CONTRACT DOCUMENTS

CONTRACT NO. 0085D028

ST. MARTINS BY THE BAY WATER PROJECT

FOR THE

WORCESTER COUNTY COMMISSIONERS

WORCESTER COUNTY, MARYLAND




10/6/2025

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of **Maryland**, License No. **57406**, Expiration Date: **December 18, 2027**.

Prepared by:

DAVIS, BOWEN & FRIEDEL, INC.
601 E. Main St., Suite 100
Salisbury, MD 21804
(410) 543-9091

October, 2026

**ADVERTISEMENT FOR BIDS**

**WORCESTER COUNTY COMMISSIONERS**
**WORCESTER COUNTY, MARYLAND**
**St. Martins by the Bay Water Project**

**General Notice**

**Worcester County Commissioners** (Owner) is requesting Bids for the construction of the following Project:

**St. Martins by the Bay Water Project**

**0085D028**

Bids for the construction of the Project will be received at the **Worcester County Administration Office** located at **1 West Market Street, Room 1103 Snow Hill, MD 21863**, until **Wednesday**, **January 20, 2027** at **2:00 PM** local time. At that time the Bids received will be **publicly** opened and read.

The Project includes the following Work:

> **Installation of approximately 5,525 LF of 6 and 8-inch water main and appurtenances, water services, and meter pits, hydrant assemblies, and all restoration including overlay of approximately 10,200 SY of road and related work as indicated within the contract documents. Work includes furnishing all equipment, material, and labor for the work described in the contract document drawings and specifications.**

Bids are requested for the following Contract: **St. Martins By The Bay Water Project, #0085D028**

~~Owner anticipates that the Project's total bid price will be approximately $**[insert amount]**.~~ The Project has an expected duration of **270** days.

**Obtaining the Bidding Documents**

Information and Bidding Documents for the Project can be found at the following designated websites:

**https://www.worcestermd.gov/commissioners/bids**

&

**https://emma.maryland.gov/page.aspx/en/rfp/request_browse_public**

Bidding Documents may be downloaded from the designated website. Prospective Bidders are urged to register with the designated website as a plan holder, even if Bidding Documents are obtained from a plan room or source other than the designated website in either electronic or paper format. The designated website will be updated periodically with addenda, lists of registered plan holders, reports, and other information relevant to submitting a Bid for the Project. All official notifications, addenda, and other Bidding Documents will be offered only through the designated website. Neither Owner nor Engineer will be responsible for Bidding Documents, including addenda, if any, obtained from sources other than the designated website.

The Issuing Office for the Bidding Documents is:

> **Davis, Bowen & Friedel Inc.**
> **601 E. Main Street, Suite 100, Salisbury MD, 21804**


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Prospective Bidders may obtain ~~or examine~~ the Bidding Documents at the Issuing Office on Monday through ~~Friday~~ **Thursday** between the hours of **8:00 am and 4:00 pm, and on Fridays from 8:00 am to 12:00 pm,** 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 a deposit of $**[insert amount]** for each set. Bidders who return full sets of the Bidding Documents in good condition within 10 days after receipt of Bids will receive a full refund. Non-Bidders, and Bidders who obtain more than one set of the Bidding Documents, will receive a refund of **$[insert amount; often half of the initial deposit]** for documents returned in good condition within the time limit indicated above. Make deposit checks for Bidding Documents payable to **[entity name].**~~

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

| Format | Cost |
|---|---|
| Bidding Documents (including Full-Size Drawings) | **$100.00** |
| ~~Bidding Documents (including Half-Size Drawings)~~ | ~~$~~ |
| ~~Compact Disc containing Bidding Documents in portable document format (PDF)~~ | ~~$~~ |
| Electronic ~~download~~ **transmittal** of Bidding Documents ~~from **[Hyper link to download site]**~~ **via email delivery.** | **$100.00** |
| ~~**[Geotechnical or other informational documents, listed by title]**~~ | ~~$~~ |

**Pre-bid Conference**

A pre-bid conference for the Project will be held on **Thursday December 10, 2027** at **10:00 AM** at **Worcester County Public Works, 1000 Shore Lane, Berlin, MD 21811.** Attendance at the pre-bid conference is encouraged but not required.

~~A mandatory pre-bid conference for the Project will be held on **[day, date]** at **[time]** at **[name of venue] [street address of venue] [city, state, zip code].** Bids will not be accepted from Bidders that do not attend the mandatory 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**


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~~*[add project specific waivers as applicable; If AIS applies instead of BABAA delete the BABAA waiver reference and insert references to the AIS De Minimis and AIS Minor Component waivers].*~~

**This Advertisement is issued by**:

Owner: **Worcester County Commissioners**
By: **Dallas Baker Jr., PE**
Title: **Director of Public Works**
Date: **November 24, 2027**


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# INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

## TABLE OF CONTENTS


**Page**

Article 1— Defined Terms ..... 1

Article 2— Bidding Documents ..... 1

Article 3— Qualifications of Bidders ..... 3

Article 4— Pre-Bid Conference ..... 4

Article 5— Site and Other Areas; Existing Site Conditions; Examination of Site; Owner's Safety Program; Other Work at the Site ..... 4

Article 6— Bidder's Representations and Certifications ..... 7

Article 7— Interpretations and Addenda ..... 7

Article 8— Bid Security ..... 8

Article 9— Contract Times ..... 8

Article 10— Substitute and "Or Equal" Items ..... 9

Article 11— Subcontractors, Suppliers, and Others ..... 9

Article 12— Preparation of Bid ..... 10

Article 13— Basis of Bid ..... 11

Article 14— Submittal of Bid ..... 13

Article 15— Modification and Withdrawal of Bid ..... 13

Article 16— Opening of Bids ..... 14

Article 17— Bids to Remain Subject to Acceptance ..... 14

Article 18— Evaluation of Bids and Award of Contract ..... 14

Article 19— Bonds and Insurance ..... 15

Article 20— Signing of Agreement ..... 15

Article 21— Sales and Use Taxes ..... 16

Article 22— Contracts to Be Assigned ..... 16



**EJCDC® C-200, 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~~


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~~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** 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.~~


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## ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 ~~To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within **[number]** 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. ~~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.~~

3.02 ~~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.


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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.~~


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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.


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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: **[provide contact information]**. 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


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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. **Mr. Edward Welch, Procurement Officer, Worcester County Administration, One West Market Street, Room 1103 Snow Hill, Maryland 21863, eawelch@co.worcester.md.us**

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


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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.


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## 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. Public Utility Work**


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**B. Paving Work**

**C. Licensed Plumbing Work**

D. **Well Abandonment Work**

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.


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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.~~


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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.~~


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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,


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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.


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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


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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 **Maryland** state sales and use taxes on materials and equipment to be incorporated in the Work. ~~(Exemption No. **[number])**.~~ **The County will provide a tax exemption certificate number to the awarded contractor. It is the responsibility of the contractor to determine what costs are tax exempt.** 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.**


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# 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: **County Commissioners of Worcester County, One West Market Street Room 1103, Snow Hill, Maryland 21863.**

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.**

~~**J. [List other documents and edit above as pertinent].**~~

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


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3.01 *Unit Price Bids*

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

| Item No. | Description | SIZE OR DEPTH | Unit | Estimated Quantity | Bid Unit Price | Bid Amount |
|---|---|---|---|---|---|---|
| 1. | Mobilization, Bonds, Insurance, and Demobilization (maximum 3% of Base Bid) | -- | LS | 1 | $ | $ |
| 2. | Furnish, Install, and Maintain Sediment & Erosion Control Devices | -- | LS | 1 | $ | $ |
| 3. | Furnish and Install Traffic Control Measures | -- | LS | 1 | $ | $ |
| 4. | Demolition and Disposal of Existing Water Treatment Facilities | -- | LS | 1 | $ | $ |
| 5A. | Furnish and Install Water Main and Appurtenances | 6” | LF | 50 | $ | $ |
| 5B. | | 8” | LF | 5,475 | $ | $ |
| 6A. | Furnish and Install Public Side Water Services and Appurtenances | 1” | LF | 1,470 | $ | $ |
| 6B. | | 2” | LF | 120 | $ | $ |
| 7A. | Furnish and Install Water Meter Assemblies | 1” | EA | 30 | $ | $ |
| 7B. | | Dual 1” | EA | 12 | $ | $ |
| 7C. | | 2” | EA | 3 | $ | $ |
| 8A. | Furnish and Install Private Side Water Services and Appurtenances | 1” | LF | 2,970 | $ | $ |
| 8B. | | 2” | LF | 165 | $ | $ |
| 9. | Furnish and Install Fire Hydrant Assemblies | -- | EA | 16 | $ | $ |
| 10. | Furnish and Install Tracer Wire Box | -- | EA | 19 | $ | $ |
| 11. | Mill Existing Asphalt and Dispose of the Millings | 2” | SY | 12,337 | $ | $ |
| 12. | Furnish and Install Graded Aggregate Subbase | 6” | SY | 1,640 | $ | $ |
| 13. | Furnish and Install Bituminous Concrete Base Course | 2.5” | SY | 1,640 | $ | $ |
| 14. | Furnish and Install Bituminous Concrete Surface Course | 2” | SY | 12,337 | $ | $ |
| 15. | Install and Maintain Temporary Construction Security & Privacy Fencing Surrounding Staging Area | -- | LS | 1 | $ | $ |
| 16. | Decommissioning Existing Water Supply Well | -- | LS | 1 | $ | $ |


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| | | | | | | |
|---|---|---|---|---|---|---|
| **Contingencies** | | | | | | |
| **17.** | **Misc. Excavation and Test Pitting** | **--** | **CY** | **50** | **$** | **$** |
| **18.** | **Excavation Below Subgrade and Gravel Refill** | **--** | **CY** | **100** | **$** | **$** |
| **19.** | **Furnish and Install Select Fill** | **--** | **CY** | **75** | **$** | **$** |
| **20.** | **Furnish and Place 4,000 PSI Concrete** | **--** | **CY** | **10** | **$** | **$** |
| **Total Base Bid, Sum of All Lump Sum & Unit Price Bid Items, 1-20:** | | | | | | **$** |
| **Sum of Base Bid Items 5B, 11, 12, 13, & 14:** | | | | | | **$** |
| **Bid Alternate A** | | | | | | |
| **21-A** | **Directional Drill Furnish and Installation of Water Main and Appurtenances** | **8”** | **LF** | **938** | **$** | **$** |
| **5B-A** | **Furnish and Install Water Main and Appurtenances** | **8”** | **LF** | **4,537** | **$** | **$** |
| **11-A** | **Mill Existing Asphalt and Dispose of the Millings** | **2”** | **SY** | **10,020** | **$** | **$** |
| **12-A** | **Furnish and Install Graded Aggregate Subbase** | **6”** | **SY** | **1,235** | **$** | **$** |
| **13-A** | **Furnish and Install Bituminous Concrete Base Course** | **2.5”** | **SY** | **1,235** | **$** | **$** |
| **14-A** | **Furnish and Install Bituminous Concrete Surface Course** | **2”** | **SY** | **10,020** | **$** | **$** |
| **Total of All Lump Sum & Unit Price Bid Items for Bid Alternate A, 21-A – 14-A:** | | | | | | **$** |

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. **The bid items of Bid Alternate A will be replace the corresponding bid items of the base bid, if Bid Alternate A is approved.**


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3.02 *Total Bid Price (Lump Sum and Unit Prices)*

| | |
|---|---|
| **Total Base Bid Price (Total of all Lump Sum, Unit Price, Excluding Bid Alternate A)** | **$** |

**TOTAL BASE BID PRICE IN WORDS**

_____
_____
_____

| | |
|---|---|
| **Total Alternate Bid Price (Total Base Bid Price plus Total Sum of Bid Alternate A and subtracting the Sum of Base Bid Items 5B, 11, 12, 13, & 14)** | **$** |

**TOTAL BID ALTERNATE PRICE IN WORDS**

_____
_____
_____

**ARTICLE 4—TIME OF COMPLETION**

4.01 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.

4.02 ~~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**~~

4.03 ~~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**~~

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

**ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA**

5.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for **90** days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.


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5.02 *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.

5.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda: **[Add rows as needed. Bidder is to complete table.]**

| Addendum Number | Addendum Date |
|---|---|
| | |
| | |
| | |

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

6.01 *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


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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.

6.02 *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.


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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) _____


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# BID BOND (PENAL SUM FORM)

| **Bidder** | **Surety** |
|---|---|
| Name: | Name: |
| Address *(principal place of business)*: | Address *(principal place of business)*: |
| **Owner** | **Bid** |
| Name: **County Commissioners of Worcester County** | Project *(name and location)*: |
| Address *(principal place of business)*: **One West Market Street Room 1103, Snow Hill, Maryland 21863** | **St. Martin By The Bay Water Project, Worcester County** |
| | Bid Due Date: **January 20, 2027** |
| **Bond** | |
| Penal Sum: | |
| Date of Bond: | |

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 | Surety |
|---|---|
| _____ *(Full formal name of Bidder)* | _____ *(Full formal name of Surety) (corporate seal)* |
| By: _____ *(Signature)* | By: _____ *(Signature) (Attach Power of Attorney)* |
| Name: _____ *(Printed or typed)* | Name: _____ *(Printed or typed)* |
| Title: _____ | Title: _____ |
| Attest: _____ *(Signature)* | Attest: _____ *(Signature)* |
| Name: _____ *(Printed or typed)* | Name: _____ *(Printed or typed)* |
| Title: | Title: |

*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.*

**EJCDC® C-430, Bid Bond (Penal Sum Form).**
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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.


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**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: | ☐ Sole Proprietorship ☐ Partnership ☐ Corporation | | |
| ☐ Limited Liability Company ☐ 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? | | ☐ Yes ☐ No ☐ 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: | | | |


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

| | | | |
|---|---|---|---|
| Name: | | Title: | |
| Authorized to sign contracts: ☐ Yes ☐ No | | Limit of Authority: | $ |
| Name: | | Title: | |
| Authorized to sign contracts: ☐ Yes ☐ No | | Limit of Authority: | $ |
| Name: | | Title: | |
| Authorized to sign contracts: ☐ Yes ☐ 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 |
|---|---|---|
| ☐ Disadvantaged Business Enterprise | | |
| ☐ Minority Business Enterprise | | |
| ☐ Woman-Owned Business Enterprise | | |
| ☐ Small Business Enterprise | | |
| ☐ Disabled Business Enterprise | | |
| ☐ Veteran-Owned Business Enterprise | | |
| ☐ Service-Disabled Veteran-Owned Business | | |
| ☐ HUBZone Business (Historically Underutilized) Business | | |
| ☐ Other | | |
| ☐ None | | |


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**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: | | ☐ Attached |
| Date of Business's most recent audited financial statement: | | ☐ 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) | | |


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**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? | ☐ Yes ☐ 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? ☐ Yes ☐ 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? | | ☐ Yes ☐ No | |
| Does provider have an A.M. Best Rating of A-VII or better? | | ☐ Yes ☐ No | |
| Mailing Address (principal place of business): | | | |
| Physical Address (principal place of business): | | | |
| Phone (main): | | Phone (claims): | |


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**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? ☐ Yes ☐ No | | | | |
| Been barred from contracting by any local, state, or federal agency within the last 5 years? ☐ Yes ☐ No | | | | |
| Been released from a bid in the past 5 years? ☐ Yes ☐ No | | | | |
| Defaulted on a project or failed to complete any contract awarded to it? ☐ Yes ☐ No | | | | |
| Refused to construct or refused to provide materials defined in the contract documents or in a change order? ☐ Yes ☐ No | | | | |
| Been a party to any currently pending litigation or arbitration? ☐ Yes ☐ 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.


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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.


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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: _____


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**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 | | | | | |


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**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 | | | | | |


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**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 | | | | | |


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**Schedule C—Key Individuals**

| **Project Manager** | | | |
|---|---|---|---|
| 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 | |
| **Project Superintendent** | | | |
| 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 | |


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| **Safety Manager** | | | |
|---|---|---|---|
| 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 | |

| **Quality Control Manager** | | | |
|---|---|---|---|
| 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 | |


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# 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.*

## CERTFICATE OF OWNER'S ATTORNEY

PROJECT NAME:

CONTRACTOR NAME AND CONTRACT NUMBER:

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

**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

**USDA**
Form RD 400-6
(Rev. 08-22)

# COMPLIANCE STATEMENT

Form Approved
OMB No. 0575-0201
Exp. Date 07/31/2025

This statement relates to a proposed contract with _____

_____

*(Name of borrower or grantee)*

who expects to finance the contract with assistance from either the Rural Housing Service (RHS), Rural Business-Cooperative Service (RBS), or the Rural Utilities Service (RUS) or their successor agencies, United States Department of Agriculture (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor, I represent that:

1. I ☐ have ☐ have not, participated in a previous contract or subcontract subject to Executive 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.

2. If I have participated in such a contract or subcontract, I ☐ have, ☐ have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

☐ If the proposed contract is for $50,000 or more: or ☐ if the proposed nonconstruction contract is for $50,000 or more and I have 50 or more employees, I also represent that:

3. I ☐ have, ☐ have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.

4. If I have participated in such a contract or subcontract, ☐ I have, ☐ have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either the RHS, RBS or RUS, or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide for my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods):

*A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a currently valid OMB Control Number. The OMB Control Number for this information collection is 0575-0201. Public reporting for this collection of information is estimated to be approximately 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. All responses to this collection of information are voluntary. However, in order to obtain or retain a benefit, the information in this form is required 7 CFR 1901-E. Rural Development has no plans to publish information collected under the provisions of this program. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Rural Development Innovation Center, Regulations Management Division at ICRMTRequests@usda.gov.*

## 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)*

## U.S. DEPARTMENT OF AGRICULTURE

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

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

**(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)**

(1) 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.

(2) 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(s) | Date

**Instructions for Certification**

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the reverse side 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 and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person 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 rules implementing Executive Order 12549. You may contact the person to which this proposal is 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 shall 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 Transaction," without modification, in all lower tier covered transaction 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 Nonprocurement List.

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order 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

## ATTACHMENT A.2 – DOMESTIC PREFERENCE *DE MINIMIS* LIST FORMAT

***Notes to User:***

*1. This attachment is an example format for Contractors to use in maintaining a list of items to document the use of the De Minimis waiver of the Domestic Preference requirements.*
*2. This list or similar is required to be filled out throughout the construction Contract as needed.*
*3. The State Engineer may periodically ask to review this information.*
*4. At the Contract completion, this list, along with all Manufacturers' certifications, are to be given to the Engineer for delivery to the Owner.*
*5. This list is applicable for projects governed by BABAA. USDA RD State Office can provide guidance if AIS applies to the project instead.*

*DE MINIMIS* COSTING WORKSHEET

Project Name: _____
Contract Name/# (if more than one) _____
Contractor (Company Name): _____
Representative: _____
Date: _____

Total Project Costs: $ _____
Allowable Total *De Minimis* Costs (5% of project costs) $ _____
Total Cost of all *De Minimis* Items $ _____
Remaining Amount Allowed for Future *De Minimis* Items $ _____

| No. | Detailed Description and Manufacturer or Local Source of *De Minimis* Material | Quantity | Cost Per Item | Total Item Cost |
|---|---|---|---|---|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| 8 | | | | |
| 9 | | | | |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |

# 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 Date

Contractor Company Name

Contractor Address

## ATTACHMENT A.5 – ENGINEERS CERTIFICATIONS

***Notes to User:***

*1. This attachment provides sample language for the statements needed for the Engineer of Record's certification; it should be submitted with the bid package to the Agency for concurrence for authorization to bid by Agency.*

*2. This certification is not intended to be a warranty in any way but rather the designer's professional opinion that to the best of their knowledge the documents comply.*

*3. This certification does not need to be included in the contract documents.*

*4. 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."*

The final Drawings and Specifications, construction Contract Documents, Bidding Documents, procurement documents, and any other final design phase deliverables, comply with all applicable federal requirements including 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. This includes the following:

- The Engineers Joint Contract Documents Committee (EJCDC) documents have been used, and all acceptable revisions identified in this Bulletin have been made in accordance with the terms of the license agreement, which states in part that the Engineer "will plainly show all changes to the standard EJCDC text, using 'Track Changes' (redline/strikeout), highlighting, or other means of clearly indicating additions and deletions." Such other means may include attachments indicating changes (e.g. Supplementary Conditions modifying the General Conditions).

- Any building(s) designed for this Project will comply with the requirements of the Architectural Barriers Act (ABA) of 1968, the Americans with Disabilities Act (ADA) of 1990, Section 504 of the Rehabilitation Act of 1973, and any federal, state, or local accessibility standards.

- Any building(s) designed for this Project will comply with the Seismic Safety of Federally Assisted New Building Construction requirements of 7 CFR part 1792, and any federal, state, or local standards.

- All referenced Products and Construction Materials in the Drawings, Specifications, and Bidding Documents for the Project comply with BABAA.

- All referenced Products and Construction Materials to be referenced in the Addenda, executed Contracts, and Change Orders will comply with BABAA.

Nicholas S. Bradley, P.E.
Civil Engineer
Davis, Bowen & Friedel Inc.

Engineer Name and Title
Engineering Company Name

11/9/2026

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.

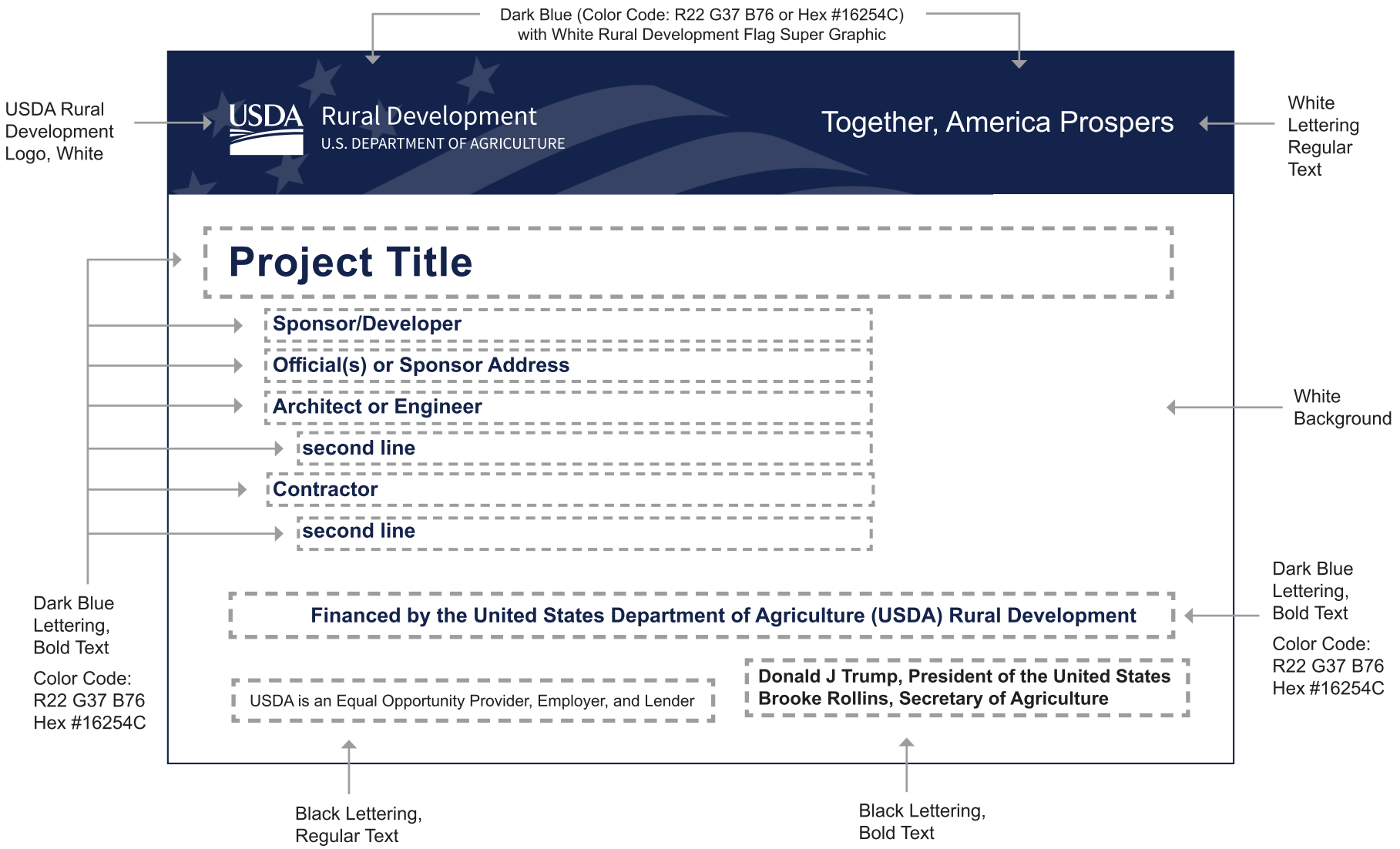
[List common name of items, products and/or materials]

These products and/or materials were manufactured in [Provide location(s) of manufacturing]

[Include signature of authorized representative]

# 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)

**NOTICE OF AWARD**

| | | | |
|---|---|---|---|
| Date of Issuance: | | | |
| Owner: | **County Commissioners of Worcester** | Owner's Project No.: | **0085D028** |
| Engineer: | **Davis, Bowen & Friedel Inc.** | Engineer's Project No.: | **0085D028** |
| Project: | **St. Martin's By The Bay Water Project** | | |
| Contract Name: | **St. Martin's By The Bay Water Project** | | |
| Bidder: | | | |
| Bidder's Address: | | | |

You are notified that Owner has accepted your Bid dated **January 20, 2027** for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

**The installation of approximately 5,525 LF of 6 and 8-inch water main and appurtenances, water services, and meter pits, hydrant assemblies, and all restoration including overlay of approximately 10,200 SY of road and related work as indicated within the contract documents. Work includes furnishing all equipment, material, and labor for the work described in the contract document drawings and specifications.**

The Contract Price of the awarded Contract is $**[Contract Price]**. 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.

**2** 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 **2** 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): **[Describe other conditions that require Successful Bidder's compliance]**~~

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.


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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: **County Commissioners of Worcester**

By *(signature)*: _____

Name *(printed)*: _____

Title: _____

Copy: Engineer


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

This Agreement is by and between **County Commissioners of Worcester County** ("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: **The installation of approximately 5,525 LF of 6 and 8-inch water main and appurtenances, water services, and meter pits, hydrant assemblies, and all restoration including overlay of approximately 10,200 SY of road and related work as indicated within the contract documents. Work includes furnishing all equipment, material, and labor for the work described in the contract document 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: **The installation of approximately 5,525 LF of 6 and 8-inch water main and appurtenances, water services, and meter pits, hydrant assemblies, and all restoration including overlay of approximately 10,200 SY of road and related work as indicated within the contract documents.**

**ARTICLE 3—ENGINEER**

3.01 The Owner has retained **Davis, Bown & Friedel Inc.** ("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 **Engineer**.

**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]**.~~


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4.03 *Contract Times: Days*

A. The Work will be substantially complete within **270** 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 **30** 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 $**1,035.00** 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 $**1,035.00** 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~~


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~~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) | | | | | $ |


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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 **10th** 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. **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. **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 **100** percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.


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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 **[number]** 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 **19** sheets with each sheet bearing the following general title: **St. Martins by the Bay Water Project.**
7. Drawings listed on the attached sheet index.
8. Addenda (numbers **[number]** to **[number]**, inclusive).
9. Exhibits to this Agreement (enumerated as follows):
    a. **No additional exhibits are available.**
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.


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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.


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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.


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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:

_____
*(typed or printed name of organization)*

By: _____
*(individual's signature)*

Date: _____
*(date signed)*

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Attest: _____
*(individual's signature)*

Title: _____
*(typed or printed)*

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
*(typed or printed)*

Title: _____
*(typed or printed)*

Address:

_____

_____

_____

Phone: _____

Email: _____

*(If **[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: _____


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# NOTICE TO PROCEED

| | | | |
|---|---|---|---|
| Owner: | **County Commissioners of Worcester County** | Owner's Project No.: | **0085D028** |
| Engineer: | **Davis, Bowen & Friedel Inc.** | Engineer's Project No.: | **0085D028** |
| Contractor: | | Contractor's Project No.: | |
| Project: | **St. Martin's By The Bay Water Project** | | |
| Contract Name: | **St. Martin's By The Bay Water Project** | | |
| 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:

The number of days to achieve Substantial Completion is **270** 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 **30** 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:

**Contractor and their key subcontractors shall attend a pre-construction meeting and concur with the subsequent meeting minutes.**

| | |
|---|---|
| Owner: | **County Commissioners of Worcester County** |
| By *(signature)*: | |
| Name *(printed)*: | |
| Title: | |
| Date Issued: | |

Copy: Engineer


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# PERFORMANCE BOND

| **Contractor** | **Surety** |
|---|---|
| Name: | Name: |
| Address *(principal place of business)*: | Address *(principal place of business)*: |
| **Owner** | **Contract** |
| Name: **County Commissioners of Worcester County** | Description *(name and location)*: **St. Martin's By The Bay Water Project, Worcester County** |
| Mailing address *(principal place of business)*: **One West Market Street Room 1103, Snow Hill, Maryland 21863.** | Contract<br>Effective Date of |

**Bond**

Bond Amount:

Date of Bond:

*(Date of Bond cannot be earlier than Effective Date of Contract)*

Modifications to this Bond form:

☐ None ☐ See Paragraph 16

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.

| Contractor as Principal | Surety |
|---|---|
| _____ | _____ |
| *(Full formal name of Contractor)* | *(Full formal name of Surety) (corporate seal)* |
| By: _____ | By: _____ |
| *(Signature)* | *(Signature)(Attach Power of Attorney)* |
| Name: _____ | Name: _____ |
| *(Printed or typed)* | *(Printed or typed)* |
| Title: _____ | Title: _____ |
| Attest: _____ | Attest: _____ |
| *(Signature)* | *(Signature)* |
| Name: _____ | Name: _____ |
| *(Printed or typed)* | *(Printed or typed)* |
| Title: _____ | Title: _____ |

*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.*


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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:


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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


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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: **None**


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# PAYMENT BOND

| **Contractor** | **Surety** |
|---|---|
| Name: | Name: |
| Address *(principal place of business)*: | Address *(principal place of business)*: |
| **Owner** | **Contract** |
| Name: **County Commissioners of Worcester County** | Description *(name and location)*: **St. Martin's By The Bay Water Project, Worcester County** |
| Mailing address *(principal place of business)*: **One West Market Street Room 1103, Snow Hill, Maryland 21863** | Contract<br>Effective Date of |

**Bond**

Bond Amount:

Date of Bond:

*(Date of Bond cannot be earlier than Effective Date of Contract)*

Modifications to this Bond form:

☐ None ☐ See Paragraph 18

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.

| Contractor as Principal | Surety |
|---|---|
| _____ | _____ |
| *(Full formal name of Contractor)* | *(Full formal name of Surety) (corporate seal)* |
| By: _____ | By: _____ |
| *(Signature)* | *(Signature)(Attach Power of Attorney)* |
| Name: _____ | Name: _____ |
| *(Printed or typed)* | *(Printed or typed)* |
| Title: _____ | Title: _____ |
| Attest: _____ | Attest: _____ |
| *(Signature)* | *(Signature)* |
| Name: _____ | Name: _____ |
| *(Printed or typed)* | *(Printed or typed)* |
| Title: _____ | Title: _____ |

*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.*


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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.


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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;


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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: **None**


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# CERTIFICATE OF SUBSTANTIAL COMPLETION

| | | | |
|---|---|---|---|
| Owner: | **County Commissioners of Worcester County** | Owner's Project No.: | **0085D028** |
| Engineer: | **Davis, Bowen & Friedel Inc.** | Engineer's Project No.: | **0085D028** |
| Contractor: | | Contractor's Project No.: | |
| Project: | **St. Martin's By the Bay Water Project** | | |
| Contract Name: | **St. Martin's By the Bay Water Project** | | |

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: _____


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**NOTICE OF ACCEPTABILITY OF WORK**

| | | | |
|---|---|---|---|
| Owner: | **County Commissioners of Worcester County** | Owner's Project No.: | **0085D028** |
| Engineer: | **Davis, Bowen & Friedel Inc** | Engineer's Project No.: | **0085D028** |
| Contractor: | | Contractor's Project No.: | |
| Project: | **St. Martin's By the Bay Water Project** | | |
| Contract Name: | **St. Martin's By the Bay Water Project** | | |
| 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: _____


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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## TABLE OF CONTENTS


**Page**

Article 1—Definitions and Terminology ..... 1
1.01 Defined Terms ..... 1
1.02 Terminology ..... 6
Article 2—Preliminary Matters ..... 7
2.01 Delivery of Performance and Payment Bonds; Evidence of Insurance ..... 7
2.02 Copies of Documents ..... 7
2.03 Before Starting Construction ..... 7
2.04 Preconstruction Conference; Designation of Authorized Representatives ..... 8
2.05 Acceptance of Schedules ..... 8
2.06 Electronic Transmittals ..... 8
Article 3—Contract Documents: Intent, Requirements, Reuse ..... 9
3.01 Intent ..... 9
3.02 Reference Standards ..... 9
3.03 Reporting and Resolving Discrepancies ..... 10
3.04 Requirements of the Contract Documents ..... 10
3.05 Reuse of Documents ..... 11
Article 4—Commencement and Progress of the Work ..... 11
4.01 Commencement of Contract Times; Notice to Proceed ..... 11
4.02 Starting the Work ..... 11
4.03 Reference Points ..... 11
4.04 Progress Schedule ..... 12
4.05 Delays in Contractor's Progress ..... 12
Article 5—Site; Subsurface and Physical Conditions; Hazardous Environmental Conditions ..... 13
5.01 Availability of Lands ..... 13
5.02 Use of Site and Other Areas ..... 14
5.03 Subsurface and Physical Conditions ..... 15
5.04 Differing Subsurface or Physical Conditions ..... 16




**Copyright© 2018 National Society of Professional Engineers, American Council of Engineering Companies, and American Society of Civil Engineers. All rights reserved.**

5.05 Underground Facilities ..... 17
5.06 Hazardous Environmental Conditions at Site ..... 19
Article 6—Bonds and Insurance ..... 21
6.01 Performance, Payment, and Other Bonds ..... 21
6.02 Insurance—General Provisions ..... 22
6.03 Contractor's Insurance ..... 24
6.04 Builder's Risk and Other Property Insurance ..... 25
6.05 Property Losses; Subrogation ..... 25
6.06 Receipt and Application of Property Insurance Proceeds ..... 27
Article 7—Contractor's Responsibilities ..... 27
7.01 Contractor's Means and Methods of Construction ..... 27
7.02 Supervision and Superintendence ..... 27
7.03 Labor; Working Hours ..... 27
7.04 Services, Materials, and Equipment ..... 28
7.05 "Or Equals" ..... 28
7.06 Substitutes ..... 29
7.07 Concerning Subcontractors and Suppliers ..... 31
7.08 Patent Fees and Royalties ..... 32
7.09 Permits ..... 33
7.10 Taxes ..... 33
7.11 Laws and Regulations ..... 33
7.12 Record Documents ..... 33
7.13 Safety and Protection ..... 34
7.14 Hazard Communication Programs ..... 35
7.15 Emergencies ..... 35
7.16 Submittals ..... 35
7.17 Contractor's General Warranty and Guarantee ..... 38
7.18 Indemnification ..... 39
7.19 Delegation of Professional Design Services ..... 39
Article 8—Other Work at the Site ..... 40
8.01 Other Work ..... 40
8.02 Coordination ..... 41
8.03 Legal Relationships ..... 41


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Article 9—Owner's Responsibilities ..... 42
9.01 Communications to Contractor ..... 42
9.02 Replacement of Engineer ..... 42
9.03 Furnish Data ..... 42
9.04 Pay When Due ..... 42
9.05 Lands and Easements; Reports, Tests, and Drawings ..... 43
9.06 Insurance ..... 43
9.07 Change Orders ..... 43
9.08 Inspections, Tests, and Approvals ..... 43
9.09 Limitations on Owner's Responsibilities ..... 43
9.10 Undisclosed Hazardous Environmental Condition ..... 43
9.11 Evidence of Financial Arrangements ..... 43
9.12 Safety Programs ..... 43
Article 10—Engineer's Status During Construction ..... 44
10.01 Owner's Representative ..... 44
10.02 Visits to Site ..... 44
10.03 Resident Project Representative ..... 44
10.04 Engineer's Authority ..... 44
10.05 Determinations for Unit Price Work ..... 45
10.06 Decisions on Requirements of Contract Documents and Acceptability of Work ..... 45
10.07 Limitations on Engineer's Authority and Responsibilities ..... 45
10.08 Compliance with Safety Program ..... 45
Article 11—Changes to the Contract ..... 46
11.01 Amending and Supplementing the Contract ..... 46
11.02 Change Orders ..... 46
11.03 Work Change Directives ..... 46
11.04 Field Orders ..... 47
11.05 Owner-Authorized Changes in the Work ..... 47
11.06 Unauthorized Changes in the Work ..... 47
11.07 Change of Contract Price ..... 47
11.08 Change of Contract Times ..... 49
11.09 Change Proposals ..... 49
11.10 Notification to Surety ..... 50


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Article 12—Claims ..... 50
12.01 Claims ..... 50
Article 13—Cost of the Work; Allowances; Unit Price Work ..... 51
13.01 Cost of the Work ..... 51
13.02 Allowances ..... 55
13.03 Unit Price Work ..... 55
Article 14—Tests and Inspections; Correction, Removal, or Acceptance of Defective Work ..... 56
14.01 Access to Work ..... 56
14.02 Tests, Inspections, and Approvals ..... 56
14.03 Defective Work ..... 57
14.04 Acceptance of Defective Work ..... 58
14.05 Uncovering Work ..... 58
14.06 Owner May Stop the Work ..... 58
14.07 Owner May Correct Defective Work ..... 59
Article 15—Payments to Contractor; Set-Offs; Completion; Correction Period ..... 59
15.01 Progress Payments ..... 59
15.02 Contractor's Warranty of Title ..... 62
15.03 Substantial Completion ..... 62
15.04 Partial Use or Occupancy ..... 63
15.05 Final Inspection ..... 64
15.06 Final Payment ..... 64
15.07 Waiver of Claims ..... 65
15.08 Correction Period ..... 66
Article 16—Suspension of Work and Termination ..... 67
16.01 Owner May Suspend Work ..... 67
16.02 Owner May Terminate for Cause ..... 67
16.03 Owner May Terminate for Convenience ..... 68
16.04 Contractor May Stop Work or Terminate ..... 68
Article 17—Final Resolution of Disputes ..... 69
17.01 Methods and Procedures ..... 69
Article 18—Miscellaneous ..... 69
18.01 Giving Notice ..... 69
18.02 Computation of Times ..... 69


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18.03 Cumulative Remedies ..... 70
18.04 Limitation of Damages ..... 70
18.05 No Waiver ..... 70
18.06 Survival of Obligations ..... 70
18.07 Controlling Law ..... 70
18.08 Assignment of Contract ..... 70
18.09 Successors and Assigns ..... 70
18.10 Headings ..... 70


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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


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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


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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.


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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.


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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.


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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.


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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


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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.


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## 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


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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.


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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


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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.


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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.


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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


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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.


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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


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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;


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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


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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


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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


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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


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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


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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.


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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);


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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


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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.


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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.


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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;


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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.


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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.


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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.


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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.


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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.


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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.


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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.


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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


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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.


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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


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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.


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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.


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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.


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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.


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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.


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## 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.


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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.


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## 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.


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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:


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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.


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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


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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


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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


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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


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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.


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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, expediters, 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


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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


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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.


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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,


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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,


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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


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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.


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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;


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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


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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


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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.


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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,


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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.


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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,


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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


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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.


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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.


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# SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

## TABLE OF CONTENTS


**Page**

Article 1— Definitions and Terminology ..... 1
Article 2— Preliminary Matters ..... 3
Article 3— Contract Documents: Intent, Requirements, Reuse ..... 7
Article 4— Commencement and Progress of the Work ..... 8
Article 5— Site, Subsurface and Physical Conditions, Hazardoud Environmental Conditions ..... 9
Article 6— Bonds and Insurance ..... 10
Article 7— Contractor's Responsibilities ..... 18
Article 8— Other Work at the Site ..... 20
Article 9— Owner's Responsibilities ..... 21
Article 10— Engineer's Status During Construction ..... 21
Article 11— Changes to the Contract ..... 23
Article 12— Claims ..... 23
Article 13— Cost of Work; Allowances, Unit Price Work ..... 24
Article 14— Tests and Inspections; Correction, Removal, or Accceptance of Defective Work ..... 24
Article 15— Payments to Contractor, Set Offs; Completions; Correction Period ..... 25
Article 16— Suspension of Work and Termination ..... 26
Article 17— Final Resolutions of Disputes ..... 26
Article 18— Miscellaneous ..... 28
Exhibit A— Software Requirements for Electronic Document Exchange ..... 1
Exhibit B— Foreseeable Bad Weather Days ..... 1
Exhibit C— Geotechnical Baseline Report Supplement to the Supplementary Conditions ..... 1



**EJCDC® C-800, Supplementary Conditions of the Construction Contract.**
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**Modified to include RD edits from RUS Bulletin 1780-26 (5/10/2024).**

# 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**

~~No suggested Supplementary Conditions in this Article.~~

**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.**


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**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, in accordance with 2 CFR 184.**

**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* - A certification submitted by Contractor that, to the best of the Contractor's knowledge and belief, all Work complies with Domestic Preference requirements.**

**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. Manufacturers' Certifications must include (at a minimum): specific list of products (using common names) associated with the certificate, location of the final manufacturing, signature of the manufacturer's representative, and a reference to the Domestic Preference statute. 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.**


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**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**

2.01 *Delivery of Bonds and Evidence of Insurance*

SC-2.01 Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in their place:

B. *Evidence of Contractor's Insurance:* When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by Contractor in this Contract. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

C. *Evidence of Owner's Insurance:* After receipt from Contractor of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner in this Contract (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 *Copies of Documents*

SC-2.02 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).

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

A. Owner shall furnish to Contractor **5** printed copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.


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2.06 *Electronic Transmittals*

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

B. *Electronic Documents Protocol:* The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol ("EDP" or "Protocol") for exchange of electronic transmittals.

1. *Basic Requirements*

a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.

b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.

c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.

d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.

e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party's use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.

f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions ("System Infrastructure") at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.


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1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is **[number]** MB. Attachments larger than that may be exchanged using large file transfer functions or physical media.

2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.

b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology ("IT") for maintaining operations of its System Infrastructure during the Project, including coordination with the party's individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.

c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.

d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.

e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.

f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.

g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the


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Electronic Document or use an alternative delivery method to complete the communication.

h. The Owner will operate a Project information management system (also referred to in this EDP as "Project Website") for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents, communications, submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:

1) Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;

2) Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;

3) Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication and document archives, etc.); and

4) Include any other Project Website attributes that may be pertinent to Contractor's use of the facility and pricing of such use.

C. *Software Requirements for Electronic Document Exchange; Limitations*

1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.

a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.

2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.

3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

SC-2.06 Supplement Paragraph 2.06 of the General Conditions by adding the following paragraph:

D. *Requests by Contractor for Electronic Documents in Other Formats*

1. Release of any Electronic Document versions of the Project documents in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be at the sole discretion of the Owner.


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2. To extent determined by Owner, in its sole discretion, to be prudent and necessary, release of Electronic Documents versions of Project documents and other Project information requested by Contractor ("Request") in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be subject to the provisions of the Owner's response to the Request, and to the following conditions to which Contractor agrees:

    a. The content included in the Electronic Documents created by Engineer and covered by the Request was prepared by Engineer as an internal working document for Engineer's purposes solely, and is being provided to Contractor on an "AS IS" basis without any warranties of any kind, including, but not limited to any implied warranties of fitness for any purpose. As such, Contractor is advised and acknowledges that the content may not be suitable for Contractor's application, or may require substantial modification and independent verification by Contractor. The content may include limited resolution of models, not-to-scale schematic representations and symbols, use of notes to convey design concepts in lieu of accurate graphics, approximations, graphical simplifications, undocumented intermediate revisions, and other devices that may affect subsequent reuse.

    b. Electronic Documents containing text, graphics, metadata, or other types of data that are provided by Engineer to Contractor under the request are only for convenience of Contractor. Any conclusion or information obtained or derived from such data will be at the Contractor's sole risk and the Contractor waives any claims against Engineer or Owner arising from use of data in Electronic Documents covered by the Request.

    c. Contractor shall indemnify and hold harmless Owner and Engineer and their subconsultants from all claims, damages, losses, and expenses, including attorneys' fees and defense costs arising out of or resulting from Contractor's use, adaptation, or distribution of any Electronic Documents provided under the Request.

    d. Contractor agrees not to sell, copy, transfer, forward, give away or otherwise distribute this information (in source or modified file format) to any third party without the direct written authorization of Engineer, unless such distribution is specifically identified in the Request and is limited to Contractor's subcontractors. Contractor warrants that subsequent use by Contractor's subcontractors complies with all terms of the Contract Documents and Owner's response to Request.

3. In the event that Owner elects to provide or directs the Engineer to provide to Contractor any Contractor-requested Electronic Document versions of Project information that is not explicitly identified in the Contract Documents as being available to Contractor, the Owner shall be reimbursed by Contractor on an hourly basis (at $**150.00** per hour) for any engineering costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Engineer.

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

3.01 *Intent*


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SC-3.01 Delete Paragraph 3.01.C in its entirety.

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

**SC-4.01.A – Delete the paragraph, and replace with:**

**A. The Contract Times will commence on the day indicated in the Notice to Proceed. The Notice to Proceed date must be no later than 30 days after the Effective Date of the Contract. The Owner must issue a Notice to Proceed.**

4.05 *Delays in Contractor's Progress*

**SC-4.05 Paragraph is mandatory for WWD projects.**

SC-4.05 Amend Paragraph 4.05.C by adding the following subparagraphs:

5. *Weather-Related Delays*

a. If "abnormal weather conditions" as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled. **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.**

b. 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 **0.5"** 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: **32** degrees Fahrenheit; or, at 3:00 p.m. the ambient outdoor temperature is equal to or greater than the following high temperature threshold: **95** 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 **Vevor – KMDOCEAN139** weather monitoring station at **Ocean Pines, MD**.


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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 Add the following new paragraphs immediately after Paragraph 5.03.D:

E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely: ~~**[If there are no such reports, so indicate in the table.]**~~

| Report Title | Date of Report | Technical Data |
|---|---|---|
| | | **No reports available** |
| | | |
| | | |

F. The following table lists the 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 specifically identifies the Technical Data upon which Contractor may rely: ~~**[If there are no such drawings, so indicate in the table.]**~~

| Drawings Title | Date of Drawings | Technical Data |
|---|---|---|
| | | **No reports available** |
| | | |
| | | |

G. Contractor may examine copies of reports and drawings identified in SC-5.03.E and SC-5.03.F that were not included with the Bidding Documents at **601 E. Main Street, Suite 100, Salisbury, MD 21804** during regular business hours, or may request copies from Engineer.

5.06 *Hazardous Environmental Conditions*


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SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely: ~~**[If there are no such reports, so indicate in the table]**~~

| Report Title | Date of Report | Technical Data |
|---|---|---|
| | | **No reports available** |
| | | |
| | | |

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely: ~~**[If there are no such drawings, so indicate in the table]**~~

| Drawings Title | Date of Drawings | Technical Data |
|---|---|---|
| | | **No reports available** |
| | | |
| | | |

**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 WEP projects.**

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2010, 2013, or 2018 edition).

2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2010, 2013, or 2018 edition).

**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.**

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.B:

1. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be **2** years after Substantial Completion.

2. After Substantial Completion, Contractor shall furnish a warranty bond issued in the form of EJCDC® C-612, Warranty Bond (2018). The warranty bond must be in a bond amount of **100** percent of the final Contract Price. The warranty bond period will extend to a date **2** years after Substantial Completion of the Work. Contractor shall deliver the


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fully executed warranty bond to Owner prior to or with the final application for payment, and in any event no later than 11 months after Substantial Completion.

3. The warranty bond must be issued by the same surety that issues the performance bond required under Paragraph 6.01.A of the General Conditions.

6.02 *Insurance—General Provisions*

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

~~SC-6.02 Add the following paragraph immediately after Paragraph 6.02.H.2 of the General Conditions:~~

~~3. For the following Subcontractors, Suppliers, or categories of Subcontractor or Supplier, Contractor shall require the following specified insurance, with policy limits as stated: **[Identify Subcontractors, Suppliers, or categories of same, and insert specific insurance requirements and policy limits]**~~

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:** |
|---|---|
| **Workers' Compensation** | |
| State | Statutory |
| Applicable Federal (e.g., Longshoreman's) | Statutory |
| Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable | Statutory |
| **Jones Act (if applicable)** | |
| Bodily injury by accident—each accident | **$ 500,000.00** |
| Bodily injury by disease—aggregate | **$ 1,000,000.00** |
| **Employer's Liability** | |


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| Workers' Compensation and Related Policies | Policy limits of not less than: |
|---|---|
| Each accident | **$ 100,000.00** |
| Each employee | **$ 100,000.00** |
| Policy limit | **$ 500,000.00** |
| ~~**Stop-gap Liability Coverage**~~ | |
| ~~For work performed in monopolistic states, stop-gap liability coverage must be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:~~ | ~~$~~ |

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.


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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 | **$ 2,000,000.00** |
| Products—Completed Operations Aggregate | **$ 500,000.00** |
| Personal and Advertising Injury | **$ 1,000,000.00** |
| Bodily Injury and Property Damage—Each Occurrence | **$ 1,000,000.00** |

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:** |
|---|---|
| **Bodily Injury** | |
| Each Person | **$ 1,000,000.00** |
| Each Accident | **$ 1,000,000.00** |
| **Property Damage** | |
| Each Accident | **$ 500,000.00** |
| **or** | |
| **Combined Single Limit** | |
| Combined Single Limit (Bodily Injury and Property Damage) | **$ 1,000,000.00** |

K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general


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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 | **$ 1,000,000.00** |
| General Aggregate | **$ 1,000,000.00** |

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 | **$ 1,000,000.00** |
| General Aggregate | **$ 1,000,000.00** |

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 | **$ 1,000,000.00** |
| Annual Aggregate | **$ 1,000,000.00** |

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 Owner, and (4) submit


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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 | **$ 1,000,000.00** |
| Aggregate | **$ 1,000,000.00** |

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 | **$ 500,000.00** |
| General Aggregate | **$ 500,000.00** |

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

6.04 *Builder's Risk and Other Property Insurance*

SC-6.04 Delete Paragraph 6.04.A and insert the following in its place:

A. Owner 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.

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).


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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). If this coverage is subject to a sublimit, such sublimit will be a minimum of $**500,000.00**.

5. extend to cover damage or loss to insured property while in transit. If this coverage is subject to a sublimit, such sublimit will be a minimum of $**500,000.00.**

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.**


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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. **None.**

12. If debris removal in connection with repair or replacement of insured property is subject to a coverage sublimit, such sublimit will be a minimum of $**500,000.00**

~~13. In addition to the coverage sublimits stated above, the following coverages are also subject to sublimits, as follows:~~

    ~~a. **[Here list a specific coverage, or cause of loss, that has been determined to be likely to be subject to a sublimit. If not applicable, then delete Paragraph SC-6.04.F.13 in its entirety.]** If this coverage is subject to a sublimit, such sublimit will be a minimum of $**[amount]**.~~

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

G. *Coverage for Completion Delays:* The builder's risk policy will include, for the benefit of Owner, loss of revenue and soft cost coverage for losses arising from delays in completion that result from covered physical losses or damage. Such coverage will include, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, compensation for loss of net revenues, rental costs, and attorneys' fees and engineering or other consultants' fees, if not otherwise covered.

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

~~H. *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.~~

~~1. The builder's risk policy (or if applicable the installation floater) will be subject to a deductible amount of no more than $**[number]** for direct physical loss in any one occurrence.~~

SC-6.04 Delete Paragraph 6.04.A of the General Conditions and substitute the following in its place:

A. *Installation Floater*

1. Contractor shall provide and maintain installation floater insurance on a broad form or "all risk" policy providing coverage for materials, supplies, machinery, fixtures, and equipment that will be incorporated into the Work ("Covered Property"). Coverage under the Contractor's installation floater will include loss from covered "all risk" causes (perils) to Covered Property:

    a. of the Contractor, and Covered Property of others that is in Contractor's care, custody, and control;

    b. while in transit to the Site, including while at temporary storage sites;

    c. while at the Site awaiting and during installation, erection, and testing;

    d. continuing at least until the installation or erection of the Covered Property is completed, and the Work into which it is incorporated is accepted by Owner.


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2. The installation floater coverage cannot be contingent on an external cause or risk, or limited to property for which the Contractor is legally liable.

3. The installation floater coverage will be in an amount sufficient to protect Contractor's interest in the Covered Property. The Contractor will be solely responsible for any deductible carried under this coverage.

4. This policy will include a waiver of subrogation applicable to Owner, Contractor, Engineer, all Subcontractors, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.03 *Labor; Working Hours*

SC-7.03 Add the following new subparagraphs immediately after Paragraph 7.03.C:

1. Regular working hours will be **7:30 AM to 4:00 PM E.S.T.**

2. Owner's legal holidays are **New Year's Day, Birthday of Dr. Martin Luther King Jr, President's Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Election Day, Veteran's Day, Thanksgiving Day, American Indian Heritage Day, Christmas Day.**

SC-7.03 Amend the first and second sentences of Paragraph 7.03.C to state "…all Work at the Site must be performed during regular working hours, **Monday** through **Friday.** Contractor will not perform Work on a **Saturday**, **Sunday**, or any legal holiday."

~~SC-7.03 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.~~

SC-7.03 Add the following new paragraph immediately after Paragraph 7.03.C:

D. **Contractor** shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer's services (including those of the Resident Project Representative, if any), Owner's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

SC-7.03 Add the following new subparagraph immediately after Paragraph SC-7.03.D:

**1.** For purposes of administering the foregoing requirement, additional overtime costs are defined as **overtime pay for RPR services at a 1.5 times the current hourly rate schedules of the Engineer, and overtime pay for County Employees at 1.5 time the current hourly rate schedules of the Owner.**

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

**D. All products must meet Domestic Preference requirements.**


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**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.**

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

**Unless the specification 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.**

**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.**

**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.**


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7.10 *Taxes*

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

A. Owner is exempt from payment of sales and compensating use taxes of the State of **Maryland** and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

**SC-7.12.A Amend paragraph by adding the following after "written interpretations and clarifications,":**

**Manufacturers' Certifications,**

7.13 *Safety and Protection*

SC-7.13 Insert the following after the second sentence of Paragraph 7.13.G:

The following Owner safety programs are applicable to the Work: **None.**

**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.**

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

**F. Contractor shall certify prior to final payment 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 8—OTHER WORK AT THE SITE**

8.02 *Coordination*


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~~SC-8.02 Add the following new Paragraph 8.02.C immediately after Paragraph 8.02.B:~~

~~C. Owner intends to contract with others for the performance of other work at or adjacent to the Site.~~

~~1. **[Here identify individual or entirety]** shall have authority and responsibility for coordination of the various contractors and work forces at the Site;~~

~~2. The following specific matters are to be covered by such authority and responsibility: **[Here itemize such matters]**;~~

~~3. The extent of such authority and responsibilities is: **[Here provide the extent]**.~~

**ARTICLE 9—OWNER'S RESPONSIBILITIES**

9.13 *Owner's Site Representative*

~~SC-9.13 Add the following new paragraph immediately after Paragraph 9.12 of the General Conditions:~~

~~9.13 *Owner's Site Representative*~~

~~A. Owner will furnish an "Owner's Site Representative" to represent Owner at the Site and assist Owner in observing the progress and quality of the Work. The Owner's Site Representative is not Engineer's consultant, agent, or employee. Owner's Site Representative will be [**here identify individual or entity]**. The authority and responsibilities of Owner's Site Representative follow: **[Here describe the duties and activities of the Owner's Site Representative.]**~~

**ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION**

10.03 *Resident Project Representative*

~~SC-10.03 Add the following new subparagraph immediately after Paragraph 10.03.A:~~

~~1. On this Project, by agreement with the Owner, the Engineer will not furnish a Resident Project Representative to represent Engineer at the Site or assist Engineer in observing the progress and quality of the Work.~~

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.


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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.


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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**

~~No suggested Supplementary Conditions in this Article.~~

**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.**

**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.**

**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.**

**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.


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

13.01 *Cost of the Work*

~~SC-13.01 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 **[name of equipment rental rate book]**.~~

~~SC-13.01 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 $500. **[or insert other threshold price.]**~~

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

13.03 *Unit Price Work*

**SC-13.03 Delete Paragraph 13.03.E 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 ACCCEPTANCE OF DEFECTIVE WORK**

~~No suggested Supplementary Conditions in this Article.~~


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**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 the following 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.**

SC-15.01 Add the following new Paragraph 15.01.F:

F. For contracts in which the Contract Price is based on the Cost of Work, if Owner determines that progress payments made to date substantially exceed the actual progress of the Work


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(as measured by reference to the Schedule of Values), or present a potential conflict with the Guaranteed Maximum Price, then Owner may require that Contractor prepare and submit a plan for the remaining anticipated Applications for Payment that will bring payments and progress into closer alignment and take into account the Guaranteed Maximum Price (if any), through reductions in billings, increases in retainage, or other equitable measures. Owner will review the plan, discuss any necessary modifications, and implement the plan as modified for all remaining Applications for Payment.

**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 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.

15.08 *Correction Period*

SC-15.08 Add the following new Paragraph 15.08.G:

G. The correction period specified as one year after the date of Substantial Completion in Paragraph 15.08.A of the General Conditions is hereby revised to be the number of years set forth in SC-6.01.B.1; or if no such revision has been made in SC-6.01.B, then the correction period is hereby specified to be **2** years after Substantial Completion.

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

No suggested Supplementary Conditions in this Article.

**ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES**

17.02 *Arbitration*

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

17.02 *Arbitration*


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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;


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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.

17.03 *Attorneys' Fees*

SC-17.03 Add the following new paragraph immediately after Paragraph 17.02. [Note: If there is no Paragraph 17.02, because neither arbitration nor any other dispute resolution process has been specified here in the Supplementary Conditions, then revise this to state "Add the following new Paragraph immediately after Paragraph 17.01" and revise the numbering accordingly].

17.03 *Attorneys' Fees*

A. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

**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.~~


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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**


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**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;**


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**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**


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**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.**


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**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.**


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**5. Mitigation Measures – The following environmental mitigation measures are required on this Project: [*Insert mitigation measures from the Letter of Conditions here*].**

**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:**


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**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.***


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## EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

| Item | Electronic Documents | Transmittal Means | Data Format | Note (1) |
|---|---|---|---|---|
| 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 | |

| Notes | |
|---|---|
| (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. |

| Key | |
|---|---|
| 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 **2022.001.20169** or later |
| DWG | Autodesk® AutoCAD .dwg format Version **NA** |
| DOC | Microsoft® Word .docx format Version **2202 (Microsoft 265)** |
| EXC | Microsoft® Excel .xls or .xml format Version **2202 (Microsoft 265)** |
| DB | Microsoft® Access .mdb format Version **2202 (Microsoft 265)** |


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## 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 | **5** | **15** | **0** |
| February | **7** | **7** | **0** |
| March | **8** | **0** | **0** |
| April | **10** | **0** | **0** |
| May | **8** | **0** | **0** |
| June | **3** | **0** | **5** |
| July | **5** | **0** | **10** |
| August | **5** | **0** | **10** |
| September | **5** | **0** | **5** |
| October | **3** | **0** | **0** |
| November | **3** | **7** | **0** |
| December | **5** | **15** | **0** |

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.


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**EXHIBIT C—GEOTECHNICAL BASELINE REPORT SUPPLEMENT TO THE SUPPLEMENTARY CONDITIONS**

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]**


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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]**.


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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.


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~~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.~~


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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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~~Paragraphs SC-5.03 and SC-5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.~~


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**WORK CHANGE DIRECTIVE NO.: [Number of Work Change Directive]**

| | | | |
|---|---|---|---|
| Owner: | **County Commissioners of Worcester County** | Owner's Project No.: | **0085D028** |
| Engineer: | **Davis, Bowen & Friedel Inc** | Engineer's Project No.: | **0085D028** |
| Contractor: | | Contractor's Project No.: | |
| Project: | **St. Martin's By the Bay Water Project** | | |
| Contract Name: | **St. Martin's By the Bay Water Project** | | |
| 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: | | |


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**CHANGE ORDER NO.: [Number of Change Order]**

| | | | |
|---|---|---|---|
| Owner: | **County Commissioners of Worcester County** | Owner's Project No.: | **0085D028** |
| Engineer: | **Davis, Bowen & Friedel Inc** | Engineer's Project No.: | **0085D028** |
| Contractor: | | Contractor's Project No.: | |
| Project: | **St. Martin's By the Bay Water Project** | | |
| Contract Name: | **St. Martin's By the Bay Water Project** | | |
| 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:<br>$ _____ | Original Contract Times:<br>Substantial Completion: _____<br>Ready for final payment: _____ |
| **[Increase] [Decrease]** from previously approved Change Orders No. 1 to No. **[Number of previous Change Order]**:<br>$ _____ | **[Increase] [Decrease]** from previously approved Change Orders No.1 to No. **[Number of previous Change Order]**:<br>Substantial Completion: _____<br>Ready for final payment: _____ |
| Contract Price prior to this Change Order:<br>$ _____ | Contract Times prior to this Change Order:<br>Substantial Completion: _____<br>Ready for final payment: _____ |
| **[Increase] [Decrease]** this Change Order:<br>$ _____ | **[Increase] [Decrease]** this Change Order:<br>Substantial Completion: _____<br>Ready for final payment: _____ |
| Contract Price incorporating this Change Order:<br>$ _____ | Contract Times with all approved Change Orders:<br>Substantial Completion: _____<br>Ready for final payment: _____ |

| | Recommended by Engineer (if required) | Authorized by Owner |
|---|---|---|
| By: | _____ | _____ |
| Title: | _____ | _____ |
| Date: | _____ | _____ |

| | Authorized by Owner | Approved by Funding Agency (if applicable) |
|---|---|---|
| By: | _____ | _____ |
| Title: | _____ | _____ |
| Date: | _____ | _____ |


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**FIELD ORDER NO.: [Number of Field Order]**

| | | | |
|---|---|---|---|
| Owner: | **County Commissioners of Worcester County** | Owner's Project No.: | **0085D028** |
| Engineer: | **Davis, Bowen & Friedel Inc** | Engineer's Project No.: | **0085D028** |
| Contractor: | | Contractor's Project No.: | |
| Project: | **St. Martin's By the Bay Water Project** | | |
| Contract Name: | **St. Martin's By the Bay Water Project** | | |
| 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: _____

**EJCDC® C-942, Field Order.**
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# SECTION 01 11 00

# SUMMARY OF WORK

## PART 1 - GENERAL

### 1.1 DESCRIPTION

A. Contract includes all work designated in the Contract Documents including the Specifications and as shown on the Plans and generally consists of Installation of approximately 5,525 LF of 6 and 8-inch water main and appurtenances, water services, and meter pits, hydrant assemblies, and all restoration including overlay of approximately 10,020 SY of road way and related work as indicated within the contract documents. Work includes furnishing all equipment, material, and labor for the work described in the contract document drawings and specifications. In case of conflict between contract plans and specifications, the Contractor shall request a determination from the ENGINEER as to which shall govern. The Contractor shall furnish all implements, machinery, tools, equipment, material and labor necessary to the performance of the work and shall furnish and do everything necessary to make the work perfect, complete, neat and finished, and the Contractor shall maintain all the work to be done under this Contract in this condition at the time the work is finally inspected.

B. The work shall be done in full conformance with all codes, rules and regulations of the Worcester County Public Works and the State of Maryland pertaining to this PROJECT.

### 1.2 GENERAL CONSTRUCTION REQUIREMENTS

A. Contractor shall meet with and fully cooperate and coordinate his activities with the Worcester County Public Works and other utility providers and obtain permits from all regulatory agencies, including dewatering permits, unless provided in these documents and addenda.

B. Contractor shall set up and maintain traffic controls prior to work in right-of-way.

C. Contractor is solely responsible for developing and providing a detailed sequence of construction subject to OWNER’S approval.

D. Contractor shall plan the work to avoid conflicts with existing utilities and shall at Contractor’s sole expense adjust temporary and permanent water, drains, sewer and storm drains if and as needed to eliminate conflicts.

E. Water services shall be maintained and kept operational throughout the PROJECT except for brief interruptions for connections which shall be coordinated with the County.

F. Contractor shall install and maintain erosion and sediment control requirements.

G. Contractor shall perform all test pitting well in advance of work to verify utility crossing depths.

H. All federal, state and local regulations will be followed for safety, including, but not limited to, dust control and noise level restrictions.

I. Installation, disinfection, water quality testing, appurtenances and Health Department approval for water lines if necessary to maintain water service is a PROJECT requirement.

J. Working hours in residential areas shall be limited to 8 a.m. to 4 p.m., Monday through Friday, unless extended by the OWNER.

K. The PROJECT design was completed with the best available information. The location of existing water pipes, valves, drains, sewer and other utilities which are not all known at this time and shall be determined by the Contractor.

L. Contractor shall make every effort to assure shop drawings and submittals are complete at first submission.

M. Storage of materials including piping shall be on crates, wood cribs, or pallets to elevate them above the ground. Do not store pipe or other materials in direct contact with dirt or mud. Keep interior of all pipe materials free of debris and storm water during storage.

N. Closure of one side of the street shall be the normal procedure. Closure of both lanes of traffic shall not be allowed unless coordinated in advanced with the Worcester County Department of Public Work. Allowances shall be made to allow property owners safe access to their homes.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

# SECTION 01 20 00

# PRICE AND PAYMENT PROCEDURES

## PART 1 – GENERAL

### 1.1 GENERAL

A. Payment for materials furnished and work done under this contract will be made as herein below stipulated, for the actual amount of materials supplied and work done under authorization of the ENGINEER and in accordance with the prices bid in the Bid Form. The Contractor shall not be entitled to receive additional compensation for anything furnished or done, except for such extra work as shall be authorized by written order.

B. It is intended that all work shown on the contract drawings and included in the specifications is to be paid for under the items listed in the bid form. The absence of a bid item for any specific category of work shall be interpreted as meaning that the cost of such work, accomplished as defined by the contract documents, shall be included in the prices bid for the related item listed in the Bid Form.

C. The OWNER may elect to increase or decrease quantities above the indicated estimated quantity or delete entire bid items in their entirety without change in unit prices or impact on remaining work items.

D. Bid prices for base bid items shall include furnishing all materials, equipment and labor for the scope of work of this contract and all appurtenant work to complete the work as shown or described. All hauling and disposing of excess, unsuitable excavated material or non-reusable removed materials shall be included in the prices bid. Bid prices shall include excavation, backfill of trenches or subgrade and sub-base preparation with suitable materials removed from the excavation or excess suitable materials from the PROJECT site, or from imported source; furnishing, placing, compaction, and compaction testing; dewatering, sheeting, shoring and bracing, gravel bedding; locating existing utilities or storm drains; unclassified excavation; removal, storage, re-hauling and replacement of all material encountered during excavation; disposal of unsuitable or excess material; wetting or drying borrow for proper placement and compaction; maintenance or protection of excavation or subgrade; furnishing and placing pipe, structures, and appurtenances; support and protection of adjacent property, utilities and structures encountered and restoration in-kind in case of damage; demolition, removal of salvaged equipment to OWNER'S required site; connection of water lines to water main and disinfection; maintaining stormwater pipe and catch basins and removing all debris after final restoration; traffic and pedestrian control ,restoration, sediment erosion control; lay out, stake out, as built surveys; and coordination, control of grades for positive drainage, and all other appurtenant work as shown or specified.

E. For Lump Sum bid items, no measurement will be made. Payment will be made on a lump sum basis at the lump sum price bid for work completed and approved by the ENGINEER.

PART 2 – BID ITEMS

2.1 BID ITEM FOR MOBILIZATION, BONDS, INSURANCE, AND DEMOBILIZATION (Bid Item No. 1)

A. Mobilization shall consist of, but not be limited to, storage, staging, utility locates, meetings, sanitary and other facilities as required by the specifications, by local or state law, or by regulation, providing access to the PROJECT site, obtaining necessary permits and licenses and payment of fees, and providing required insurance and bonds.

B. Payment for mobilization will be made at the lump sum price bid. The lump sum price bid for mobilization shall be limited to a maximum of three (3%) percent of the total base bid. Furthermore, the maximum amount of the lump sum price bid for mobilization that is requisitioned on the Construction Requisition No. 1 shall not exceed fifty (50) percent of the lump sum price bid and each succeeding requisition shall be limited to a maximum of ten (10) percent of the lump price bid until the entire lump sum price less retainage has been requisitioned.

2.2 BID ITEM FOR FURNISHING, INSTALLING, AND MAINTAINING SEDIMENT AND EROSION CONTROL DEVICES (Bid Item No. 2)

A. The price bid shall include and cover all costs of furnishing, delivering and installing silt fencing, check dams, and other sediment and erosion control measures as shown on the contract drawings.

B. All accessory and incidental work.

C. Payment for all work associated with this item will be made at the lump sum price bid.

2.3 BID ITEM FOR FURNISHING, AND INSTALLING TRAFFIC CONTROL MEASURES (Bid Item No. 3)

A. The price bid shall include and cover all costs of furnishing, and maintaining traffic control measures necessary to safely complete the proposed work, meeting all requirements of the agency having jurisdiction of the roadway in question.

B. The contractor shall submit to the OWNER for approval a phased traffic control plan including all construction items and elements complete with associated timelines for each phase of the PROJECT. A meeting will be held with the awarded contractor, the OWNER, and the ENGINEER to review and discuss the construction traffic control plan.

C. All accessory and incidental work.

D. Payment for all work associated with this item will be made at the lump sum price bid.

## 2.4 BID ITEM FOR DEMOLITION AND DISPOSAL OF EXISTING WATER TREATMENT FACILITIES (Bid Item No. 4)

A. The price bid shall include and cover all costs of the demolition and disposal of the water treatment facilities, including:

1. Notification of the property owners and residences of the schedule and impact of the construction.
2. Dewatering, as required, throughout construction.
3. Installation, maintenance, and removal of temporary construction fencing.
4. Test pitting to locate existing utilities which may be in conflict with the work.
5. Removal, disposal, and capping of existing utility lines, fittings, and vessels designated for demolition.
6. Abandonment of existing well in accordance with State of Maryland regulations.
7. All fees and costs associated with the permitting of the proposed well abandonment.
8. All fees and costs associated with disposal of all demolished materials, including hazardous materials.
9. Repair and adjustment of any damages from installation, storm events and vandalism.

B. All else necessary and incidental to the complete and acceptable installation.

C. No measurement shall be made.

D. Payment for all work associated with this item will be made at the lump sum price bid.

## 2.5 BID ITEMS FOR FURNISHING AND INSTALLING WATER MAINS AND APPURTENANCES (Bid Item No. 5A, 5B, 5B-A)

A. The unit prices bid shall include and cover all costs of furnishing, delivering and installing water main complete including, but not limited to, the following;

1. Saw cutting, roto-milling and removal of existing pavement of the various types encountered.
2. Clearing, grubbing, stripping and stockpiling topsoil.
3. Removal and excavation of all materials encountered in trench excavation.
4. Hauling wet material for drying or excess excavated material to use as trench refill materials.
5. Backfilling of trenches with acceptable material from the excavation.
6. Compaction and top grading of backfilled material and compaction testing.
7. Furnishing and placing water main, fittings, concrete buttresses, anchors, retainers, adaptors, sleeves, blind flanges, detection tape, tracer wire, tracer wire boxes, restraints, and other appurtenances.
8. Connection to the existing water main, deflection of the proposed main around, over, or under other pipelines, utilities or structures as needed.
9. Placing and removal of sheeting and bracing.
10. Dewatering and disposal of water.
11. Test pitting within the trench width to locate existing utilities which may be in conflict with the work. Test pitting in all locations to locate the existing water mains, services, and appurtenances.
12. Locating, supporting, protecting all utilities or structures and their restoration in case of injury or damage and adjustment of valve boxes, manhole covers, etc.
13. Pipe testing.
14. Distribution system disinfection.
15. Top soiling, finish grading and seeding disturbed grass areas.
16. Furnishing, installation and subsequent removal of temporary blow off hydrants and plugging of MJ tee after completion of blow off operations at locations shown on the drawings or as required.
17. All else necessary and incidental to the complete and acceptable installation.
18. Repair and adjustment of any damages from water main installation.
19. Excavation, and removal of plugs and buttresses or plugging and buttressing as required and noted on the plans.
20. Compaction and rough grading.
21. In-Place Density Test.
22. Repair and adjustment of any damages from installation, storm events and vandalism.
23. Surface restoration including temporary pavement or other surface or near surface effects disturbed during the work.

B. Measurement will be made regardless of depth, horizontally along the centerline of the pipe, with no deduction made for length of fittings.

C. Payment for all work in connection with furnishing and laying water mains will be made at the appropriate unit prices bid for the lengths of the sizes of pipe installed.

## 2.6 BID ITEMS FOR FURNISHING AND INSTALLING PUBLIC SIDE WATER SERVICES AND APPURTENANCES (Bid Items No. 6A, 6B)

A. The unit prices bid shall include and cover all costs of furnishing, delivering and installing water services from the installed watermain to the installed water meter assemblies including, but not limited to, the following:

1. Saw cut and removal and excavation of all materials encountered in excavation.
2. Hauling wet for drying or excess excavated material to use as refill materials.
3. Backfilling with material from the excavation.
4. Compaction and rough grading of backfilled material with soil testing as specified.
5. Furnishing and placing water service and other appurtenances.
6. Removal of existing meter, meter vault and service piping as required.
7. Placing and removal of sheeting and bracing.
8. Dewatering, disposal of water, and associated permits.
9. Test pitting in the area of work or elsewhere as necessary to locate existing utilities and appurtenances which may be in conflict with the work.
10. Locating, supporting, protecting all utilities or structures and their restoration in case of injury or damage and adjustment of valve boxes, and manhole covers, to proposed grade, etc.
11. Coordinate with Public Works and property owner to notify of service interruption and minimize disruptions.
12. Repair and adjustment of any damages from water service installation.
13. Pipe pressure testing and all costs and fees associated therewith.
14. Bacterial testing and all costs and fees associated therewith.
15. Repair and adjustment of any damages from installation, storm events and vandalism.

B. Measurement will be made regardless of depth, horizontally along the centerline of the pipe, with no deduction made for length of fittings.

C. Payment for all work in connection with furnishing and laying water services will be made at the appropriate unit prices bid for the lengths of the sizes of pipe installed.

## 2.7 BID ITEMS FOR FURNISHING AND INSTALLING WATER METER ASSEMBLIES (Bid Items 7A, 7B, & 7C)

A. The unit price bid shall include and cover all costs of furnishing, delivering and installing water Meters and Boxes complete including, but not limited to, the following:

1. Sawcut and removal and excavation of all materials encountered in excavation.
2. Hauling wet for drying or excess excavated material to use as trench refill materials.
3. Backfilling of trenches with material from the excavation.
4. Compaction and rough grading of backfilled material with soil testing as specified.
5. Utilizing directional bore or missile bore equipment as required to minimize damages to existing surface features.
6. Deflection of the proposed service around, over or under other pipelines, utilities or structures as needed.
7. Removal of existing service piping as required.
8. Placing and removal of sheeting and bracing.
9. Dewatering, disposal of water, and associated permits.
10. Test pitting in the area of work or elsewhere as necessary to locate existing utilities and appurtenances which may be in conflict with the work.
11. Locating, supporting, and protecting all utilities or structures and their restoration in case of injury or damage.
12. Coordinate with County and property owner to notify of service interruption and minimize disruptions.
13. Repair and adjustment of any damages from water service installation. Including but not limited to grading, seeding, mulch, sidewalk and driveway restorations.
14. Pipe pressure testing and all costs and fees associated therewith.
15. Bacterial testing and all costs and fees associated therewith.
16. Temporary and proposed distribution system disinfection.
17. Compaction and rough grading using compacted imported gravel.
18. Repair and adjustment of any damages from installation, storm events and vandalism.
19. All materials shown within the detail between the Inlet and Outlet Packing Fitting.

B. All accessory and incidental work.

C. No measurement shall be made, however, each assembly shall be considered to be the entire unit from the water main to the hydrant including hydrant tee, connecting pipe leads, fittings, and the valve, valve box, and cover.

D. Payment for all work in connection with furnishing and installing water meter assemblies will be made at the appropriate unit prices bid for each assembly constructed complete.

## 2.8 BID ITEMS FOR FURNISHING AND INSTALLING PRIVATE SIDE WATER SERVICES AND APPURTENANCES (Bid Items No. 8A, 8B)

A. This item shall be performed by a Professional Plumber licensed in the State of Maryland. The unit prices bid shall include and cover all costs of furnishing, delivering and installing water services from the installed water meter assemblies to the nearest existing point of connection for each customer to be served, including, but not limited to, the following:

1. Saw cut and removal and excavation of all materials encountered in excavation.
2. Hauling wet for drying or excess excavated material to use as refill materials.
3. Backfilling with material from the excavation.
4. Compaction and rough grading of backfilled material with soil testing as specified.
5. Furnishing and placing water service and other appurtenances. All water services shall take the most direct path from installed water meter to the point of connection. If obstacles are present, deviation from the most direct path may be approved by the Owner or Engineer.
6. Removal and abandonment of existing service piping as required.
7. Placing and removal of sheeting and bracing.
8. Dewatering, disposal of water, and associated permits.
9. Test pitting in the area of work or elsewhere as necessary to locate existing utilities and appurtenances which may be in conflict with the work.
10. Locating, supporting, protecting all utilities or structures and their restoration in case of injury or damage and adjustment of valve boxes, and manhole covers, to proposed grade, etc.
11. Coordinate with Public Works and property owner to notify of service interruption and minimize disruptions.
12. Repair and adjustment of any damages from water service installation.
13. Pipe pressure testing and all costs and fees associated therewith.
14. Bacterial testing and all costs and fees associated therewith.
15. Repair and adjustment of any damages from installation, storm events and vandalism.

B. Measurement will be made regardless of depth, horizontally along the centerline of the pipe, with no deduction made for length of fittings.

C. Payment for all work in connection with furnishing and laying water services will be made at the appropriate unit prices bid for the lengths of the sizes of pipe installed.

2.9 BID ITEM FOR FURNISHING AND INSTALLING FIRE HYDRANT ASSEMBLY (Bid Item 9)

A. The unit prices bid for furnishing and installing parallel or perpendicular fire hydrant assemblies shall include as a minimum:

1. Excavation and backfill of trench.
2. Gravel bedding and gravel drain.
3. Concrete buttress.
4. Piping from transmission main to hydrant lead as shown.
5. Ductile iron connecting pipe.
6. Special anchoring as detailed.
7. Fittings including main line hydrant tee, bell-restraint clamp for long hydrant leads (more than one length of pipe between valve and shoe), 90 degree bend (for parallel assemblies), and sleeves, if required.
8. 6" Resilient seat gate valve, three-piece valve box with cover and concrete collar.
9. Fire Hydrant.
10. Support blocking, and stainless steel anchor rods as required.
11. Operating wrenches as specified.
12. Painting hydrant.
13. All else necessary and incidental to the complete and acceptable installation and applicable items of paragraph 2.5 of this section.

B. No measurement shall be made, however, each assembly shall be considered to be the entire unit from the water main to the hydrant including hydrant tee, connecting pipe leads, fittings, and the valve, valve box, and cover.

C. Payment will be made at appropriate the unit prices bid for each assembly constructed complete in place.

2.10 BID ITEM FOR FURNISHING AND INSTALLING TRACER WIRE BOX (Bid Item 10)

A. The unit prices bid for furnishing and installing tracer wire box shall include as a minimum:

1. Excavation and backfill of trench.
2. Provide Tracer Wire Box per plans and Spec Section 22 16 00.
3. Termination of tracer wire per manufacturer’s specifications.
4. Support blocking, as required.
5. All else necessary and incidental to the complete and acceptable installation and applicable items of paragraph 2.5 of this section.

B. No measurement shall be made, however, each assembly shall be considered to be a single unit.

C. Payment will be made at appropriate the unit prices bid for each assembly constructed complete in place.

2.11 BID ITEM TO MILL EXISTING ASPHALT AND DISPOSE OF THE MILLINGS
(Bid Items 11, 11-A)

A. The unit price bid shall include milling of existing pavement or other materials and removal to an offsite area. Also included are any appurtenant preparation for grade control survey, pavement removal, saw cutting existing pavement or driveways to a smooth straight edge, protection and restoration in case of damage to utilities, hauling and disposing of unsuitable or excess material offsite, temporary maintenance of stormwater flows, dust control, securing areas for storage of materials and all related work as specified or directed. Contractor shall protect all utilities and repair or replace the same at his expense if disturbed or damaged.

B. All accessory and incidental work.

C. Measurement will be made horizontal to the pavement surface width and length for calculating square yard surface area.

D. Payment for all work shall be made in accordance with the unit price bid times the area of pavement milled (in square yards).

2.12 BID ITEM TO FURNISH AND INSTALL GRADED AGGREGATE SUBBASE
(Bid Items 12, 12-A)

A. The unit prices bid for furnishing all labor, materials, and equipment necessary for installing graded aggregate base. Also included are grade control survey, proof rolling, and compacting with final grade to conform to the lines and grades shown on the drawings or as otherwise approved, restoration of adjacent areas, sediment and erosion control, temporary maintenance of stormwater flows, dust control, securing areas for storage of materials, hauling, storing, drying or wetting material, compaction testing, and all related work as specified or directed. Contractor shall protect all utilities and repair or replace the same at his expense if disturbed or damaged.

B. All accessory and incidental work.

C. Measurement will be made horizontally along the top surface width and length for calculation of square yard surface area.

D. Payment for all work shall be made in accordance with the unit price bid times the measured surface area amount of graded aggregate subbase installed.

## 2.13 BID ITEMS FOR FURNISHING AND INSTALLING BITUMINOUS CONCRETE BASE COURSE (Bid Items 13, 13-A)

A. The price bid shall include and cover all costs of furnishing and installing the bituminous concrete pavement including:

1. Stakeout for grades of the paving.
2. Test rolling.
3. Restoration in case of damage to subgrade, sub-base, or adjacent areas.
4. Removal and disposal of unsuitable or excess material.
5. Surface cleaning and tack coat between layers
6. Placement of the bituminous concrete at the correct grade and location.
7. Adjustment of existing manholes, inlets and valve boxes and other similar items to finished grade
8. Pavement marking, roadway striping, and signage.
9. Coordination of work with County and Property owners.
10. Tie-in to existing pavement with proposed pavement.
11. Grade, seed and mulch to transition into existing shoulder

B. All accessory and incidental work and appurtenances to place the pavement as indicated in these specifications and detailed on the plans.

C. Measurement for bituminous concrete base course will be made horizontally along the top surface width and length of the installed base course for calculation of square yard surface area.

D. Payment for all work in connection with this item shall be made in accordance with the unit price bid times the measured quantity of bituminous concrete base course placed.

2.14 BID ITEMS FOR FURNISHING AND INSTALLING BITUMINOUS CONCRETE SURFACE COURSE (Bid Items 14, 14-A)

A. The price bid shall include and cover all costs of furnishing and installing the bituminous concrete pavement including:

1. Stakeout for grades of the paving.
2. Test rolling.
3. Restoration in case of damage to subgrade, sub-base, or adjacent areas.
4. Removal and disposal of unsuitable or excess material.
5. Surface cleaning and tack coat between layers
6. Placement of the bituminous concrete at the correct grade and location.
7. Adjustment of existing manholes, inlets and valve boxes and other similar items to finished grade
8. Pavement marking, roadway striping, and signage.
9. Coordination of work with County and Property owners.
10. Tie-in to existing pavement with proposed pavement.
11. Grade, seed and mulch to transition into existing shoulder

B. All accessory and incidental work and appurtenances to place the pavement as indicated in these specifications and detailed on the plans.

C. Measurement for bituminous concrete course will be made horizontally along the top surface width and length for calculation of square yard surface area.

D. Payment for all work in connection with this item shall be made in accordance with the unit price bid times the measured quantity of bituminous concrete surface course placed.

2.15 BID ITEM FOR INSTALLING AND MAINTAINING TEMPORARY CONSTRUCTION SECURITY & PRIVACY FENCING SURROUNDING STAGING AREAS (Bid Item 15)

A. The price bid for installing and maintaining temporary construction security & privacy fencing surrounding staging areas shall include and cover furnishing, installing, maintaining, and removing 6ft tall security fencing with privacy slats to fully encompass the project staging areas. Contractor shall keep the staging area locked during non-working hours, and provide access to the Owner, Engineer, and any other agencies having jurisdiction over the work upon request.

B. All accessory and incidental work.

C. Payment for all work associated with this item will be made at the lump sum price bid.

2.16 BID ITEMS FOR DECOMMISSIONING EXISTING WATER SUPPLY WELL
(Bid Item No. 16)

A. The price bid shall include and cover all costs of decommissioning the existing water supply well including:

1. All necessary permitting required to decommission an existing production well in accordance with State requirements.
2. All materials and labor required to properly abandon the decommissioned well following State procedures, including but not limited to any additional fill/seal prior to capping
3. Removal and capping of existing site piping as shown in the construction documents.

B. All accessory and incidental work.

C. No measurement will be made for this item.

D. Payment for all work associated with this item will be made at the lump sum price bid.

CONTINGENCIES:

2.17 BID ITEM FOR MISCELLANEOUS EXCAVATION AND BACKFILL FOR TEST PITTING (Bid Item 17)

A. The price bid for miscellaneous excavation and backfill shall include and cover saw cutting, stockpiling topsoil, excavation, backfill, placement, compaction, and removal of sheeting, dewatering, and all other incidental items of work.

B. Measurement for quantities of miscellaneous excavation and refill will be based upon the authorized depth, width and length of the excavation and backfill.

C. Payment for all work in connection with miscellaneous excavation and backfill will be made at the unit price bid per cubic yard for the volume actually excavated and refilled within the limits defined and authorized. No payment will be made for excavations within water, sewer and stormwater trenches.

2.18 BID ITEM FOR EXCAVATION BELOW SUBGRADE AND GRAVEL REFILL (Bid Item 18)

A. The price bid for excavation below subgrade and gravel refill shall include and cover the furnishing of all equipment, labor, tools, materials, excavation, hauling, additional placing and removal of sheeting, disposing of unsuitable material, furnishing, placing and compacting gravel and all incidentals necessary to complete this item of work.

B. Measurement for quantities of excavation below subgrade and gravel refill will be based upon the authorized depth, length and trench payment width shown on the drawings.

C. Payment for all work in connection with excavation below subgrade and gravel refill will be made at the unit price bid for the volume of gravel placed within the limits defined hereinbefore. No payment will be made for gravel used for the Contractor's convenience for dewatering or drains around fire hydrants.

2.19 BID ITEM FOR FURNISHING AND PLACING SELECT BACKFILL (Bid Item 19)

A. The price bid for furnishing and placing select backfill shall include and cover furnishing, placing, compacting and testing select backfill, disposal of unsuitable excavated material, and all other incidental work.

B. Measurement for quantities of select backfill will be based upon the authorized depth and length of placement in trench and the trench payment width.

C. Payment for all work in connection with select backfill will be made at the appropriate unit price for the volume actually furnished and placed within the limits defined hereinbefore and as authorized.

2.20 BID ITEM FOR FURNISHING AND PLACING 4,000 PSI CONCRETE (Bid Item 20)

A. The price bid for miscellaneous concrete shall include and cover furnishing and placing miscellaneous 4,000 psi concrete, including forming and all other incidental work, for cradle or other construction not included as a part of other pay items.

B. Measurement for quantities of miscellaneous concrete will be based upon the authorized depth, width and length of concrete placement.

C. Payment for all work in connection with miscellaneous concrete will be made at the appropriate unit price bid for the volume of concrete actually furnished and placed within the limits defined hereinbefore and as authorized.

BID ALTERNATE:

2.21 BID ITEMS FOR DIRECTIONAL DRILL FURNISHING AND INSTALLING WATER MAINS AND APPURTENANCES (Bid Item No. 21-A)

A. The unit prices bid shall include and cover all costs of furnishing, delivering and installing water main via directional drilling methods complete including, but not limited to, the following;

1. Saw cutting, roto-milling and removal of existing pavement of the various types encountered.
2. Clearing, grubbing, stripping and stockpiling topsoil.
3. Removal and excavation of all materials encountered in trench excavation.
4. Hauling wet material for drying or excess excavated material to use as trench refill materials.
5. Backfilling of trenches with acceptable material from the excavation.
6. Compaction and top grading of backfilled material and compaction testing.
7. Furnishing and delivering all materials, tools and equipment for laying the pipeline complete including furnishing, installing, and testing the of pipe, fittings, valves, tracer wire, restraints and appurtenances by directional drilling methods.
8. Connection to the existing water main, deflection of the proposed main around, over, or under other pipelines, utilities or structures as needed.
9. Placing and removal of sheeting and bracing.
10. Dewatering and disposal of water.
11. Test pitting within the trench width to locate existing utilities which may be in conflict with the work. Test pitting in all locations to locate the existing water mains, services, and appurtenances.
13. Locating, supporting, protecting all utilities or structures and their restoration in case of injury or damage and adjustment of valve boxes, manhole covers, etc.
14. Distribution system disinfection.
15. Top soiling, finish grading and seeding disturbed grass areas.
16. Furnishing, installation and subsequent removal of temporary blow off hydrants and plugging of MJ tee after completion of blow off operations at locations shown on the drawings or as required.
17. All else necessary and incidental to the complete and acceptable installation.
18. Repair and adjustment of any damages from water main installation.
19. Excavation, and removal of plugs and buttresses or plugging and buttressing as required and noted on the plans.
20. Compaction and rough grading.
21. In-Place Density Test.
22. Repair and adjustment of any damages from installation, storm events and vandalism.
23. Surface restoration including temporary pavement or other surface or near surface effects disturbed during the work.

B. Measurement will be made regardless of depth, horizontally along the centerline of the pipe, with no deduction made for length of fittings.

C. Payment for all work in connection with furnishing and laying water mains will be made at the appropriate unit prices bid per linear foot of the pipe actually furnished and installed.

END OF SECTION

# SECTION 01 31 19

# PROJECT MEETINGS

## PART 1 - GENERAL

### 1.1 DESCRIPTION

A. Work Included:

1. Preconstruction conference
2. Construction Progress meetings
3. Project closeout conferences

## PART 2 - PRODUCTS (Not Applicable)

## PART 3 - EXECUTION

### 3.1 PRECONSTRUCTION CONFERENCE

A preconstruction conference will be scheduled within ten (10) days after the issuance of the Notice to Proceed order. The ENGINEER will schedule a preconstruction conference to be held at the PROJECT Site or office of the OWNER. The preconstruction conference shall be attended by one top ranking officer of the construction company, Contractor's PROJECT superintendent, ENGINEER, OWNER, and all interested parties including but not limited to Local, County, State, or Federal Agencies. The purpose of the meeting shall be to establish PROJECT administrative criteria, review the Contractor's requirements, and to discuss construction schedules and methods. The agenda for the conference will generally include the following topics:

1. Responsibilities of the OWNER
2. Responsibilities of consulting ENGINEER
3. Responsibilities of the Contractor
4. Responsibilities of the funding agency (If Applicable)
5. Coordination of utility work
6. Processing pay requests
7. Discussion of contractor's schedule (Must be submitted 7 days prior to meeting)
8. Review of subcontractors
9. Submittals
10. Change order procedures
11. Safety
12. Labor and equal employment requirements
13. PROJECT inspection (If Applicable)
14. Rights-of-way and easements
15. PROJECT sign (If Applicable)
16. Coordination between contractors
17. Other items on the ENGINEERs agenda

## 3.2 CONSTRUCTION PROGRESS MEETINGS

A. Progress meetings shall be held on a monthly basis or at other times during the execution of the Contract at the request of the parties involved. The meeting will be held at the PROJECT site or other location designated by ENGINEER. Contractor shall be represented by the PROJECT superintendent at all meetings and by a ranking officer if so requested by the ENGINEER or the OWNER. The Contractor shall schedule the attendance of management personnel, subcontractors and/or equipment suppliers as may be necessary from time to time to resolve issues that may arise.

B. The ENGINEER may call additional progress meetings at critical times in the PROJECT.

C. Representatives of the Contractor's suppliers and subcontractors shall be persons familiar with the details of the work. They shall be persons authorized to make commitments on matters of work progress, delivery dates, size of labor force, cost and other matters as necessary to expedite the work and resolve conflicts.

D. Contractor shall provide attendance by authorized representatives of the Contractor and all major subcontractors that have performed work over the prior month or will be performing work in the upcoming month.

## 3.3 PROJECT CLOSEOUT CONFERENCE

A. The ENGINEER shall schedule a PROJECT closeout conference during the final phases of the work. The purpose of the meeting will be to discuss administrative aspects of the PROJECT closeout including duties of the Contractor with respect to PROJECT acceptance, warranties, post construction services, final inspection, final payment, punch list, and other items on the agenda. The Contractor, ENGINEER, participating funding agencies and the OWNER shall be in attendance.

## 3.4 MEETING MINUTES

The ENGINEER may keep minutes of PROJECT meetings and will distribute copies to all parties present at meeting or listed on a permanent list of concerned parties.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.0 DESCRIPTION

Work Included:

A. Schedule of Values

B. Construction Schedule

C. Survey and Layout Data

D. Shop Drawings

E. Certificates of Compliance

F. Certified Payrolls

G. Record of Testing

H. Record Drawings

I. Samples

J. Release of Liens

K. Warranties and Guarantees

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SCHEDULE OF VALUES

A. A schedule of values of the various parts of the work to be done under lump sum items shall be agreed upon by the Contractor and the ENGINEER. One week prior to the preconstruction conference, the Contractor shall submit for approval a proposed breakdown into construction categories of their lump sum price bid. This breakdown shall add up to the full 100% value of the lump sum price, and all parts of it shall be covered by the performance bond. The approved breakdown shall be used for the purpose of arriving at a basis for monthly estimates for appropriate lump sum bid items.

3.2 CONSTRUCTION SCHEDULE

A. The construction schedule and chart shall be submitted to the ENGINEER for approval one week prior to the preconstruction conference. The general schedule will be discussed at

the preconstruction meeting and copies made available to all interested parties. No construction shall be permitted until the construction schedule is approved.

B. The Contractor shall develop a critical path construction schedule and chart that shows at a minimum a bar graph indicating the series of activities either separately or concurrently required to complete the PROJECT within the allotted time. The chart shall also indicate expected cash flows on a monthly basis. Room shall be provided on the chart whereby the Contractor can plot actual progress of the work against that initially proposed.

C. The Contractor shall update the schedule on a monthly basis and submit the revised schedule to the ENGINEER along with the monthly pay request.

D. The Contractor shall furnish the ENGINEER at least five (5) days prior to the start of construction a final list of subcontractors which will be used on the PROJECT in accordance with Section C700 of these specifications.

3.3 SURVEY & LAYOUT DATA

A. The Contractor shall furnish the ENGINEER at least five days prior to the start of construction two record copies of line and grade stake out data. The furnishing of such record data, despite any action or lack thereof on the part of the ENGINEER relative to the data furnished, shall in no way release the Contractor from their responsibility for the completeness and accuracy of stake out work necessary for construction.

B. All survey and stake out work shall be done by qualified persons. Surveyor shall be licensed in the state where the PROJECT is located. The Contractor is responsible for stake out of all facilities required by this contract within the prices bid.

C. Any benchmarks destroyed through or as a direct result of the Contractor's construction operations shall be replaced and/or restored at their expense with no additional cost to the OWNER.

D. Work done by the Contractor without them having first established proper line and grade, or work done by them to incorrect line and grade, may be ordered removed and replaced at no increase in contract price.

3.4 SHOP DRAWINGS

A. The Contractor shall submit to the ENGINEER layout drawings for the installation and erection of the work and shop drawings for all fabricated or manufactured articles to be used in the work. The Contractor shall have three (3) copies prepared for submittal to the ENGINEER and shall prepare whatever additional copies as may be necessary or required for their own use and/or use by equipment suppliers and subcontractors.

B. All data, drawings, and correspondence from subcontractors, manufacturers, or suppliers shall be routed through the Contractor. The ENGINEER shall review only such data and details as are transmitted to them by the Contractor. All correspondence from the Contractor to the ENGINEER shall refer to the appropriate section of these specifications containing the subject matter of the inquiry.

C. Detailed shop drawings, shall include; as many of the following as applicable: drawing, detail, section, sub-part, paragraph, sub-paragraph, sub-sub-paragraph to specifically

identifying where the submitted equipment can be found in the Contract Documents; detailed materials lists and dimensional drawings, data, and literature for fabricated materials or equipment to be incorporated in the work. Include method for mounting for equipment and any alternations required due to removal, replacement or repair of existing equipment. Include all specific data that may be required for ascertaining the excellence and character of the equipment and the space occupied. Shop drawings shall be submitted to the ENGINEER for review for general compliance with the Contract Documents before fabrication. The Contractor shall obtain and check manufacturers shop drawings, certified prints and other pertinent data for conformance with all requirements with the Drawings and Specifications and in ample time to permit satisfactory progress of the work. After a completion of such check and verification by the Contractor, the Contractor shall sign or stamp such drawings, which stamp shall state as follows:

CHECKED BY: _____
(Contractors Name)

SIGNED BY: _____
(Checkers Name)

D. All data, drawings, and correspondence from subcontractors, manufacturers, or suppliers shall be routed through the Contractor. The ENGINEER shall review only such data and details as are transmitted to them by the Contractor. All correspondence from the Contractor to the ENGINEER shall refer to the appropriate section of these specifications containing the subject matter of the inquiry.

E. The ENGINEER's review of layout and shop drawings will be only to verify general compliance with Contract Documents. Figure dimensions and other detail will not be checked. Any notation made on shop drawings by the ENGINEER shall be for the Contractor's guidance but shall not relieve the Contractor from their responsibility to re-check, verify and resolve items so noted. The ENGINEERs review of shop drawings shall not relieve the Contractor from responsibility for errors or omissions thereon, whether or not called to the attention of the Contractor by the ENGINEER.

F. The Contractor's attention is specifically directed to the fact that no work shall be fabricated, nor equipment or materials ordered, nor any construction performed prior to approval by the ENGINEER of shop drawings applicable thereto. Construction performed in violation of this requirement will be neither approved nor certified for payment until applicable shop drawings have been submitted and approved. If any equipment or materials are ordered by the Contractor prior to submission and approval of shop drawings, they do so at their own risk.

F. The ENGINEER shall review at no charge to the Contractor shop drawings originally submitted and one re-submittal. Additional reviews resulting from improper submittal, lack of requested information, or disapproval shall be billed to the Contractor by the ENGINEER. The Contractor shall notify the ENGINEER in writing at the time of submission of any deviation in submittals from the requirements of the Contract Documents.

H. To expedite the return of shop drawings to the Contractor, the Contactor may need to pay extra for overnight delivery. The Contractor will be expected to provide their account number for such service and will be expected to include such costs within the base prices bid.

## 3.5 CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with Specifications requirements shall be executed in three (3) copies plus the number to be returned to the Contractor. Each certificate shall be signed by an authorized officer of the manufacturing company and shall contain the name and address of the Contractor, the PROJECT name and location, the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed of relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet the specific requirements.

## 3.6 CERTIFIED PAYROLLS

The Contractor shall provide Certified Payrolls on a monthly basis with the Payment Requests. It is the sole responsibility of the Contractor that payrolls are compliant with the most current Davis Bacon Act requirements. These documents will be kept by the OWNER for PROJECT Records.

## 3.7 RECORDS OF TESTING

A. The Contractor shall maintain records of all testing performed during the life of the PROJECT.

B. Records shall indicate the line, date of testing, persons involved in the testing and the results.

C. At the end of the PROJECT, or more frequently if requested, all testing records shall be turned over to the ENGINEER.

## 3.8 RECORD DRAWINGS

The Contractor shall keep one copy of the drawings at the site, in good order and provide mark-up to show all changes made during construction. These record drawings shall be available to the ENGINEER and shall be delivered to them upon completion of the contract. Record drawings shall contain stationing of all valves, bends, and fittings or dimensions from structures. They shall also contain all as-built elevations. All survey and stake out work shall be done by qualified persons. Surveyor shall be licensed in the state where the PROJECT is located.

## 3.9 SAMPLES

A. The number and type of samples submitted shall be specified in the particular section to which they apply.

B. Samples shall be physical samples to illustrate the materials and workmanship. They shall be submitted in sufficient size and quantity to clearly illustrate the functional characteristics of the product or material, with integrally related parts and attachment devices, and the full range of color to be provided.

C. All samples shall have been checked by and stamped with the approval of the Contractor, identified clearly as to material, manufacturer, and any pertinent catalog numbers indicating the intended use.

3.10 RELEASE OF LIENS

Affidavits of payments of all bills related to the PROJECT, release of liens, bonding company approvals and consent of surety to final payment.

3.11 WARRANTIES AND GUARANTEES

The Contractor shall provide all release of liens, warrantees, guarantees, bonds, and affidavits required for equipment and the total PROJECT in accordance with these specifications. The Contractor shall provide a Release of Liens from all subcontractors and material suppliers.

END OF SECTION

SECTION 01 77 19

CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 GENERAL

A. The items listed herein shall be compiled and prepared by the Contractor prior to completion of all work and delivered within one month of date of substantial completion to the OWNER for their future use.

B. Final payment to the Contractor will be withheld until all items listed herein are delivered to the OWNER.

C. Submit all items specified herein to the ENGINEER for review prior to delivery to the OWNER. All items specified herein shall be submitted to the ENGINEER in accordance with Section 01 33 00, Submittal Procedures. Make any corrections, additions or deletions from the contents thereof as may be required by the ENGINEER.

1.2 RECORD DRAWINGS

A. The Contractor shall keep a current record of all changes made during construction, including mechanical and electrical lines and apparatus. The record drawings shall show the location of all permanently concealed work not installed where indicated on the Contract Documents. Redline record drawings shall be kept up to date every week and submitted to the ENGINEER upon request.

B. Accuracy of information shall be the sole responsibility of the Contractor. Drawings shall be prepared at the same scale as the Contract Documents. Copies of the Contract Drawings may be obtained from the ENGINEER. The cost of reproduction and shipping shall be paid for by the Contractor.

1.3 WARRANTY

The Contractor shall provide all guarantees required for equipment and the total project as hereinbefore specified.

1.4 RELEASE OF LIENS

Affidavits of payments of all bills related to the PROJECT, release of liens, bonding company approvals and consent of surety to final payment.

1.5 SUPPLY

Supply extra material supplies and spare parts as called for throughout specification

1.6 FINAL CLEAN-UP

A. Perform general cleanup before final inspection.

B. Remove rubbish.

C. Remove stains, marks, and dirt from all paved surfaces.

D. Thoroughly clean debris from the sewer system.

E. Provide brush cleaning of roadways.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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, reinforcement, concrete materials, mix design, placement procedures, and finishes.

1.3 DEFINITIONS

Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, pozzolans, and ground granulated blast-furnace slag. Materials shall be in accordance with ACI 232.2 R-96 and ACI 233 R-95.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, PROJECT conditions, weather, test results, or other circumstances warrant adjustments.

C. Shrinkage Limitation Certification: For designated concrete mixes, lab tests shall be in accordance with 2.12 I. Shrinkage limitation certification shall be submitted to certify concrete mix limits shrinkage to specified levels.

D. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

E. Drawings-Fabrication/Erection/Installation: Drawings for reinforcement and accessories, without reference to the contract drawings.

F. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork. Design and engineering of formwork are Contractor's responsibility.

1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.

G. Welding Certificates: Copies of certificates for welding procedures and personnel.

H. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

I. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

1. Cementitious materials and aggregates.
2. Form materials and form-release agents.
3. Steel reinforcement and reinforcement accessories.
4. Admixtures.
5. Curing materials.
6. Floor and slab treatments.
7. Bonding agents.
8. Adhesives.
9. Vapor retarders.
10. Joint-filler strips.

J. Minutes of pre-installation conference.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete work similar in material, design, and extent to that indicated for this PROJECT and whose work has resulted in construction with a record of successful in-service performance.

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where PROJECT is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for formwork and shoring and re-shoring installations that are similar to those indicated for this PROJECT in material, design, and extent.

C. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.

1. Manufacturer must be certified according to the National Ready Mixed Concrete Association's Certification of Ready Mixed Concrete Production Facilities.
2. Material manufacturers shall be ISO 9001/9002 registered proof of documented quality assurance system. Quality system must be independent auditing registrar. ISO 9001/9002 certification shall be included with material submittals.

D. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C1077 and ASTM E329 to conduct the testing indicated, as documented according to ASTM E548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

E. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.

F. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."

G. ACI Publications: Comply with the following, unless more stringent provisions are indicated:

1. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
2. ACI 211, "Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete."
3. ACI 212, "Chemical Admixtures for Concrete."
4. ACI 232.2R-96, "Use of Fly Ash in Concrete."
5. ACI 233R-95, "Ground Granulated Blast Furnace Slag as a Cementitious Constituent in Concrete."
6. ACI 301, "Specification for Structural Concrete."
7. ACI 302.1R, "Guide for Concrete Floor Slab Construction."
8. ACI 305R, "Hot Weather Concreting."
9. ACI 306R, "Cold Weather Concreting."
10. ACI 308, "Standard Practice for Curing Concrete."
11. ACI 309R, "Guide for Consolidation of Concrete."
12. ACI 315, "Details and Detailing of Concrete Reinforcement," latest edition.
13. ACI 318, "Building Code Requirements for Reinforced Concrete," latest edition.
14. ACI 347, "Recommended Practice for Concrete Form Work."

H. Preinstallation Conference: Conduct conference at PROJECT site to comply with requirements in Division 1 Section "Project Meetings."

1. Before submitting design mixes, review concrete mix design and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixes.
c. Ready-mix concrete producer.
d. Concrete subcontractor.
e. Laboratory responsible for field quality control.

## 1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle steel reinforcement to prevent bending and damage.

1. Avoid damaging coatings on steel reinforcement.
2. Repair damaged epoxy coatings on steel reinforcement according to ASTM D3963/D3963M

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

B. Plywood, metal, or other approved panel materials.

1. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
2. Structural 1, B-B, or better, mill oiled and edge sealed, not less than 5/8" (16 mm) thick.

C. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

D. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

E. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch minimum.

F. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

G. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

H. Furnish units that will leave no corrodible metal closer than 1½ inch (38 mm) to the plane of the exposed concrete surface.

I. Furnish ties that, when removed, will leave holes not larger than 1 inch (25 mm) in diameter in concrete surface.

2.2 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A615/A615M, Grade 60 (Grade 420), deformed.

B. Epoxy-Coated Reinforcing Bars: ASTM A775/A775M (where indicated).

C. Steel Bar Mats: ASTM A184/A184M, assembled with clips.

1. Steel Reinforcement: ASTM A615/A615M, Grade 60 (Grade 420), deformed bars.

D. Deformed-Steel Welded Wire Fabric: ASTM A497, flat sheet.

## 2.3 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete, and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected or CRSI Class 2 stainless-steel bar supports.

B. Epoxy-Coated Joint Dowel Bars: ASTM A775/A775M; with ASTM A615/A615M, Grade 60, (where indicated).

C. Epoxy Repair Coating: Liquid, two part, epoxy repair coating; compatible with epoxy coating on reinforcement and complying with ASTM A775/A775M.

## 2.4 CONCRETE MATERIALS

A. Portland Cement: ASTM C150, Type I/II.

B. Normal-Weight Aggregate: ASTM C33, uniformly graded, and as follows:

1. Nominal Maximum Aggregate Size: 1-1/2 inches (38 mm).

Combined Aggregate Gradation: Well graded from coarsest to finest with not more than 18 percent and not less than 8 percent retained on an individual sieve, except that less than 8 percent may be retained on coarsest sieve and on No. 50 (0.3 mm) sieve, and less than 8 percent may be retained on sieves finer than No. 50 (0.3 mm).

C. Water: Potable and complying with ASTM C94.

## 2.5 ADMIXTURES

A. Air Entraining Admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures. Provide one of the following:

| | |
|---|---|
| "AEA-92" or "Air Mix 200" | The Euclid Chemical Co. |
| "Pozzolith Normal" | Master Builders |
| "WRDA" | W.R. Grace Co. |
| "Plastocrete 160" | Sika Chemical Corp. |

B. Water Reducing Admixture: ASTM C494, Type A, and containing not more than 0.05 percent chloride ions. Provide one of the following:

| | |
|---|---|
| "Eucon WR" Series | The Euclid Chemical Co. |
| "Pozzolith Normal" | Master Builders |
| "WRDA" | W.R. Grace Co. |
| "Plastocrete 160" | Sika Chemical Corp. |

C. High Range, Water Reducing Admixture (Superplasticizer): ASTM C494, Type F or Type G and containing not more than 0.05 percent chloride ions. Provide one of the following:

| | |
|---|---|
| "Eucon 37" or "Eucon 537" | The Euclid Chemical Co. |
| "Rheobuild 1000" | Master Builders |
| "Daracem 100" | W.R. Grace Co. |
| "Sikament 3000" | Sika Chemical Corp. |

D. Non-Chloride, Non-Corrosive Accelerating Admixture: The admixture shall conform to ASTM C494, Type C or E, and not contain more chloride ions than are present in municipal drinking water. The admixture manufacturer must have long-term non-corrosive test data from an independent testing laboratory (of at least a year's duration) using an acceptable accelerated corrosion test method such as that using electrical potential measures. Provide one of the following:

| | |
|---|---|
| "Accelguard 80" | The Euclid Chemical Co. |
| "Pozzutec 20" | Master Builders |
| "Daraset" | W.R. Grace Co. |

E. Water-Reducing and Retarding Admixture: ASTM C494, Type D, and contain not more than 0.05 percent chloride ions. Provide one of the following:

| | |
|---|---|
| "Eucon Retarder 75" | The Euclid Chemical Co. |
| "Pozzolith Retarder" | Master Builders |
| "Daratard 17" | W.R. Grace Co. |
| "Plastiment" | Sika Chemical Co. |

F. Mid-Range Water-Reducing Admixture: ASTM C494, Type A and containing no more than 0.05 percent chloride ions. Provide one of the following:

| | |
|---|---|
| "Eucon MR" | The Euclid Chemical Co. |
| "Polyheed" | Master Builders, Inc. |

G. Corrosion - Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

    a. DCI or DCI-S; W.R. Grace and Co., Construction Products Division
    b. Rheocrete 222 and; Master Builders, Inc.
    c. FerroGard-901; Sika Corporation.
    d. Eucon CTA; Euclid Chemical Company.

2.6 WATERSTOPS

A. Reference Section 03 15 13: "Waterstops"

2.7 VAPOR RETARDERS

A. Vapor Retarder: Polyethylene sheet, ASTM D4397, not less than 10 mils (0.25 mm) thick.

B. Fine-Graded Granular Material: Clean mixture of crushed stone, crushed gravel, and manufactured or natural sand; ASTM D448, Size 10, with 100 percent passing a No. 4 (4.75-mm) sieve and 10 to 30 percent passing a No. 100 (0.15-mm) sieve; meeting deleterious substance limits of ASTM C33 for fine aggregates.

2.8 FLOOR AND SLAB TREATMENTS

A. All building floor slabs shall receive floor hardener unless otherwise noted.

B. Unpigmented Mineral Dry-Shake Floor Hardener: As indicated, use factory-packaged dry combination of Portland Cement, graded quartz aggregate, and plasticizing admixture; or

C. Penetrating Liquid Floor Treatment: As indicated, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.

D. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

E. Products: Subject to compliance with requirements, provide one of the following:

1. Unpigmented Mineral Dry-Shake Floor Hardener:

    a. Surflex; Euclid Chemical Co.
    b. Maximent; Master Builders, Inc.

2. Penetrating Liquid Floor Treatment:

    a. Euco Diamond Hard; Euclid Chemical Co.

2.9 CURING MATERIALS

A. All concrete work shall be properly cured in accordance with ACI recommendations.

B. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

C. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.

D. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

E. Water: Potable.

F. Clear, Waterborne, Membrane-Forming Curing Compound (VOC Compliant): ASTM C309, Type 1, Class B. The compound shall have a minimum of 18 percent solids and a maximum moisture loss of 0.039 grams per square cm. when applied at a coverage rate of 250 sq. ft. per gallon. Actual application rate shall be 150 to 200 sq. ft. per gallon depending on atmospheric conditions.

G. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound (VOC Compliant): ASTM C1315, Type 1, Class A. The compound shall have a minimum of 18 percent soilds and a maximum moisture loss of 0.039 grams per square cm. when applied at a coverage rate of 250 sq. ft. per gallon. Actual application rate shall be 150 to 200 sq. ft. per gallon depending on atmospheric conditions.

H. Products: Subject to compliance with requirements, provide one of the following approved products:

1. Evaporation Retarder:

   a. Eucobar; Euclid Chemical Co.
   b. Confilm; Master Builders, Inc.
   c. SikaFilm; Sika Corporation.

2. Clear, Waterborne, Membrane-Forming Curing Compound:

   a. Kurez VOX; Euclid Chemical Co.
   b. Vocomp-20; W. R. Meadows, Inc.

3. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound:

   a. Vocomp-30; W. R. Meadows, Inc.
   b. Super Diamond Clear VOX; Euclid Chemical Co.
   c. Super Aqua-Cure VOX; Euclid Chemical Co.

## 2.10 RELATED MATERIALS

A. Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber.

B. Bonding Agent: ASTM C1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

C. Epoxy-Bonding Adhesive: ASTM C881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements, and as follows:

1. Type: Class I and II, non-load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

D. Reglets: Fabricate reglets of not less than 0.0217-inch- thick galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.

E. Anti-Corrosion Epoxy Adhesive: Water-based epoxy resin for adhesion and corrosion protection of reinforcing members (24 hour maximum open time). Products: Subject to compliance with requirements, providing one of the following:

1. Corr-Bond; Euclid Chemical Co.
2. Armatec 110; Sika Corp.

## 2.11 CONCRETE MIXES

A. Prepare design mixes for each type and strength of concrete determined by either laboratory trial mix or field test data bases, as follows:

1. Proportion normal-weight concrete according to ACI 211.1 and ACI 301.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the laboratory trial mix basis.

C. Footings: Proportion normal-weight concrete mix as follows:

1. Compressive Strength (28 Days): 3000 psi.
2. Maximum Slump: 4 inches (100 mm).
3. Maximum Slump for Concrete Containing High-Range Water-Reducing Admixture: 8 inches after admixture is added to concrete with 2- to 4-inch slump.

D. Building and Sidewalks, Slab-on-Grade: Proportion normal-weight concrete mix as follows:

1. Compressive Strength (28 days): 4000 psi.
2. Minimum Cementitious Materials Content: 520 lb/cu. yd. for concretes with a maximum aggregate size 1".
3. Minimum Cementitious Materials Content: 560 lb/cu. yd. for concretes with a maximum aggregate size of 3/4".
4. Maximum Slump: 4 inches (100 mm).

E. Walls, suspended slabs, structural base slabs, retaining walls, retaining wall footings, and Other Structural Members: Proportion normal-weight concrete mix as follows:

1. Compressive Strength (28 Days): 4000 psi.
2. Minimum Cementitious Materials Content: 517 lb/cu. yd. for concretes with a maximum aggregate size of 1½."

3. Minimum Cementitious Materials Content: 536 lb/cu. yd. for concretes with a maximum aggregate size 1".
4. Maximum Slump: 4 inches (100 mm).
5. Maximum Slump for Concrete Containing High-Range Water-Reducing Admixture: 8 inches after admixture is added to concrete with 2-inch slump, showing no signs of segregation.

F. Shrinkage Limitation: Concrete designated on the drawings to be "Crack Critical" shall be one of the following. Contractor shall perform laboratory test for certification well in advance to avoid delays in the PROJECT.

1. Concrete mix shall be certified to limit shrinkage in accordance with the following:

a. A drying shrinkage test shall be conducted on a preliminary trial batch with the maximum water-cementitious materials ratio used to qualify each proposed concrete mix design using the concrete materials, including admixtures that are proposed for the PROJECT. Three test specimens shall be prepared for each test. Drying shrinkage specimens shall be 4 by 4 by 11 inches (100 by 100 by 275 mm) prisms with an effective gauge length of 10 inches (250 mm), fabricated, cured, dried, and measured in accordance with ASTM C157 except with the following modifications:

b. Specimens shall be removed from the molds at an age of 23 hours ∀ 1 hour after trial batching, shall be placed immediately in water at 73EF ∀ 3EF (23EC ∀ 2EC) for at least 30 minutes, and shall be measured within 30 minutes thereafter to determine original length and then submerged in lime-saturated water as specified in ASTM C157. Measurement to determine expansion expressed as a percentage of original length shall be taken at 7 days. The length at 7 days shall be the base length from drying shrinkage calculations ("0" days drying age). Specimens then shall be stored immediately in a humidity controlled room maintained at 73EF ∀ 3EF (23EC ∀ 2EC) and 50% ∀ 4% relative humidity for the remainder of the test. Measurements to determine shrinkage expressed as percentage of base length shall be reported separately for 7, 14, and 21 days ∀ 4 hours of drying from "0" days after 7 days of moist curing.

c. Drying shrinkage deformation for each specimen shall be computed as the difference between the base length (at "0" days drying age) and the length after drying at each test age. Results of the shrinkage test shall be reported to the nearest 0.001 percent. If drying shrinkage of any specimens deviates from the average for that test age by more than 0.004 percent, the results for that specimen shall be disregarded.

d. The average drying shrinkage of each set of test specimens cast in the laboratory from a trial batch at the 21 days drying age shall not exceed 0.036 percent for concrete to be used in liquid-containing structures and 0.048 percent for concrete to be used in other structures. Drying shrinkage tests will not be required for any additional concrete mixes used for pile caps, isolated footing, pipe blocking, pipe encasement, and

building slabs.

G. Cementitious Materials: Limit percentage, by weight, of cementitious materials (in accordance with ACI 232.2R-96, and ACI 233R-95) other than Portland Cement in concrete as follows:

1. Combined Fly Ash and Pozzolan: 25 percent.
2. Ground Granulated Blast-Furnace Slag: 25 percent.

H. Maximum Water-Cementitious Materials Ratio:

1. All concrete unless otherwise noted 0.45
2. Building slabs, footings, and sidewalks 0.50

I. Air Content: Add air-entraining admixture at manufacturer’s prescribed rate to result in concrete at point of placement having an air content as follows within a tolerance of plus or minus 1 percent, unless otherwise indicated.

1. Air Content: 5.5 percent for 1-1/2-inch- nominal maximum aggregate size.
2. Air Content: 6 percent for 1-inch- nominal maximum aggregate size.
3. Air Content: 6 percent for 3/4-inch- nominal maximum aggregate size.

J. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

K. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.45.
4. Use corrosion-inhibiting admixture in concrete mixes where indicated.

## 2.12 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.13 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94 and ASTM C1116 and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

B. Mixers: Concrete shall be ready-mixed. Shrink mixing will not be permitted. Transit mixed concrete shall be mixed and have water added only at the site. All mixing equipment must, in the opinion of the inspector, be suitable for the job. A standard type of batch mixer shall be used and no hand mixing will be permitted. Ready-mixed concrete shall conform to ASTM C94. Contractor is to maintain a readily available file of delivery tickets stating design strength, batch time, delivery time, placement time, mix slumps, aggregate and admix (if applicable) and yards delivered for all concrete.

C. Charging Procedure: Mix shall be kept at a consistency which can be placed readily without segregation. Aggregates shall be measured in grated hoppers by weight, in a manner which can easily be checked. Cement shall be measured by volume or by weight. Air slacked cement or cement which is lumpy, whatever the cause, shall not be used. Worming of cement directly into truck mixers shall not be permitted.

D. Mixing Procedure: In stationary mixers, mixing time shall be a minimum of ten minutes after addition of water. If an extra charge of water is required because of too low slump, the drum shall be turned a minimum of 30 revolutions after adding such charge. Once initial set has taken place, no attempt shall be made to temper the concrete by the addition of water. Any concrete so tempered will be rejected and shall be removed from the site. Mixers shall not be charged in excess of the rated speed. Mixer shall be completely discharged before recharging.

E. Time Limit: When either Type I or Type II Portland cements are in use, the elapse time between the initial contact of the cement with water and the discharge of the batch on the job shall not be more than 1 ½ hours or 300 revolutions.

F. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C94. Mix concrete materials in appropriate drum-type batch machine mixer.

1. For mixer capacity of 1 cu. yd. or smaller, continue mixing at least one and one-half minutes, but not more than five minutes after ingredients are in mixer, before any part of batch is released.
2. For mixer capacity larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd.
3. Provide batch ticket for each batch discharged and used in the Work, indicating PROJECT identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

## PART 3 - EXECUTION

### 3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until concrete structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class B, 1/4 inch (6 mm).

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical. Kerf wood inserts for forming keyways, reglets, recesses, and the like, for easy removal.

1. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Chamfer exterior corners and edges of permanently exposed concrete

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

## 3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor bolts, accurately located, to elevations required.
2. 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, shelf angles, and other conditions.
3. Aluminum items in contact with concrete shall receive twocoats of bitumastic coal tar epoxy.

## 3.3 REMOVING AND REUSING FORMS

A. General: Formwork, for sides of beams, walls, columns, and similar parts of the Work, that does not support weight of concrete or any live loads 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 hard enough to not be damaged by form-removal operations and provided curing and protection operations are maintained.

B. Leave formwork, for beam soffits, walls, slabs, and other structural elements, that supports weight of concrete or any live loads in place until concrete has achieved the following:

1. At least 70 percent of 28-day design compressive strength.
2. Determine compressive strength of in-place concrete by testing representative field- or laboratory-cured test specimens according to ACI 301.

C. 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-release agent.

D. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by ENGINEER.

## 3.4 SHORES AND RESHORES

A. Comply with ACI 318 (ACI 318M), ACI 301, and recommendations in ACI 347R for design, installation, and removal of shoring and reshoring.

B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

## 3.5 VAPOR RETARDERS

A. Vapor Retarder: Place, protect, and repair vapor-retarder sheets according to ASTM E1643 and manufacturer's written instructions.

B. Fine-Graded Granular Material: Cover vapor retarder with fine-graded granular material, moisten, and compact with mechanical equipment to depth of 3/4" to 1 1/2".

## 3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Shop- or field-weld reinforcement according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire fabric in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength, watertightness and appearance of concrete are not impaired, at locations indicated or as approved by ENGINEER. Maximum distance between construction joints shall be forty (40) feet.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated.
2. Locate joints for beams, slabs, and walls in the middle third of spans.
3. Space vertical joints in walls as indicated.
4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness, as follows:

1. Grooved Joints: For sidewalks and as indicated, form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-(3-mm-) wide joints into concrete as soon as cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

E. Dowel Joints: Install dowel sleeves and dowels or dowel bar and support assemblies at joints where indicated.

1. Use dowel sleeves or lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint, unless noted otherwise.

3.8 WATERSTOPS

A. Flexible Waterstops: Install construction joints as indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of work. Field-fabricate joints in waterstops according to manufacturer's written instructions.

B. Self-Expanding Strip Waterstops: Install in wall to base slab intersections and at other locations indicated, according to manufacturer's written instructions, bonding fastening and firmly pressing into place. Install in longest lengths practicable.

3.9 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed. The subgrade of all slabs shall be thoroughly wetted with water prior to placement of concrete, especially during hot, dry or windy conditions.

B. Do not add water to concrete during delivery, at PROJECT site, or during placement, unless approved by ENGINEER.

C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation.

D. Dropping of concrete over 4 feet or through a cage of reinforcing steel will not be permitted.

E. Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Place each layer while preceding layer is still plastic, to avoid cold joints.

1. Consolidate placed concrete with mechanical vibrating equipment. Use equipment and procedures for consolidating concrete recommended by ACI 309R.
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 vibrator. 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 lose plasticity. 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 constituents to segregate.
3. Provide a minimum of 2 vibrators in good working condition on the job at all times.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

G. Concrete shall not be deposited during rain. Concrete shall not be deposited into areas of standing or running water.

H. Maximum Pours: Maximum length of all pours shall be 40 feet (12.19 m), unless otherwise noted or approved by ENGINEER. All joints shall be as approved by the ENGINEER or as detailed on the drawings. All reinforcement, forms and ground with which concrete is to come in contact, shall be free of frost.

I. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When air temperature has fallen to or is expected to fall below 40 deg F (4.4 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.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.
4. Protection After Placement: Suitable means as defined in ACI 306 shall be provided for maintaining a temperature in the concrete of at least 50 degrees F for not less than three days after the concrete is placed. For a period of seven days, the concrete shall not be exposed to a temperature below 40 degrees F.
5. Concrete placement shall be made when air temperature is at least 32 degrees F and rising, unless special precautions acceptable to the ENGINEER,

J. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R and as follows, when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F (32.22 deg C) at time of placement. Chilled mixing water 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 steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

## 3.10 FINISHING FORMED SURFACES

A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch (3 mm) in height.

1. Apply to concrete surfaces exposed to public view or to be covered with a coating or covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, or painting.
2. Do not apply rubbed finish to smooth-formed finish.

B. Rubbed Finish: Apply the following to smooth-formed finished concrete:

1. Smooth-Rubbed Finish: Not later than one day after form removal, 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 and mortar used for concrete repair.

C. 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.

## 3.11 FINISHING FLOORS AND SLABS

A. General: Comply with recommendations in ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated, to surfaces to receive trowel finish, and to floor and slab surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.

C. Trowel Finish: After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Finish and measure surface so gap at any point between concrete surface and an unleveled freestanding 10-foot-(3.05-m-) long straightedge, resting on two high spots and placed anywhere on the surface, does not exceed the following:

a. 1/4 inch (6.4 mm).

D. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify surface with a fine broom.

E. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with ENGINEER before application.

F. Mineral Dry-Shake Floor Hardener Finish: After initial floating, apply mineral dry-shake materials to building slab surfaces according to manufacturer's written instructions and as follows:

1. Uniformly apply mineral dry-shake materials at a rate of 100 lb/100 sq. ft. (49 kg/10 sq. m), unless greater amount is recommended by manufacturer.
2. Uniformly distribute approximately two-thirds of mineral dry-shake materials over surface by hand or with mechanical spreader, and embed by power floating. Follow power floating with a second mineral dry-shake application, uniformly distributing remainder of material, and embed by power floating.
3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake material manufacturer and apply immediately after final finishing.

## 3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, 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 indicated 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 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 inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

## 3.13 CONCRETE PROTECTION AND CURING

A. General: Take curing measures immediately after casting and extend period according to the ENGINEER’s/ARCHITECT’s recommendation based upon prevailing temperature, wind, and relative humidity.

1. Keep concrete continuously moist for minimum 14 days after casting.
2. Maintain concrete temperature at minimum 50 degrees Fahrenheit for seven days after casting.
3. Avoid alternate wetting and drying and fluctuations of concrete temperature.
4. Protect fresh concrete from direct rays of sun, rain, drying winds, soiling, and damage.
5. Do not permit curing method to affect adversely finished or treatments applied to finished concrete.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions will cause excessive moisture loss before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Curing/Sealing Methods for Slabs: Cure all concrete surfaces with one or a combination of the following methods. Where a specific curing procedure is not specified, at the Contractor's selection, one or more of the following methods shall be used.

1. Water curing: Keep concrete surfaces continuously wet with clean water during the curing period by immersion, maintaining a continuous flow of water over the surface, continuous spraying, continuous sprinkling or a combination of these. For all curing methods, the difference in temperature between the water used for curing and the concrete shall not exceed 20 degrees Fahrenheit.
2. Wet Coverings: Cover the concrete surfaces with burlap, cotton mats, sand, earth, or other suitable moisture retaining materials and keep these materials saturated during the curing period. Lap all fabrics at least 8 inches at all joints. On exposed concrete, do not use any type covering which will discolor the concrete surface.
3. Waterproof coverings: As soon as possible after finishing, thoroughly wet the concrete surfaces and cover the concrete surfaces with waterproof paper or plastic film immediately after wetting. For a period or at least 8 hours after the concrete has taken its initial set, maintain a continuous flow of clean water over the concrete surface under the covering. Lap all joints in the covering at least 8 inches and provide weights and other means and methods to keep the waterproof covering in direct contact with the concrete during the curing period.
4. Membrane forming curing compounds: All exposed interior slabs, not receiving a liquid densifier, and troweled slabs receiving mastic applied adhesives or "shake-on" hardeners shall be cured with the specified curing and sealing compound. Exterior slabs, sidewalks, curbs, and architectural concrete, not receiving a penetrating sealer, shall be cured with the specified clear, non-yellowing curing and sealing compound. Maximum coverage shall be 200 $ft^2$/gallon on steel troweled surfaces and 150 $ft^2$/gallon on floated or broomed surfaces for the curing/sealing compound.

D. Curing methods for Walls: Cure all concrete walls as follows: Keep forms wet during period forms are required to remain in place. Immediately after formed concrete has taken its initial set, start a gently uniform flow of clean water over concrete to thoroughly wet all concrete surfaces and formwork and maintain this flow of water until forms are removed. Immediately after form removal cure concrete surfaces with one of the curing methods specified above.

E. Other Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing by one or a combination of the following methods listed in paragraph F below.

F. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

   a. Water.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

   a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
   b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
   c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer recommends for use with floor coverings.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
4. Curing and sealing compound below is usually for floors and slabs and may act as a permanent surface finish.
5. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.
6. Remove curing compound from concrete surfaces to receive coating, adhesive or other finish, or use alternate curing method.

G. Do not apply loads to elevated slabs, walls, and beams for 28-days or until approved concrete tests document concrete has reached 100% of specified minimum compressive strength.

## 3.14 LIQUID FLOOR TREATMENTS

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Some manufacturers state that this floor treatment also functions as a curing aid. If used as a cure, delete minimum age of concrete below and revise application method to follow manufacturer's written instructions. Coordinate with "Concrete Protection and Curing" Article. Revise minimum period below to 14 or 28 days if preferred or more if recommended.
3. Do not apply to concrete that is less than seven days old.
4. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

3.15 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid epoxy joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.16 FIELD QUALITY CONTROL

A. Testing Agency: Contractor shall engage a qualified independent testing and inspecting agency to sample materials, perform tests, and submit test reports during concrete placement.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mix exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
2. Slump: ASTM C143; one test at point of placement (prior to pumping) for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C231, pressure method, for normal-weight concrete; ASTM C173, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
4. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40 deg F (4.44 deg C) and below and when 80 deg F (26.67 deg C) and above, and one test for each composite sample.
5. Unit Weight: ASTM C567, fresh unit weight of structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
6. Compression Test Specimens: ASTM C31/C31M;

a. Cast and laboratory cure one set of four standard cylinder specimens for each composite sample.
b. Cast and field cure one set of four standard cylinder specimens for each day's pour.
c. Cast extra two cylinders for each day's pour (14 day compressive strength)
d. Cast two extra cylinders per pour.

7. Compressive-Strength Tests: ASTM C39;

a. Test two laboratory-cured specimens at 7, two at 14 days, days and two at 28 days.
b. Test two field-cured specimens at 7 days, two at 14 days, and two at 28 days.
c. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at age indicated.

C. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

D. Strength of each concrete mix will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

E. Test results shall be reported in writing to ENGINEER, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain PROJECT identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for all tests.

F. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by ENGINEER but will not be used as sole basis for approval or rejection of concrete.

G. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by ENGINEER. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42 or by other methods as directed by ENGINEER. Contractor shall pay for cored cylinder collections and testing if standard cylinder specimens fail to confirm conformance with the specifications.

END OF SECTION

# SECTION 22 11 16

# DOMESTIC WATER PIPING

## PART 1 – GENERAL

### 1.1 DESCRIPTION

The Contractor shall furnish and install all water mains, valves, hydrants, fittings, flexible expansion joints, and appurtenances as specified herein and as defined on the drawings or as directed by the Engineer. Provide all necessary adaptors for connection to existing mains.

### 1.2 SCOPE

A. Exterior water piping, valves and appurtenances shall be as specified in this section.

## PART 2 – PRODUCTS

### 2.1 DUCTILE IRON PIPE AND FITTINGS

A. Ductile iron pipe shall be manufactured in accordance with ANSI/AWWA A21.51/C151, latest edition, and shall be thickness Class 50, Class 52 in streets or highway sleeves or Class 56 under railroads unless otherwise noted on the drawings or the bid form. The Contractor shall have the option of furnishing mechanical or push-on joints conforming to the latest edition of ANSI/AWWA A21.11/C111.

B. Pipe and fittings shall have a standard external asphaltic coating approximately one (1) mil thick.

C. Pipe and fittings shall have an internal cement lining in accordance with latest revision of ANSI/AWWA A21.4/C104. No bituminous coating shall be used on the inside of pipe and fittings.

D. All fittings and specials shall be ductile iron. Ductile iron fittings and specials shall be full body, mechanical joint with a 250-psi pressure rating and marked in conformance with ANSI/AWWA A21.10/C110, latest edition, and ANSI/AWWA A21.11/C111, latest edition.

E. Use Nitrile (NBR) pipe gaskets if the pipe will be in contact with volatile organic compounds. If soils are contaminated with gasoline use Neoprene or Buna-N material.

### 2.2 POLYVINYL CHLORIDE (PVC) PLASTIC PIPE AND FITTINGS

A. Polyvinyl chloride pipe shall meet the requirements of AWWA C909. It shall be manufactured in standard length not exceeding twenty (20) feet and have an outside diameter equal to cast iron pipe. PVC pipes shall have standard dimension ration (SDR) of 18.0. The pipe shall be rated for a working pressure of at least 200 psi.

B. Polyvinyl chloride (PVC) pipe shall be manufactured with an elastomeric-gasket joint conforming to ASTM D3139. Pipe ends shall be beveled.

C. Fittings for PVC water main shall be cast iron or ductile iron as specified in 2.1, above.

D. The Contractor shall provide all necessary adapters for connecting PVC pipe to cast iron fittings and valves or other pipelines. Adapters shall be as recommended by the pipe manufacturer. Furnishing and installing adapters shall be included in the prices bid for the pipe.

E. Polyvinyl chloride pipe shall be delivered and stockpiled in unit pallets. Store pipe on flat surface. No stacking of pallets or random lengths above five (5) feet in height will be allowed. If pipe is stockpiled for more than 30 days prior to installation in the trench, it must be suitable covered with reflective materials to protect the pipe from ultra-violet rays emanating from sunlight. Do not use plastic sheets. Allow for air circulation under covering.

F. Bowed sections of pipe will not be acceptable and will not be allowed to be installed on this project.

2.3 POLYETHYLENE (PE) PIPE AND FITTINGS

A. Polyethylene (PE) pipe shall be SDR 9, or as indicated on the drawings, and plain end for fusion welding conforming to ASTM F714 and ASTM D3035. Minimum pressure rating shall be 200 psi.

B. The pipe, fittings and specials shall be from the same manufacturer. All fittings and specials shall have the same pressure rating as the pipe.

C. Molded fittings will conform to ASTM F714. End sections of PE piping in directional bores shall have an AWWA C207 Class D flange end butt fusion welded to PE main where connecting to other materials. Flange shall be drilled to standard 125-pound template. End connections shall not be made until the PE pipe has had sufficient time to rebound, per manufacturer’s recommendations.

D. All pipe and fittings joints shall be fully restrained from movement due to thermal expansion/contraction forces.

E. Joints for the pipe and fittings shall be by butt fusion joining techniques in accordance with the manufacture's recommendations. Where joining pipe is required within the trench, electrofusion techniques may be used in lieu of butt fusion. Electrofusion couplings and saddles may be used where necessary. All Electrofusion couplings shall be made using a computer controlled automatic electrofusion system. The electrofusion system shall consist of couplings containing an integral heating source which is computer controlled for time, temperature, and jointing pressure for a consistent joint. Couplings shall be rated for the same working pressure as the pipe and shall have a built-in identification feature to automatically set fusion times. The electrofusion system shall include a current monitoring feature. All joints shall be made in accordance with the manufacturer's instructions. The use of mechanical couplings for making joints is prohibited.

F. All HDPE fittings shall be of the type specified. They shall be of the same material and fully pressure rated to meet or exceed the pressure rating of the pipe.

## 2.4 GATE VALVES & BOXES

A. Gate valves shall be furnished and installed where indicated on the drawings. Each gate valve shall conform to AWWA C509 for resilient wedge gate valves. The cast iron gate valves shall be epoxy coated inside and out.

B. The valve stem shall be constructed of manganese bronze and sealing shall be accomplished by dual o-rings allowing replacement of o-ring seals while the valve is open and under pressure. Buried valves shall be equipped with a two-inch square operating nut.

C. Gate valves shall be provided so that inconvenience and sanitary hazards will be minimized during repairs. Gate valves shall be located where practical with in or adjacent to street property lines and out of the roadway when possible.

D. Gate valves shall be supported on solid concrete blocks and plumbed level with existing pipe.

E. The operating nut on buried valves shall not be more than 4’ below finished grade. A valve stem extension with accessory guide ring shall be used to raise the operating nut to the required height. The stem extension shall be pinned to the existing valve stem operating nut.

F. Waterway shall be smooth and shall have no depressions or cavities in seat area where foreign material can lodge and prevent closure or seating.

G. Gate valves shall open-left.

H. Provide each gate valve with a 5-1/4-inch diameter Buffalo screw type valve box with "WATER" cast in the lids. All boxes for 4, 6- and 8-inch valves shall be equipped with #6 round base. Ten (10) inch and larger valves shall be equipped with #8 valve box base. Valve boxes shall be adjustable between 2' - 4" and 3' - 4" except when deeper settings are required. Lids shall be extra deep and have two holes for removal of lid.

I. Provide operating wrenches.

## 2.5 TAPPING SLEEVE & VALVE

A. Tapping sleeves shall be iron body mechanical joint type. Tapping sleeve and valve assemblies shall be supported by concrete blocks and bricks and plumbed level with the existing pipe. The pipe to be tapped and all components of the tapping sleeve assembly shall be disinfected per AWWA C651 for Cutting into or Repairing Pipe.

B. Install tapping sleeve and valve per manufacturer’s recommendations.

## 2.6 CUT-IN VALVES & SLEEVES

A. Cut-in sleeve types and sizes shall be cast iron and size shall be based on actual field measurement by the Contractor.

B. Install sleeves and valves per manufacturer’s recommendations.

## 2.7 FIRE HYDRANTS

A. Fire hydrants shall be installed per the Owner's Standards. Hydrants shall be compression type with a 5-1/4-inch main valve opening, two 2-1/2 inch hose nozzles, one 4-1/2 inch pumper nozzle, and a 6 inch mechanical joint hub base. Hydrant seats shall be provided with bronze to bronze threaded connections.

B. All nozzle and steamer threads shall conform to National Standard. Hydrants shall be of proper length for a 4-foot trench depth or as required by field conditions. They shall meet the requirements of AWWA C502.

C. A sworn certificate of inspection and testing shall be furnished by the manufacturer. Install hydrants with restraint system as detailed on the drawings.

D. All hydrants to be furnished with non-kinking chains on the 2 ½ inch nozzles.

E. Pump nozzle shall be 5" Storz connection; contractor to specify to supplier that the hydrant is for Worcester County Public Works and to ensure proper hydrant and proper connections included.

F. Hydrants shall open by turning the operating nut counterclockwise.

G. Fire hydrants to receive one (1) coat of primer and two (2) coats of chrome yellow paint in accordance with Federal Standards 595A. The final coat shall be field applied after the hydrant has been installed.

H. Ductile iron pipe with cast iron or ductile iron fittings shall be used exclusively throughout the hydrant assembly. The use of PVC pipe will not be permitted in the construction of any portion of the hydrant leads.

I. Provide a minimum of two (2) hydrant operating wrenches and two (2) repair kits per project, and a minimum of one (1) per every five (5) hydrants installed.

## 2.8 PIPELINE TRACER WIRE AND LOCATION CONNECTION

A. For direct burial applications, wire shall be fastened directly to the top of the proposed water main. Tracer wire shall be #12 AWG High Strength Tracer Wire, by Copperhead Industries, LLC of Monticello, MN, or approved equal. The wire shall be rated for 2032 pounds break strength and insulation shall be 30 mil and rated for direct bury use at 30 volts.

B. Splicing of tracer wire shall not be permitted. Tracer wire shall be terminated with magnetized tracer boxes. Tracer boxes shall be installed as shown on the plans or as directed by the County/Engineer. Boxes shall be installed on the backside of the proposed main and shall be rated for the surface condition in which it is installed. All boxes shall have a cast iron locking cover with the APWA color code standard **(BLUE)** for this buried utility. Locator box shall be Copperhead Part number RB14*2T-SW or approved equal.

## 2.9 PIPE RESTRAINT SYSTEMS

A. Joint restraints shall be installed at all fittings and valves. Buttresses shall be used in all pressure lines at all valves, bends, tees, hydrants, and at reducers or other fittings where changes in direction or pipe size occur. The buttresses shall be as shown on the Drawings.

B. Mechanical joints on C-909 PVC pipe shall be assembled using EBBA Iron Mega Lug Series 1100 Mechanical Joint Restraints, or approved equal.

C. Where necessary push-on joints will be assembled using EBBA Iron Mega Lug Series 1700 Restraint Harness or approved equal.

D. No pipe joints shall be encased in concrete or covered with concrete during the construction of thrust restraint buttresses.

E. Thrust restraint of ductile cast iron pipe joints and fittings shall use ASTM A307 galvanized 3/4in steel threaded rod, nuts, and washers.

F. Forms and supports used for buttresses shall be removed after a minimum of 24 hours prior to backfilling.

## 2.10 SERVICE PIPE AND APPURTENANCES

### A. GENERAL

1. The Contractor is responsible for furnishing and installing all corporation stops, curb stops, house service pipe, valves and appurtenances as indicated on the drawings and specified herein.
2. The Contractor will provide a main tap complete with corp stop for all residential or commercial lots within the project area. The service will be connected to the existing meter box.
3. The meter setters installed by the Contractor shall accommodate the following meters:

    a. Residential hook-up: Neptune T-10 Meter with Procoder R900i type ⅝” x ¾".
    b. Commercial hook-up: Neptune T-10 Meter with Procoder R900i type 2”.

4. The Contractor shall provide all tools, equipment and accessories required for tapping ductile iron and polyvinyl chloride water mains and installing water services. All underground service lines, valves and fittings shall conform to ANSI/AWWA C800 – latest version.

### B. HOUSE SERVICES

1. Standard water service lines shall be polyethylene tubing, 1 inch diameter, SDR-9 copper tubing size unless otherwise shown on the plans. Service lines shall conform to ASTM D-2737, 200 PSI rating.
2. Corporation stops shall be 1 or 2 inch as appropriate, Mueller model H-15008 or approved equal. Install stainless steel liners at connection to service lines. Liners shall be Part No. 71 or approved equal. The Contractor shall furnish and install

liners wherever a compression connection is used on plastic service lines.

3. Cutting tools shall be of the hollow, shell bit type for removal of pipe plug. On closely spaced taps for townhouse developments, place corporation stops as recommended by pipe manufacturer. Furnish saddles with standard AWWA corporation stop inlet thread, double strapped for tapping all mains. Saddles shall be Ford stainless steel double strapped type model FS323.
4. Meter box shall be manufactured from a co-mold, three layer HDPE that is a minimum of .55" thick. The box shall withstand 20,000 pounds of free standing vertical pressure without failure. An anti-settling flange shall be integral and located on the bottom of the box to resist post installation settlement. Meter box shall be black on the outside, to resist UV degradation and white on the inside. Meter box shall be model MMP182230, manufactured by Bingham & Taylor, or approved equal. Meter box covers shall be Type A, H-20 rated or approved equal. Meters shall be installed in unpaved areas unless approved by the County. Lids shall have the word “WATER” cast into the cover and include lifter worm locks.
5. Meter setter with ball valve inlet and dual check valve outlet for ⅝” x ¾" meters shall be installed in the Bingham & Taylor meter pit and be Ford PSIB-28L-18-18 NL for the inlet and Ford PSO HH-28L-18-18 NL for the outlet. Ball valves shall be Ford BA13-232W. Check valve shall be Ford HHA 31-323 or approved equal. Couplings for connection shall be Ford C-16-33 with stainless steel inserts. Meter support shall be by a lateral PVC brace.
6. All bolts, nuts and washers within the meter pit shall be stainless steel.
7. Supply meter box lid wrenches as follows: Ford Model Key 3-36; for 1 to 5 box covers, 1 key; for 6 to 10 box covers, 2 keys; and for greater than 10 box covers, 3 keys, or approved equal. Contractor shall verify fit and compatibility of assembly components prior to ordering.

C. COMMERCIAL SERVICE

1. All lines larger than 1" diameter shall be 2 inch diameter SDR-9 copper tubing size polyethylene pipe.
2. For tapping ductile iron pipe use Ford F202, double strap, iron service clamp with 2-inch AWWA threads and FB1000-7 corporation stop. For tapping PVC pipe use Ford FS202, stainless steel tapping saddle with 2 inch AWWA threads and FB1000-7 corporation stop. Use Teflon tape for threaded service connections. Do not torque saddles or sleeves without water pressure in main.
3. Curb valves shall be 2-inch Ford B44-777 ball valve. Curb valve boxes shall be B&T 92D screw extension type with arch base or approved equal.
4. Meter pits shall be Carson MS3036 HDPE, or approved equal. Meter pit covers shall be Monitor MC-30TT by Ford or approved equal. Provide double extra heavy covers for traffic areas. Setters shall be Ford VBHH77-18B-11-77 with 2 inch flange angle check valve, 2 inch flange angle ball valve plus a bypass ball valve with padlock wings.
5. All bolts, nuts and washers within the meter pit shall be stainless steel.

PART 3 – EXECUTION

3.1 LAYING WATER MAINS, FITTINGS AND APPURTENANCES

A. The Contractor shall verify the dimensions of all valves, fittings, equipment, etc., so that all of the pipe work performed will fit together properly and conform to the general arrangement shown on the Drawings. All pipe valves, fittings, and related accessories shall be carefully examined for defects before installing and no defective pieces shall be installed. All pieces shall be thoroughly cleaned before they are installed and shall be kept clean and dry.

B. Adjoining pipe, valves and/or equipment to be joined by flanges shall be blocked and shimmed to true elevation with bolt holes in perfect alignment before bolts are inserted and tightened. Bolts shall be tightened uniformly. Drawing skewed joints into gaskets between flanged connections, fittings shall be non-asbestos composition and shall be coated with thread lubricant prior to making up joints. Flange bolts, nuts and washers shall, unless otherwise shown on the drawings, be of mild steel with good, sound, well-fitted threads; the nuts shall be cold-punched, hexagonal, trimmed, and chamfered. Heads, nuts and threads shall be United States standard sizes. Bolts shall be of such length as to project one-quarter inch beyond the nut when the flanged joint with gasket is assembled.

C. During construction, the Contractor shall keep all ends of pipes or conduits, and all equipment connections, closed with caps, plugs, or wooden flange covers, so as to prevent entrance of dirt, building materials, or other foreign matter.

D. Water main pipe, fittings, and valves shall be installed per manufacture's printed instructions. Care shall be taken to ensure that no joints are made with unevenness or rough edges. Pipeline deflection must be kept below the manufacturer's limitations.

E. All pipes shall be bedded on a solid foundation prior to backfilling. Defects due to settlement shall be corrected by the Contractor at their own expense. Bell holes shall be dug sufficiently large to receive same.

F. Pipe and fittings shall be kept clean until final acceptance of the work. All open pipe ends shall be provided with plugs to keep dirt, water and other materials from entering. This plug shall be kept in place when actual pipe laying is not in progress.

G. Excavation and backfilling for water mains and appurtenances shall be per Section 31 23 00 of these specifications.

H. PVC pipe shall be beveled before making pipe joint.

I. Install no pipe on frozen or frost penetrated subgrade. When directed, the Contractor shall install pipe on artificial foundations. Such foundation may consist of gravel or concrete and shall be to the dimensions and in the manner directed by the Engineer.

J. Pipeline detectable tape shall be installed continuously along all proposed water mains. The tape shall be installed directly above the water main and 18 inches from the ground surface. The tape shall be Lineguard Type II Detectable Tape as manufactured by Lineguard, Inc. of Wheaton, Illinois, or approved equal. The tape shall be a minimum of

two inches wide, blue in color, imprinted with the words, "CAUTION -- WATER LINE BELOW", and be capable of being detected with inductive methods.

K. Pipeline tracer wire shall be installed along proposed water main.

L. All concrete required to construct buttresses behind plugs, tees, bends and other fittings and anchorages beneath the vertical bends shall be placed as directed and/or as shown on the plans. The cost of concrete buttressing shall be included in the appropriate unit prices bid for pipe and fittings.

3.2 LAYING SERVICE PIPE AND APPURTENANCES

A. All service pipe shall be carefully inspected for damaged areas. All damaged pipe shall be cut out and recoupled. Pipe installed during hot weather shall be allowed to contract to normal length before backfilling. Pipes and fittings shall be bedded on a solid foundation.

B. Fittings and valves shall be kept clean, handled carefully and installed according to the manufacturer's recommendations.

C. Service lines in streets shall be installed by open cutting, directional bore or missile bore method utilizing an underground piercing tool such as an ACCU-punch or equal. Maximum diameter of piercing tool to be 2-1/2 inches. Based on bids received, the Owner may adjust the quantity of the various types of service installation or eliminate the use of the piercing tool as is in his best interest.

D. Installation of services by piercing tool shall be performed with all necessary devices to assure alignment accuracy. Such devices shall include a magnetic level, launcher and aiming frame. The Contractor shall demonstrate installation procedures to the Engineer and the D.O.T. for approval prior to use.

E. Service connections shall be installed immediately after the construction of the adjacent main. Postponement of construction of service lines will not be allowed.

F. Requirements for sterilization and pressure testing of service connections shall be the same as specified for mains in this specification.

G. The Contractor is responsible for locating existing services, cutting and reconnecting with all necessary adaptors or sleeves within the unit price bid for service lines. The Contractor shall obtain and pay for the services of a licensed plumber if required by code.

3.3 INSTALLING FITTINGS, HYDRANTS, GATE VALVES AND VALVE BOXES

A. Fittings, hydrants, gate valves and valve boxes shall be placed along the water mains at the locations indicated on the drawings or where otherwise designated by the Engineer.

B. A valve box shall be carefully placed over the bonnet of each gate valve with the top at the finished surface of the street, sidewalk or at such other elevation as the Engineer shall direct. It shall be set exactly plumb. In tamping the backfill around the box special care shall be taken to keep the box plumb and to have it firmly supported on two 4-inch-thick solid concrete blocks to avoid settlement. Any box which is found out of plumb, or which

is not firmly supported, shall be excavated, and reset in a satisfactory manner, at the Contractor's expense.

C. Ductile iron pipe with cast iron or ductile iron fittings shall be used exclusively throughout the hydrant assembly. The use of polyvinyl chloride pipe will not be permitted in construction of any portion of the hydrant leads.

3.4 WATER MAIN TESTING

A. The Contractor shall furnish all equipment, labor, and materials, including water, pumps, compressors, stopwatch, gauges, and meters as approved by the Engineer for testing. The Engineer shall determine the amount of main to be tested at any one time and reserves the right to separate the installation into several test sections.

B. Test Restrictions

1. Test pressure shall not be less than 1.5 times the working pressure at the highest point along the test section and shall not be less than 100 psi.
2. Test pressure shall not exceed pipe or thrust-resistant design pressures.
3. The hydrostatic test shall be for a 24-hour duration or as designated by the Engineer.
4. Test pressure shall not vary by more than 5 psi (35 MPa or 0.35 bar) for the duration of the test.
5. Valves shall not be operated in either direction at differential pressure exceeding the rated valve working pressure. Use of a test pressure greater than the rated valve pressure can result in trapped test pressure between the gates of a double-disc gate valve. For tests at these pressures, the test setup should include provision, independent of the valve, to reduce the line pressure to the rated valve pressure on completion of the test. The valve can then be opened enough to equalize the trapped pressure with the line pressure, or fully opened if desire.

C. Pressurization: After the pipe has been laid, all newly laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure as stated above at the point of testing. Each valved section of pipe shall be slowly filled with water, and the specified test pressure, based on the elevation of the lowest point of the line or section under test and corrected to the elevation of the test gauge, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Owner. Valves shall not be operated in either the opening or closing direction at differential pressures above the rated pressure. It is good practice to allow the system to stabilize at the test pressure before conducting the leakage test.

D. Air Removal: Before applying the specified test pressure, air shall be expelled completely from the pipe, valves, and hydrants. If permanent air vents are not located at all high points, the contractor shall install corporation cocks at such points so that the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed, and the test pressure applied. At the conclusion of the pressure test, the corporation cocks shall be removed and plugged or left and capped in place at the discretion of the Owner.

E. Examination: Any exposed pipe, fittings, valves, hydrants, and joints shall be examined carefully during the test. Any damaged or defective pipe, fittings, valves, hydrants, or

joints that are discovered following the pressure test shall be repaired or replaced with sound material, and the test shall be repeated until it is satisfactory to the Owner.

F. Leakage Defined: Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe or any valved section thereof to maintain pressure within 5 psi (35 MPa or 0.35 bar) of the specified test pressure after the pipe has been filled with water and the air has been expelled. Leakage shall not be measured by a drop in pressure in a test section over a period of time.

G. Allowable Leakage: No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{S \times D \times \sqrt{P}}{133{,}200}$$

Where:
- L = allowable leakage, in gallons per hour
- S = length of pipe, in feet
- D = nominal diameter of the pipe, in inches
- P = average test pressure during the leakage test, in pounds per square inch (150 psi)

This formula is based on an allowable leakage of 11.65 gpd/mi/in. of nominal diameter at a pressure of 150 psi.

When hydrants are in the test section, the test shall be made against closed hydrant valves and open gate valves.

## 3.5 DISINFECTION AND BACTERIOLOGICAL TESTS

A. Upon completion of water main construction, disinfect main and appurtenances. Disinfection shall be done in accordance with AWWA C601, latest edition. Contractor shall submit a plan of disinfection for approval by the Engineer.

B. After the applicable retention period, the heavily chlorinated water shall be flushed from the main. This water shall be discharged to the sanitary sewer system. Only after water leaving the main is no higher in chlorine concentration than normal drinking water will a discharge to storm drains be allowed. Convey flushed water to discharge point in a closed sewer system.

C. Affidavits of compliance certifying the water sampled from the water mains to be free of coliform bacteria shall be submitted to the Engineer. The contractor is responsible for requesting tests from third party lab certified in the State of Maryland. They shall provide written documentation when a section of mains can be placed in service.

D. The contractor shall place in each length of pipe, hydrants, hydrant branches and other appurtenances, a sufficient amount of HTH tablets to insure adequate disinfection treatment of the main after its completion. Tablets shall be fastened to the inside top of every length of pipe as laid, using gasket cement known as "Permatex No. 2".

E. The contractor will be held entirely responsible for securing a minimum residual chlorine content of 5 p.p.m. at the extremities of the mains after twenty-four (24) hours or more contact with the full water pressure on the main.

F. Water for filling the mains shall be introduced at a velocity of less than 1 foot per second in order to permit the HTH or Perchloron to completely dissolve and have a reasonable uniform distribution throughout the mains. It is the intent of this Specification to require a sufficient amount of chemical to be equivalent to a dosage of 50 p.p.m. of chlorine.

G. After the chlorine has been in contact with the mains or storage units for twenty-four (24) hours or longer, samples collected from the extremities of the mains shall indicate a residual chlorine content of 5 p.p.m. or more.

H. If less than 5 p.p.m. residual chlorine is indicated, the system shall be drained, and the disinfection treatment repeated.

I. If samples collected at the extremities indicate a residual chlorine of 5 p.p.m. or more, the system shall be flushed until there is only a normal chlorine residual (1 p.p.m. or less) present, as determined by the DPD Method Test. Samples of water shall be collected from various points along the lines, by the State Board of Health for bacteriological analysis. If Contractor so desires, they may employ at their own expense an independent laboratory, approved by the State, for performance of bacteriological analysis. If satisfactory bacteriological results are obtained, the lines may then be allowed to be placed in service. A copy of all test results shall be submitted to the Engineer.

END OF SECTION

# SECTION 31 00 00

# EARTHWORK

## PART 1 – GENERAL

### 1.1 DESCRIPTION

A. Earthwork includes clearing, excavation, filling and grading.

B. The extent of clearing, excavation, filling and grading is shown on the drawing.

1. Remove shrubs, trees, grass or obstructions which interfere with new construction and are not noted to be removed by Owner. Preparation of subgrade for slabs and pavements is also included as part of this work.
2. The owner shall reuse or store suitable removed items at their discretion. Contractor shall transport removed items to Owner approved location.
3. Replant existing shrubs per owners approved location.

### 1.2 QUALITY ASSURANCE

Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

### 1.3 FIELD QUALITY CONTROL

Quality Control Testing will be required during construction.

A. Testing agency will inspect and owner will approve subgrades and fill layers before further construction work is performed thereon.

B. If, based on reports of Testing Agency and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense.

### 1.4 JOB CONDITIONS

A. Existing Utilities: Locate existing underground utilities in the areas of work.

1. Should uncharged or incorrectly charged piping or other utilities be encountered during excavation, consult the Owner immediately for directions as to proceed.
2. Contact "Miss Utility" (1-800-441-8355) and Owner for assistance in locating existing utilities.

B. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this work and post with warning lights. Operate warning lights during hours from dusk to dawn each day and as otherwise required.

2. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

1.5 RELATED WORK SPECIFIED ELSEWHERE

Erosion and Sediment Control: Section 31 25 00

PART 2 – PRODUCTS

2.1 SOIL MATERIALS

A. Subgrade Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand, as acceptable to the Owner.

B. Backfill and Fill Materials: Provide acceptable soil materials for backfill and fill from borrow, or on-site stockpile, free of clay, rock, or gravel larger than 1" in any dimension, debris, waste, frozen materials, organic and other deleterious matter.

PART 3 – EXECUTION

3.1 INSPECTION

Examine the areas and conditions under which excavating, filling and grading are to be performed and determine suitability of stockpiled soil for use as backfill and fill material. Do not proceed with the work until satisfactory conditions have been corrected in an acceptable manner.

3.2 EXCAVATION

A. Excavation consists of removal and disposal of material encountered when establishing required grade elevations.

B. Earth excavation consists of removal and disposal of pavements and other obstructions visible on ground surface.

C. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Owner.

D. Under footings, foundation bases or slabs fill unauthorized excavation by extending the indicated bottom elevation of the footing or base to the excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, only when acceptable to the Owner.

E. Elsewhere, backfill and compact unauthorized excavation as specified for authorized excavations of same classification, unless otherwise directed by the Owner.

F. Stability of Excavations

1. Slope side of excavation to comply with local codes and ordinances having

jurisdiction. Shore and brace where sloping is not possible either because of space restrictions or stability of material excavated.

2. Maintain sides and slopes of excavations in a safe condition until completion of backfilling.

G. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross braces, in good serviceable condition.

1. Provide minimum requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
2. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.

H. Dewatering: Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area.

1. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
2. Convey water removed from excavations and rainwater to collecting or run-off areas. Provide and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Comply with applicable sediment control measures. Do not use trench excavations as temporary drainage ditches.

I. Material Storage: Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.

1. Locate and retain soil materials away from edge of excavations.
2. Dispose of excess and/or unsatisfactory soil material and waste materials as specified hereinafter.

J. Excavation for Structures: Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10” and extending a sufficient distance from footings and foundations to permit placing and removal of concrete form work, installation of services, other construction required, and for inspection. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete is placed. Trim bottoms to required lines and grades to leave solid base to receive concrete.

K. Excavation for Pavements: Cut surface under pavements to comply with cross sections, elevations and grades as shown.

L. Removal of Unsatisfactory Soil Materials: Excavate unsatisfactory soil materials encountered that extend below required elevations, to additional depth directed by the Engineer. Unsatisfactory material is defined as clay, wet soil, silt, etc. which would not, in the Engineer’s opinion, provide adequate strength and would not compact properly. Unsatisfactory material shall be removed from the site.

3.3 COMPACTION

A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification.

B. Percentage of Maximum Density Requirements: Provide not less than following percentages of maximum density of soil material compacted at optimum moisture content, as measured by AASHTO T-180, Method C, for the actual density of each layer of soil material-in-place.

1. Building Slabs and Steps: Compact top 12" of subgrade and each layer of backfill or fill material at 95% maximum density.
2. Lawn or Unpaved Areas: Compact top 6" of subgrade and each layer of backfill or fill material at 90% maximum density.
3. Walkways: Compact top 6" of subgrade and each layer of backfill or fill material at 95% maximum density.
4. Pavements: Compact top 12" of subgrade and each layer of backfill or fill material at 95% maximum density.

C. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material.

3.4 BACKFILL AND FILL

A. General: Place satisfactory excavated, borrow or stockpiled material in layers to required subgrade elevations, in excavations under grass areas, under walks and pavements and under steps.

B. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance by Architect of construction below finish grade including, where applicable, damp proofing, 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.
5. Removal of trash and debris.

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 the particular area classification, break up the ground surface, pulverize, moisture-condition to the 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" in loose depth. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content. Compact each layer to required percentage of maximum density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
2. Place backfill and fill materials evenly adjacent to structures, to required elevations. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around structure to approximately same elevation in each lift.

## 3.5 GRADING

A. General: 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 shown, or between such points and existing grades.

B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Finish surfaces free from irregular surface changes, and as follows:

1. Grassed Areas: Finish areas to receive topsoil to within not more than 0.10' above or below the required subgrade elevations.
2. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 0.10' above or below the required subgrade elevations.
3. Pavements: Shape surface of areas under pavement to line, grade and cross-section, with finish surface not more than 0.10' above or below the 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 0.2'.

D. Compaction: After grading, compact subgrade surfaces to the depth and percentage of maximum density for each area classification.

## 3.6 MAINTENANCE

A. Protection of Graded Areas:

1. Protect newly graded areas from traffic and erosion and keep free of trash and debris.
2. 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, re-shape, and compact to required density prior to further construction.

END OF SECTION

SECTION 31 23 00

EXCAVATION & FILL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work included in this section shall include furnishing all labor, materials, and equipment necessary for the Contractor to perform all excavation, backfilling, filling, grubbing and grading required for construction and installation of pipelines, pavements, sidewalks, landscaping, structures and appurtenances and to perform general site grading. Excavation shall include removal of pavement, concrete, rock, earth and debris, regardless of character. Trenches and excavations shall be sheeted, shored and braced by the Contractor, as necessary to allow construction and to protect surface paving and adjacent structures, and provide safe working conditions. Additionally, the Contractor shall be responsible for maintaining a dry excavation by dewatering. They shall also locate, support and protect existing utilities and structures encountered in the work, provide traffic control where required, dispose of surplus and unsuitable excavated materials and restore backfilled areas to original condition or as required by the drawings and specifications. All backfilled and restored areas shall be maintained by the Contractor, in a proper condition, for the duration of the PROJECT.

B. The Contractor is responsible for direct or indirect damage to existing structures, pipelines, conduits, utility poles, wires and utilities of every description in the vicinity of their work whether above or below ground, or that may be encountered in trench or structure excavation, whether or not such utilities are shown on the Drawings. This responsibility shall include the cost of protection by sheeting, bracing, hand excavation, when warranted, and the expense to repair or replace any existing facility damaged directly or indirectly by construction activities under this contract.

C. The Contractor shall verify the location, size and elevation of all existing utilities at the various points of connection and/or crossings prior to starting any work. Any discrepancies in locations or elevations shall be brought immediately to the attention of the ENGINEER in order that the designs may be adjusted accordingly. Damages suffered or additional costs incurred by the Contractor as a result of their failure to conform to the requirements of this paragraph shall be the sole responsibility of the Contractor. Connections to existing utilities shall be made by the Contractor at such a time and in such a manner as the ENGINEER may direct, and the cost shall be included in the price bid for pipeline and structures, unless otherwise defined elsewhere in the proposal.

D. Excavation and backfill within an area where a State agency has jurisdiction shall be done in accordance with requirements and provisions of the permits issued by the agency for construction within their respective right-of-way. Such requirements and provisions, where applicable, shall take precedence and supersede the provisions of these specifications.

E. Prior to excavation, the Contractor is to obtain soil explorations in the areas of the proposed PROJECT which are to be carried out by a qualified geotechnical engineer to determine subsurface conditions.

1.2 SUBMITTALS

A. Submit for approval certified gradations, plasticity index and soil classification of each type of material proposed for use.

B. Submit copies of all laboratory and field soil test results directly to the ENGINEER within twenty-four (24) hours of completion of test.

1.3 QUALITY ASSURANCE

A. Compaction:

1. Top twelve (12") of subgrade and each eight (8") loose layer of backfill and fill under structures. Building slabs, steps, sidewalks, pavement and structure base slabs shall be compacted to ninety-five (95) percent maximum density, ASTM D 1557, unless otherwise noted.

2. Top six (6") of subgrade and each layer of backfill under lawns or unpaved areas, shall be compacted to ninety (90) percent maximum density, ASTM D 1557.

B. Grading Tolerances Outside Building Lines:

1. Lawns, unpaved areas, walks, and embankments, plus or minus one (1”) inch.
2. Stone and asphalt pavements, plus or minus half (1/2) inch.

C. Grading Tolerance for Fill Under Building Slabs: Plus or minus ½ inch measured with a 10’ straightedge.

1.4 PROJECT CONDITIONS

A. Contact the OWNER and Miss Utility at 1-800-441-8355 at least forty-eight (48) hours prior to beginning installations.

B. Existing Utilities: Do not interrupt existing utilities, electrical, yard piping, etc. serving facilities occupied by the OWNER or others except when permitted in writing by the ENGINEER and then only after acceptable temporary utility services have been provided. Provide a minimum forty-eight (48) hours’ notice to the ENGINEER and receive written notice to proceed before interrupting the utility.

C. All soil testing services shall be performed by an independent testing agency coordinated by the Contractor and the R.P.R.

PART 2 - PRODUCTS

2.1 GENERAL

A. No classification of excavated materials will be made. Excavation and trenching work shall include the removal and subsequent handling of all materials excavated or otherwise removed in performance of the contract work, regardless of the type, character, composition, or condition thereof.

B. Materials used for backfill and fill shall be free of clay clods, rock or gravel larger than two (2") inches in any dimension and debris, waste, frozen materials, and other deleterious matter.

2.2 SOIL MATERIALS

A. General: Provide approved satisfactory borrow soil materials from off-site when sufficient approved soil materials are not available from excavations. Materials shall comply with Maryland Department of Transportation State Highway Administration Standard Specifications.

B. Satisfactory Soil Materials: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, SC, and SM; free of rock or gravel larger than two (2) inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter. Satisfactory soil materials shall conform to Maryland State Highway Administration Section 916.01 - Select Borrow.

C. Unsatisfactory Soil Materials: ASTM D 2487 soil classification groups GC, ML, MH, CL, CH, OL, OH, and PT.

D. Backfill and Fill Materials: Satisfactory soil materials unless otherwise approved by the ENGINEER.

E. Pavement Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, conforming to Maryland State Highway Administration Section 901 for Graded Aggregate Base.

F. Structural Fill: ASTM D 2487 Soil Classification Groups SM and/or SC.

G. Drainage Fill: Washed, evenly graded mixture of crushed stone, or crushed or uncrushed gravel, ASTM D448, coarse aggregate grading size 57 conforming to AASHTO M43 type No. 57.

H. Pipe Bedding Material: Artificial foundation using drainage fill, as noted above.

I. No soil material shall be considered unsatisfactory due to moisture content. Contractor shall dry soils with excess moisture or add additional moisture to any material at no additional cost to the OWNER.

2.3 SUITABLE BACKFILL

All suitable materials removed from the excavation shall be used for backfill and/or subgrade replacements of unsuitable materials. No excavated material shall be wasted without permission of the ENGINEER. As material is excavated it shall be separated into suitable and unsuitable material stockpiles for reuse or disposal as the case may be. No payment for select backfill under contingencies will be approved until all suitable soils from excavations have been expended.

2.4 SELECT BACKFILL

A. Should the Contractor encounter unsuitable material during excavation, they shall remove and dispose of such material at a location approved by the ENGINEER. The cost of such disposal shall be included in the appropriate prices bid.

B. Should sufficient suitable material from excavations on the PROJECT not be available for

backfill, the Contractor shall furnish Select Backfill upon approval of the ENGINEER. Special backfill shall conform to the requirements for satisfactory soil materials per Section 2.2. Contractor shall pay for all testing necessary for approval of the select materials including sampling, sieve analysis, Atterberg limits and classification.

C. The Contractor shall furnish certification that their borrow is from a Maryland State Highway Administration approved source.

D. Contractor shall dry soils with excess moisture or add additional moisture to any material at no additional cost to the OWNER.

E. Payment for removal of unsuitable subgrade material and replacement with select backfill as authorized by the ENGINEER will be made at the unit price bid for the material placed within the payment trench width detailed on the PROJECT plans and for the length and depth approved. For backfill around structures, select backfill payment volume will be limited to an area 3'0" outside the foremost edge of the structure on all sides and from the bottom of the structure to the ground surface. This item is for unsuitable subgrade and backfill material only and does not apply to embankment or fill material required for PROJECT construction which is to be included in the lump sum price.

2.5 ARTIFICIAL FOUNDATION

Artificial Foundation and pipe bedding material shall consist of course aggregate crushed gravel with angular edges grading size 57 conforming to Maryland State Highway Administration Aggregates Specification Section 901.01.

2.6 TOPSOIL

Topsoil shall mean friable clay loam surface soil suitable for use in grass planting. It occurs as a thin soil layer covering naturally well-drained land covered by a heavy growth of grass or which has been covered with a heavy growth of grass during the latest growing period before start of construction. In addition, the topsoil shall be reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and shall be free from stones, stumps, and other objects larger than two (2”) inches in any dimension, roots, and other objectionable material.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways in accordance with individual specifications, the contract drawings, and regulations/recommendations of State and local agencies having jurisdiction.

3.2 STRIPPING

A. Remove all organic material from the roadways and building construction areas. Stockpile all suitable material for reuse as topsoil during final grading and stabilization process. Remove all unsuitable materials from the site at the end of the PROJECT.

B. The depth of stripping shall be a minimum of six (6”) inches or as required by actual field conditions.

3.3 GENERAL EXCAVATION

A. Explosives: The use of explosives shall not be permitted on this PROJECT.

B. Unclassified Excavation: Excavation is unclassified and includes excavation to required subgrade elevations regardless of the character of materials and obstructions encountered.

C. Excavated materials shall be segregated as they are excavated, with the suitable and unsuitable materials and topsoil being piled separately according to designated use specified in Part 2 of this section. All suitable materials shall be used for backfill or embankment. Suitable wet materials shall be dried to optimum moisture content at the Contractor's expense and be used for backfill or embankment. All unsuitable materials shall be removed, at the Contractor's expense and disposed of after the PROJECT is completed at a location approved by the ENGINEER. No excavated material shall be deposited at any time so as to endanger partly finished structures either by direct pressure, or indirectly by overloading banks contiguous to the operation.

D. The Contractor shall employ the services of a soil testing agency acceptable to the ENGINEER to determine adequacy of excavated material for reuse as backfill or embankment. Submit results of testing to ENGINEER for approval.

E. Excavation may be moved directly to areas of fill and embankment. However, the Contractor must schedule the work so that all construction areas will remain free draining, without any ponding of water. Temporary ditches and dewatering operations shall be constructed, if necessary, to accomplish this end. If, at the time of excavation, it is not possible to place material in its proper location as fill or embankment, it shall be stockpiled for later use and shall be stabilized in an approved manner if not to be utilized within fourteen (14) calendar days.

3.4 PIPELINE TRENCH EXCAVATION

A. The Contractor shall excavate, maintain and backfill all excavation necessary for completing the work under the contract. Unless otherwise specified or approved, excavation shall be open cut. No extra compensation will be allowed for hand excavation and backfill necessary to complete the work as required by the ENGINEER.

B. Trenches shall be excavated to the necessary width and depth, as shown on the drawings and as required for the placement and removal of protective sheeting, pull boxes, etc. No extra compensation will be allowed for trenches wider than that detailed on the drawings.

C. The sides of the trenches shall be practically plumb and shall not be sloped unless approved in writing by the ENGINEER. Trench sides shall be supported or sheeted as required to protect the public, construction personnel, pavement surfaces, curbing, utilities, structures,

etc., and required for safety. Safety regulations shall be as required by State safety codes and OSHA. Refer to Part 3.8 of this section for sheeting requirements.

D. In paved areas, the Contractor shall remove the paving only as necessary for the excavation of the trench or as detailed. Pavement edges at the trench shall be saw cut neat, straight, and to the full depth of paving prior to the start of any excavation. Should the Contractor disturb or damage pavement to a greater width than detailed on the drawings or should pavement damage result from cave-ins, settlement, etc., the Contractor shall replace such paving at their own expense.

E. In non-paved areas, strip surface vegetation and suitable topsoil and place in stockpiles which are separated from the trench excavated materials. Topsoil shall not be used for general trench refill.

F. The excavation of all trenches shall be fully completed at least twenty (20) feet in advance of pipe laying, unless otherwise authorized or directed. The ENGINEER may require the backfilling of open trench, over completed pipelines, or ahead of the pipe laying operation, if in their judgment such action is necessary, and the Contractor shall have no claim for extra compensation.

G. Should work be stopped for any reason and any excavation is left open for an unreasonable length of time, the Contractor shall refill the excavation at their own expense if so directed by the ENGINEER, the Inspector or OWNER. They shall not reopen the excavation until they is ready to complete the facility. Should the Contractor refuse or fail to refill any excavation completely within forty-eight (48) hours, or immediately if it poses a safety hazard, after a proper notice has been given by the ENGINEER, Inspector, or OWNER, the OWNER shall be authorized to do the work. The resulting expenses shall be deducted from monies due the Contractor.

H. The Contractor shall complete excavation as nearly as practicable to the lines of the pipeline to be installed as detailed. All cavities in the bottom of the trench shall be filled to the required level with compacted crushed stone or gravel. Unless the cavities have been made on direction of the ENGINEER and classified as "Excavation Below Subgrade" for unsuitable material, no extra compensation shall be due the Contractor.

I. Excavated materials shall be graded, hauled, stored and protected as such material found suitable will be required for backfilling, or other purposes. Material classified as unsuitable shall be disposed of by the Contractor at a location approved by the ENGINEER. Hauling of excavated materials for any purpose shall not entitle the Contractor to additional compensation. Only those excavated materials designated by the OWNER shall become property of the Contractor.

J. All stockpiled materials shall be placed in such a way to prevent damage to the trench, structures, drainage areas or private property. Excavated materials shall not be placed on private property, unless written permission is obtained from the property owner by the Contractor.

K. The Contractor shall remove, relocate or protect all structures including but not limited to signs, mailboxes, overhead and buried utilities and other structures in the path of work as required for construction whether shown on drawings or not. No extra compensation will be allowed for property damage, injury or loss of time due to obstructions encountered that are not shown on the plans.

L. The Contractor shall be responsible for any damage to utilities, curb, gutter, sidewalk, traffic control devices, pavement material, pavement markings and lawns. Any damage resulting directly or indirectly during construction shall be replaced in kind by the Contractor without additional compensation. The reuse of disturbed curb, gutter or sidewalk is prohibited. New sections shall be installed to the nearest undisturbed joint. Cost for replacement shall be included in the appropriate price bid.

3.5 PIPELINE TRENCH BACKFILL

A. Materials excavated from the trench except topsoil shall be used for trench backfill, provided that, in the opinion of the ENGINEER, the excavated material is suitable for this purpose. Backfill material shall be free from large lumps, pavement, pieces of concrete and stones.

B. Suitable material, as approved by the ENGINEER, shall be carefully deposited in the trench by methods which will not damage or disturb the pipeline or structure, and shall be solidly tamped around the pipe or structure. Backfill material shall be placed in six (6") inch loose layers and hand tamped until the top of pipe is covered by at least twelve (12”) inches of compacted material. Above this point, backfill material shall be placed in eight (8") inch loose layers. Compaction for eight (8") inch layers shall be accomplished by mechanical tampers or other approved methods. Care shall be taken in the use of mechanical tampers not to injure or move the pipe or to cause the pipe to be supported unevenly. Each layer shall be mechanically tamped for the full trench width unless an alternative method is approved in writing by the ENGINEER.

C. Every backfill layer shall be compacted as per Section 1.3.A. Materials containing an excess of moisture shall be permitted to dry until the moisture content is within the specified range. Materials too dry shall be wetted uniformly, at the Contractor's expense, until the moisture content is in the specified range.

D. No compacting shall be done when the material is too wet to be compacted properly. At such times, the work shall be suspended until the backfill materials have dried sufficiently to permit proper compaction or such other precautions shall be taken as may be necessary to obtain proper compaction. The Contractor is responsible for hauling, storing and drying of excavated material to be used in backfill operations within the prices bid.

E. The ENGINEER may request compaction tests of the backfilled trenches at any time during construction or upon completion of the backfill operations. Such testing shall be arranged by the Contractor and performed by an independent testing agency approved by the ENGINEER. The Contractor shall pay the testing laboratory for all tests performed inclusive of sample collection, preparation and transportation. If the results of any tests shown that backfills do not meet the specified compaction, the Contractor shall, at their own expense, correct the condition as directed by the ENGINEER.

F. The Contractor shall, at their own expense, maintain all refilled excavations in proper condition. Trench surfaces shall be reshaped when necessary. If the Contractor fails to make repairs within forty-eight (48) hours after receipt of written notice from the OWNER, the OWNER may refill said depression wherever necessary and the cost of so doing will be retained from any monies due or to become due the Contractor under the Contract. The Contractor shall be fully responsible for any injury or damage that may result from lack of maintenance of any refilled excavation at any time prior to final acceptance.

G. All unauthorized excavations made by the Contractor shall be immediately backfilled in accordance with the requirements of the specifications for trench backfill at the Contractor's expense.

H. After completion of backfilling, all material not used shall be disposed of as approved by the ENGINEER, and all places on the line of the work shall be left clean and in good condition. This cleaning up shall be done by the Contractor without extra compensation. If they fail to do this work within a reasonable time after receipt of notice, it will be performed by the OWNER, and the cost will be retained from the monies due the Contractor under the Contract.

I. No backfilling of pipelines will be allowed until measurements of pipe and an inspection has been performed by the OWNER's representative, and until the ENGINEER has authorized the backfill. Any unauthorized backfill of pipelines shall be uncovered by the Contractor at their expense if required by the ENGINEER.

J. The Contractor shall exercise caution in backfill and compaction to prevent damage to structures.

K. Backfill trenches with concrete that carry below or pass under footings and that are excavated within eighteen (18") inches of footings. Place concrete to the level of the bottom of footings.

3.6 EXCAVATION BELOW SUBGRADE AND GRAVEL REFILL

A. Materials below the excavation limit for pipelines and structures (below subgrade), which in the judgment of the ENGINEER should be removed, shall be removed as directed. All spaces created by the removal of unsuitable material below subgrade shall be refilled and compacted with crushed stone or gravel, specified in "Artificial Foundation" of this section. The top, sides and bottom of the excavation shall be wrapped with a non-woven filter fabric as recommended by the geotechnical engineer performing testing for the Project. Payment for Excavation Below Subgrade and Gravel Refill shall be made at the unit price bid only for the length width and depth authorized.

B. Should the Contractor elect to excavate suitable material below subgrade and install stone for the purpose of securing a dry trench bottom, in lieu of dewatering by mechanical methods, no payment will be made for Excavation Below Subgrade and Gravel Refill.

3.7 DEWATERING

A. Surface water and subsurface ground water shall be prevented from entering excavations, from ponding on prepared subgrades, and from flooding PROJECT site and surrounding area.

B. Subgrades and foundation soils shall be protected from softening and damage by rain or water accumulation.

C. All excavations must be kept free of water below the subgrade of the work while work is in progress. This may be accomplished by ordinary pumping methods or by well points, whichever will produce the required results. The Contractor shall obtain all necessary

dewatering permits at no additional expense. Upon removal of dewatering equipment, the Contractor shall backfill all holes and restore disturbed areas to their original condition.

D. Dewatering for the structures and pipelines shall commence when groundwater is first encountered and shall be continued until such time as backfill has been completed. No concrete or pipe shall be laid in water nor shall water be allowed to rise over them until the concrete or mortar has set at least eight (8) hours. Groundwater shall not be allowed to rise around the pipe until the trench is backfilled.

E. The Contractor shall dispose of the water from the work in a suitable manner without damage to adjacent property. No water shall be drained into work built or under construction without prior consent of the ENGINEER. Water shall be disposed of in such a manner as not to be a menace to the Public Health.

F. In the event the Contractor's dewatering operations affect any water supplies within the PROJECT area, the Contractor shall take whatever steps required in providing uninterrupted water service.

G. The Contractor shall remove any siltation deposits in storm sewer systems, resulting from their dewatering or construction operations.

H. Contractor shall be responsible for conveyance of dewatering flows and for erosion and sediment control in conformance with local and state requirements.

I. The cost associated with dewatering operations shall be included in the appropriate price bid. No extra compensation will be allowed.

J. Contractor shall be responsible for obtaining well permits for dewatering and shall meet all applicable requirements. Contractor shall also obtain all necessary discharge permits as required for dewatering and for erosion and sediment control and shall comply with the requirements of all agencies having jurisdiction thereof.

## 3.8 SHEETING, SHORING AND BRACING

A. The Contractor shall furnish and install all sheeting, shoring and bracing and other protective systems necessary to ensure safe working conditions, to prevent subsidence of earth and caving embankments, and to prevent injury and death as well as damage to public and private property and structures. The Contractor is responsible for obtaining proper design of such protective systems. The Contractor shall employ an on-site "Competent Person" as defined by OSHA 1926.650 (b), who is responsible for, but not limited to: the locations and protection of underground installations; recognize and control hazards due to water accumulation; daily inspections of excavations, adjacent areas and protective systems; determine the impact of distress and/or surcharge loads and adjust the protective systems accordingly.

B. Sheeting, shoring and bracing and other protective systems shall be removed as backfilling progresses, except at such locations as the ENGINEER may direct or approve it to be left in place.

C. The conditions of all excavations made by the Contractor shall be the responsibility of the Contractor. No extra compensation will be allowed for property damage, injury or loss of time, due to excavation slides or cave-ins at any time under any circumstances.

D. The Contractor shall cut off any sheeting left in place, at least eighteen (18”) inches below finished grade and shall remove the material cut off without compensation.

E. Where necessary, in quicksand, soft ground, or for the protection of any structure or property, sheeting shall be driven to such depth below the bottom of the trench as may be required to protect all existing and/or proposed work.

F. The cost for furnishing, placing and removal of sheeting, shoring or bracing shall be included in the prices bid.

G. A trench box is an acceptable alternative for pipeline installation to sheeting, shoring or bracing providing such boxes conform to safety codes and work is monitored by the Contractor’s "Competent Person".

3.9 SUITABLE BACKFILL

All suitable materials removed from the excavation shall be used for backfill and/or subgrade replacements of unsuitable materials. No excavated material shall be wasted without permission of the ENGINEER. As material is excavated it shall be separated into suitable and unsuitable material stockpiles for reuse or disposal as the case may be. No payment for select backfill under contingencies will be approved until all suitable soils from excavations have been expended.

3.10 APPROVAL OF SUBGRADE

A. Notify ENGINEER when excavations have reached required subgrade.

B. Proof roll subgrade areas to receive bituminous paving with a fully loaded tandem axel dump truck or equal load as approved by the testing agency in the presence of the ENGINEER or their representative prior to compaction. The contractor shall remove all subgrade soils where pumping occurs.

C. When ENGINEER determines that unforeseen unsatisfactory soil or soft areas are present, continue excavation and replace with compacted backfill or fill material as directed. Provide penetrometer testing for structural subgrades.

D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the ENGINEER at no additional cost.

3.11 VERIFICATION OF SOIL BEARING CAPACITY

The Contractor shall be responsible for testing of the available soil bearing capacity below the foundation of any structure. They shall arrange for such testing by an independent agency approved by the ENGINEER. The Contractor shall pay the agency for at least two (2) three (3)-foot deep penetrometer tests and subsequent bearing capacity evaluation as specified on the drawings per 1000 S.F. area, minimum one (1) per individual structure or basin. If the required value as stated in the structural notes is not reached, the Contractor shall compact the subgrade by means of vibratory rollers and pay and arrange for retesting until the required values are met.

3.12 UNAUTHORIZED EXCAVATION

Fill unauthorized excavation under foundations or wall footings by extending indicated bottom

elevation of concrete foundation or footing 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. Fill unauthorized excavations under other construction as directed by the ENGINEER.

3.13 FILL AND EMBANKMENT

A. Contractor shall furnish and place, within the prices bid and at no additional cost to the OWNER, all structural fill to meet the construction requirements of the Contract Documents. Only material meeting the specifications will be approved for use. Contractor shall dispose of excess material off site within prices bid.

B. Structural Fill and Embankment

1. Structural Fill and Embankment for roadways, embankment, and structures shall be constructed of friable, compatible material from excavation or borrow. The material shall be free from debris, organic matter or excessive amounts of clay. Soils shall be classified as SM and/or SC (Unified Soils Classification).
2. Structural fills shall be constructed in loose layers not exceeding eight (8”) inches loose thickness for the full width of the cross section. Construction shall proceed in such manner as to keep all areas free-draining, without ponding of water. Construction shall be suspended when satisfactory results cannot be achieved on account of wet or freezing weather.
3. Each layer of fill or embankment shall be compacted to not less than ninety-five (95) percent of maximum density as determined by ASTM D 698, by means of multiple-wheel pneumatic tired rollers, vibratory rollers, or other approved types, unless otherwise noted.
4. Compacting shall be continued until the required compaction has been achieved. Displacement of soil under or ahead of the roller shall be sufficient evidence that required compaction has not been achieved.
5. Fills and embankments shall be carried to the finished grades shown, less the necessary allowance for pavement, topsoiling, etc. Fine grade all areas prior to construction of finishing courses.
6. Frozen materials shall not be placed in fills and embankments. Any materials which freeze after being placed shall not be covered over until it has completely thawed.
7. Embankment and fill material which may be lost or displaced as a result of natural causes such as storms, cloudbursts, etc., shall be replaced by the Contractor with acceptable material at no additional cost to the OWNER.

3.14 EXCAVATION FOR STRUCTURES

A. Excavate for structures, walls, foundations, footings, etc., to the depth and width required for construction and stripping of forms. Structural excavation shall consist of the excavation of all earth, rock, boulders, existing concrete and masonry foundations and walls, and all other materials encountered regardless of type, which the Contractor may encounter. No extra compensation will be allowed for excavation greater than 3'0" outside the most exterior point of the structure.

B. The sides of the excavation shall be practically plumb and shall not be sloped unless approved in writing by the ENGINEER. Sides shall be supported or sheeted as required to protect pavement surfaces, curbing, utilities, structures, etc., and required for safety. Safety

regulations shall be as required by State safety codes and OSHA. Refer to Sheeting, Shoring, and Bracing of this Section.

C. In paved areas, the Contractor shall remove the paving only as necessary for the excavation of the structure or as detailed. Pavement edges at the structure shall be saw cut neat, straight, and to the full depth of paving prior to the start of any excavation. Should the Contractor disturb or damage pavement for a greater width than detailed on the drawings or should pavement damage result from cave-ins, settlement, etc., the Contractor shall replace such paving at their own expense.

D. In non-paved areas, strip surface vegetation and suitable topsoil and place in stock piles which are separated from the trench excavated materials. Topsoil shall not be used for general trench refill.

E. Should work be stopped for any reason and any excavation is left open for an unreasonable length of time, the Contractor shall refill the excavation at their own expense if so directed by the ENGINEER, the Inspector or the OWNER. They shall not reopen the excavation until they are ready to complete the facility. Should the Contractor refuse or fail to refill any excavation completely within forty-eight (48) hours, or immediately if it poses a safety hazard, after a proper notice has been given by the ENGINEER or Inspector, the OWNER shall be authorized to do the work. The resulting expenses shall be deducted from monies due the Contractor.

F. The Contractor shall complete excavation as nearly as practicable to the depths of the structure to be installed as detailed. All cavities in the bottom of the excavation shall be filled to the required level with compacted crushed stone or gravel. Unless the cavities have been made on direction of the ENGINEER and classified as "Excavation Below Subgrade" for unsuitable material, no extra compensation shall be due the Contractor.

G. Excavated materials shall be graded, hauled, stored and protected as such material found suitable will be required for backfilling, or other purposes. Material classified as unsuitable shall be disposed of by the Contractor at the end of the PROJECT at a location approved by the ENGINEER. Hauling of excavated materials for any purpose shall not entitle the Contractor to additional compensation. Only those excavated materials designated by the OWNER shall become property of the Contractor.

H. All stockpiled materials shall be placed in such a way to prevent damage to the structures, drainage areas or private property. Excavated materials shall not be placed on private property, unless written permission is obtained from the property owner by the Contractor.

I. The Contractor shall remove, relocate or protect all structures including but not limited to signs, mailboxes, overhead and buried utilities and other structure in the path of work as required for construction whether shown on drawings or not. No extra compensation will be allowed for property damage, injury or loss of time due to obstructions encountered that are not shown on the plans.

J. The Contractor shall be responsible for any damage to curb, gutter, sidewalk, traffic control devices, pavement material, pavement markings and lawns. Any damage resulting directly or indirectly during construction shall be replaced in kind by the Contractor without additional compensation. The reuse of disturbed curb, gutter or sidewalk is prohibited. New sections shall be installed to the nearest undisturbed joint. Cost for replacement shall be included in the appropriate price bid.

## 3.15 BACKFILL FOR STRUCTURES

A. Backfill around structures with suitable material from the excavation to the original surface grades shown on the plans or defined by the ENGINEER. If additional material is needed to backfill around the structure, Special Off-Site Backfill approved by the ENGINEER shall be furnished and placed by the Contractor within the lump sum price bid.

B. No backfill shall be placed against new concrete or masonry structures until properly cured.

C. Backfill shall be placed in eight (8”) inch loose layers and compacted by mechanical tampers or other approved methods. Compaction shall conform to the requirements for compaction already set forth in this specification.

D. The Contractor shall exercise caution in backfill and compaction to prevent damage to structures.

## 3.16 TEMPORARY REPAVING

A. The Contractor shall furnish, place and compact two (2") inches of cold patch as temporary pavement surface over all backfill areas created for pipeline and structure installation located in roadways or driveways. This surface shall be maintained by the Contractor until permanent surface restoration has been performed.

B. Should the Contractor remove existing pavement beyond the width specified or detailed on the plans, or should pavement be disturbed from settlement, slides or other construction activities, they shall saw cut back the pavement and provide temporary paving in these areas.

C. In all other areas over which the Maryland State Highway Administration exercises jurisdiction, all pavement restoration shall be done in accordance with the permit requirements of the agency.

## 3.17 GRADING

### A. PREPARATION

1. Prepare subsoil surface for finish grading by dressing and shaping to provide for uniform placement of topsoil or other surface as specified.
2. Cut and fill to within 0.2 foot of the correct subgrade elevations. Set elevation to top of subgrade under paved areas to bottom of the pavement base. Set elevation of the top of subgrade under areas to receive topsoil, 4 inches below finished grades.
3. Furnish additional material required for rough grading, backfill or fill.
4. Remove surface rock or other foreign objects exceeding two (2”) inches in greater dimension. Dispose of such rock and debris in a lawful manner off-site.
5. Provide smooth transition between existing adjacent grades and new grades.

### B. PERFORMANCE

1. Placement of Topsoil: Place topsoil over areas indicated for new grading contours. However, before topsoil construction work in these areas shall have been

completed. Observe precautions as follows:

a. Do not place topsoil over areas indicated to receive paving or sidewalk.
b. Do not work topsoil or liner material while frozen or wet. Do not work materials in a dusting condition, but moisten same to prevent a dust nuisance.
c. Scarify subsoil to a depth of two (2") inches for bonding topsoil with subsoil.
d. On sloped areas, work topsoil or liner material into subsoil to blend so as to eliminate any semblance of slip-planning between the two soils, but leave a sufficient cover of topsoil to insure seed germination. Perform such blending of soils by ridging or serrating the subsoil on the slopes.
e. Place topsoil as needed for dressing-up minor depressions due to settling and erosion and to eliminate any other minor irregularities.

2. Finished Elevations and Lines of Grassed Areas: Grade topsoiled areas of the site to within a tolerance of one (1) inch of the elevations and lines indicated and in accordance with the following.

a. Grade a uniform longitudinal fall in swales and other surface drainage areas to provide a drainage flow line that can easily be maintained and traversed with normal lawn maintenance equipment.
b. Establish finish grade of topsoil ½ to 3/4 inches below top of abutting walks or paving to provide positive drainage of same
c. Place and grade topsoil to a depth not less than four (4") inches nor greater than twelve (12") inches.
d. Compaction: Compact finish grades as the final operation using a light roller weighing not over 120 pounds per foot-width of roller.
e. Tillage: Till finish graded soil over areas indicated for lawn regardless of type of lawn work performed. Use equipment and methods common to such work and till soil to a two inch depth minimum.
f. Seed and mulch in accordance with the Surface Restoration and Paving sections and the PROJECT plans and details.

## 3.18 QUALITY CONTROL TESTING DURING CONSTRUCTION

A. Compaction and Density testing shall be coordinated by the Contractor with the ENGINEER and performed by an independent testing agency approved by the ENGINEER. The Contractor shall pay the testing laboratory for all tests performed inclusive of sample collection, preparation and transportation. Whenever test results indicate compaction densities less than specified, the Contractor shall, at their own expense, secure the specified compaction and subsequent retesting with methods approved by the ENGINEER. The testing agency, employed by the Contractor, shall submit a copy of all testing reports directly to the ENGINEER. Each report shall contain the PROJECT identification name and number, name of Contractor, name of testing agency, and location of sample tested by station, location and depth as minimum. All test locations shall be as approved or required by the ENGINEER.

B. Perform in-place density tests according to ASTM D 1556 (sand cone method) ASTM D 2167 (rubber balloon method) or ASTM D 2937 (drive cylinder method), as applicable. A copy of each test shall be forwarded to the ENGINEER within seventy-two (72) hours of testing.

1. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the moisture gages according to ASTM D 3017.

C. When field in-place density tests are performed using nuclear methods, make calibration checks of both density and moisture gages at beginning of work, on each different type of material encountered, and at intervals as directed by the ENGINEER.

D. Footing Subgrade: At footing subgrades, perform at least one (1) test of each soil stratum to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of each subgrade with related tested strata when acceptable to the ENGINEER.

E. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, perform at least one (1) field in-place density test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than three (3) tests.

F. Foundation Wall Backfill: In each compacted backfill layer, perform at least one field in-place density test for each 100 feet or less of wall length, but no fewer than two tests along a wall face.

G. Trench Backfill: In each compacted initial and final backfill layer, perform at least one (1) field in-place density test for each 200 feet or less of trench, but no fewer than two (2) tests.

H. When testing agency reports that subgrades, fills, or backfills are below specified density, scarify and moisten or aerate, or remove and replace soil to the depth required, recompact and retest until required density is obtained.

I. Contractor shall excavate previously backfilled areas upon request for field in-place density tests below the surface as directed by the ENGINEER.

## 3.19 MISCELLANEOUS EXCAVATION AND BACKFILL

A. The Contractor shall do such miscellaneous excavation as may be necessary or directed. Such excavation shall be subject to the same conditions and requirements as specified for trench excavation.

B. Miscellaneous Excavation shall include the digging of test pits, extra width of trench beyond the specified trench payment width made necessary by change in its alignment, or excavation for any special structures outside the trench that may not be shown on the drawings or described in the specifications, where such excavation is done at the direction of the ENGINEER.

C. Test pits shall be dug by the Contractor whenever directed to determine location, depth or materials of existing utilities. The depth and size of test pits shall be such as required by the ENGINEER.

D. Test pits shall also be dug by the Contractor, as authorized by the ENGINEER, along the lines of the trenches as shown on the drawings in advance of the excavation, or prior to use

of mechanical moles, for the purpose of satisfying themselves as to the location and elevation of underground obstructions or conditions where such test pits are due within the limit of the trench excavation, no additional compensation shall be made. Test pits dug beyond the specified limits of excavation shall be paid under this bid item.

E. Test pits dug which are noted on the PROJECT plans or in advance of pipe laying operations to verify utility locations or additional excavation required to use sheeting or trench boxes shall be included in the prices bid in the proposal. Additional test pits required shall be paid under the contingency bid item for such excavation; the Contractor shall be responsible for ensuring the Inspector or OWNER's representative is present to perform measurement of sub-excavation in order for the Contractor to qualify for such payment.

## 3.20 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep newly graded areas free of trash and debris.

B. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace material to depth directed by the ENGINEER; reshape and recompact at optimum moisture content to the required density.

C. Settling: Where settling occurs during the PROJECT correction period, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work and eliminate evidence of restoration to the greatest extent possible.

## 3.21 DISPOSAL OF SURPLUS AND WASTE MATERIALS

Disposal: Remove surplus soil and waste material, including unsatisfactory soil or excess satisfactory material, trash, and debris, and legally dispose of it off the OWNER's property.

## 3.22 INSTALLATION OF DETECTABLE WARNING TAPE

Pipeline detectable warning tape shall be installed continuously above all underground utilities including water mains and service lines, or other utility which may be installed or distributed as part of this PROJECT. Detectable tape of the color and label required by the particular utility shall be installed in two (2) places, twelve (12") inches above the pipe and twelve (12") inches below the ground surface or as recommended by the tape manufacturer. Detectable tape shall be a minimum of two (2") inches wide and be imprinted with the words "Warning! Underground (Utility Type) Below" continuously along the tape. Provide tape colors to utilities as follows:

A. Red: Electric power lines, cables, conduit and lighting cables

B. Yellow: Gas, oil, steam, petroleum or gaseous materials

C. Orange: Telephone, communications, alarm or signal lines, cables or conduit

D. Blue: Potable Water systems

E. Green: Sewer and stormwater systems

END OF SECTION

SECTION 31 25 00

EROSION & SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Provide necessary equipment, labor and supplies for erosion and sediment control throughout PROJECT. Work consists of grading of site, providing silt fence, and other necessary measures required for effective control. Sediment and erosion control work shall be as indicated on drawings and in compliance with applicable requirements of the governing authorities having jurisdiction. The receipt of a proposal by a bonafide BIDDER shall be interpreted to mean the Contractor has familiarized themselves with these Regulations and Rules of Procedure and is fully cognizant of exactly what is required.

1.2 SUBMITTALS

A. Erosion and Sediment Control Schedule.

1. At pre-construction conference or prior to start of actual construction, submit for acceptance, schedules for accomplishment of temporary and permanent erosion control work. Submit schedule for each of the following procedures: Clearing and grubbing, grading, facilities construction, paving, and surface restoration. No work shall be started until erosion control schedules and methods of operation have been approved.
2. Schedule should be prepared on Contractor's letterhead. Send original and one (1) copy to OWNER.

1.3 EXECUTION

A. Throughout the duration of the PROJECT, control erosion and minimize siltation to rivers, streams and impoundments. Control shall include, but is not limited to the use of berms, dikes, dams, sediment basins, sediment traps, filters, fiber mats, netting, gravel or crushed stone, mulch, grasses, slope drains, and other methods. Erosion and sediment control measures as described herein and on the drawings shall be applied to erodible materials exposed by any PROJECT activity.

B. Coordinate erosion and sediment control measures with the construction of the permanent drainage facilities which shall be constructed prior to the grading operation to assure economical, effective and continuous erosion and siltation control.

C. Dress, prepare, and seed slopes immediately following the completion of each portion of work and immediately following suspension of grading operations.

D. Fill slopes shall be dressed, prepared and seeded as the embankment proceeds to the extent needed to stop erosion and sedimentation.

E. The Contractor shall incorporate permanent erosion control features into the PROJECT at the earliest practicable time. Temporary erosion control measures shall be used to correct. Conditions that develop during construction that were not foreseen during the design stage, that are needed prior to installation of permanent erosion control features, or that are needed temporarily to control erosion that develops during normal construction practices that are not associated with permanent control features of the PROJECT.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 - GENERAL

1.1 DESCRIPTION

The Contractor shall furnish all materials, labor, and equipment necessary to construct bituminous concrete paving as detailed on the drawings. Placement of base and pavement shall be performed after all embankment, fill compaction and testing is complete.

1.2 SUBMITTALS

A. Certificates: Provide three (3) copies of materials certificate signed by the material producer and the Contractor, certifying that each material item complies with, or exceeds, specified requirements.

1.3 JOB CONDITIONS

A. Weather Limitations: Apply prime coats only when ambient temperature is above 50°F, and when temperature has not been below 35°F for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess amount of moisture.

B. Construct asphalt concrete surface course only when atmospheric temperature is above 40°F, and rising, and when base is dry. Base and wedge course may be placed when air temperature is above 32°F and rising.

C. Grade Control: Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.1 BASE COURSE

A. Base course shall be graded aggregate, meeting the requirements of Sections 501 of the Maryland State Highway Administration Specifications.

B. Base course materials shall be thoroughly compacted and final graded prior to placement of asphalt pavement. Work shall be performed per Maryland State Highway Administration Specifications. The Contractor shall pay for density testing performed on the subbase material. Testing shall be done during the early stage of compaction to allow adjustment in moisture content and compaction equipment.

2.2 ASPHALT PAVEMENT

Pavement shall be furnished and installed by the Contractor in accordance with Maryland State Highway Administration specifications. Pavement shall be installed in lifts as detailed on the plans. Asphalt shall comply with AASHTO T-49, penetration grade 85-100.

## PART 3 - EXECUTION

### 3.1 INSPECTION

Paver must examine the areas and conditions under which asphalt concrete paving is to be installed. Notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Paver.

### 3.2 SURFACE PREPARATION

A. Remove loose material from compacted base surface immediately before placing mix.

B. Proof roll prepared base to check for unstable areas and areas requiring additional compaction.

1. Notify Contractor of unsatisfactory conditions. Do not begin paving work until deficient base areas have been corrected and are ready to receive paving.

### 3.3 PLACING MIX

A. General: Placing asphalt concrete mixture on prepared surface, as specified in Section 400 of Maryland State Highway Administration Specifications.

B. Compaction: Use 5 to 8-ton Tandem Steel Wheel Rollers which comply with Section 400 of Maryland State Highway Administration Specifications.

### 3.4 FIELD QUALITY CONTROL

A. General: Test in-place bituminous concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by the Owner.

B. Thickness: In-place compacted thickness will not be acceptable if exceeding the following allowable variation from required thickness:

1. Binder Course: 1/2", plus or minus.
2. Surface Course: 1/4", plus or minus.

C. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using 10' straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness:

1. Base Course Surfaces: 1/4".
2. Wearing Course Surfaces: 3/16".

### 3.5 PARKING AND LANE MARKINGS

A. Cleaning: Sweep and clean the surface to eliminate loose material and dust.

B. Striping: Use yellow chlorinated-rubber base traffic lane-marking paint, factory-mixed, quick-drying, and non-bleeding.

1. Provide material complying with FS TT-P-115, type III.

C. Apply paint with mechanical equipment to produce uniform straight edges.

3.6 PAVEMENT MILLING

Milling shall be performed using a roto-milling machine with a proven record for use in milling hot-mix pavement. Contractor shall protect and adjust all valve boxes, manhole covers, catch basin grates, etc. which are in the area of proposed milling to match to the new pavement elevations.

A two inch (2") mill surface overlay is required for major repairs as noted on the drawings or required by the Worchester County Department of Public Works. Mill and overlay shall commence a minimum of one foot (1') beyond the outer limits of each utility patch in pavement. Mill and overlay will be minimum of one lane width. If the patch extends into a second lane, the mill and overlay must extend to cover the second lane entirely. Overlay shall not be less than two inches (2") of surface course material. Grades shall be reestablished to promote positive drainage.

END OF SECTION

# SECTION 32 16 00

## CURBS, GUTTERS, SIDEWALKS, AND DRIVEWAYS - SURFACE RESTORATION

## PART 1 - GENERAL

### 1.1 DESCRIPTION

The Contractor shall restore all surfaces damaged by their operations and install all new concrete, stone or asphalt paving to the width and extent detailed and noted on the plans or specified herein.

## PART 2 - PRODUCTS (Not Applicable)

## PART 3 - EXECUTION

### 3.1 TOPSOIL AND SEEDING

A. Topsoil shall be placed in areas where grass and vegetation has been disturbed by the Contractor's operations. Depth of topsoil shall be four (4”) inches minimum. Topsoil salvaged and stockpiled during trench and structure excavation may be used for this purpose. When topsoiling all materials and methods of construction shall meet the provisions of other sections of these specifications.

B. Seeding shall consist of furnishing and placing seed and soil supplements on topsoiled areas and at any other locations as directed by the ENGINEER. When seeding all materials and methods of construction shall meet the provisions of Section 705 of Maryland State Highway Administration standard specification.

C. No separate payment shall be made for topsoil and seeding. The cost of this work shall be included in the appropriate prices bid.

D. Topsoil, seeding and mulching shall be performed in accordance with permanent seeding requirements noted on the PROJECT plans.

E. GUARANTEE

1. Seeded areas shall produce a dense, well-established, and uniform stand of grass. Repair any eroded, dead, or bare areas until accepted by OWNER.
2. Grass shall be allowed to reach a height of three (3”) to four (4”) inches, then the Contractor shall mow to a height of two (2”) inches. The grass shall again be allowed to reach a three (3”) to four (4” inch height and mowed to a two (2”) inch height.
3. Upon completion of second mowing, grass areas will be accepted by the OWNER providing the requirements herein have been met.

### 3.2 DRIVEWAY AND PARKING AREAS

A. Driveways and parking areas disturbed through the Contractor's construction operations shall be restored in kind unless otherwise noted on the drawings. Cost for restoration shall be included in the linear foot cost for utility installation.

## 3.3 CONCRETE CURBS, SIDEWALKS AND DRIVEWAYS

### A. General

1. The Contractor shall permanently repair or relay all curbs, sidewalks and driveways that have been removed, broken, or otherwise injured in executing any of the work under the contract or injured by settlement of any backfilled excavation at any time prior to termination of the contract and guarantee period.
2. Curb and sidewalk removed or damaged during construction shall be replaced in accordance with State of Maryland State Highway Administration Standards.
3. All concrete shall be according to Maryland SHA Section 902.10. All concrete placed shall reach a minimum compression strength of 4,000 PSI at twenty-eight (28) days.
4. Separate pavement for reconstruction of curbs, sidewalks and concrete driveways will not be made. However, cost shall be included within the appropriate unit and/or lump prices bid for furnishing and laying water mains and appurtenances.

### B. Curbs

1. Concrete curbs, normal and depressed, shall be replaced in accordance with Maryland SHA Section 609 and as detailed on the drawings. Handicapped ramps shall be inserted in all areas where sidewalk is replaced at the corners of an intersection.
2. Curbs shall be depressed at all existing driveway locations in accordance with State Standard Details, including proper preparation of subgrade and proper placing and spacing of joints and joint materials.
3. Partial replacement, when so directed, shall extend to the nearest existing joint in each direction.

### C. Sidewalks

1. Concrete sidewalks shall be replaced as required, or as directed, in accordance with Maryland SHA Section 610. Handicapped ramps shall be installed in all areas defined herein.
2. Sidewalks in areas not subject to vehicular loading shall have a minimum thickness of six (6”) inches with fiber reinforcement of 1.25 pounds per cubic yard of concrete placed upon a properly prepared, graded and compacted subgrade.
3. Sidewalks in vehicular loading areas shall be a minimum thickness of six (6”) inches with fiber reinforcement of 1.25 pounds per cubic yard of concrete and be reinforced with six (6”) inch by six (6”) inch wire mesh of 10-10 gauge. Subgrade shall be prepared as stated for non-load areas.
4. Replacement of partial sections of concrete sidewalk, where so directed, shall be extended to the nearest existing joint in each direction.
5. Sidewalks shall be replaced to a width as shown on the drawings and such width shall be maintained throughout the entire length of the block. In no instance shall the constructed width be less than four (4) feet.
6. A broom finish shall be applied perpendicular to the direction of traffic. All joint tool marks shall be removed.

3.4 GRADING

A. Grading shall be by motor grader and to the limit defined. Re-grade and remove excess materials on existing street shoulders to permit positive drainage of stormwater from roadway.

B. The Contractor shall dispose of all excess materials removed.

3.5 PARKING AND LANE MARKERS

A. Use yellow or white chlorinated-rubber base traffic lane-marking paint, factory-mixed, quick-drying, and non-bleeding.

1. Provide material complying with FS TT-P-115, type III.

B. Applying paint with mechanical equipment to produce uniform straight edges.

C. All markings destroyed during construction operations to be replaced in-kind.

END OF SECTION