-rings.
  - b. The valve gate shall be made of cast iron having a vulcanized, synthetic rubber coating, or a seat ring attached to the disc with retaining screws. Sliding of the rubber on the seating surfaces to compress the rubber will not be allowed. The design shall be such that compression-set of the rubber shall not affect the ability of the valve to seal when pressure is applied to either side of the gate. The sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.
  - c. All internal ferrous surfaces shall be coated with epoxy to a minimum thickness of 4 mils. The epoxy shall be non-toxic, impart no taste to the water and shall conform to AWWA C550, latest revision.
  - d. Gate valves 4 through 12-inches shall be manufactured by American-Darling, Mueller or M & H Valve.

- a. Check Valves
  1. Check valves shall be iron body, bronze mounted. They shall be outside weight and lever type (unless specified otherwise by the ENGINEER or indicated as such on the Plans) with bronze seat, hinge and guide busting. Unless otherwise indicated, check valves for interior use shall be flanged and those for exterior use shall be mechanical joint.
- b. Blowoff Assemblies
  1. Blowoff assemblies shall be installed in accordance with the details and Specifications at the locations shown on the Plans or as directed by the ENGINEER for the purpose of removing any obstacles or impurities from the main. The piping shall be the size indicated on the Plans PVC with a standard gate valve sized as indicated and 2-piece cast iron valve box and lid marked "Water". The lid shall be secured with a pentagon lock nut.

### **2.3 FIRE HYDRANTS (FH)**

- A. All fire hydrants shall conform to the requirements of AWWA C502 for 250 psi working pressure. Hydrants shall be the compression type, closing with line pressure. The valve opening shall not be less than [5-1/4-inches].
- B. In the event of a traffic accident, the hydrant barrel shall break away from the standpipe at a point above grade and in a manner which will prevent damage to the barrel and stem, preclude opening of the valve, and permit rapid and inexpensive restoration without digging or cutting off the water.
- C. The means for attaching the barrel to the standpipe shall permit facing the hydrant a minimum of eight different directions.
- D. Hydrants shall be fully bronze mounted with all working parts of bronze. Valve seat ring shall be bronze and shall screw into a bronze retainer.
- E. All working parts, including the seat ring shall be removable through the top without disturbing the barrel of the hydrant.
- F. The operating nut shall match those on the existing hydrants. The operating threads shall be totally enclosed in an operating chamber, separated from the hydrant barrel by a rubber O-ring stem seal and lubricated by a grease or an oil reservoir.
- G. Hydrant shall be a non-freezing design and be provided with a simple, positive, and automatic drain which shall be fully closed whenever the main valve is opened.

- H. Hose and pumper connections shall be breech-locked, pinned, or threaded and pinned to seal them into the hydrant barrel. Each hydrant shall have two 2-1/2-inch hose connections and one 4-1/2-inch pumper connection, all with National Standard threads and each equipped with cap and non-kinking chain.
- I. Hydrants shall be furnished with a mechanical joint connection to the spigot of the 6-inch hydrant lead.
- J. Minimum depth of bury shall be 4.5 feet. Provide extension section where necessary for proper vertical installation and in accordance with manufacturer's recommendations.
- K. All outside surfaces of the barrel above grade shall be painted with enamel equal to Koppers Glamortex 501 in a color to be selected by the Owner.
- L. Hydrants shall be traffic model and shall be American or approved equal.

#### **2.4 VALVE BOXES (VB) AND EXTENSION STEMS**

- A. All valves shall be equipped with valve boxes. The valve boxes shall be cast iron two-piece screw type with drop covers. Valve boxes shall have a 5.25-inch inside diameter. Valve box covers shall weigh a minimum of 13 pounds. The valve boxes shall be adjustable to 6-inches up or down from the nominal required cover over the pipe. Valve boxes shall be of sufficient length that bottom flange of the lower belled portion of the box is below the valve operating nut. Ductile or cast iron extensions shall be provided as necessary. Covers shall have "WATER VALVE" or "WATER" cast into them. Valve boxes shall be manufactured in the United States.
- B. All valves shall be furnished with extension stems, as necessary, to bring the operating nut to within 30-inches of the top of the valve box. Connection to the valve shall be with a wrench nut coupling and a set screw to secure the coupling to the valve's operating nut. The coupling and square wrench nut shall be welded to the extension stem. Extension stems shall be equal to Mueller A-26441 or M & H Valve Style 3801.
- C. All Valve Boxes shall be installed with Concrete Collars as Indicated on the Detail Sheet.

#### **2.5 VALVE MARKERS (VM)**

- A. The CONTRACTOR shall provide a concrete valve marker as detailed on the Drawings for each valve installed. Valve markers shall be stamped "Water".

**2.6 TAPPING SLEEVES AND VALVES (TS&V)**

- A. Tapping sleeves shall be stainless steel of the split-sleeve, mechanical joint type. The CONTRACTOR shall be responsible for determining the outside diameter of the pipe to be connected to prior to ordering the sleeve. Valves shall be gate valves furnished in accordance with the specifications shown above, with flanged connection to the tapping sleeve and mechanical joint connection to the branch pipe. The tapping sleeve and valve shall be supplied by the valve manufacturer. Tapping sleeves shall be equal to American-Darling, Mueller or M & H Valve.

**2.7 TAPPING SADDLES**

- A. Tapping saddles shall be brass body type with O-ring gasket. Tapping saddles shall be equal to Mueller Series H-134 Service Clamp.

**2.8 CORPORATION COCKS AND CURB STOPS**

- A. Corporation cocks and curb stops shall be ground key type, shall be made of bronze conforming to ASTM B 61 or B 62, and shall be suitable for the working pressure of the system. Ends shall be suitable for flared tube compression type joint. Threaded ends for inlet and outlet of corporation cocks shall conform to AWWA C800; coupling nut for connection to flared copper tubing shall conform to ANSI B16.26. Corporation cocks and curb stops shall be manufactured by Ford or approved equal.

**2.9 AIR VALVES**

- A. Air Release Valves: Air release valves shall be one of the following types:
1. The air release valve shall automatically release air accumulations from the pipeline due to the action of the float. When the air valve body fills with air, the float falls freely from the orifice to allow the air to escape to the atmosphere. When all the air has been exhausted from the valve body, the float will be buoyed up to seat against the orifice and prevent water from being exhausted from the valve. The valve body and cover shall be constructed of cast iron (ASTM A 126-B). A synthetic orifice button shall be affixed to the valve cover to provide a non-corrosive seat for the float. The float shall be constructed of stainless steel. A resilient, Buna-N seat shall be attached to the float for drop-tight closure. The float shall be free floating within the valve body. Valve orifice size shall be as shown on the Drawings.
  2. The air release valve shall automatically release air accumulations from the pipeline due to the action of the float and lever mechanism. When the air valve body fills with air, the float falls. Through the leverage mechanism, this causes the resilient seat to open the orifice and allow the air to escape to the atmosphere. When all the air has been

exhausted from the valve body, the float will be buoyed up. Through the leverage mechanism, this will cause the resilient seat to close the orifice, preventing water from being exhausted from the valve. The valve body and cover shall be constructed of cast iron (ASTM A 126-B). The float shall be constructed of stainless steel and attached to a stainless steel lever mechanism. A resilient, Buna-N seat shall be attached to the lever mechanism for drop-tight closure. Valve orifice size shall be as shown on the Drawings.

- B. Air/Vacuum Valve: The air/vacuum valve shall discharge large amounts of air as the pipeline fills and allow air to enter the pipeline as it drains or in the event of vacuum conditions. The valve shall operate by means of a non-collapsible stainless-steel float which seals an orifice. As air enters the valve the float shall drop from the orifice and allow the air to escape. As water rises in the valve, the float will again seal the orifice. The valve will be of such design that the float cannot blow shut at any air velocity. All working parts shall be of stainless steel. The inside of the valve body shall be epoxy coated. Valve inlet size shall be as shown on the Drawings.
- C. Combination Air Valves: Combination air valves shall combine the features of an air release valve and an air/vacuum valve and shall be of one of the following types:
  - 1. Valve shall consist of an air/vacuum valve described in paragraph B. above, with an air release valve described in A. above tapped into its body. The valve shall be of two-piece body design with an isolation gate valve separating the two valves.
  - 2. Valve shall be single body, double orifice, allowing large volumes of air to escape out the larger diameter air and vacuum orifice when filling a pipeline and closes watertight when the liquid enters the valve. During large orifice closure, the smaller diameter air release orifice will open to allow small pockets of air to escape automatically and independently of the large orifice. The large air/vacuum orifice shall also allow large volumes of air to enter through the orifice during pipeline drainage to break the vacuum. The Buna-N seats must be fastened to the valve, without distortion, for drop-tight shut-off. The float shall be stainless steel. Valve sizes shall be as shown on the Drawings.
- D. Surge Check Valve: Where shown on the Drawings or specified, provide a surge check valve on the inlet of the air/vacuum valve. The surge check valve shall be normally open, spring loaded valve consisting of a body, seat and plug bolted to the inlet of the air/vacuum valve. The surge check shall operate on the interphase between the kinetic energy and relative velocity flows of air and water, allowing air to pass through but water shall close the surge check, reducing the rate of water flow by means of throttling orifices in the plug to

prevent shock closure of the air/vacuum valve. The surge check orifices must be an adjustable type to suit operating conditions in the field.

- E. All air valves and accessories shall be supplied by a single manufacturer and shall be G.A. Industries, APCO, Crispin or Val-Matic.

## **2.10 METER SETTERS**

- A. The meter setter shall be a tandem coppersetter as shown on the standard detail drawings with 3/4" double purpose ends and be 15" high with padlock wing. It shall be all purpose, designed for 5/8" x 3/4" meter and be of sufficient height to raise meters above the bottom of the meter box. The meter setter shall be Ford, or equal. Meter setters shall have an inverted key inlet valve.
- B. Setters shall be installed so that the meters are centered in the meter box.
- C. The water service line shall be extended a minimum of 18" beyond the meter box on the customer end. The end of the extension shall be capped or plugged to prevent entry of foreign material until the connection is made.

## **2.11 WATER METERS**

- A. Water meter shall be cold water displacement type meeting all requirement of AWWA C700-77. The meter sizes shall be 5/8-inch x 3/4-inch meters for 3/4" service rated at a flow of 20 gpm and 1" meters for 1" service rated at a flow of 50 gpm. Meters shall be of frost-proof design and be rotating disk type. The meters shall be equipped with a straight-reading register recording in U.S. Gallons hermetically sealed to prevent fogging and with a removable corrosion resistant strainer screen between the outer case and measuring chamber. Register shall be equipped with a device to afford capability for accurately testing each meter according to AWWA Standards. The body case shall have the manufacturer's serial number imprinted thereon and have raised markings to indicate the direction of flow. Meter shall be Zenner or approved equal.

## **2.12 YARD HYDRANTS**

- A. Yard hydrants shall be installed where described on the Drawings or directed by the Engineer in accordance with the details shown. Hydrants shall be of the frost proof, compression type with all working parts removable without digging up the hydrants. Hydrants shall be equipped with removable handwheel or lever, hose connections (1-1/2" size) and bottom connection for 2-inch water line. Hydrants shall be American-Darling or equal.
- B. All hydrants shall be backfilled to the ground surface with crushed stone.

- C. Exposed portions of hydrants shall be factory painted with an enamel finish. Color charts shall be furnished with Shop Drawings for color selection by the Engineer. Below ground portions shall have two (2) coats of Fed. Spec. TT-V-51F Asphalt Varnish.

### **2.13 VALVE KEYS**

- A. The CONTRACTOR shall provide to the OWNER one valve key for every five valves provided, but no more than three and not less than one valve key. Valve keys shall be 72-inches long with a tee handle and a 2-inch square wrench nut. Valve keys shall be furnished by the valve manufacturer. Valve keys shall be equal to Mueller A-24610 or ACIPCO No. 1303.

### **2.14 CONCRETE**

- A. Concrete shall have a compressive strength of not less than 3000 psi, with not less than 5.5 bags of cement per cubic yard and a slump between 3 and 5-inches. For job mixed concrete, submit the concrete mix design for approval by the Engineer. Ready-mixed concrete shall be mixed and transported in accordance with ASTM C 94. Reinforcing steel shall conform to the requirements of ASTM A 615, Grade 60.

### **2.15 PRESSURE REDUCING VALVE VAULTS**

#### **A. GENERAL**

- 1. The supplier shall furnish required materials for installation of a pressure reducing valve station. Major items to be furnished include one (1) 4" pressure reducing valve, one (1) concrete valve vault with hatch, two (2) pressure gauge assemblies, and all necessary pipe, valves and fittings for a complete pressure reducing valve station installation.

#### **B. PRESSURE REDUCING VALVES**

##### **1. FUNCTION:**

The Pressure Reducing Valve shall automatically reduce a higher upstream pressure and maintain a constant lower downstream pressure regardless of varying flow rate and/or varying inlet pressure. Valve will operate independent of valve differential pressure, utilizing a 2-way control principle.

##### **2. MAIN VALVE:**

The main valve shall be a hydraulically operated, diaphragm actuated globe valve of either angle or oblique (Y) pattern design, having semi-straight flow with no right angle turns. The valve shall be center guided, having an

unobstructed flow path with no stem guides, bearings, or supporting ribs. The valve shall have a maximum pressure rating of 250 psi for ANSI Class 150# flanges and 400 psi for all other end connections (threaded, grooved, or Class 300# flanges). All necessary repairs shall be possible without removing the valve from the line.

3. ACTUATOR:

The actuator assembly shall be a double-chambered diaphragm design with an inherent separating partition between the lower surface of the diaphragm and the main valve. The entire actuator assembly shall be removable from the valve as a single, integral unit. The seal shall be rectangular in cross section contained on three and one half sides, and the seal disc shall have a V-Port Throttling Plug. The diaphragm within the main valve actuator assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure.

4. PILOT CONTROL SYSTEM:

The pressure reducing pilot control shall be a direct-acting, adjustable, spring-loaded, normally open, diaphragm valve designed to permit flow when controlled pressure is less than the spring setting. The standard spring setting range shall be 15-150 psi, with options for 3-430 psi. The valve shall be factory assembled with all control tubing, isolations ball valves, control filter and pilot.

5. MATERIALS OF CONSTRUCTION:

The valve body and cover shall be Ductile Iron to ASTM A536, with a NSF 61 approved fusion bonded epoxy coating. External nuts and bolts shall be SAE 316 stainless steel. The interior trim shall be stainless steel. Valve bearing shall be bronze ASTM B62. The nylon reinforced diaphragm and all O-rings shall be EPDM, with the seat seal being Buna-N. The control loop accessories, pilot, tubing & fittings shall all be SAE 316 stainless steel. The valve shall be certified to NSF/ANSI 61 and 372 for contact with drinking water.

6. MANUFACTURE:

The valve shall be a Bermad Model 720.

7. PRESSURE REDUCING VAULT SETTINGS:

## WATER MAINS AND ACCESSORIES

Vault Name	Line Size	Inlet Pressure	Outlet Pressure	Min Flow	Normal Flow	Max Flow
Minor Branch Road	4"	130-150 PSI	120 PSI	<5 GPM	5 GPM	100

## C. INTERNAL PIPING, VALVES &amp; FITTINGS

1. All ductile iron piping outside the station shall be Class 51, mechanical joint in accordance with ANSI/AWWA C151/A21.51. Fittings for underground installation shall be mechanical joint ductile iron in accordance with ANSI/AWWA C111/AN21.11, with retainer glands.
2. All ductile iron piping within the station building shall be Class 53, flanged ANSI 125# in accordance with ANSI/AWWA C115/A21.15. All ductile iron pipe shall be cement lined and coated per AWWA C104 inside.
3. All piping 2" diameter or less shall be steel with welded joints, schedule 40.

## D. CONCRETE VALVE VAULT

1. The contractor shall furnish and install one (1) concrete valve vault as shown on the plans and specified herein. Each vault shall be the type known as Reinforced Concrete Sewer and Culvert Pipe. It shall consist of a concrete wall reinforced with a cage formed of circumferential and longitudinal steel and in accordance with "Precast Reinforced Concrete Manhole Risers and Tops", ASTM designation C478.
2. The pipe shall be round and true. The average internal diameter of the riser sections shall not be less than the nominal diameter by more than 3/8" or one (1) percent, whichever is greater. The shell thickness shall not be less than that given under dimensions by more than five (5) percent.
3. Reinforcement consists of wire conforming to Specifications A-82 and A185 and placed in precast manhole in accordance to ASTM C-478 as follows:  
  
Riser sections - A-185; 3 x 8 - W3/W2 60"(1+1)x450'  
Flat slab tops - A-185; 3 x 8 - W3/W2 and #3 rebar, two layers rebar interlaced
4. All cement used shall be Type I. The minimum compressive strength of the concrete shall be 4000 psi.

#### E. MISCELLANEOUS ACCESSORIES

1. The pressure gauges shall be a 4-1/2" face with polypropylene case, bottom connections, bronze bourdon tube and movements. The gauge shall be a Winters pressure gauge or equal.
  
2. The aluminum access hatch shall be a 36"x36" trough frame 1/2" thick diamond plate reinforced to a 300 psf live load. The frame shall be extruded aluminum channel section with an integral anchor flange on all four sides. Frame shall drain water out through a 1-1/2" pipe coupling. The floor access door shall be equipped with a flush aluminum drop handle that does not protrude above the cover, and a stainless steel automatic hold open arm with red vinyl grip to lock the cover in the open position. The door shall have stainless steel hinges with stainless steel tamper proof bolts and nuts. A staple for a padlock shall be supplied for security.
  
3. All cement used shall be Type I. The minimum compressive strength of the concrete shall be 4000 psi.

#### F. SUBMITTALS AND DRAWINGS

The valve vault supplier shall furnish to the CONTRACTOR and ENGINEER detailed piping drawings of the proposed installation of the packaged pressure reducing station. As a minimum, the drawing shall show the both section and plan views of the proposed station, and the location and dimensions of pipe, valves and fittings inside the concrete structure. Each piece shall contain a mark number on the drawing, and the material shall contain this mark number when the item is shipped to the job site. The detailed drawing shall be performed on the latest version of AutoCAD. The ENGINEER shall review and approve the plans.

#### G. SYSTEM START-UP

Following installation of the above equipment by the CONTRACTOR, a certified factory trained manufacturer's representative shall inspect the installation and assist in starting up the equipment for a period of no less than eight (8) hours. Manufacturer's "Start-up Reports" shall be completed by the representative and approved by the Owner. The manufacturer shall warrant the installation for a period of no less than one (1) year from the date of start-up. The warranty shall cover defects in pipe, valves and fittings.

**PART 3 EXECUTION****3.1 EXISTING UTILITIES AND OBSTRUCTIONS**

- A. The Drawings indicate utilities or obstructions that are known to exist according to the best information available to the OWNER. The CONTRACTOR shall call the agencies or departments that own and/or operate utilities in the vicinity of the construction work site at least 72 hours (three business days) prior to construction to verify the location of the existing utilities.
- B. Existing Utility Location: The following steps shall be exercised to avoid interruption of existing utility service.
1. Provide the required notice to the utility owners and allow them to locate their facilities. Field utility locations are valid for only 10 days after original notice. The CONTRACTOR shall ensure, at the time of any excavation, that a valid utility location exists at the point of excavation.
  2. Expose the facility, for a distance of at least 200 feet in advance of pipeline construction, to verify its true location and grade. Repair, or have repaired, any damage to utilities resulting from locating or exposing their true location.
  3. Avoid utility damage and interruption by protection with means or methods recommended by the utility owner.
  4. Maintain a log identifying when phone calls were made, who was called, area for which utility relocation was requested and work order number issued, if any. The CONTRACTOR shall provide the ENGINEER an updated copy of the log bi-weekly, or more frequently if required.
- C. Conflict with Existing Utilities
1. Horizontal Conflict: Horizontal conflict shall be defined as when the actual horizontal separation between a utility, main, or service and the proposed water main does not permit safe installation of the water main by the use of sheeting, shoring, tying-back, supporting, or temporarily suspending service of the parallel or crossing facility. The CONTRACTOR may change the proposed alignment of the water main to avoid horizontal conflicts if the new alignment remains within the available right-of-way or easement, complies with regulatory agency requirements and after a written request to and subsequent approval by the ENGINEER or OWNER. Where such relocation of the water main is denied by the ENGINEER or OWNER, the CONTRACTOR shall arrange to have the utility, main, or service relocated.
  2. Vertical Conflict: Vertical conflict shall be defined as when the actual vertical separation between a utility, main, or service and the proposed water main does not permit the crossing without immediate or potential

future damage to the utility, main, service, or the water main. The CONTRACTOR may change the proposed grade of the water main to avoid vertical conflicts if the changed grade maintains adequate cover and complies with regulatory agencies requirements after written request to and subsequent approval by the ENGINEER or OWNER. Where such relocation of the water main is denied by the ENGINEER or OWNER, the CONTRACTOR shall arrange to have the utility, main, or service relocated.

- D. Electronic Locator: Have available at all times an electronic pipe locator and a magnetic locator, in good working order, to aid in locating existing pipe lines or other obstructions.
- E. Water and Sewer Separation
  - 1. Water mains should maintain a minimum 10-foot edge-to-edge separation from sewer lines, whether gravity or pressure. If the main cannot be installed in the prescribed easement or right-of-way and provide the 10-foot separation, the separation may be reduced, provided the bottom of the water main is a minimum of 18-inches above the top of the sewer. Should neither of these two separation criteria be possible, the water main shall be installed below the sewer with a minimum vertical separation of 18-inches.
  - 2. The water main, when installed below the sewer, shall be encased in concrete with a minimum 12-inch concrete depth to the first joint in each direction. Where water mains cross the sewer, the pipe joint adjacent to the pipe crossing the sewer shall be cut to provide maximum separation of the pipe joints from the sewer.
  - 3. No water main shall pass through, or come in contact with, any part of a sanitary sewer manhole.

### **3.2 CONSTRUCTION ALONG HIGHWAYS, STREETS AND ROADWAYS**

- A. Install pipelines and appurtenances along highways, streets and roadways in accordance with the applicable regulations of, and permits issued by, the Department of Transportation, Pulaski County and the City of Burnside with reference to construction operations, safety, traffic control, road maintenance and repair.
- B. Traffic Control
  - 1. The CONTRACTOR shall provide, erect and maintain all necessary barricades, suitable and sufficient lights and other traffic control devices; provide qualified flagmen where necessary to direct traffic; take all necessary precautions for the protection of the work and the safety of the public.

2. Construction traffic control devices and their installation shall be in accordance with the current Manual on Uniform Traffic Control Devices for Streets and Highways and the Department of Highways Specifications, latest edition.
  3. Placement and removal of construction traffic control devices shall be coordinated with the Department of Transportation, Pulaski County, and the City of Burnside a minimum of 48 hours in advance of the activity.
  4. Placement of construction traffic control devices shall be scheduled ahead of associated construction activities. Construction time in street right-of-way shall be conducted to minimize the length of time traffic is disrupted. Construction traffic control devices shall be removed immediately following their useful purpose. Traffic control devices used intermittently, such as "Flagmen Ahead", shall be removed and replaced when needed.
  5. Existing traffic control devices within the construction work zone shall be protected from damage. Traffic control devices requiring temporary relocation shall be located as near as possible to their original vertical and horizontal locations. Original locations shall be measured from reference points and recorded in a log prior to relocation. Temporary locations shall provide the same visibility to affected traffic as the original location. Relocated traffic control devices shall be reinstalled in their original locations as soon as practical following construction.
  6. Construction traffic control devices shall be maintained in good repair and shall be clean and visible to affected traffic for daytime and nighttime operation. Traffic control devices affected by the construction work zone shall be inspected daily.
  7. Construction warning signs shall be black legend on an orange background. Regulatory signs shall be black legend on a white background. Construction sign panels shall meet the minimum reflective requirements of the Department of Transportation, Pulaski County, and the City of Burnside. Sign panels shall be of durable materials capable of maintaining their color, reflective character and legibility during the period of construction.
  8. Channelization devices shall be positioned preceding an obstruction at a taper length as required by the current Manual on Uniform Traffic Control Devices for Streets and Highways, as appropriate for the speed limit at that location. Channelization devices shall be patrolled to ensure that they are maintained in the proper position throughout their period of use.
- C. Construction Operations
1. Perform all work along highways, streets and roadways to minimize interference with traffic.
  2. Stripping: Where the pipe line is laid along road right-of-way, strip and stockpile all sod, topsoil and other material suitable for right-of-way

- restoration.
3. Trenching, Laying and Backfilling: Do not open the trench any further ahead of pipe laying operations than is necessary. Backfill and remove excess material immediately behind laying operations. Complete excavation and backfill for any portion of the trench in the same day.
  4. Shaping: Reshape damaged slopes, side ditches, and ditch lines immediately after completing backfilling operations. Replace topsoil, sod and any other materials removed from shoulders.
  5. Construction operations shall be limited to 400 feet along areas within KYDOT jurisdiction, including clean-up and utility exploration.
- D. Excavated Materials: Do not place excavated material along highways, streets and roadways in a manner which obstructs traffic. Sweep all scattered excavated material off of the pavement in a timely manner.
- E. Drainage Structures: Keep all side ditches, culverts, cross drains, and other drainage structures clear of excavated material. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.
1. The CONTRACTOR shall make provisions for handling all flows in existing creeks, ditches, sewers and trenches by pipes, flumes or other approved methods at all times when his operations would, in any way, interfere with the natural functioning of said creeks, ditches, sewers and drains. The CONTRACTOR shall at all times during construction provide and maintain sufficient equipment for the disposal of all water which enters the excavation, both in open cut trenches and in tunnels, to render such excavation firm and dry, until the structures to be built thereon are completed.
- F. Landscaping Features: Landscaping features shall include, but are not necessarily limited to: fences; property corners; cultivated trees and shrubbery; manmade improvements; subdivision and other signs within the right-of-way and easement. The CONTRACTOR shall take extreme care in moving landscape features and promptly re-establishing these features.
- G. Maintaining Highways, Streets, Roadways and Driveways
1. Maintain streets, highways, roadways and driveways in suitable condition for movement of traffic until completion and final acceptance of the Work. All excavation shall be conducted in a manner to the last interruption to traffic.
  2. During the time period between pavement removal and completing permanent pavement replacement, maintain highways, streets and roadways by the use of steel running plates. Running plate edges shall have asphalt placed around their periphery to minimize vehicular impact. The backfill above the pipe shall be compacted as specified elsewhere up

to the existing pavement surface to provide support for the steel running plates.

3. Furnish a road grader or front-end loader for maintaining highways, streets, and roadways. The grader or front-end loader shall be available at all times.
4. Immediately repair all driveways that are cut or damaged. Maintain them in a suitable condition for use until completion and final acceptance of the Work. Driveways and other private and public access routes shall not be kept blocked or closed by the CONTRACTOR for more than a reasonable period of time without prior written approval from the property owner or controlling authority.
5. Maintenance of all traffic shall be in accordance with any requirements of the local road department(s) and/or the Kentucky Department of Transportation. It is the responsibility of the CONTRACTOR to coordinate all work with and notify the above-named agencies, and to provide all necessary signs, barricades, lights, flagmen, and other items for maintenance of traffic.
6. Public travel shall be maintained, unrestricted, wherever and whenever possible. Detours shall be provided when so directed by the appropriate agency. Adequate precautions shall be taken to provide for the safety of both vehicular and pedestrian traffic. Emergency vehicles shall be provided access to construction area at all times.
7. Unless specifically directed otherwise by the ENGINEER, not more than five hundred (500') feet of trench shall be opened ahead of the pipe laying, and not more than five hundred (500') feet of open ditch shall be left behind the pipe laying. All barricades, lanterns, watchmen, and other such signs and signals as may be necessary to warn the public of the dangers in connection with open trenches, excavations and other obstructions, shall be provided by and at the expense of the CONTRACTOR.
8. When so required, or when directed by the ENGINEER, only one-half (1/2) of the street crossing and road crossings shall be excavated before placing temporary bridges over the side excavated for the convenience of the traveling public.
9. All backfilled ditches shall be maintained in such manner that they will offer no hazard to the traveling public and the property owners abutting the improvements shall be taken into consideration. All public or private drives shall be promptly backfilled or bridges at the direction of the ENGINEER. Excavated materials shall be disposed of so as to cause the least interference, and in every case the deposition of excavated materials shall be satisfactory to the ENGINEER.

#### H. Property Protection

1. Extreme care shall be taken to protect trees, fences, poles, crops and all other property from damage unless their removal is authorized by the

ENGINEER. Any damaged property shall be restored to as good or better than original condition and shall meet with the approval of the ENGINEER and OWNER.

2. The CONTRACTOR has the right to fully utilize the easement unless specifically stated otherwise on the plans or by the ENGINEER. If any irreplaceable trees, fences, poles or crops, such as tobacco, corn, soy beans and such (excluding pasture land), occur on the easement the CONTRACTOR shall obtain the ENGINEER's and OWNER's approval prior to removing or otherwise causing damage to any of these items.
3. Beyond the limits of the easement the CONTRACTOR shall be responsible for any damage caused by his operations and/or his personnel.

### **3.3 PIPE DISTRIBUTION**

- A. Pipe shall be distributed and placed in such a manner that will not interfere with traffic.
- B. No pipe shall be strung further along the route than 1000 feet beyond the area in which the CONTRACTOR is actually working without written permission from the OWNER.
- C. No street or roadway may be closed for unloading of pipe without first obtaining permission from the proper authorities. The CONTRACTOR shall furnish and maintain proper warning signs and obstruction lights for the protection of traffic along highways, streets and roadways upon which pipe is distributed.
- D. No distributed pipe shall be placed inside drainage ditches.
- E. Distributed pipe shall be placed as far as possible from the roadway pavement, but no closer than five feet from the roadway pavement, as measured edge-to-edge.

### **3.4 LOCATION AND GRADE**

- A. The Drawings show the alignment of the water main and the location of valves, hydrants and other appurtenances.
- B. Construction Staking
  1. The base lines for locating the principal components of the work and bench marks adjacent to the work are shown on the Drawings if available. Base lines shall be defined as the line to which the location of the water main is referenced, i.e., edge of pavement, road centerline, property line, right-of-way or survey line. The CONTRACTOR shall be responsible for performing all survey work required for constructing the water main, including the establishment of base lines and any detail

surveys needed for construction. This work shall include the staking out of permanent and temporary easements to insure that the CONTRACTOR is not deviating from the designated easements.

2. The level of detail of survey required shall be that which the correct location of the water main can be established for construction and verified by the ENGINEER or OWNER. Where the location of components of the water main, e.g. tunnels and fittings, are not dimensioned, the establishment on the location of these components shall be based upon scaling these locations from the Drawings with relation to readily identifiable land marks, e.g., survey reference points, power poles, manholes, etc.

C. Reference Points

1. The CONTRACTOR shall take all precautions necessary, which includes, but is not necessarily limited to, installing reference points, in order to protect and preserve the centerline or baseline established by the ENGINEER.
2. Reference points shall be placed, at or no more than three feet, from the outside of the construction easement or right-of-way. The location of the reference points shall be recorded in a log with a copy provided to the ENGINEER and OWNER for use, prior to verifying reference point locations. Distances between reference points and the manhole centerlines shall be accurately measured to 0.01 foot.
3. The CONTRACTOR shall give the ENGINEER reasonable notice that reference points are set. The reference point locations must be verified by the ENGINEER prior to commencing clearing and grubbing operations.

D. After the CONTRACTOR locates and marks the water main centerline or baseline, the CONTRACTOR shall perform clearing and grubbing.

E. Construction shall begin at a connection location and proceed without interruption. Multiple construction sites shall not be permitted without written authorization from the ENGINEER for each site.

F. The CONTRACTOR shall be responsible for any damage done to reference points, base lines, center lines and temporary bench marks, and shall be responsible for the cost of re-establishment of reference points, base lines, center lines and temporary bench marks as a result of the operations.

### **3.5 LAYING AND JOINTING PIPE AND ACCESSORIES**

A. Lay all pipe and fittings to accurately conform to the lines and grades established by the ENGINEER.

B. Pipe Installation

1. Proper implements, tools and facilities shall be provided for the safe performance of the Work. All pipe, fittings, valves and hydrants shall be lowered carefully into the trench by means of slings, ropes or other suitable tools or equipment in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.
  2. All pipe, fittings, valves, hydrants and other appurtenances shall be examined carefully for damage and other defects immediately before installation. Defective materials shall be marked and held for inspection by the ENGINEER, who may prescribe corrective repairs or reject the materials.
  3. All lumps, blisters and excess coating shall be removed from the socket and plain ends of each pipe, and the outside of the plain end and the inside of the bell shall be wiped clean and dry and free from dirt, sand, grit or any foreign materials before the pipe is laid. No pipe containing dirt shall be laid.
  4. Foreign material shall be prevented from entering the pipe while it is being placed in the trench. No debris, tools, clothing or other materials shall be placed in the pipe at any time.
  5. As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.
  6. It is not mandatory to lay pipe with the bells facing the direction in which work is progressing.
  7. Applying pressure to the top of the pipe, such as with a backhoe bucket, to lower the pipe to the proper elevation or grade, shall not be permitted.
  8. Detection tape shall be buried 4 to 10-inches deep. Should detection tape need to be installed deeper, the CONTRACTOR shall provide 3-inch wide tape. In no case shall detection tape be buried greater than 20-inches from the finish grade surface.
- C. Alignment and Gradient
1. Lay pipe straight in alignment and gradient or follow true curves as nearly as practicable. Do not deflect any joint more than the maximum deflection recommended by the manufacturer.
  2. Maintain a transit, level and accessories on the job to lay out angles and ensure that deflection allowances are not exceeded.
- D. Expediting of Work: Excavate, lay the pipe, and backfill as closely together as possible. Do not leave unjointed pipe in the trench overnight. Backfill and compact the trench as soon as possible after laying and jointing is completed. Cover the exposed end of the installed pipe each day at the close of work and at

all other times when work is not in progress. If necessary to backfill over the end of an uncompleted pipe or accessory, close the end with a suitable plug, either push-on, mechanical joint, restrained joint or as approved by the ENGINEER.

E. Joint Assembly

1. Push-on, mechanical, flange and restrained type joints shall be assembled in accordance with the manufacturer's recommendations.
2. The CONTRACTOR shall inspect each pipe joint within 200 feet on either side of main line valves to ensure 100 percent seating of the pipe spigot, except as noted otherwise.
3. Each restrained joint shall be inspected by the CONTRACTOR to ensure that it has been "homed" 100 percent.
4. The CONTRACTOR shall internally inspect each pipe joint to ensure proper assembly for pipe 24-inches in diameter and larger after the pipe has been brought to final alignment.

F. Cutting Pipe: Cut ductile iron pipe using an abrasive wheel saw. Cut PVC pipe using a suitable saw; remove all burrs and smooth the end before jointing. The CONTRACTOR shall cut the pipe and bevel the end, as necessary, to provide the correct length of pipe necessary for installing the fittings, valves, accessories and closure pieces in the correct location. Only push-on or mechanical joint pipe shall be cut.

G. Polyethylene Encasement: Installation shall be in accordance with AWWA C105 and the manufacturer's instructions. All ends shall be securely closed with tape and all damaged areas shall be completely repaired to the satisfaction of the Engineer.

H. Valve and Fitting Installation

1. Prior to installation, valves shall be inspected for direction of opening, number of turns to open, freedom of operation, tightness of pressure-containing bolting and test plugs, cleanliness of valve ports and especially seating surfaces, handling damage and cracks. Defective valves shall be corrected or held for inspection by the ENGINEER. Valves shall be closed before being installed.
2. Valves, fittings, plugs and caps shall be set and joined to the pipe in the manner specified in this Section for cleaning, laying and joining pipe, except that 12-inch and larger valves shall be provided with special support, such as treated timbers, crushed stone, concrete pads or a sufficiently tamped trench bottom so that the pipe will not be required to support the weight of the valve. Valves shall be installed in the closed position.
3. A valve box shall be provided on each underground valve. They shall be carefully set, centered exactly over the operating nut and truly plumbed.

The valve box shall not transmit shock or stress to the valve. The bottom flange of the lower belled portion of the box shall be placed below the valve operating nut. This flange shall be set on brick, so arranged that the weight of the valve box and superimposed loads will bear on the base and not on the valve or pipe. Extension stems shall be installed where depth of bury places the operating nut in excess of 30-inches beneath finished grade so as to set the top of the operating nut 30-inches below finished grade. The valve box cover shall be flush with the surface of the finished area or such other level as directed by the ENGINEER.

4. In no case shall valves be used to bring misaligned pipe into alignment during installation. Pipe shall be supported in such a manner as to prevent stress on the valve.
5. A valve marker shall be provided for each underground valve. Unless otherwise detailed on the Drawings or directed by the ENGINEER, valve markers shall be installed 6-inches inside the right-of-way or easement.

#### I. Hydrant Installation

1. Prior to installation, inspect all hydrants for direction of opening, nozzle threading, operating nut and cap nut dimensions, tightness of pressure-containing bolting, cleanliness of inlet elbow, handling damage and cracks. Defective hydrants shall be corrected or held for inspection by the ENGINEER.
2. All hydrants shall stand plumb and shall have their nozzles parallel with or at right angles to the roadway, with pumper nozzle facing the roadway, except that hydrants having two-hose nozzles 90 degrees apart shall be set with each nozzle facing the roadway at an angle of 45 degrees.
3. Hydrants shall be set to the established grade, with the centerline of the lowest nozzle at least 12-inches above the ground or as directed by the ENGINEER.
4. Each hydrant shall be connected to the main with a 6-inch branch controlled by an independent 6-inch valve. When a hydrant is set in soil that is pervious, drainage shall be provided at the base of the hydrant by placing coarse gravel or crushed stone mixed with coarse sand from the bottom of the trench to at least 6-inches above the drain port opening in the hydrant to a distance of 12-inches around the elbow.
5. When a hydrant is set in clay or other impervious soil, a drainage pit 2 x 2 x 2 feet shall be excavated below each hydrant and filled with coarse gravel or crushed stone mixed with coarse sand under and around the elbow of the hydrant and to a level of 6-inches above the drain port.
6. Hydrants shall be located as shown on the Drawings or as directed by the ENGINEER. In the case of hydrants that are intended to fail at the ground-line joint upon vehicle impact, specific care must be taken to provide adequate soil resistance to avoid transmitting shock moment to the lower barrel and inlet connection. In loose or poor load bearing soil, this may be accomplished by pouring a concrete collar approximately 6-

inches thick to a diameter of 24-inches at or near the ground line around the hydrant barrel.

### **3.6 CONNECTIONS TO WATER MAINS**

- A. Make connections to existing pipe lines with tapping sleeves and valves or restrained coupling adapters, unless specifically shown otherwise on the Drawings.
- B. Location: Before laying pipe, locate the points of connection to existing water mains and uncover as necessary for the ENGINEER or OWNER to confirm the nature of the connection to be made.
- C. Interruption of Services: Make connections to existing water mains only when system operations permit. Operate existing valves only with the specific authorization and direct supervision of the Owner.
- D. Tapping Saddles and Tapping Sleeves
  - 1. Holes in the new pipe shall be machine cut, either in the field or at the factory. No torch cutting of holes shall be permitted.
  - 2. Prior to attaching the saddle or sleeve, the pipe shall be thoroughly cleaned, utilizing a brush and rag, as required.
  - 3. Before performing field machine cut, the watertightness of the saddle or sleeve assembly shall be pressure tested. The interior of the assembly shall be filled with water. An air compressor shall be attached, which will induce a test pressure as specified in this Section. No leakage shall be permitted for a period of five minutes.
  - 4. After attaching the saddle or sleeve to an existing main, but prior to making the tap, the interior of the assembly shall be disinfected. All surfaces to be exposed to potable water shall be swabbed or sprayed with a one percent hypochlorite solution.
- E. Connections Using Solid Sleeves: Where connections are shown on the Drawings using solid sleeves, the CONTRACTOR shall furnish materials and labor necessary to make the connection to the existing pipe line.
- F. Connections Using Couplings: Where connections are shown on the Drawings using couplings, the CONTRACTOR shall furnish materials and labor necessary to make the connection to the existing pipe line, including all necessary cutting, plugging and backfill.

### **3.7 VALVE BOX ADJUSTMENT (Not Used)**

### **3.8 THRUST RESTRAINT**

- A. Provide restraint at all points where hydraulic thrust may develop.
- B. Concrete Blocking
  - 1. Provide concrete blocking for all bends, tees, valves, and other points where thrust may develop, except where other exclusive means of thrust restraint are specifically shown on the Drawings.
  - 2. Concrete shall be as specified in this Section.
  - 3. Form and pour concrete blocking at fittings as shown on the Drawings and as directed by the ENGINEER. Pour blocking against undisturbed earth. Increase dimensions when required by over excavation.

### 3.9 INSPECTION AND TESTING

- A. Pressure and Leakage Test
  - 1. All sections of the water main subject to internal pressure shall be pressure tested in accordance with AWWA C600. A section of main will be considered ready for testing after completion of all thrust restraint and backfilling.
  - 2. Each segment of water main between main valves shall be tested individually. At no time shall the segment being tested exceed 3,500 feet without prior approval of the ENGINEER.
  - 3. Test Preparation
    - a. For water mains less than 24-inches in diameter, flush sections thoroughly at flow velocities, greater than 2.5 feet per second, adequate to remove debris from pipe and valve seats. For water mains 24-inches in diameter and larger, the main shall be carefully swept clean, and mopped if directed by the ENGINEER. Partially open valves to allow the water to flush the valve seat.
    - b. Partially operate valves and hydrants to clean out seats.
    - c. Provide temporary blocking, bulkheads, flanges and plugs as necessary, to assure all new pipe, valves and appurtenances will be pressure tested.
    - d. Before applying test pressure, air shall be completely expelled from the pipeline and all appurtenances. Insert corporation cocks at highpoints to expel air as main is filled with water as necessary to supplement automatic air valves. Corporation stops shall be constructed as detailed on the Drawings with a meter box.
    - e. Fill pipeline slowly with water. Provide a suitable pump with an accurate water meter to pump the line to the specified pressure.
    - f. The differential pressure across a valve or hydrant shall equal the maximum possible, but not exceed the rated working pressure. Where necessary, provide temporary backpressure to meet the differential pressure restrictions.

- g. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure.
4. Test Pressure: Test the pipeline at 50 psi above the rated working pressure of the pipe, measured at the lowest point, for at least two hours. Maintain the test pressure within 5 psi of the specified test pressure for the test duration. Should the pressure drop more than 5 psi at any time during the test period, the pressure shall be restored to the specified test pressure. Provide an accurate pressure gage with graduation not greater than 5 psi.
5. Leakage
- a. Leakage shall be defined as the sum of the quantity of water that must be pumped into the test section, to maintain pressure within 5 psi of the specified test pressure for the test duration plus water required to return line to test pressure at the end of the test. Leakage shall be the total cumulative amount measured on a water meter.
- b. The OWNER assumes no responsibility for leakage occurring through existing valves.
6. Test Results:
- a. No test section shall be accepted if the leakage exceeds the limits determined by the following formula:

$$L = \frac{SD (P)^{1/2}}{133,200}$$

Where:

L = allowable leakage, in gallons per hour

S = length of pipe tested, in feet

D = nominal diameter of the pipe, in inches

P = average test pressure during the leakage test, in pounds per square inch (gauge)

As determined under Section 4 of AWWA C600.

- b. If the water main section being tested contains lengths of various pipe diameters, the allowable leakage shall be the sum of the computed leakage for each diameter. The leakage test shall be repeated until the test section is accepted. All visible leaks shall be repaired regardless of leakage test results.

7. Completion: After a pipeline section has been accepted, relieve test pressure. Record type, size and location of all outlets on record drawings.

### **3.10 DISINFECTING PIPELINE**

- A. After successfully pressure testing each pipeline section, disinfect in accordance with AWWA C651 for the continuous-feed method and these Specifications.
- B. Specialty Contractor: Disinfection shall be performed by an approved specialty contractor. Before disinfection is performed, the CONTRACTOR shall submit a written procedure for approval before being permitted to proceed with the disinfection. This plan shall also include the steps to be taken for the neutralization of the chlorinated water.
- C. Chlorination
  1. Apply chlorine solution to achieve a concentration of at least 50 milligrams per liter free chlorine in new line. Retain chlorinated water for 24 hours.
  2. Chlorine concentration shall be recorded at every outlet along the line at the beginning and end of the 24 hour period.
  3. After 24 hours, all samples of water shall contain at least 25 milligrams per liter free chlorine. Re-chlorinate if required results are not obtained on all samples.
- D. Disposal of Chlorinated Water: Reduce chlorine residual of disinfection water to less than one milligram per liter if discharged directly to a body of water or to less than two milligrams per liter if discharged onto the ground prior to disposal. Treat water with sulfur dioxide or other reducing chemicals to neutralize chlorine residual. Flush all lines until residual is equal to existing system.
- E. Bacteriological Testing: After final flushing and before the main is placed into service, the CONTRACTOR shall assist the OWNER in collecting samples from the line to have tested for bacteriological quality. Testing shall be performed by the OWNER at a laboratory certified by the State of Kentucky. Re-chlorinate lines until the required results are obtained.

### **3.11 PROTECTION AND RESTORATION OF WORK AREA**

- A. General: Return all items and all areas disturbed, directly or indirectly by work under these Specifications, to their original condition or better, as quickly as possible after work is started.

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WATER MAINS AND ACCESSORIES

1. The CONTRACTOR shall plan, coordinate, and prosecute the work such that disruption to personal property and business is held to a practical minimum.
  2. All construction areas abutting lawns and yards of residential or commercial property shall be restored promptly. Backfilling of underground facilities, ditches, and disturbed areas shall be accomplished on a daily basis as work is completed. Finishing, dressing, and grassing shall be accomplished immediately thereafter, as a continuous operation within each area being constructed and with emphasis placed on completing each individual yard or business frontage. Care shall be taken to provide positive drainage to avoid ponding or concentration of runoff.
  3. Handwork, including raking and smoothing, shall be required to ensure that the removal of roots, sticks, rocks, and other debris is removed in order to provide a neat and pleasing appearance.
  4. The Department of Transportation's engineer shall be authorized to stop all work by the CONTRACTOR when restoration and cleanup are unsatisfactory and to require appropriate remedial measures.
- B. Man-Made Improvements: Protect, or remove and replace with the ENGINEER'S approval, all fences, walkways, mail boxes, pipe lines, drain culverts, power and telephone lines and cables, property pins and other improvements that may be encountered in the Work.
- C. Cultivated Growth: Do not disturb cultivated trees or shrubbery unless approved by the ENGINEER. Any such trees or shrubbery which must be removed shall be heeled in and replanted under the direction of an experienced nurseryman.
- D. Cutting of Trees: Do not cut trees for the performance of the work except as absolutely necessary. Protect trees that remain in the vicinity of the work from damage from equipment. Do not store spoil from excavation against the trunks. Remove excavated material stored over the root system of trees within 30 days to allow proper natural watering of the root system. Repair any damaged tree over 3-inches in diameter, not to be removed, under the direction of an experienced nurseryman. All trees and brush that require removal shall be promptly and completely removed from the work area and disposed of by the CONTRACTOR. No stumps, wood piles, or trash piles will be permitted on the work site.
- E. Disposal of Rubbish: Dispose of all materials cleared and grubbed during the construction of the Project in accordance with the applicable codes and rules of the appropriate county, state and federal regulatory agencies.

END OF SECTION

**PART 1 GENERAL**

**1.01 SCOPE**

- A. This section provides the technical requirements necessary to ensure proper installation of tracer wire and related components for the purposes of locating both conductive and non-conductive underground water/sewer utilities. It recognizes that the first step in protecting underground utility assets is installing a quality, reliable locating system. This specification is based on best practices for underground utility locating.

**Part 2 MATERIALS AND ACCESSORIES**

**2.01 MATERIALS**

- A. General
1. All system components, including tracer wire, connectors, ground rods and access points, must be compatible. The components shall be manufactured by Copperhead® Complete Utility Locating System™ or approved equal.
  2. All tracer wire and tracer wire components shall be manufactured in the USA.
  3. All tracer wire shall have HDPE (High Density Polyethylene) insulation for direct bury, color coded per APWA standard for the specific utility being marked.
- B. Tracer wire and insulation
1. Tracer wire shall conform to the following ASTM standards as applicable:
  2. B1010/B1010M – Standard Specification for Copper-Clad Steel Electrical Conductor for Tracer Wire Applications
  3. B910/B910M – Standard Specification for Annealed Copper-Clad Steel Wire
  4. B227 – Standard Specification for Hard-Drawn Copper-Clad Steel Wire
  5. B170 – Standard Specification for Oxygen-Free Electrolytic Copper-Refinery Shapes
  6. D1248 – Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
  7. Documentation verifying that tracer wire is 100% made in the USA.
  8. If tracer wire manufacturer has not completed a 5-year corrosion test, a 5-year warranty must be provided.
  9. Open Trench / Open Cut - Tracer wire shall be Copperhead® copper-clad steel 12-AWG High Strength, high carbon with minimum 600 lb. break load, minimum 30 mil HDPE insulation (1230\*-HS-\*\*).
  10. Directional Drilling/Boring - Tracer wire shall be Copperhead

copper-clad steel 10-AWG Extra High Strength with minimum 1,150 lb. break load, minimum 45 mil HDPE insulation(1245\*-EHS-\*\*).

11. Pipe Bursting - Tracer wire shall be Copperhead 7x7 stranded copper-clad steel SoloShot™ Xtreme Strength with 4,700 lb. break load, minimum 50 mil HDPE insulation(PBX-50\*-\*\*).

\* denotes color  
\*\* spool size (500', 1000', 2500')

C. Connectors

1. Direct bury wire connectors shall include three-way lockable Copperhead SnakeBite™ Locking Connectors (LSC1230C) and Copperhead Mainline-to-Service Connectors (3WB- 01) specifically manufactured for use in underground tracer wire installation. Connectors shall be dielectric silicone filled to seal out moisture and corrosion and shall be installed in a manner as to prevent any uninsulated wire exposure.
2. Non-locking, friction fit or taped connectors are prohibited.

D. Termination / Access

1. All tracer wire termination points must provide a direct connection point to the tracer wire by a utility locate transmitter (above ground or at grade) specifically manufactured for light duty, concrete/driveway, or roadway applications.
2. All at-grade access points shall be appropriately identified with "sewer" or "water" on the cap and be color coded per American Public Works (APWA) standards.
3. All two-terminal tracer wire access points must include a manually interruptible conductive/connective link between the terminal for the tracer wire connection and the terminal for the ground rod wire connection.
4. All two-terminal tracer wire access points must have external direct connection points to both the tracer wire and ground rod wire from top of lid.
5. All at-grade access points shall include an encapsulated magnet molded into the top portion of the tube, to allow for detection by a ferrous metal detector.
6. All at-grade access points shall be supplied with anti-corrosion wax/gel to protect wires.

## **PART 3      INSTALLATION**

### **3.01      INSTALLATION DIRECTION**

#### **A. General**

1. Tracer wire installation shall be performed in such a manner that allows proper access for connection of line tracing equipment, proper locating of wire without loss or deterioration of low frequency (512 Hz) signal, and without distortion of signal caused by more than one wire being installed in close proximity to one another.
2. Tracer wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.
3. Any damage occurring during installation of the tracer wire must be immediately repaired by removing the damaged wire and installing a new section of wire with approved connectors. Taping and/or spray coating shall not be allowed.
4. Tracer wire shall be installed at the bottom half of the pipe and secured (taped/tied) at 5-foot intervals.
5. Tracer wire shall be color coded as follows:
  - Potable Water – Blue
  - Sanitary Sewer & Storm Sewer – Green
  - Gas – Electric
6. All service lateral tracer wire shall be a single wire, connected to the mainline tracer wire using a three-way mainline-to-service connector, installed without cutting/splicing the mainline tracer wire.
7. In occurrences where an existing tracer wire is encountered on an existing utility that is being extended or tied into, the new tracer wire and existing tracer wire shall be connected using approved connectors.
8. Tracer wire on all service laterals/stubs must terminate at an approved tracer wire access point located directly above the utility, at the edge of the road right-of-way, but out of the roadway.
9. One foot of excess/slack wire is required in all tracer wire access points after meeting final elevation.

#### **B. Water System**

1. A mainline tracer wire must be installed, with all service lateral tracer wires properly connected to the mainline tracer wire, to promote tracing/locating capabilities from a single connection point.
2. Lay mainline tracer wire continuously, by-passing around the outside of valves and fittings on the north or east side.

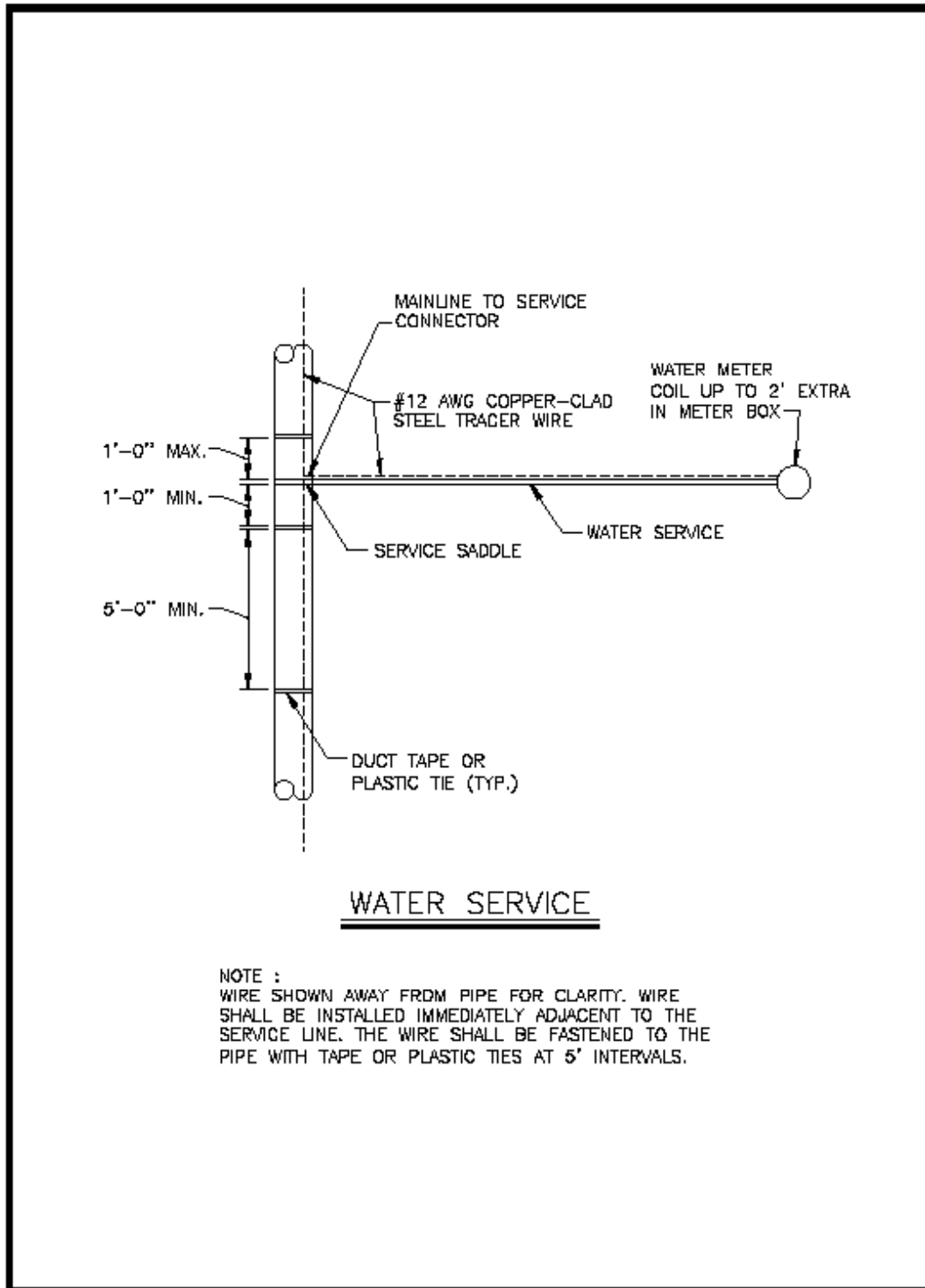
3. A single tracer wire only shall be installed on all water service laterals and must terminate at an approved tracer wire access point, color coded and located directly above the service lateral at the edge of road right-of-way.
4. All conductive and non-conductive service lines shall include tracer wire.

#### C. Prohibited Products and Methods

1. The following products and methods shall NOT be allowed or acceptable:
  - A single tracer wire only shall be installed on all water service laterals and must terminate at an approved tracer wire access point, color coded and located directly above the service lateral at the edge of road right-of-way.
  - Non-American-made products
  - Uninsulated tracer wire
  - Stainless steel tracer wire
  - Tracer wire insulations other than HDPE
  - Tracer wire not domestically manufactured
  - Brass or copper ground rods
  - Wire connections utilizing taping or spray-on waterproofing
  - Looped wire or continuous wire installations that have more than one wire laid side-by-side or in close proximity to one another.
  - Tracer wire wrapped around the corresponding utility
  - Brass fittings with tracer wire connection lugs
  - Wire terminations within the roadway in valve boxes, cleanouts, manholes, etc.
  - Connecting tracer wire to existing conductive utilities

#### D. Testing

1. All new tracer wire installations shall be located using typical low frequency (512 Hz) line tracing equipment, witnessed by the contractor, engineer and facility owner as applicable, prior to acceptance of ownership.
2. This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project.
3. Continuity testing in lieu of actual line tracing shall not be accepted.



END OF SECTION



**PART 1 GENERAL**

**1.1 SCOPE**

- A. The work covered by this section shall include the establishment of all ground cover including areas to be seeded and sodded. This work shall include the supply of all materials, labor, superintendence and maintenance as outlined in these specifications.
- B. The part of the site not covered by roads, walks, building, etc. shall be seeded according to these specifications. The areas to be sodded shall include a three-foot strip immediately adjacent to all roads, walks, and structures, etc.
- C. Before final acceptance of the work, the CONTRACTOR shall satisfactorily clean all areas within the limits of his operations including the street surfaces, walks, gutters, fences, lawns, private property and structures, leaving them in as neat, clean and usable condition as originally found. He shall remove all machinery, tools, surplus materials, temporary buildings and other structures from the site of work. He shall so remove all organic matter and materials containing organic matter from all areas and places used by him during construction. All sewers, manholes, inlets, etc., shall be cleared of all scaffolding, sedimentation, debris, rubbish and dirt.
  - 1. Where the CONTRACTOR's operations have resulted in filling existing ditches, clogging existing culverts, damaging existing bridges, ground surfaces, sidewalks, driveways, etc., the Contractor shall reditch, clean culverts, repair or replace bridges, ground surfaces, sidewalks, driveways, etc., so as to return them to a condition as good as or better than existed prior to the beginning of his operations.
- D. The CONTRACTOR's cleanup operations, which include repair, restoration or replacement of ground surfaces and existing improvements and the removal of rock, shall be performed continuously during the construction operations.
- E. Following installation of the pipeline, "rough cleanup" work shall be performed. This shall consist of grading the trench to create a neat, low mound of backfill material and disposing of any excavated material, rubbish, etc. Crushed stone shall be added to driveways where necessary and fences repaired to the satisfaction of the property owners. After trenches have had adequate time to settle, final grade work and seeding shall be performed.
  - 1. Rough Grade Work and Cleanup (Rough Cleanup) shall be defined to include the final backfill and windrowing of the ditch line, filling and leveling street and driveway cuts, cleaning up and removal of rubbish,

repair of fences and structures, and any other such work that may be required to result in a neat, orderly project area. Rough Cleanup shall be performed as other construction progresses and must be completed immediately after the adjacent pipeline construction.

2. Rough Cleanup is not a separate pay item. The cost for this work shall be included in the unit bid price for linework. If Rough Cleanup is not performed as specified, the OWNER will require deductions from partial payment estimates.
- F. Final cleanup, grade work and seeding shall be performed on each line when backfilled trenches have had adequate time to settle, but at least within 2 months from the date each line is constructed. Final grade work and seeding on Kentucky Department of Transportation rights-of-way shall be done in accordance with said Departments specifications and the permit granted to the OWNER specifically for this project.
- G. Where work was performed on private property in lawns, earth of good quality, free from rock shall be spread over the disturbed area and graded and compacted to match adjacent ground contours. The graded area shall be hand raked until smooth and free from rock, potholes, and humps. The disturbed area shall then be seeded with the seed variety used on the original lawn (e, g., a bluegrass lawn shall be reseeded with bluegrass seed) and the seed raked in lightly. The seeded area shall be fertilized and then uniformly covered with straw to a depth of approximately 1-1/2 inches.
1. Where work was performed on private property and not in lawns the trench line shall be graded and filled if necessary to match adjacent contours. All rock larger than 1-1/2" in diameter shall be removed from the disturbed area. In general, pasture and fallow land shall be fertilized and seeded with Kentucky 31 Fescue and plowed fields shall be left unseeded, however, the desire of each property owner shall govern regarding seeding.
  2. In all cases on private property the rate of seed and fertilizer application shall be that recommended by the University of Kentucky Extension Service for new plantings of the variety of grass seed used.
- H. If the trench line settles following final grade work or if grass seed fails to germinate within a reasonable time, the CONTRACTOR shall regrade or reseed the area in question as specified above and as directed by the ENGINEER.
- I. The OWNER reserves the right to require the CONTRACTOR to obtain a signed release from each property owner affected by the work. Said Release shall indicate that the property owner is satisfied with the restoration of his land. However, the execution of such a release shall not relieve the CONTRACTOR from any of his contractual obligations or other claims that may arise at a later date. The widths

of construction easements obtained by the OWNER from property owners is normally 20 feet and the CONTRACTOR shall confine his activities to the area within the limits of the easements unless specific permission is obtained by the CONTRACTOR from property owners.

## **PART 2        PRODUCTS**

### **2.1            LIME**

- A. Agriculture lime shall be spread over the entire area to be planted at an average rate of one (1) ton per acre. One tillage operation shall incorporate both the lime and the fertilizer into the soil to a depth of four inches (4").

### **2.2            FERTILIZER**

- A. Two fertilizer materials shall be applied to all areas to be seeded. The first shall be complete commercial fertilizer with 1:2:2 ratio of nitrogen, phosphorus, and potassium. Eight hundred pounds (800 lbs.) per acre of a 6-12-12 fertilizer, or equivalent amount of another 1:2:2 ratio fertilizer shall be used.
- B. In addition to a complete fertilizer, a slowly available nitrogen fertilizer shall be applied. Two hundred fifty pounds (250 lbs.) per acre of urea formaldehyde (38-0-0) shall be used.
- C. Both fertilizer materials shall be free flowing and suitable for application with approved equipment. Each material shall conform to State fertilizer laws. Bagged fertilizer shall be delivered in sealed standard containers and shall bear the name, trademark, and warranty of the producer. The fertilizers shall be incorporated into the surface four inches (4") by tillage.

### **2.3            SEED**

- A. Grass seed shall be fresh, clean and new crop seed composed of the following varieties mixed in the proportion by weight as shown and shall be certified as to varietal purity. All seed shall be mixed by a dealer furnished in sealed standard containers and tagged with the dealer's guaranteed statement of composition of mixture and percentage of purity and germination. All areas disturbed by construction activity shall be seeded within the following blend at a rate of two hundred pounds (200 lbs.) per acre (4.6 pounds per 1000 square feet).
- B. The quality of seed shall conform to or exceed the minimum requirement for seed quality of the Kentucky Seed Improvement Association and shall meet or exceed the following standards for purity and germination:

Variety	Min% Purity /Germ	Wt.%	Seeding Rate Pounds Per Acre
Kentucky Bluegrass-Kenblue	98/80	20	40
Creeping Red Fescue-Pennlawn	98/85	70	140
Perennial Ryegrass	95/90	10	20

## 2.4 MULCH

- A. Mulch for hydroseeding shall be natural wood cellulose fiber or wood pulp which disperses readily in water and which has no toxic effect when combined with seed or other materials. It shall be a commercially available product made for use in spray applicators. Wood cellulose mulch shall be applied at a rate of 1000 lbs. per acre when work is done in the spring or fall season as defined below and 1500 pounds per acre when work is done during summer months.

## 2.5 SOD

- A. Sod shall be bluegrass sod strongly rooted and free of pernicious weeds. It shall be a uniform thickness of not more than 1-1/2" and shall have not less than 3/4" of soil. All sod shall be grown on a commercial turf farm and no pasture sod shall be acceptable. The source of the sod must be approved by the Engineer before it is cut for delivery.

## PART 3 EXECUTION

### 3.1 PLANTING SEASON

- A. The normal seasonal dates for seeding mixtures containing Kentucky Bluegrass or tall fescue shall be August 15 to October 15 and from the time the soil is workable in the spring to May 1. Seeding of a specified grass variety at times other than the normal seasonal dates must be approved by the ENGINEER. Seeding shall not be done during windy weather or when the ground is excessively wet, frozen or otherwise untillable.

### 3.2 SOIL PREPARATION

- A. All areas shall be graded to surface drain as shown on the plans. The lime and fertilizer shall be applied at the rates specified above and tilled into the surface 4

inches with approved tillage equipment to provide a reasonably firm, but friable seedbed.

- B. All areas to be seeded or sodded shall meet the specified grades and be free of any weed or undesirable plant growth or debris.
- C. Lime and fertilizer for all areas shall be applied at the rate specified and incorporated into the top four inches by approved tillage equipment. The seed and wood cellulose mulch shall then be mixed with adequate water to produce a slurry and then applied uniformly with a hydroseeder at the rates specified above. Any area inadequately covered shall be redone as directed by the ENGINEER.

### **3.3 MAINTENANCE OF SEEDED AREAS**

- A. The CONTRACTOR shall maintain seeded areas until they have been mowed two times and then he shall repair eroded areas one time after the second mowing. Each mowing shall be when the grass is about four inches (4") high and cut back to about 2 1/2". After the second mowing, the CONTRACTOR shall notify the ENGINEER that he is ready to repair erosion damage so that an inspection can be scheduled when the erosion repair work is complete. Once the erosion areas have been filled with topsoil, fertilized, seeded and mulched and the work has been inspected and approved by the ENGINEER, the work under this section is complete. Any further erosion repair work necessary will be treated as an extra and shall be done only when authorized by the ENGINEER.

### **3.4 CARE DURING CONSTRUCTION**

- A. The CONTRACTOR shall be responsible for repair to turf areas damaged by his equipment or men until all work is accepted. Temporary haul roads and storage areas shall be tilled to depth of four inches (4") and fertilized, seeded and mulched as specified above.

END OF SECTION



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**SECTION 02957**  
**EROSION CONTROL AND STABILIZATION**

**PART 1      GENERAL**

**1.1            SUMMARY**

- A.      This Section includes provisions for erosion control and stabilization.

**PART 2      PRODUCTS**

**2.1            EROSION CONTROL**

- A.      All drainage paths and swales to be cut, graded and seeded prior to any utilities trenching.
- B.      All drainage paths and excavated areas to be mulched upon completion of seeding. Straw bales to be staked perpendicular to flow in bottom of swale every 100 feet along drainage swale route. Straw bales to remain in swale route until a substantial growth of grass has been established. Straw bales to be staked around all inlet rims where swale lines are excavated to route storm water flow into inlet.
- C.      Erosion control requires immediate seeding and mulching of any stripped and unvegetated areas, including unpaved right-of-ways.

**2.2            SEEDING**

- A.      A leguminous inoculated seed mixture shall be used for all seed areas. Class of seeding as follows:
  - 1.      Mixture A: shall be used for all drainage paths, swales, side slopes, and all other areas where existing lawn is disturbed during construction.  
  
Seed mixture shall be as follows:  
2 lbs./1000 sq. ft. - Chewings Fescue  
2 lbs./1000 sq. ft. - Kentucky Bluegrass  
2 lbs./1000 sq. ft. - Perennial Rye  
  
Seed shall be sown at a rate of 6 lbs. per 1000 sq. ft. of area.
  - 2.      Mixture B: shall be for all areas disturbed by excavation and re-grading as seasonal or temporary cover in bare areas.

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EROSION CONTROL AND STABILIZATION

Seed mixture shall be as follows:  
1 lb./1000 sq. ft. - Perennial Rye  
1 lb./1000 sq. ft. - Annual Rye

Seed shall be sown at a rate of 4 lbs. per 1000 sq. ft. of area.

3. Mixture C: shall be used for all lake or pond banks.

Seed mixture shall be as follows:  
20% Perennial Ryegrass  
15% Kentucky Bluegrass  
15% Creeping Red Fescue  
50% Nutri-Kote plus Apron fungicide seed coating.

Seed shall be sown at a rate of 5 lbs. per 1000 sq. ft. of area.

**2.3 FERTILIZER**

- A. Apply a minimum of 600 lbs. of 12-12-12 fertilizer per acre.

**2.4 MULCH**

- A. Mulch shall consist of clean, seed-free threshed straw of wheat, rye, oats, or barley. Mulch to be spread uniformly to form a continuous blanket not less than 1.5 inches loose measurement over "Mixture A" and "Mixture C" seeded areas.
- B. The mulch shall be held in place by being mechanically crimped into the soil, tackified with a bio-degradable tackifier, or netted and stapled to the soil with a photo-degradable or bio-degradable netting. The mulch should be applied at a minimum rate of 1500 lbs. per acre.

**2.5 STRAW TACKIFIER - MULCH TACKIFIER**

- A. The tackifier shall be a naturally derived product from all organic sources resulting in a strong resilient muciloid, non-bitumen M-Binder. The product can be used in a hydro-seeder with both 100% Virgin Wood Fiber or Paper Wood Cellulose mulch and can be sprayed on 100% Wheat Straw Mulch for stabilization from the wind. Application rates vary between 60-140 lbs. per acre depending upon the existing conditions. The product shall be packed in 40 lbs. fiber bags.

Technical Specifications:

Protein Content	1.62
Ash Content	2.7
Fiber	4.0
pH of 1% Solution	6.8
Settleable Solids	5.0

- B. Erosion control requires immediate seeding and mulching of any stripped and un-vegetated areas, including unpaved rights-of-way.

END OF SECTION



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**SECTION 03300**  
**CAST-IN-PLACE CONCRETE**

**PART 1      GENERAL**

**1.1            RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2            SUMMARY**

- A. This Section specifies cast-in place concrete, including formwork, reinforcing, mix design, placement procedures, and finishes.
- B. Cast-in-place concrete includes the following:
  - 1. Foundations and footings.
  - 2. Slabs-on-grade.
  - 3. Fill for steel deck.
  - 4. Foundation walls.
  - 5. Shear walls.
  - 6. Load-bearing building walls.
  - 7. Building frame members.
  - 8. Equipment pads and bases.
  - 9. Fill for steel pan stairs.

**1.3            SUBMITTALS**

- A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others if requested by ENGINEER.
- C. Shop drawings for reinforcement detailing fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, bent bar diagrams, and arrangement of concrete reinforcement. Include special reinforcing required for openings through concrete structures.
- D. Shop drawings for formwork indicating fabrication and erection of forms for specific finished concrete surfaces. Show form construction including jointing, special form joints or reveals, location and pattern of form tie placement, and other items that affect exposed concrete visually.

1. ENGINEER's review is for general applications and features only. Designing formwork for structural stability and efficiency is CONTRACTOR's responsibility.
- E. Samples of materials as requested by ENGINEER, including names, sources, and descriptions, as follows:
1. Color finishes.
  2. Normal weight aggregates.
  3. Fiber reinforcement.
  4. Reglets.
  5. Waterstops.
  6. Vapor retarder/barrier.
  7. Form liners.
- F. Laboratory test reports for concrete materials and mix design test.
- G. Material certificates in lieu of material laboratory test reports when permitted by ENGINEER. Material certificates shall be signed by manufacturer and CONTRACTOR, certifying that each material item complies with or exceeds specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements.

#### **1.4 QUALITY ASSURANCE**

- A. Codes and Standards: Comply with provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
  2. ACI 318, "Building Code Requirements for Reinforced Concrete."
  3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."
- B. Concrete Testing Service: Engage a testing agency acceptable to ENGINEER to perform material evaluation tests and to design concrete mixes.
- C. Materials and installed work may require testing and retesting at any time during progress of Work. Tests, including retesting of rejected materials for installed Work, shall be done at CONTRACTOR's expense.

### **PART 2 PRODUCTS**

#### **2.1 FORM MATERIALS**

- A. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.
- B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or another acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Forms for Textured Finish Concrete: Units of face design, size, arrangement, and configuration to match control sample. Provide solid backing and form supports to ensure stability of textured form liners.
- D. Forms for Cylindrical Columns and Supports: Metal, glass-fiber-reinforced plastic, or paper or fiber tubes that will produce smooth surfaces without joint indications. Provide units with sufficient wall thickness to resist wet concrete loads without deformation.
- E. Pan-Type Forms: Glass-fiber-reinforced plastic or formed steel, stiffened to support weight of placed concrete without deformation.
- F. Carton Forms: Biodegradable paper surface, treated for moisture-resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- G. Form Release Agent: Provide commercial formulation form release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- H. Form Ties: Factory-fabricated, adjustable-length, stainless steel, removable or snap-off metal form ties designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units that will leave no metal closer than 1-1/2 inches (38 mm) to the plane of the exposed concrete surface.
  - 1. Provide ties that, when removed, will leave holes not larger than 1 inch (25 mm) in diameter in the concrete surface. Use only stainless material.

## **2.2 REINFORCING MATERIALS**

- A. Reinforcing Bars: ASTM A615 Grade 60 (ASTM A615M Grade 400), deformed.
- B. Galvanized Reinforcing Bars: ASTM A767 (ASTM A767M), Class II [2.0 oz. zinc psf (610 g/sq. m)], hot-dip galvanized after fabrication and bending.
- C. Epoxy-Coated Reinforcing Bars: ASTM A775 (ASTM A775M).

- D. Steel Wire: ASTM A82, plain, cold-drawn steel.
- E. Welded Wire Fabric: ASTM A185, welded steel wire fabric.
- F. Deformed-Steel Welded Wire Fabric: ASTM A497.
- G. Epoxy-Coated Welded Wire Fabric: ASTM A884, Class A.
- H. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar-type supports complying with CRSI specifications.
  - 1. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.
  - 2. For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or stainless steel (CRSI, Class 2).

### **2.3 CONCRETE MATERIALS**

- A. Portland Cement: ASTM C150, Type I.
  - 1. Use one brand of cement throughout Project.
- B. Fly Ash: ASTM C618, Type F.
- C. Normal-Weight Aggregates: ASTM C33 and as specified. Provide aggregates from a single source for exposed concrete.
  - 1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.
  - 2. Local aggregates not complying with ASTM C33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Engineer.
- D. Lightweight Aggregates: ASTM C330.
- E. Water: Potable.
- F. Fiber Reinforcement: Polypropylene fibers engineered and designed for secondary reinforcement of concrete slabs, complying with ASTM C1116, Type III, not less than 3/4 inch long.
  - 1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the

following:

- a. Gilco Fibers, Cormix Construction Chemicals.
  - b. Durafiber, Durafiber Corp.
  - c. Fiberstrand 100, Euclid Chemical Co.
  - d. Fibermesh, Fibermesh Co., Div. Synthetic Industries, Inc.
  - e. Forta, Forta Corp.
  - f. Grace Fibers, W.R. Grace & Co.
  - g. Polystrand, Metalcrete Industries
- G. Admixtures, General: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
- H. Air-Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Air-Tite, Cormix Construction Chemicals.
    - b. Air-Mix or Perma-Air, Euclid Chemical Co.
    - c. Darex AEA or Daravair, W.R. Grace & Co.
    - d. MB-VR or Micro-Air, Master Builders, Inc.
    - e. Sealtight AEA, W.R. Meadows, Inc.
    - f. Sika AER, Sika Corp.
- I. Water-Reducing Admixture: ASTM C494, Type A.
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Chemtard, ChemMasters Corp.
    - b. PSI N, Cormix Construction Chemicals.
    - c. Eucon WR-75, Euclid Chemical Co.
    - d. WRDA, W.R. Grace & Co.
    - e. Pozzolith Normal or Polyheed, Master Builders, Inc.
    - f. Metco W.R., Metalcrete Industries.
    - g. Prokrete-N, Prokrete Industries.
    - h. Plastocrete 161, Sika Corp.
- J. High-Range Water-Reducing Admixture: ASTM C494, Type F or Type G.
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the

following:

- a. Super P, Anti-Hydro Co., Inc.
  - b. Cormix 200, Cormix Construction Chemicals.
  - c. Eucon 37, Euclid Chemical Co.
  - d. WRDA 19 or Daracem, W.R. Grace & Co.
  - e. Rheobuild or Polyheed, Master Builders, Inc.
  - f. Superslump, Metalcrete Industries.
  - g. PSPL, Prokrete Industries.
  - h. Sikament 300, Sika Corp.
- K. Water-Reducing, Accelerating Admixture: ASTM C494, Type E.
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Q-Set, Conspec Marketing & Manufacturing Co.
    - b. Lubricon NCA, Cormix Construction Chemicals.
    - c. Accelguard 80, Euclid Chemical Co.
    - d. Daraset, W.R. Grace & Co.
    - e. Pozzutec 20, Master Builders, Inc.
    - f. Accel-Set, Metalcrete Industries.
- L. Water-Reducing, Retarding Admixture: ASTM C494, Type D.
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. PSI-R Plus, Cormix Construction Chemicals.
    - b. Eucon Retarder 75, Euclid Chemical Co.
    - c. Daratard-17, W.R. Grace & Co.
    - d. Pozzolith R, Master Builders, Inc.
    - e. Protard, Prokrete Industries.
    - f. Plastiment, Sika Corporation.

## **2.4 RELATED MATERIALS**

- A. Reglets: Where sheet flashing or bituminous membranes are terminated in reglets, provide reglets of not less than 0.0217- inch- (0.46-mm-) thick galvanized sheet steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.
- B. Dovetail Anchor Slots: Hot-dip galvanized sheet steel, not less than 0.0336-inch-thick (0.76 mm) with bent tab anchors. Fill slot with temporary filler or cover face opening to prevent intrusion of concrete or debris.

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- C. Waterstops: Provide flat, dumbbell-type or centerbulb-type waterstops at construction joints and other joints as indicated. Size to suit joints.
  - D. Rubber Waterstops: Corps of Engineers CRD-C 513.
    - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
      - a. The Burke Co.
      - b. Progress Unlimited.
      - c. Williams Products, Inc.
  - E. Polyvinyl Chloride Waterstops: Corps of Engineers CRD-C 572.
    - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
      - a. The Burke Co.
      - b. Greenstreak Plastic Products Co.
      - c. W.R. Meadows, Inc.
      - d. Progress Unlimited.
      - e. Schlegel Corp.
      - f. Vinylex Corp.
  - F. Sand Cushion: Clean, manufactured or natural sand.
  - G. Vapor Retarder: Provide vapor retarder that is resistant to deterioration when tested according to ASTM E154, as follows:
    - 1. Polyethylene sheet not less than 8 mils (0.2 mm) thick.
  - H. Vapor Barrier: Premolded seven-ply membrane consisting of reinforced core and carrier sheet with fortified bitumen layers, protective weathercoating, and plastic antistick sheet. Water vapor transmission rate of 1 perm when tested according to ASTM E96, Method B. Provide manufacturer's recommended mastics and gusset tape.
    - 1. Product: Subject to compliance with requirements, provide Sealtight Premoulded Membrane by W.R. Meadows, Inc. or approved equal.
  - I. Nonslip Aggregate Finish: Provide fused aluminum oxide granules or crushed emery as the abrasive aggregate for a nonslip finish, with emery aggregate containing not less than 50 percent aluminum oxide and not less than 25 percent ferric oxide. Use

CAST-IN-PLACE CONCRETE

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material that is factory-graded, packaged, rustproof, nonglazing, and unaffected by freezing, moisture, and cleaning materials.

- J. Colored Wear-Resistant Finish: Packaged dry combination of materials consisting of portland cement, graded quartz aggregate, coloring pigments, and plasticizing admixture. Use coloring pigments that are finely ground nonfading mineral oxides interground with cement. Color as selected by OWNER from manufacturers' standards, unless otherwise indicated.
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Conshake 600 Colortone, Conspec Marketing & Mfg. Co.
    - b. Floorcron, Cormix Construction Chemicals.
    - c. Quartz Tuff, Dayton-Superior.
    - d. Surfex, Euclid Chemical Co.
    - e. Colorundum, A.C. Horn, Inc.
    - f. Quartz Plate, L&M Construction Chemicals, Inc.
    - g. Colorcron, Master Builders, Inc.
    - h. Floor Quartz, Metalcrete Industries
    - i. Lithochrome Color Hardener, L.M. Scofield Co.
    - j. Harcol Redi-Mix, Sonneborn-Chemrex.
    - k. Hard Top, Symons Corp.
- K. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m), complying with AASHTO M 182, Class 2.
- L. Moisture-Retaining Cover: One of the following, complying with ASTM C171.
1. Waterproof paper.
  2. Polyethylene film.
  3. Polyethylene-coated burlap.
- M. Liquid Membrane-Forming Curing Compound: Liquid-type membrane-forming curing compound complying with ASTM C309, Type I, Class A. Moisture loss not more than 0.55 kg/sq. m when applied at 200 sq. ft./gal (4.9 sq. m/L).
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. A-H 3 Way Sealer, Anti-Hydro Co., Inc.
    - b. Spartan-Cote, The Burke Co.
    - c. Conspec #1, Conspec Marketing & Mfg. Co.
    - d. Sealco 309, Cormix Construction Chemicals.

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- e. Day-Chem Cure and Seal, Dayton Superior Corp.
  - f. Eucocure, Euclid Chemical Co.
  - g. Horn Clear Seal, A.C. Horn, Inc.
  - h. L&M Cure R, L&M Construction Chemicals, Inc.
  - i. Masterkure, Master Builders, Inc.
  - j. CS-309, W.R. Meadows, Inc.
  - k. Seal N Kure, Metalcrete Industries.
  - l. Kure-N-Seal, Sonneborn-Chemrex.
  - m. Stontop CS2, Stonhard, Inc.
- N. Water-Based Acrylic Membrane Curing Compound: ASTM C309, Type I, Class B.
- 1. Provide material that has a maximum volatile organic compound (VOC) rating of 350 g/L.
  - 2. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Highseal, Conspec Marketing and Mfg. Co.
    - b. Sealco - VOC, Cormix Construction Chemicals.
    - c. Safe Cure and Seal, Dayton Superior Corp.
    - d. Aqua-Cure, Euclid Chemical Co.
    - e. Dress & Seal WB, L&M Construction Chemicals, Inc.
    - f. Masterkure 100W, Master Builders, Inc.
    - g. Vocomp-20, W.R. Meadows, Inc.
    - h. Metcure, Metalcrete Industries.
    - i. Stontop CS1, Stonhard, Inc.
- O. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.
- 1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Aquafilm, Conspec Marketing and Mfg. Co.
    - b. Eucobar, Euclid Chemical Co.
    - c. E-Con, L&M Construction Chemicals, Inc.
    - d. Confilm, Master Builders, Inc.
    - e. Waterhold, Metalcrete Industries.
- P. Underlayment Compound: Free-flowing, self-leveling, pumpable, cement-based compound for applications from 1 inch (25 mm) thick to feathered edges.
- 1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the

following:

- a. K-15, Ardex, Inc.
- b. Self-Leveling Wear Topping, W.R. Bonsal Co.
- c. Conflow, Conspec Marketing and Mfg. Co.
- d. Corlevel, Cormix Construction Chemicals.
- e. LevelLayer II, Dayton Superior Corp.
- f. Flo-Top, Euclid Chemical Co.
- g. Gyp-Crete, Gyp-Crete Corp.
- h. Levelex, L&M Construction Chemicals, Inc.
- i. Underlayment 110, Master Builders, Inc.
- j. Stoncrete UL1, Stonhard, Inc.
- k. Concrete Top, Symons Corp.
- l. Thoro Underlayment Self-Leveling, Thoro System Products.

Q. Bonding Agent: Polyvinyl acetate or acrylic base.

1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

- a. Polyvinyl Acetate (Interior Only):
  - 1) Superior Concrete Bonder, Dayton Superior Corp.
  - 2) Euco Weld, Euclid Chemical Co.
  - 3) Weld-Crete, Larsen Products Corp.
  - 4) Everweld, L&M Construction Chemicals, Inc.
  - 5) Herculox, Metalcrete Industries.
  - 6) Ready Bond, Symons Corp.
- b. Acrylic or Styrene Butadiene:
  - 1) Acrylic Bondcrete, The Burke Co.
  - 2) Strongbond, Conspec Marketing and Mfg. Co.
  - 3) Day-Chem Ad Bond, Dayton Superior Corp.
  - 4) SBR Latex, Euclid Chemical Co.
  - 5) Daraweld C, W.R. Grace & Co.
  - 6) Hornweld, A.C. Horn, Inc.
  - 7) Everbond, L&M Construction Chemicals, Inc.
  - 8) Acryl-Set, Master Builders Inc.
  - 9) Intralok, W.R. Meadows, Inc.
  - 10) Acrylpave, Metalcrete Industries.
  - 11) Sonocrete, Sonneborn-Chemrex.
  - 12) Stonlock LB2, Stonhard, Inc.
  - 13) Strong Bond, Symons Corp.

- R. Epoxy Adhesive: ASTM C881, two-component material suitable for use on dry or damp surfaces. Provide material type, grade, and class to suit Project requirements.
1. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
    - a. Burke Epoxy M.V., The Burke Co.
    - b. Spec-Bond 100, Conspec Marketing and Mfg. Co.
    - c. Resi-Bond (J-58), Dayton Superior.
    - d. Euco Epoxy System #452 or #620, Euclid Chemical Co.
    - e. Epoxite Binder 2390, A.C. Horn, Inc.
    - f. Epabond, L&M Construction Chemicals, Inc.
    - g. Concsive Standard Liquid, Master Builders, Inc.
    - h. Rezi-Weld 1000, W.R. Meadows, Inc.
    - i. Metco Hi-Mod Epoxy, Metalcrete Industries.
    - j. Sikadur 32 Hi-Mod, Sika Corp.
    - k. Stonset LV5, Stonhard, Inc.
    - l. R-600 Series, Symons Corp.

## 2.5 PROPORTIONING AND DESIGNING MIXES

- A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use an independent testing agency acceptable to Engineer for preparing and reporting proposed mix designs.
1. Do not use the same testing agency for field quality control testing.
  2. Limit use of fly ash to not exceed 25 percent of cement content by weight.
- B. Submit written reports to ENGINEER of each proposed mix for each class of concrete prior to start of Work. Do not begin concrete production until proposed mix designs have been reviewed.
- C. Design mixes to provide normal weight concrete with the following properties as indicated on drawings and schedules:
1. 4000 psi (27.6 MPa), 28-day compressive strength; water-cement ratio, 0.44 maximum (non-air-entrained), 0.35 maximum (air-entrained).
- D. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
1. Subjected to freezing and thawing: W/C 0.45.
  2. Subjected to deicers/watertight: W/C 0.40.
  3. Subjected to brackish water, salt spray, or deicers: W/C 0.40.

- E. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
1. Ramps, slabs, and sloping surfaces: Not more than 3 inches (75 mm).
  2. Reinforced foundation systems: Not less than 1 inch (25 mm) and not more than 3 inches (75 mm).
  3. Concrete containing high-range water-reducing admixture (superplasticizer): Not more than 8 inches (200 mm) after adding admixture to site-verified 2 - 3-inch (50 - 75 mm) slump concrete.
  4. Other concrete: Not more than 4 inches (100 mm).
- F. Lightweight Structural Concrete: Lightweight aggregate and concrete shall conform to ASTM C330. Proportion mix to produce concrete with a minimum compressive strength of 3000 psi (20.7) at 28 days and a calculated equilibrium unit weight of 110 pcf (1762 kg/cu. m) plus or minus 3 pcf (48.1 kg/cu. m) as determined by ASTM C567. Concrete slump at the point of placement shall be the minimum necessary for efficient mixing, placing, and finishing. Maximum slump shall be 6 inches (150 mm) for pumped concrete and 5 inches (125 mm) elsewhere. Air entrain concrete exposed to weather according to ACI 301 requirements.
- G. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by ENGINEER. Laboratory test data for revised mix design and strength results must be submitted to and accepted by ENGINEER before using in Work.
- H. Fiber Reinforcement: Add at manufacturer's recommended rate but not less than 1.5 lb/cu. yd. (0.9 kg/cu. m).

## **2.6 ADMIXTURES**

- A. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
- B. Use accelerating admixture in concrete slabs placed at ambient temperatures below 50 deg F (10 deg C).
- C. Use high-range water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water-cement ratios below 0.50.
- D. Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within the following limits:

1. Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure:
    - a. 4.5 percent (moderate exposure); 5.5 percent (severe exposure) for 1-1/2 inch (38 mm) maximum aggregate.
    - b. 4.5 percent (moderate exposure); 6.0 percent (severe exposure) for 1 inch (25 mm) maximum aggregate.
    - c. 5.0 percent (moderate exposure); 6.0 percent (severe exposure) for 3/4 inch (19 mm) maximum aggregate.
    - d. 5.5 percent (moderate exposure); 7.0 percent (severe exposure) for 1/2 inch (13 mm) maximum aggregate.
  2. Other concrete not exposed to freezing, thawing, or hydraulic pressure, or to receive a surface hardener: 2 to 4 percent air.
- E. Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

## **2.7 CONCRETE MIXING**

- A. Ready-Mixed Concrete: Comply with requirements of ASTM C94, and as specified.
1. When air temperature is between 85 deg F (29 deg C) and 90 deg F (32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## **PART 3 EXECUTION**

### **3.1 GENERAL**

- A. Coordinate the installation of joint materials, vapor retarder/barrier, and other related materials with placement of forms and reinforcing steel.

### **3.2 FORMS**

- A. General: Design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits:
1. Provide Class A tolerances for concrete surfaces exposed to view.

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2. Provide Class C tolerances for other concrete surfaces.
- B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in the Work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent cement paste from leaking.
  - C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like for easy removal.
  - D. Provide temporary openings for clean-outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.
  - E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
  - F. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.
  - G. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

**3.3 VAPOR RETARDER/BARRIER INSTALLATION**

- A. General: Place vapor retarder/barrier sheeting in position with longest dimension parallel with direction of pour.
- B. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended mastic or pressure-sensitive tape.
  1. Cover vapor retarder/barrier with sand cushion and compact to depth indicated.

**3.4 PLACING REINFORCEMENT**

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as specified.
  - 1. Avoiding cutting or puncturing vapor retarder/barrier during reinforcement placement and concreting operations. Repair damages before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved.
- D. Place reinforcement to maintain minimum coverages as indicated for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

### **3.5 JOINTS**

- A. Construction Joints: Locate and install construction joints so they do not impair strength or appearance of the structure.
- B. Provide keyways at least 1-1/2 inches (38 mm) deep in construction joints in walls and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as indicated otherwise. Do not continue reinforcement through sides of strip placements.
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- E. Waterstops: Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint. Support and protect exposed waterstops during progress of Work. Field-fabricate joints in waterstops according to manufacturer's printed instructions.

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- F. Isolation Joints in Slabs-on-Grade: Construct isolation joints in slabs-on-grade at points of contact between slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
- G. Contraction (Control) Joints in Slabs-on-Grade: Construct contraction joints in slabs-on-grade to form panels of patterns as shown. Use saw cuts 1/8 inch (3 mm) wide by one-fourth of slab depth or inserts 1/4 inch (6 mm) wide by one-fourth of slab depth, unless otherwise indicated.
  - 1. Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove of loose debris.
  - 2. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate.
  - 3. If joint pattern is not shown, provide joints not exceeding 15 ft. (4.5 m) in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays).
  - 4. Provide joint fillers and sealants.

**3.6 INSTALLING EMBEDDED ITEMS**

- A. General: Set and build into formwork anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached.
- B. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, relieving angles, and other conditions.
- C. Install dovetail anchor slots in concrete structures as indicated on drawings.
- D. Forms for Slabs: Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.

**3.7 PREPARING FORM SURFACES**

- A. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before placing reinforcement.
- B. Do not allow excess form-coating material to accumulate in forms or come into contact with in-place concrete surfaces against which fresh concrete will be placed.

Apply according to manufacturer's instructions.

- A. Coat steel forms with a nonstaining, rust-preventative material. Rust-stained steel formwork is not acceptable.

### **3.8 CONCRETE PLACEMENT**

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. General: Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation at its final location.
- D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers no deeper than 24 inches (600 mm) and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
  - 1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete complying with ACI 309.
  - 2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix to segregate.
- E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until completing placement of a panel or section.
  - 1. Consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners.
  - 2. Bring slab surfaces to correct level with a straightedge and strike off. Use bull floats or darbies to smooth surface free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.

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3. Maintain reinforcing in proper position on chairs during concrete placement.
- F. Cold-Weather Placement: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- G. When air temperature has fallen to or is expected to fall below 40 deg F (4 deg C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F (10 deg C) and not more than 80 deg F (27 deg C) at point of placement.
1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
- H. Hot-Weather Placement: When hot weather conditions exist that would impair quality and strength of concrete, place concrete complying with ACI 305 and as specified.
1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg F (32 deg C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
  3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.
  4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions.

**3.5 FINISHING FORMED SURFACES**

- A. Rough-Formed Finish: Provide a rough-formed finish on formed concrete surfaces not exposed to view in the finished Work or concealed by other construction. This is the concrete surface having texture imparted by form-facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch (6 mm) in height rubbed down or chipped off.
- B. Smooth-Formed Finish: Provide a smooth-formed finish on formed concrete surfaces exposed to view or to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or another similar system.

This is an as-cast concrete surface obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch defective areas with fins and other projections completely removed and smoothed.

- C. Smooth-Rubbed Finish: Unless otherwise shown or scheduled, provide smooth-rubbed finish on all exposed, vertical concrete surfaces that have received smooth-formed finish treatment not later than 1 day after form removal.
  - 1. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Grout-Cleaned Finish: Provide grout-cleaned finish on scheduled concrete surfaces that have received smooth-formed finish treatment.
  - 1. Combine one-part Portland cement to one and one-half parts fine sand by volume, and a 50:50 mixture of acrylic or styrene butadiene-based bonding admixture and water to form the consistency of thick paint. Blend standard portland cement and white portland cement in amounts determined by trial patches so that final color of dry grout will match adjacent surfaces.
  - 2. Thoroughly wet concrete surfaces, apply grout to coat surfaces, and fill small holes. Remove excess grout by scraping and rubbing with clean burlap. Keep damp by fog spray for at least 36 hours after rubbing.
- E. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### **3.6 MONOLITHIC SLAB FINISHES**

- A. Scratch Finish: Apply scratch finish to monolithic slab surfaces to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and where indicated.
  - 1. After placing slabs, finish surface to tolerances of F(F) 15 (floor flatness) and F(L) 13 (floor levelness) measured according to ASTM E1155 (ASTM E1155M). Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set with stiff brushes, brooms, or rakes.
- B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified; slab surfaces to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo; and where indicated.

1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to tolerances of F(F) 18 (floor flatness) and F(L) 15 (floor levelness) measured according to ASTM E1155 (ASTM E1155M). Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.
- C. Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or another thin film-finish coating system.
1. After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances of F(F) 20 (floor flatness) and F(L) 17 (floor levelness) measured according to ASTM E1155 (ASTM E1155M). Grind smooth any surface defects that would telegraph through applied floor covering system.
- D. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply a trowel finish as specified, then immediately follow by slightly scarifying the surface with a fine broom.
- E. Nonslip Broom Finish: Apply a nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with before application.
- F. Nonslip Aggregate Finish: Apply nonslip aggregate finish to concrete stair treads, platforms, ramps, sloped walks, and where indicated.
1. After completing float finishing and before starting trowel finish, uniformly spread dampened nonslip aggregate at a rate of 25 lb per 100 sq. ft. (12 kg/10 sq. m) of surface. Tamp aggregate flush with surface using a steel trowel, but do not force below surface. After broadcasting and tamping, apply trowel finishing as specified.
  2. After curing, lightly work surface with a steel wire brush or an abrasive stone, and water to expose nonslip aggregate.

### **3.7 MISCELLANEOUS CONCRETE ITEMS**

- A. Filling In: Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as specified to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.
- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in safety inserts and accessories as shown on drawings. Screed, tamp, and trowel-finish concrete surfaces.

### **3.8 CONCRETE CURING AND PROTECTION**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
- C. Curing Methods: Cure concrete by curing compound, by moist curing, by moisture-retaining cover curing, or by combining these methods, as specified.
- D. Provide moisture curing by the following methods:
  - 1. Keep concrete surface continuously wet by covering with water.
  - 2. Use continuous water-fog spray.
  - 3. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4-inch (100 mm)

lap over adjacent absorptive covers.

- E. Provide moisture-retaining cover curing as follows:
  - 1. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches (75 mm) and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  
- F. Apply curing compound on exposed interior slabs and on exterior slabs, walks, and curbs as follows:
  - 1. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
  - 2. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.
  
- G. Curing Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces, by moist curing with forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
  
- H. Curing Unformed Surfaces: Cure unformed surfaces, including slabs, floor topping, and other flat surfaces, by applying the appropriate curing method.
  - 1. Final cure concrete surfaces to receive finish flooring with a moisture-retaining cover, unless otherwise directed.

### **3.9 SHORES AND SUPPORTS**

- A. General: Comply with ACI 347 for shoring and reshoring in multistory construction, and as specified.
  
- B. Extend shoring from ground to roof for structures four stories or less, unless otherwise permitted.
  
- C. Extend shoring at least three floors under floor or roof being placed for structures over four stories. Shore floor directly under floor or roof being placed, so that loads from construction above will transfer directly to these shores. Space shoring in stories below this level in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members where no reinforcing steel

is provided. Extend shores beyond minimums to ensure proper distribution of loads throughout structure.

- D. Remove shores and reshore in a planned sequence to avoid damage to partially cured concrete. Locate and provide adequate reshoring to support work without excessive stress or deflection.
- E. Keep reshores in place a minimum of 15 days after placing upper tier, or longer, if required, until concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.

### **3.10 REMOVING FORMS**

- A. General: Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.
- B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.
- C. Form-facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

### **3.11 REUSING FORMS**

- A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable.

### **3.12 CONCRETE SURFACE REPAIRS**

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removing forms, when acceptable.

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- B. Mix dry-pack mortar, consisting of one-part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh (1.2 mm) sieve, using only enough water as required for handling and placing.
1. Cut out honeycombs, rock pockets, voids over 1/4 inch (6 mm) in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch (25 mm). Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
  2. For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- C. Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Owner. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast cement cone plugs secured in place with bonding agent.
1. Repair concealed formed surfaces, where possible, containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.
1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
  2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
  3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable.
  4. Repair defective areas, except random cracks and single holes not exceeding 1 inch (25 mm) in diameter, by cutting out and replacing with fresh

concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4-inch (19 mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

- E. Repair isolated random cracks and single holes 1 inch (25 mm) or less in diameter by dry-pack method. Groove top of cracks and cut out holes to sound concrete and clean of dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding compound. Place dry-pack before bonding agent has dried. Compact dry-pack mixture in place and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- F. Perform structural repairs with prior approval of ENGINEER for method and procedure, using specified epoxy adhesive and mortar.
- G. Repair methods not specified above may be used, subject to acceptance of ENGINEER.

### **3.13 QUALITY CONTROL TESTING DURING CONSTRUCTION**

- A. General: The CONTRACTOR will employ a testing agency to perform tests and to submit test reports, at no additional cost to the OWNER.
- B. Sampling and testing for quality control during concrete placement may include the following, as directed by ENGINEER.
  - 1. Sampling Fresh Concrete: ASTM C172, except modified for slump to comply with ASTM C94.
    - a. Slump: ASTM C143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.
    - b. Air Content: ASTM C173, volumetric method for lightweight or normal weight concrete; ASTM C231, pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
    - c. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40 deg F (4 deg C) and below, when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.
    - d. Compression Test Specimen: ASTM C31; one set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test

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- specimens except when field-cured test specimens are required.
- e. Compressive-Strength Tests: ASTM C39; one set for each day's pour exceeding 5 cu. yd. (4 cu. m) plus additional sets for each 50 cu. yd. (38 cu. m) more than the first 25 cu. yd. (19 cu. m) of each concrete class placed in any one day; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
- 2. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
  - 3. When total quantity of a given class of concrete is less than 50 cu. yd. (38 cu. m), ENGINEER may waive strength testing if adequate evidence of satisfactory strength is provided.
  - 4. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
  - 5. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi (3.4 MPa).
- C. Test results will be reported in writing to ENGINEER within 3 days. Reports of compressive strength tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.
  - D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
  - E. Additional Tests: The testing agency will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed.

END OF SECTION