



***“Project Manual” for
Arc/Billow Drainage Improvements***

September 2022

OWNER:

Town of Edisto Beach
2414 Murray Street
Edisto Beach, SC 29438

PREPARED BY:

Davis & Floyd, Inc.
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Charleston, SC 29405
(843) 554-8602

D|F Job No.: 031893.01

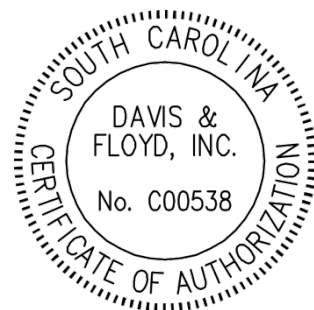


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INVITATION TO BID

Town of Edisto Beach
Edisto Beach, South Carolina
Arc/Billow Street Drainage Improvements

General Notice

Town of Edisto Beach, South Carolina (Owner) is requesting Bids for the construction of the following Project:

Arc/Billow Street Drainage Improvements

Bids for the construction of the Project will be received from Bidders at the Town of Edisto Beach located at 2414 Murray Street, until **Wednesday, November 3, 2022 at 2:00 pm** local time. At that time the Bids received will be publicly opened and read.

The Project includes the following Work:

Replacement of stormwater piping and associated drainage structures at intersection of Murray Street and Billow Street and near intersection of Lee Street and Billow Street; possible utility relocation associated with installation of proposed stormwater structures; removal and replacement of pavement and sidewalk; grading and restoration of site; and all other associated activities.

Bids are requested for the following Contract: **Arc/Billow Street Drainage Improvements**

Owner anticipates that the Project's total base bid price will be approximately \$230,000. The Project has an expected duration of 120 days.

Obtaining the Bidding Documents

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

<https://davisfloyd.filegenius.com>

Bidding Documents may be downloaded from the designated website. Access rights to the designated website may be obtained by emailing documents-chs@davisfloyd.com, or by calling Davis & Floyd, Inc. at (843) 554-8602, and requesting such access. There is no fee for access to or download of digital documents. Prospective Bidders are **required** 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:

Town of Edisto Beach
2414 Murray Street
Edisto Beach, SC 29438

Pre-bid Conference

A **mandatory** pre-bid conference for the Project will be held at the project site on **October 31, 2022** at **2:00 pm** local time.

Project Funding Requirements

This project is funded in part by the American Rescue Plan Act (ARPA) of 2021.

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.

This Advertisement is issued by:

Owner: Town of Edisto Beach, South Carolina

By: Iris Hill

Title: Town Administrator

Date: September 30, 2022

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. *Registered Document Holder*—A Bidder who has made contact and is registered with the Issuing Office to receive Bidding Documents as required in the Advertisement or invitation to Bid.
 - C. *Engineer*—The Owner will retain the role of Owner and Engineer for the Project, as identified in Section 00520 – Agreement Form. However, for the purposes of this Section 00100 – Instructions to Bidders, Section 00020 – Invitation to Bid, and Section 00410 – Bid Form, Engineer shall mean the Project Engineer of record, Davis & Floyd, Inc., to facilitate the Owner’s advertisement, receipt, and evaluation of Bids.

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 requires that Bidders register as a Registered Documents 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 Document Holders will receive Addenda issued by Owner.
- 2.04 *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). 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 2.04.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. Applicable project CAD files.
 - 2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.
 - 3. Unless the Contract Documents explicitly identify that such information will be available to the Successful Bidder (Contractor), nothing herein will create an obligation on the part of the Owner or Engineer to provide or create such information, and the Contractor is not entitled to rely on the availability of such information in the preparation of its Bid or pricing of the Work. In all cases, the Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.
 - 4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:
- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
 - C. Bidder's state or other contractor license number, if applicable.
 - D. Subcontractor and Supplier qualification information.
 - E. Other required information regarding qualifications.

- 3.02 *A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.*
- 3.03 *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 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.
- 4.02 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

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

5.01 Site and Other Areas

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

5.02 Existing Site Conditions

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:
 - a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
 - b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
 - c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion

Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 *Other Site-related Documents*

A. Not Used.

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. Bidders visiting the Site are required to arrange their own transportation to the Site.

C. 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.

D. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

E. 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. By email addressed to the following: Ryne C. Phillips at rphillips@davisfloyd.com, with an email subject line of “Arc/Willow Street Drainage Improvements – Bidder Question.”

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

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

ARTICLE 8—BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of five percent (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.

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 seven (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 Provisions for liquidated damages for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10—SUBSTITUTE AND "OR EQUAL" ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.
- 10.02 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 (Bidders should reference §7.07 of the Supplementary Conditions). 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.
- 11.02 All Bidders must submit to Owner, as a part of his Bid, a list of the Subcontractors or Suppliers proposed for the following portions of the Work:
 - A. Paving
 - B. Storm Drainage Pipes and Structures
 - C. Domestic Water Utilities (if required)
- 11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such

Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 11.04 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12—PREPARATION OF BID

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

- 12.08 All names must be printed in ink below the signatures.
- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Lump Sum*

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

13.02 *Base Bid with Alternates*

- A. Bidders must submit portions of the Base Bid with Alternates for each item of Work listed in the Alternates section of the Bid Form.

13.03 *Sectional Bids*

- A. Not Used.

13.04 *Cost-Plus-Fee Bids*

- A. No Used.

13.05 *Unit Price*

- A. Bidders must submit portions of the 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. Not Used.

13.07 *Price-Plus-Time Bids*

- A. Not Used.

ARTICLE 14—SUBMITTAL OF BID

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

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

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

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

ARTICLE 16—OPENING OF BIDS

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

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. 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.

18.06 In evaluating whether a Bidder *is responsible*, Owner may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which

the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

- 18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

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

ARTICLE 21—SALES AND USE TAXES

21.01 Provisions for sales and use taxes, if any, are set for the in the Supplementary Conditions.

BID FORM FOR CONSTRUCTION CONTRACT

ARC/BILLOW STREET DRAINAGE IMPROVEMENTS

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: Town of Edisto Beach, South Carolina
- 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 (Section 00440) with experience statements;
 - C. 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;
 - D. 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; and
 - E. Non-Collusion Affidavit of Prime Bidder (Section 00480)
 - F. Nonresident Taxpayer Registration Affidavit Income Tax Withholding Form I-312 (Section 00490) or Nonresident Withholding Bond (if applicable, See Section 00800 Article 20, entitled Nonresident Taxpayer Registration Affidavit Income Tax Withholding and Nonresident Withholding Bond)
 - G. Byrd Anti-Lobbying Amendment Compliance and Certification (Section 00491)
 - H. Debarment Certification (Section 0492)
 - I. Equal Employment Opportunity Certification (Section 0493).

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

- 3.01 *Unit Price Bids*

SCHEDULE OF PRICES

Item	Description	Qty.	Unit	Unit Price	Total Price
GENERAL ITEMS					
1	<u>Mobilization</u>				
	A. Mobilization (5% Max of Total Base Bid Items)	1	LS	_____	_____
2	<u>General Items</u>				
	A. Surveying	1	LS	_____	_____
	B. As-Built Drawings / Project Closeout	1	LS	_____	_____
	C. Project Sign	2	EA	_____	_____
INCIDENTAL					
3	<u>Sediment and Erosion Control</u>				
	A. Drop-In Inlet Protection	3	EA	_____	_____
	B. Sediment Tubes	3	EA	_____	_____
	C. Hydroseeding	680	SY	_____	_____
	D. Silt Fencing	282	LF	_____	_____
	E. Rip Rap (Class B)	28	TON	_____	_____
	F. Construction Entrance	1	LS	_____	_____
4	<u>Fencing</u>				
	A. Temporary Construction Fencing	282	LF	_____	_____
	B. 5' Aluminum Fencing (Replace Existing Fence in Like Kind)	10	LF	_____	_____
DRAINAGE SYSTEM					
5	<u>Cleaning and Inspection</u>				
	A. Clean and Inspect Existing Pipeline (Up to 36")	200	LF	_____	_____
6	<u>Piping</u>				
	A. 24" RCP	43	LF	_____	_____
	B. 19"x30" Elliptical RCP	291	LF	_____	_____
	C. Flowable Fill	16	CY	_____	_____
7	<u>Structures</u>				
	A. Junction Box (48" x 48")	1	EA	_____	_____
	B. Junction Box w/ Grate Inlet (48" x 48")	1	EA	_____	_____
	C. Junction Box w/ Grate Inlet (72" Dia.)	2	EA	_____	_____
SITE WORK					
8	<u>Demolition and Removal</u>				
	A. 2" Mill of Existing Pavement	180	SY	_____	_____
9	<u>Pavement</u>				
	A. Liquid Asphalt Binder PG64-22	0.6	TON	_____	_____
	B. Hot Mix Asphalt Surface Course Type B	10	TON	_____	_____
WATER DISTRIBUTION SYSTEM					
10	<u>Contractor Provided Water Relocations</u>				
	A. 12" RAW Water Main Vertical Offset	1	EA	_____	_____
	B. 2" Water Service Line Offset (including appurtenances)	3	EA	_____	_____
				Total Bid - Items 1-10	_____
BID ALTERNATES					
11	<u>Alternate Bid Items</u>				
	A. Slope Stabilization	340	LF	_____	_____
	B. Junction Box w/ Grate Inlet (72" Dia.)	1	EA	_____	_____
				Total Alternate Bid	_____

A. 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.

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

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

ARTICLE 4—BASIS OF BID—COST-PLUS FEE

4.01 Not Used.

ARTICLE 5—PRICE-PLUS-TIME BID

5.01 Not Used.

ARTICLE 6—TIME OF COMPLETION

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

6.02 Not Used.

6.03 Not Used.

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

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

7.01 *Bid Acceptance Period*

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

7.02 *Instructions to Bidders*

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

7.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 8—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

8.01 *Bidder’s Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder’s (Contractor’s) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

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

8.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder 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 any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award.
3. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
4. Bidder has not solicited or induced any individual or entity to refrain from bidding.
5. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
 - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
 - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
 - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

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

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(typed or printed)

Address for giving notices:

Bidder's Contact:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Phone: _____

Email: _____

Address: _____

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

BID BOND (PENAL SUM FORM)

Bidder Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: Town of Edisto Beach, South Carolina Address <i>(principal place of business)</i> : 2414 Murray Street Edisto Beach, SC 29438	Bid Project <i>(name and location)</i> : Arc/Willow Street Drainage Improvements Edisto Beach, SC Bid Due Date:
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
_____ <i>(Full formal name of Bidder)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

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

SECTION 00440

LIST OF PROPOSED SUBCONTRACTORS

In compliance with the Instructions to Bidders and other Contract Documents, the undersigned submits the following names of Subcontractors to be used in performing the Work.

Bidder certifies that all Subcontractors listed are eligible to perform the Work. An experience statement with pertinent information regarding similar projects and other evidence of qualification is required for all identified subcontractors.

Subcontractor's Work

Subcontractor's Name

Paving

Storm Drainage Pipes and Structures

Domestic Water Utilities

In addition to the proposed Subcontractors listed above, the following Subcontractors are proposed for use in performing the Work on subcontracts which will exceed fifteen percent (15%) of the Contract Price.

<u>Subcontractor's Work</u>	<u>Subcontractor's Name</u>	<u>% of Contract Price</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Note: This for must be submitted with the Bid in accordance with the Instructions to Bidders.

Bidder: _____

Name (printed): _____

Signature: _____

Title: _____

Address: _____

(End Section 00430)

SECTION 00480 NON-COLLUSION AFFIDAVIT OF PRIME BIDDER

State of _____)

County of _____)

_____, being first duly sworn, deposes and says that:

- (1) He is _____ of _____, the Bidder that has submitted the attached Bid:
- (2) He is fully informed respecting the preparation and contents of the attached Bid and of all pertinent circumstances respecting such Bid:
- (3) Such Bid is genuine and is not a collusive or sham Bid:
 - a. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit or cost element of the Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the _____ or any person interested in the proposed Contract; and,
 - b. the price or prices quoted in the attached Bid are fair and proper and are not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

(signed) _____

(Title) _____

Subscribed and sworn to before me

this the _____ day of _____, 20____.

_____.

Notary Public for _____.

My Commission Expires _____.

(End Section 00480)



**NONRESIDENT TAXPAYER REGISTRATION
AFFIDAVIT INCOME TAX WITHHOLDING**

Mail to: The company or individual you are contracting with.

The undersigned nonresident taxpayer on oath, being first duly sworn, hereby certifies as follows:

1. Name of Nonresident Taxpayer: _____

2. Trade Name, if applicable (doing business as):

3. Mailing Address: _____

4. Federal Employer Identification Number (FEIN): _____

5. _____ Hiring or Contracting with:
Name: _____
Address: _____

_____ Receiving Rentals or Royalties From:
Name: _____
Address: _____

6. I hereby certify that the above named nonresident taxpayer is currently registered with (check the appropriate box):
 The South Carolina Secretary of State or
 The South Carolina Department of Revenue:
Date of Registration: _____

7. I understand that by this registration, the above named nonresident taxpayer has agreed to be subject to the jurisdiction of the South Carolina Department of Revenue and the courts of South Carolina to determine its South Carolina tax liability, including estimated taxes, together with any related interest and penalties.

8. I understand the South Carolina Department of Revenue may revoke the withholding exemption granted under Code Section 12-8-550 (temporarily doing business or professional services in South Carolina) or Code Section 12-8-540 (rentals) at any time it determines that the above named nonresident taxpayer is not cooperating with the Department in the determination of its correct South Carolina tax liability.

The undersigned understands that any false statement contained herein could be punished by fine, imprisonment or both.

Recognizing that I am subject to the criminal penalties under Code Section 12-54-44(B)(6)(a)(i), I declare that I have examined this affidavit and to the best of my knowledge and belief, it is true, correct and complete.

Signature of Nonresident Taxpayer (Owner, Partner or Corporate Officer, when relevant) (Seal) _____
Date

If Corporate officer, state title: _____

(Name - Please Print)

**INFORMATION
NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT**

Submit this form to the company or individual you are contracting with.

Do not submit this form to South Carolina Department of Revenue.

PURPOSE OF AFFIDAVIT

A person is not required to withhold taxes for a nonresident taxpayer who submits an affidavit certifying that they are registered with either the South Carolina Secretary of State or the South Carolina Department of Revenue.

REQUIREMENTS TO MAKE WITHHOLDING PAYMENTS

Code Section 12-8-550 requires persons hiring or contracting with a nonresident taxpayer to withhold 2% of each payment made to the nonresident where the payments under the contract exceed \$10,000. However, this section does not apply to payments on purchase orders for tangible personal property when those payments are not accompanied by services to be performed in this state.

Code Section 12-8-540 requires persons making payment to a nonresident taxpayer of rentals or royalties at a rate of \$1,200 or more a year for the use of or for the privilege of using property in South Carolina to withhold 7% of the total of each payment made to a nonresident taxpayer who is not a corporation and 5% if the payment is made to a corporation.

Our Internet address is: **www.dor.sc.gov**

SECTION 00491 BRYD ANTI-LOBBYING AMENDMENT CERTIFICATION

The following certification and disclosure regarding payments to influence certain federal transactions are made per the provisions contained in FAR 52.203-11 and 52.203-12 and 31 U.S.C. 1352, the “Byrd Anti-Lobbying Amendment.”

- (1) FAR 52.203-12, “Limitation on Payments to Influence Certain Federal Transactions” is hereby incorporated by reference into this certification
- (2) The bidder, by signing its offer, hereby certifies to the best of his or her knowledge and belief that:
 - a. No 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 on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;
 - b. If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) 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 on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and (3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$150,000 shall certify and disclose accordingly.
- (3) This certification is a material representation of fact upon which reliance is placed when this transaction was made or entered into. Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person making an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

Project Name: Arc/Billow Street Drainage Improvements

Contractor: _____

Address: _____

Authorized Representative Name: _____

Authorized Representative Title: _____

Signature of Authorized Representative: _____

Witness (Print and Sign): _____

(End Section 00491)

SECTION 00492 BRYD ANTI-LOBBYING AMENDMENT CERTIFICATION

The Bidder certifies, to the best of its knowledge and belief, that the Bidder and/or any of its Principals

Are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;

Have not, within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and

Are not presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.

The Bidder has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

"Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

The Bidder shall provide immediate written notice to the Owner if, at any time prior to subcontract award, the Bidder learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Bidder's responsibility. Failure of the Bidder to furnish a certification or provide such additional information as requested by the University may render the Bidder non-responsible.

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 paragraph (a) of this provision. The knowledge and information of a Bidder is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Bidder knowingly rendered an erroneous certification, in addition to other remedies available to the Owner, the Owner may terminate the contract resulting from this solicitation for default.

Project Name: Arc/Billow Street Drainage Improvements

Contractor: _____

Address: _____

Authorized Representative Name: _____

Authorized Representative Title:

Signature of Authorized Representative:

Witness (Print and Sign):

(End Section 00492)

SECTION 00493 EQUAL EMPLOYMENT OPPORUNITY CERTIFICATION

According to the SC Code of Regulations at 41 C.F.R. Park 60-1.4(b):

During the performance of this Contract, the Contractor agrees as follows:

During the performance of this contract, the contractor agrees as follows:

- (1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
- (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- (3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- (4) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- (5) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (6) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law. (7) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States."

Edisto Beach requires compliance with State and Federal regulations governing Equal Employment Opportunity, External Equal Opportunities (EO), External On-the-Job Training (OJT), Title VI, and the Americans with Disabilities Act (ADA) programs.

Sub recipients of federal aid contracts must include notifications in all solicitations for bids of work or material and agreements, subject to Title VI of the Civil Rights Act of 1964 and other nondiscrimination authorities. Sub-recipients, contractor and subcontractors may not discriminate in their employment practices or in the selection and retention of any subcontractor.

By signing this document, the Contractor hereby certifies its commitment to assure nondiscrimination in its programs and activities to the effect that no person shall on the grounds of race, color, national origin, sex, age, disability or income status be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination or retaliation under any federally or non-federally funded programs or activity administered by the sub-recipient and/or its contractors.

Project Name: Arc/Billow Street Drainage Improvements

Contractor: _____

Address: _____

Authorized Representative Name: _____

Authorized Representative Title: _____

Signature of Authorized Representative: _____

Witness (Print and Sign): _____

(End Section 00493)

NOTICE OF AWARD

Date of Issuance:

Owner: Town of Edisto Beach, South Carolina Owner’s Project No.:
Engineer: Davis & Floyd, Inc. Engineer’s Project No.: 031893.01
Project: Arc/Billow Street Drainage Improvements
Contract Name:
Bidder:
Bidder’s Address:

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

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.

Two (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 **two (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):
 - a. None.

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

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

Owner: Town of Edisto Beach, South Carolina
By (signature): _____
Name (printed): Iris Hill
Title: Town Administrator
Copy: Engineer

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

This Agreement is by and between Town of Edisto Beach, South Carolina (“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: Replacement of stormwater piping and associated drainage structures at intersection of Myrtle Street and Billow Street and near intersection of Lee Street and Billow Street; possible utility relocation associated with installation of proposed stormwater structures; removal and replacement of pavement and sidewalk; grading and restoration of site; and all other associated activities.

ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Providing improved drainage infrastructure near intersection of Myrtle Street and Billow Street and Lee Street and Billow Street.

ARTICLE 3—ENGINEER

3.01 The Owner or their designee, will 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 Davis & Floyd, Inc. 1940 Algonquin Road – Suite 301, Charleston, SC 29405.

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 Not Used.

4.03 *Contract Times: Days*

A. The Work will be substantially complete within 90 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 120 days after the date when the Contract Times commence to run.

4.04 *Milestones*

- A. Not Used.

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 \$500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
 2. *Completion of Remaining Work*: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$500 for each day that expires after such time until the Work is completed and ready for final payment.
 3. *Milestones: Not Applicable*.
 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.

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. Total of Lump Sum Amount and Unit Price Work (subject to final Unit Price adjustment) of **#[number]**.
 - B. 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 30th 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. Ninety percent (90%) of the value of the Work completed (with the balance being retainage).
 - 1) If fifty percent (50%) 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
 - b. Ninety percent (90%) of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to one hundred percent (100%) of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less two hundred (200%) percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

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

6.04 *Consent of Surety*

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

6.05 *Interest*

- A. All amounts not paid when due will bear interest at the rate of zero (0%) percent per annum.

ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

- A. The Contract Documents consist of all of the following:
1. This Agreement.

2. Bonds:
 - a. Performance bond (together with power of attorney).
 - b. Payment bond (together with power of attorney).
 3. General Conditions.
 4. Supplementary Conditions.
 5. Specifications as listed in the table of contents of the project manual (copy of list attached).
 6. Drawings listed in Specification 01018, List of Drawings.
 8. Addenda (numbers **[number]** to **[number]**, inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid and Attachments dated MM/DD/YYYY
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
 - e. Warranty Bond, if any.
- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 Contractor's Representations

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
 2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to

existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.
- B. Contractor certifies 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 any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award.
 - C. Contractor certifies that it is under no contractual or other impediment that would prevent them from complying with 24 CFR part 135.
 - D. Contractor certifies that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the Contractor’s obligations under 24 CFR part 135.
 - E. Contractor certifies that the Contractor provides workers’ compensation insurance coverage for each employee of the contractor employed on the project.

8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or “track changes” (redline/strikeout), or in the Supplementary Conditions.

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

This Agreement will be effective on **MM/DD/YYYY** (which is the Effective Date of the Contract).

Owner:

Town of Edisto Beach

(typed or printed name of organization)

By:

(individual's signature)

Date:

(date signed)

Name:

Iris Hill

(typed or printed)

Title:

Town Administrator

(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:

NOTICE TO PROCEED

Owner: Town of Edisto Beach, South Carolina Owner's Project No.:

Engineer: David & Floyd, Inc. Engineer's Project No.: 031893.01

Contractor: Contractor's Project No.:

Project: Arc/Billow Street Drainage Improvements

Contract Name:

Effective Date of Contract:

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

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

In accordance with the Agreement:

The number of days to achieve Substantial Completion is 90 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 60 from the commencement date of the Contract Times, resulting in a date for readiness for final payment of **[date, calculated from commencement date above]**.

Owner: Town of Edisto Beach, South Carolina

By *(signature)*: _____

Name *(printed)*: Iris Hill

Title: Town Administrator

Date Issued: _____

Copy: Engineer

PERFORMANCE BOND

<p>Contractor</p> <p>Name: _____</p> <p>Address <i>(principal place of business)</i>: _____</p>	<p>Surety</p> <p>Name: _____</p> <p>Address <i>(principal place of business)</i>: _____</p>
<p>Owner</p> <p>Name: Town of Edisto Beach, South Carolina</p> <p>Mailing address <i>(principal place of business)</i>: 2414 Murray Street Edisto Beach, SC 29438</p>	<p>Contract</p> <p>Description <i>(name and location)</i>: Arc/Billow Street Drainage Improvements Edisto Beach, SC</p> <p>Contract Price: _____</p> <p>Effective Date of Contract: _____</p>
<p>Bond</p> <p>Bond Amount: _____</p> <p>Date of Bond: _____ <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form: <input checked="" type="checkbox"/> None <input type="checkbox"/> See Paragraph 15</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor fully performs the Construction Contract, 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 under this Bond will arise after:
 - 3.1. The Owner declares a Contractor Default, terminates the Construction Contract, and notifies the Surety.
4. 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:
 - 4.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
 - 4.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
 - 4.3. 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 5 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
 - 4.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 - 4.4.1 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
5. If the Surety does not proceed as provided in Paragraph 4 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.
6. If the Surety elects to act under Paragraph 4.1, 4.2, or 4.3, 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:
 - 6.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - 6.2. 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 4; and
 - 6.3. 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.

7. If the Surety elects to act under Paragraph 4.1, 4.3, or 4.4, the Surety's liability is limited to the amount of this Bond.
8. 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.
9. 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.
10. 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.
11. 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.
12. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
13. Definitions
 - 13.1. *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, but not limited to, 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.
 - 13.2. *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.
 - 13.3. *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.
 - 13.4. *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.
 - 13.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
14. 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.
15. Modifications to this Bond are as follows: None.

PAYMENT BOND

<p>Contractor</p> <p>Name: _____</p> <p>Address (<i>principal place of business</i>): _____</p>	<p>Surety</p> <p>Name: _____</p> <p>Address (<i>principal place of business</i>): _____</p>
<p>Owner</p> <p>Name: Town of Edisto Beach, South Carolina</p> <p>Mailing address (<i>principal place of business</i>): 2414 Murray Street Edisto Beach, SC 29438</p>	<p>Contract</p> <p>Description (<i>name and location</i>): Arc/Billow Street Drainage Improvements</p> <p>Contract Price: _____</p> <p>Effective Date of Contract: _____</p>
<p>Bond</p> <p>Bond Amount: _____</p> <p>Date of Bond: _____ <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form: <input checked="" type="checkbox"/> None <input type="checkbox"/> See Paragraph 16</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. Upon notice of a claim as set forth below, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against such claim, demand, lien, or suit.
4. The Surety's obligations to a Claimant under this Bond will arise after the following:
 - 4.1. Claimants who do not have a direct contract with the Contractor
 - 4.1.1. 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
 - 4.1.2. have sent a Claim to the Surety (at the address described in Paragraph 11).
 - 4.2. 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 11).
5. If a notice of non-payment required by Paragraph 4.1.1 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 4.1.1.
6. When a Claimant has satisfied the conditions of Paragraph 4.1 or 4.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 6.1. Send an answer to the Claimant, with a copy to the Owner, within forty-five (45) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 6.2. Pay or arrange for payment of any undisputed amounts.
 - 6.3. The Surety's failure to discharge its obligations under Paragraph 6.1 or 6.2 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 6.1 or 6.2, 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.
7. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 6.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
8. 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.

9. 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.
10. 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 4.1.2 or 4.2, 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.
11. 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.
12. 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.
13. 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.

14. Definitions

14.1. *Claim*—A written statement by the Claimant including at a minimum:

- 14.1.1. The name of the Claimant;
- 14.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
- 14.1.3. 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;
- 14.1.4. A brief description of the labor, materials, or equipment furnished;
- 14.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- 14.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
- 14.1.7. The total amount of previous payments received by the Claimant; and
- 14.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

14.2. *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.

- 14.3. *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.
 - 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.

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

APPLICATION FOR PAYMENT

Prepared By



Endorsed By



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GUIDELINES FOR THE INTENDED USE OF EJCDC C-620, APPLICATION FOR PAYMENT

1.0 PURPOSE AND INTENDED USE OF THE DOCUMENT

The Application for Payment is used to facilitate periodic progress payments to the Contractor for Work completed and for stored materials and equipment (referred to in this document as "Stored Materials").

For additional information regarding the Application for Payment, see EJCDC® C-700, Standard General Conditions of the Construction Contract (2018), Paragraph 15.01, and EJCDC® C-001, Commentary on the 2018 EJCDC Construction Documents (2018).

2.0 APPLICATION FOR PAYMENT OVERVIEW

This document was prepared in Microsoft Excel due to the number of calculations involved in the preparation of the Application for Payment. The application consists of a Summary worksheet, and 3 supporting worksheets: Lump Sum worksheet, Unit Price worksheet, and Stored Materials worksheet.

- 2.1 *Summary Worksheet* — calculates the amount to be paid to the Contractor at the end of each Application for Payment period. This calculation imports numbers from the supporting worksheets to determine the value of the Work completed and Stored Materials, calculate retainage, and deduct amounts previously paid to determine the amount the Contractor should be paid for the current application period. Application periods are typically one month; however these periods may be extended when Contractor's efforts do not result in the billable completion of Work or storage of materials and equipment during the payment period.

- 2.2 *Lump Sum Worksheet* — calculates the total value for completed Work for which compensation is paid on a Lump Sum basis. The schedule of values included in this worksheet reflects a breakdown of lump sum Work items to which Contractor and Engineer have agreed, pursuant to Article 2 of the General Conditions. Costs for Stored Materials associated with lump sum items are included on this worksheet to calculate the total value for completed lump sum Work and associated Stored Materials. This total is exported to the Summary worksheet. Separate totals for Work Completed and for materials currently stored are also exported to the Summary worksheet for use in calculating the amount of retainage to be held for each.

- 2.3 *Unit Price Worksheet* — calculates the total value for completed Work for which compensation is paid on a Unit Price basis. The schedule of values included in this spreadsheet is typically a tabulation of Unit Price items from the Agreement. Costs for Stored Materials associated with unit price items are included in this worksheet to calculate the total value for completed Unit Price Work and associated Stored Materials. This total is exported to the Summary worksheet. Separate totals for Work Completed and for Materials Currently Stored are also exported to the Summary worksheet for use in calculating the amount of retainage to be held for each.

2.4 *Stored Materials Worksheet* — calculates the total value for materials and equipment that have been purchased and are being stored until they are incorporated into the Work. This worksheet adds materials and equipment to the worksheet as they are brought to the site and stored; such Stored Materials are then deducted from the Stored Materials worksheet total as they are incorporated into the Work, providing a running net value for the materials and equipment remaining in storage. The values of Stored Materials must be manually added to the Lump Sum or Unit Price line items. These do not automatically update when changes are made. The amount of materials remaining in storage is eligible for payment but must be tracked separately from Work completed since different retainage rates may apply to Work completed and Stored Materials.

3.0 Instructions for filling out the Payment Application form

- 3.1 Project-specific information is to be entered in the top portion (header) of the Summary worksheet. This same information will automatically be copied to the other worksheets to complete the headers on all other worksheets.
- 3.2 Outside of the header, data can be entered in non-shaded cells when the sheet is protected. Cells shaded light blue contain equations that will automatically transfer data from other cells or make calculations to complete the worksheet. Altering any of these cells can result in errors in the Application for Payment. It is recommended that the worksheets be protected at all times unless alterations are deliberately being made to the Application for Payment form other than to enter data. See Paragraph 4.0 below for information on Protection of Worksheets.
- 3.3 Enter information regarding each item in the Lump Sum and/or Unit Price worksheets. For Lump Sum projects, each item should represent an item in the schedule of values prepared by the Contractor and approved by the Engineer/Owner, breaking down the Lump Sum amount into measurable components. For Unit Price contracts, use numbers from the Agreement as the schedule of values. Specific information on the data to be entered into each column may be seen by clicking on the header description for that column. Similar comments may be seen for cells in the "Totals" row that indicates how the number is calculated and where this number is exported to another part of the spreadsheet. See the Commentary for additional information.
- 3.4 The equations in the Summary worksheet use numbers imported from both the Lump Sum and Unit Price worksheets. Projects will typically either use the Lump Sum or the Unit Price worksheet, but some projects may use both. If one of the worksheets is not used, it should be hidden and not deleted. If it is deleted, Users will need to correct the equations in the Summary worksheet by unprotecting the worksheet and editing the equations. To hide a worksheet, right click on the worksheet tab at the bottom of the worksheet and select "Hide." To unhide a worksheet, right click on any worksheet tab and select "Unhide," and then select the worksheet to unhide and click "Okay." This same process may be used to hide these Guidelines for Use.

4.0 Protection of Worksheets

- 4.1 The cells in this Workbook that create the forms or contain equations have been coded to "lock" the cells that should not be altered. It is recommended that the Workbook be Protected (cells locked) at all times unless it is necessary to add or delete rows. Directions for adding and deleting rows are provided in the next section. Passwords can be used to lock the Protect / Unprotect settings on spreadsheets, however the worksheets in this workbook do not require a password.
- 4.2 To unprotect a worksheet, click on the "Review" menu tab at the top of Excel, then click "Unprotect Sheet." To protect a worksheet, click on the "Review" menu tab at the top of Excel, then click "Protect Sheet." This will open a dialog box in which the User is allowed to select protection options. It is recommended that only the top two checkboxes for "Select Locked Cells" and "Select Unlocked Cells" be checked. This will reset the protection for the Worksheet.

5.0 Adding and Deleting Rows

- 5.1 A limited number of blank rows are provided in the Lump Sum, Unit Price, and Stored Material worksheets. Additional rows may be added to these worksheets by the User. The first step in this process is to unprotect the worksheet as previously discussed. After the sheet is unprotected, move with caution to prevent inadvertently deleting any cells that contain equations. To insert a row, right click in the row heading at the left of the spreadsheet and select "Insert." A new row will be inserted at the location where the cursor was placed in the row heading. If more than one new row is desired, left click and drag the cursor to include the desired number of rows, right click in the selected row headings and then select "Insert." It is important that the line immediately above the "Totals" row not be included in the rows selected. Doing so will require that equations in the "Totals" row be adjusted. When rows are inserted, Excel automatically adjusts the equations to include the new rows, unless the row directly above the "Totals" row is also selected.
- 5.2 After new rows are inserted, it is important to copy a line from one of the original rows so correct formatting and equations are copied into each new row. To do this, select the row to be copied by clicking the cell in Column A and dragging the cursor to the last column in the table. Then select "Copy" from the menu or type CTRL+C to copy the cells. Excel will show that this row has been copied by showing a moving dashed line around the cells that are to be copied. Then select the new rows into which the information is to be copied as before and select Paste from the menu or type CTRL+V.
- 5.3 To delete an unused row, right click in the row heading on the left of the spreadsheet for the row to be deleted and select "Delete." The selected row will be deleted. If more than one row is to be deleted, left click and drag the cursor to the desired number of rows to be deleted and then right click to open the menu and select "Delete." Unlike the admonition on adding new rows, it is okay to delete the row just above the "Totals" row.
- 5.4 After rows have been added or deleted, it is important to reset the worksheet protection.

6.0 Saving Files

This file is provided as a Microsoft® Excel Open XML workbook template (.xltx) to prevent this file from being inadvertently changed. When an application for payment is created for a specific project it should be saved as an Excel workbook (.xlsx) file. To do this, select Save As (F12), type in a new file name and select Excel Workbook (.xlsx) from the drop down Save As Type menu.

7.0 License Agreement

This document is subject to the terms and conditions of the License Agreement, 2018 EJCDC® Construction Series Documents. A copy of the License Agreement was furnished at the time of purchase of this document, and is available for review at www.ejcdc.org and the websites of EJCDC's sponsoring organizations.

Contractor's Application for Payment

Owner: <u>Town of Edisto Beach</u>	Owner's Project No.: _____
Engineer: <u>Davis & Floyd, Inc.</u>	Engineer's Project No.: <u>031893.01</u>
Contractor: _____	Contractor's Project No.: _____
Project: <u>Arc/Billow Street Drainage Improvements</u>	
Contract: _____	
Application No.: _____	Application Date: _____
Application Period: From _____ to _____	

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

Contractor's Certification

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

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

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

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

(4) Contractor has prepared a weekly certified payroll report for the Contractor and all subcontractors and has submitted such report(s) to the Owner for every week included in this Application Period.

Contractor: _____

Signature: _____ **Date:** _____

Recommended by Engineer	Approved by Owner
By: <u>Ryne C. Phillips</u>	By: <u>Iris Hill</u>
Title: <u>Associate</u>	Title: <u>Town Administrator</u>
Date: _____	Date: _____
Approved by Funding Agency	

By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____

Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner: Town of Edisto Beach
 Engineer: Davis & Floyd, Inc.
 Contractor: _____
 Project: Arc/Willow Street Drainage Improvements
 Contract: _____

Owner's Project No.: _____
 Engineer's Project No.: 031893.01
 Contractor's Project No.: _____

Application No.: _____ Application Period: From _____ to _____ Application Date: _____

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

Progress Estimate - Unit Price Work

Contractor's Application for Payment

Owner: Town of Edisto Beach
 Engineer: Davis & Floyd, Inc.
 Contractor: _____
 Project: Arc/Willow Street Drainage Improvements
 Contract: _____

Owner's Project No.: _____
 Engineer's Project No.: 031893.01
 Contractor's Project No.: _____

Application No.: _____ Application Period: From _____ to _____ Application Date: _____

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

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: Town of Edisto Beach, South Carolina Owner's Project No.:
Engineer: Davis & Floyd, Inc. Engineer's Project No.: 031893.01
Contractor: Contractor's Project No.:
Project: Arc/Billow Street Drainage Improvements
Contract Name:

This Preliminary Final Certificate of Substantial Completion applies to:

All Work The following specified portions of the Work:

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

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

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

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

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

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

Amendments to Owner's Responsibilities: None As follows:

[List amendments to Owner's Responsibilities]

Amendments to Contractor's Responsibilities: None As follows:

[List amendments to Contractor's Responsibilities]

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

[List attachments such as punch list; other documents]

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

Engineer

By *(signature)*: _____

Name *(printed)*: Ryne C. Phillips _____

Title: Associate _____

NOTICE OF ACCEPTABILITY OF WORK

Owner: Town of Edisto Beach, South Carolina Owner’s Project No.:
Engineer: Davis & Floyd, Inc. Engineer’s Project No.: 031893.01
Contractor: Contractor’s Project No.:
Project: Arc/Billow Street Drainage Improvements
Contract Name:
Notice Date: Effective Date of the Construction Contract:

The Engineer hereby gives notice to the Owner and Contractor that Engineer recommends final payment to Contractor, and that the Work furnished and performed by Contractor under the Construction Contract is acceptable, expressly subject to the provisions of the Construction Contract’s Contract Documents (“Contract Documents”). 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 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)*: Ryne C. Phillips
Title: Associate

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

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

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

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

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

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

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

1.02 Terminology

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

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

ARTICLE 2—PRELIMINARY MATTERS

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

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

2.02 *Copies of Documents*

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

2.03 *Before Starting Construction*

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

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

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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

2.05 *Acceptance of Schedules*

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

2.06 *Electronic Transmittals*

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

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

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

3.02 *Reference Standards*

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

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

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

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

B. *Resolving Discrepancies*

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

3.04 *Requirements of the Contract Documents*

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

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

3.05 *Reuse of Documents*

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

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

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

4.02 *Starting the Work*

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

4.03 *Reference Points*

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

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

4.04 *Progress Schedule*

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

4.05 *Delays in Contractor's Progress*

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

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

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

5.01 *Availability of Lands*

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

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

5.02 *Use of Site and Other Areas*

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

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

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

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

5.03 *Subsurface and Physical Conditions*

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

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

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

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

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

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

5.04 *Differing Subsurface or Physical Conditions*

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

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

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

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

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

5.05 *Underground Facilities*

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

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

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

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

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

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

5.06 *Hazardous Environmental Conditions at Site*

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

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

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

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

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

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

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

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

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

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

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

6.02 *Insurance—General Provisions*

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

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

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

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

6.03 *Contractor's Insurance*

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

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

6.04 *Builder's Risk and Other Property Insurance*

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

6.05 *Property Losses; Subrogation*

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

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

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

6.06 *Receipt and Application of Property Insurance Proceeds*

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

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

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

7.02 *Supervision and Superintendence*

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

7.03 *Labor; Working Hours*

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

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

7.04 *Services, Materials, and Equipment*

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

7.05 *"Or Equals"*

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

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

7.06 Substitutes

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

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

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

7.07 *Concerning Subcontractors and Suppliers*

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

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

7.08 *Patent Fees and Royalties*

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

7.09 *Permits*

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

7.10 *Taxes*

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

7.11 *Laws and Regulations*

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

7.12 *Record Documents*

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

7.13 *Safety and Protection*

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

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

7.14 *Hazard Communication Programs*

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

7.15 *Emergencies*

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

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

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

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

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

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

D. Resubmittal Procedures for Shop Drawings and Samples

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

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

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

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

7.17 Contractor's General Warranty and Guarantee

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

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

7.18 *Indemnification*

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

7.19 *Delegation of Professional Design Services*

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

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

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

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

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

8.02 *Coordination*

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

8.03 *Legal Relationships*

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

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

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

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

9.03 *Furnish Data*

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

9.04 *Pay When Due*

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

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

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

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

10.02 *Visits to Site*

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

10.03 *Resident Project Representative*

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

10.04 *Engineer's Authority*

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

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

10.05 *Determinations for Unit Price Work*

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

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

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

10.07 *Limitations on Engineer's Authority and Responsibilities*

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

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

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

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

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

10.08 *Compliance with Safety Program*

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

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

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

11.02 *Change Orders*

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

11.03 *Work Change Directives*

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

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

11.04 *Field Orders*

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

11.05 *Owner-Authorized Changes in the Work*

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

11.06 *Unauthorized Changes in the Work*

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

11.07 *Change of Contract Price*

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

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

11.08 *Change of Contract Times*

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

11.09 *Change Proposals*

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

B. *Change Proposal Procedures*

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

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

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

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

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

11.10 *Notification to Surety*

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

ARTICLE 12—CLAIMS

12.01 *Claims*

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

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

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

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

13.01 *Cost of the Work*

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

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

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

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

c. *Construction Equipment Rental*

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

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

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

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

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

D. *Contractor's Fee*

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

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

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

13.02 Allowances

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

13.03 Unit Price Work

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

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

E. *Adjustments in Unit Price*

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

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

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

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

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

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

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

14.03 *Defective Work*

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

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

14.04 *Acceptance of Defective Work*

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

14.05 *Uncovering Work*

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

14.06 *Owner May Stop the Work*

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

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

14.07 Owner May Correct Defective Work

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

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

15.01 Progress Payments

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

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

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

C. *Review of Applications*

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

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

D. *Payment Becomes Due*

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

E. *Reductions in Payment by Owner*

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

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

15.02 *Contractor's Warranty of Title*

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

15.03 *Substantial Completion*

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

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

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

15.04 *Partial Use or Occupancy*

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

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

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

15.05 *Final Inspection*

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

15.06 *Final Payment*

A. *Application for Payment*

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

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

15.07 *Waiver of Claims*

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

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

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

15.08 *Correction Period*

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

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

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

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

16.02 *Owner May Terminate for Cause*

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

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

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

16.03 *Owner May Terminate for Convenience*

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

16.04 *Contractor May Stop Work or Terminate*

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

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

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

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

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

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

18.02 *Computation of Times*

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

18.03 *Cumulative Remedies*

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

18.04 *Limitation of Damages*

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

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Assignment of Contract*

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

18.09 *Successors and Assigns*

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

18.10 *Headings*

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

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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

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

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

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

SC-1.01 Delete and replace definitions 11 and 24 in Paragraph 1.01.A with the following:

11. Constituent of Concern--Asbestos; petroleum; radioactive materials; polychlorinated biphenyls (PCBs); hazardous waste; Contaminated Environmental Media; Metal Bearing Protective Coatings, Paints, and Liners; metals such as but not limited to arsenic, cadmium, chrome, cobalt, lead, and mercury; and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. ("CERCLA"); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. ("RCRA"); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
24. Hazardous Environmental Condition--The presence at the Site of Constituents of Concern, including, but not limited to, Contaminated Environmental Media, asbestos, Metal Bearing Protective Coatings, Paints, and Liners, polychlorinated biphenyls (PCBs), petroleum, Hazardous Waste, radioactive material, metals such as but not limited to arsenic, cadmium, chrome, cobalt, lead, and mercury, and other Hazardous Substances; in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto or cause them to come under the application of a federal, state, or local regulation. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

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.
1. Notwithstanding anything to the contrary, Owner reserves the right to require complete, certified copies of all required insurance policies, including policy declarations and any endorsements required by the Contract Documents, at any time.
- 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.

2.03 *Before Starting Construction*

SC-2.03 Delete Paragraph 2.03.A.1 in its entirety and replace with the following paragraph:

1. a preliminary Progress Schedule meeting the requirements set forth in specification Section 01310 – Construction Progress Schedule;

SC-2.03 Add paragraph 2.03.A.4 immediately following paragraph 2.03.A.3:

2. a schedule of estimated monthly payments to the Contractor by the Owner. The schedule shall be revised and resubmitted each time an Application for Payment varies more than ten percent from the estimated payment schedule.

2.05 *Acceptance of Schedules*

SC-2.05 Delete Paragraph 2.05.A.1 in its entirety and replace with the following paragraph:

1. Acceptance of the Progress Schedule 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, therefore.
 - a. The preliminary Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times, and meets the requirements set forth in paragraph SC 2.03.1
 - b. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to Completion within the Contract Times, and meets the requirements set forth in specification section 01310 – Construction Progress Schedule.

2.06 *Electronic Transmittals*

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.
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 Engineer's published

hourly rates) 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

No Supplementary Conditions for this Article.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed

SC-4.01 Delete Paragraph 4.01.A and replace with the following:

- B. 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 90th day after the day of Bid opening or the 60th day after the Effective Date of the Contract, whichever date is earlier without a written agreement signed by Owner and Contractor.

4.05 Delays in Contractor's Progress

SC-4.05 Delete Paragraph 4.05.A in its entirety and replace with the following:

- 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 may be entitled to an equitable adjustment in the Contract Price or Contract Times. Contractor's entitlement to any adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. For any compensable delays, the Contractor's recovery for the delay shall be limited to daily time related field overhead expenses times the number of compensable delay days.

SC-4.05 Delete Paragraph 4.05.C in its entirety and replace with the following:

- 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 may 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. 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
 - 3. Acts of war or terrorism.

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

5.01 *Availability of Lands*

SC-5.01 Add the following new paragraph immediately after Paragraph 5.01.C.:

1. Offsite storage arrangements shall be approved in advance by Owner for all materials and equipment not incorporated into the Work but included in Applications for Payment. Such offsite storage arrangements shall be presented in writing and shall afford adequate and satisfactory security and protection. Offsite storage facilities shall be fully bonded, shall be within 30 miles of the main project site, and shall be accessible to Owner and Engineer.

5.02 *Use of Site and Other Areas*

SC-5.02 Delete and Replace Paragraph 5.02.A.2 with the following:

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, defend, 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. However, no party to be indemnified hereunder shall be entitled to indemnity for claims, actions, losses, or damages which proximately result from their sole negligence.

SC-5.02 Add the following new paragraphs immediately after Paragraph 5.02.A.2:

3. Contractor, its employees, or subcontractors shall confine its construction operations within the limits indicated on the Drawings.
 - a. On Private Property:
 - 1) Contractor shall not enter any private property outside the designated construction easement boundaries without written permission from the owner of the property.
 - 2) Easements across private property are indicated on the Drawings. If surface access is required, and allowed by the easement agreement, Contractor shall set stakes to mark the boundaries of construction easements across private

property. The stakes shall be protected and maintained until completion of construction and site cleanup.

b. Work Within Highway Right-of-Way:

- 1) All Work performed and all operations of Contractor, its employees, or subcontractors within the limits of the highway rights-of-way shall be in conformity with the requirements and be subject to authority (through Owner) of the highway authority owning or having jurisdiction over and control of the right-of-way (SCDOT, Charleston County or the Town of Edisto Beach) in each case.

4. Existing utilities must be kept in continuous operation throughout the construction period, unless otherwise noted in the Contract Documents.

- a. No interruption will be permitted which adversely affects the degree of service provided unless coordinated with and approved by the respective utility owner.
- b. Contractor shall give notice(s) sufficiently in advance to enable the affected persons/entities to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.

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:

Report Title	Date of Report	Technical Data
None.		

- 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:

Drawings Title	Date of Drawings	Technical Data
Deep Well No. 8 Record Drawing	January 9, 2020	Water Distribution System
Lee Street Pump Station	October 4, 2000	Sanitary Sewer System

- 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 [location] during regular business hours, or may request copies from Engineer.

5.05 *Underground Facilities*

SC-5.05 Delete Paragraph 5.05.F.1 and replace with the following:

1. Contractor may be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. Contractor gave the notice required in Paragraph 5.05.B.

5.06 *Hazardous Environmental Conditions at Site*

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:

Report Title	Date of Report	Technical Data
None.		

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:

Drawings Title	Date of Drawings	Technical Data
None.		

SC-5.06 Delete and Replace Paragraphs 5.06.I and 5.06.J with the following paragraphs

- I. Not used.
- 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 sole negligence.

ARTICLE 6—BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

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

SC-6.01 Delete Paragraph 6.01.D in its entirety and replace with the following:

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state of South Carolina, to issue bonds in the required amounts.

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 Delete Paragraph 6.02.D in its entirety and replace with the following:

- D. Contractor shall deliver to Owner, within 10 days after receipt of the Notice of Award, with copies to each additional insured identified in the Contract Documents, certificates of insurance and endorsements establishing the Contractor has obtained and is maintaining the policies and coverages required by the Contract Documents. These certificates shall contain a provision that policy coverages will not be canceled, altered, or materially changed without 30 days prior written notice provided to the Owner, via registered or certified mail, to the addresses below:
1. Town of Edisto Beach, SC, Attn: Iris Hill – 2414 Murray Street, Edisto Beach, SC 29438
 2. Davis & Floyd, Inc., Attn: Ryne C. Phillips – 1940 Algonquin Road – Suite 301, Charleston, SC, 29405

Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and suppliers may bock 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.

In addition, Contractor shall notify the Owner immediately upon receiving any information that any of the policies and coverages required by the Contract Documents are or will be changed, cancelled, or replaced.

- SC-6.02 Delete Paragraph 6.02.E in its entirety and replace with the following:
- E. Not used.
- SC-6.02 Delete Paragraph 6.02.F in its entirety and replace with the following:
- F. Failure of Owner to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner 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.
- SC-6.02 Add the following paragraph immediately after Paragraph 6.02.H.1 of the General Conditions:
- a. Notwithstanding anything to the contrary, Contractor shall obtain a certificate in writing from each subcontractor on the Project that the subcontractor provides workers' compensation insurance coverage for each employee of the subcontractor employed on the Project.
- SC-6.02 Add the following paragraph immediately after Paragraph 6.02.H.2 of the General Conditions:
- 3. For Subcontractors and Suppliers, the Contractor shall either:
 - a. Require each of its Subcontractors and Suppliers to procure and maintain during the life of its Subcontract and/or Agreement, Subcontractor Comprehensive General Liability, Automotive Liability, and Property Damage Liability Insurance of the type and in the same amounts as specified in Paragraph 6.03 Contractor's Insurance, or;
 - b. Insure the activities of the Contractor's Subcontractors and Suppliers under its own policy.
- SC-6.02 Delete Paragraph 6.02.I in its entirety and replace with the following paragraph:
- G. If Contractor does not purchase or maintain the insurance required by the Contract, the Owner shall notify the Contractor 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.
- SC-6.02 Delete Paragraph 6.02.N in its entirety and replace with the following paragraphs:
- N. All 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 30 days prior written notice has been given to the Contractor and Owner. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 - O. Within 10 days after Contractor's receipt of the Notice of Award, but in no instances prior to commencement of the Work, Contractor shall furnish Owner with original certificates of insurance for every applicable policy effecting the coverage required by the Contract Documents. Failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them.
 - P. Any policy deductibles or self-insured retentions must be declared to and approved by the Owner. The Owner may require Contractor to purchase coverage with a lower deductible or

retention or provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention.

- Q. All terms regarding Contractor and Subcontractor policies of insurance required by the Contract Documents shall survive termination of the Agreement and shall continue per the requirements of the Contract Documents, but in any instance shall continue no less than thirty (30) days past the final completion of the work including the performance of any warranty work. In addition, Contractor shall maintain in force and effect any “claims-made” coverage for a minimum of two (2) years after final completion of all work or services to be provided under the Contract Documents. Contractor shall purchase an extended reporting period, or “tail coverage”, if necessary, to comply with the latter requirement.

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	\$500,000
Applicable Federal (e.g., Longshoreman’s)	Statutory
Foreign voluntary workers’ compensation (employer’s responsibility coverage), if applicable	Statutory
Employer’s Liability	
Each accident	\$500,000
Each employee	\$500,000
Policy limit	\$500,000

- 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 eight 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 eight 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 hazard, explosion, and collapse coverage. Explosion, Collapse & Underground (XCU) should not be excluded if the work contemplates this exposure.
 5. Personal injury coverage.
 6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
 2. Any exclusion for water intrusion or water damage.
 3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
 4. Any exclusion of coverage relating to earth subsidence or movement.
 5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
 6. Any limitation or exclusion based on the nature of Contractor’s work.
 7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.
- I. Commercial General Liability—Minimum Policy Limits

Commercial General Liability	Policy limits of not less than:
General Aggregate	\$1,000,000
Products—Completed Operations Aggregate	\$1,000,000
Personal and Advertising Injury	\$500,000
Bodily Injury and Property Damage—Each Occurrence	\$500,000

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

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	\$500,000
Each Accident	\$500,000
Property Damage	
Each Accident	\$500,000
[or]	
Combined Single Limit (Including all Owned, Non-Owned and Hired Vehicles)	
Combined Single Limit (Bodily Injury and Property Damage)	\$\$500,000

- K. *Umbrella or Excess Liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	\$500,000
General Aggregate	\$500,000

- L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of \$500,000 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	\$500,0000
General Aggregate	\$500,0000

- 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	\$500,000
Annual Aggregate	\$1,000,000

- O. Railroad Protective Liability Insurance: Not used.
- 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 (or endorsement to the Contractors General Liability policy sufficient to meet UAV liability coverage requirements) 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
General Aggregate	\$500,000

- Q. *Other Required Insurance:* None
- R. *Waiver of Subrogation:* With respect to workers' compensation and employers' liability, commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability, and all other liability insurance specified herein to be provided by Contractor, Contractor shall require its insurance carriers to waive all rights of subrogation against Owner, Engineer, and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them.

6.04 *Builder's Risk and Other Property Insurance*

SC-6.04 Delete Paragraphs 6.02.B, 6.02.C, and 6.02.D replace with the following paragraphs:

- B. Not used.
- C. Not used.
- D. Not used.

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

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; named storm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).
 - a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.
 - b. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake, volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance will be provided through other insurance policies acceptable to Owner and Contractor.
 - c. All insurance policies (and their certificates or other evidence thereof) required to be purchased and maintained with this Paragraph SC-6.04 shall contain the provisions, to include notification requirements, identified in Paragraph 6.02.N pertaining to cancellation, material changes, and refusal of renewal.
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 value of equipment and materials on site.
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 value of equipment and materials on site.
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. Davis & Floyd, Inc. – 3229 West Montague Avenue, North Charleston, SC 29419.
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.

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 provision:

- 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.

6.05 Property Losses; Subrogation

SC-6.05 Replace Paragraphs 6.05.A.1 and 6.05.A.2 with the following paragraphs:

1. Not used.
2. Not used.

SC-6.05 Replace Paragraphs 6.05.B, 6.05.C, and 6.05.D with the following paragraphs:

- B. Not used.
- C. Not used.
- D. Not used.

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 Monday through Friday between 0700-hours and 1730-hours, local time.
2. A workday is any day with regular working hours.
3. Owner's legal holidays are New Year’s Day, Martin Luther King Jr.’s Birthday, Presidents’ Day, Good Friday, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day and the following Friday, Christmas Eve, and Christmas Day.

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

- D. Maintenance work, cleanup, and other items which no specific payment is involved may be allowed from 0800-hours to 1700-hours, local time, on Saturdays and holidays with Engineer’s permission made on a case-by-base request.
- E. Contractor shall notify Engineer at least two (2) working days prior to start of any site activity. Contractor shall do no work requiring services of the Owner’s inspection and supervisory forces for more than 10.5 hours a day nor on Owner holidays or weekends, unless authorized by Engineer in writing. Contractor shall not work in roadways during peak vehicular traffic hours following jurisdictional restrictions and requirements contained elsewhere in Contract Documents.

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

- F. 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 workday. 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.
 1. If Contractor elects to undertake additional overtime or shift work, Contractor shall maintain adequate equipment and supervision for proper prosecution and control of the Work. Contractor shall provide at least a 1 week notice to Engineer of the Work schedule.
 2. For purposes of administering the foregoing requirement, additional overtime costs are defined as expenses incurred by the Owner for performance of the Work by the Contractor outside of the Regular Working Hours identified in SC-7.03.C.1. Overtime costs shall not exceed \$200 per hour per person.
- G. Requirements and special commitments contained in the permits / agreements obtained by Owner are covered in the Supplementary Conditions, Article SC-7.09.

7.04 *Services, Materials, and Equipment*

SC-7.04 Add the following new paragraphs immediately following Paragraph 7.04.C:

- D. Until substantial completion of the Work is acknowledged by Owner, Contractor shall have responsible charge and care of the Work and of all equipment and materials to be used herein, and shall bear the risk of injury, loss, or damage to any part thereof by action of the elements or from any other cause, whether arising from the execution or from the non-execution of the Work.
- E. Contractor shall rebuild, repair, restore, and make good all injuries, losses, or damages to any portion of the work or the equipment or materials occasioned by any cause before completion and acceptance of the Work and shall bear the expense, therefore. Contractor shall, at no additional cost to Owner, provide suitable drainage and suitable structures as necessary to protect the work or any portion thereof from damage.
- F. Suspension of the Work or the granting of an extension of time for any cause whatever shall not relieve Contractor of responsibilities for the Work as specified herein.

7.05 *"Or Equals"*

SC-7.05 Delete Paragraph 7.05.C in its entirety and replace with the following:

- 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. 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 accepted Shop Drawing or other written communication.

SC-7.05 Add the following new paragraphs immediately following Paragraph 7.05.E:

- F. In order for substitutions and "or-equals" to be considered, the Contractor shall submit, not later than 10 days after Notice to Proceed, complete data to permit complete analysis of those items listed on Form for Substitutions and "Or Equals" for specified items submitted with bid.

7.06 *Substitutes*

SC-7.06 Delete Paragraph 7.06.A.3.b.1 in their entirety and replace with the following:

- 1.) that the substitute will not result in a change in the Contract Times or Contract Price.

SC-7.06 Delete Paragraph 7.06.A.3.d in its entirety and replace with the following:

- d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item.

SC-7.06 Delete Paragraph 7.06.B in its entirety and replace with the following:

- 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. Engineer will advise Contractor in writing of any negative determination.

7.07 Concerning Subcontractors, Suppliers, and Others

SC-7.07 Add the following new subparagraph immediately after Paragraph 7.07.E

1. Particular consideration will be given to the qualifications of each Subcontractor proposed to perform more than fifteen percent (15%) of the Work and those proposed on the Proposed Subcontractors Form (Section 00440). The use of Subcontractors proposed by Contractor and accepted by Owner prior to the Notice of Award will be required in the performance of the Work unless otherwise permitted or directed by Owner.

7.08 Patent Fees and Royalties

SC-7.08 Delete Paragraph 7.08.B in its entirety and replace with the following:

- B. Not used.

SC-7.08 Delete Paragraph 7.08.C in its entirety and replace with the following:

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall defend, indemnify, and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 Permits

SC-7.09 Add the following new paragraphs immediately following Paragraph 7.09.A:

- B. The Owner will provide SCDOT encroachment permit and easements as may be applicable within the limits of the project. The Contractor shall comply with all provisions of all permits obtained by the Owner.
- C. The Contractor shall secure and pay for all remaining permits, to include but not be limited to local building permits, SCDOT street blocking permits, permits related to the required water and sewer relocations, and local business license fees, as needed, to execute the Work in accordance with local laws and regulations.
- D. The Contractor shall be responsible for making all necessary arrangements with governmental departments, public utilities, public carriers, service companies and corporations owning or controlling roadways, railways, water, sewer, gas, electrical, internet, telephone and telegraph facilities such as pavements, tracks, piping, wires, cables, conduits, poles, guys, etc., including incidental structures, connected therewith, that are encountered in the Work in order that such items may be properly shored, supported and protected, or if

the Contractor desires, relocate them. The Contractor shall give all proper notices, shall comply with requirements of such parties in the performance of the Work, shall permit entrance of such parties on the project in order that they may perform their necessary work, and shall pay all charges and fees made by such parties for this work.

- E. The Contractor shall be responsible for procuring any permits or right-of-way for the use of property beyond the limits of the project.
- F. The Contractor shall obtain a business license from the Town of Edisto Beach for the duration of the Work.
- G. All persons hired to perform Work must be properly licensed by the State of South Carolina and the Town of Edisto Beach. Each Contractor and Subcontractor hired to perform Work on this project must complete and submit their own building permit and plan review application.

7.11 *Laws and Regulations*

SC-7.11 Delete the Paragraph 7.11.A in its entirety and replace with the following:

- A. Contractor shall give all notices required by and shall comply with all laws and regulations applicable to the performance of the Work and shall cause its agents, employees, Subcontractors, and Suppliers to observe and comply with all such laws, ordinances, and regulations. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any laws or regulations.

SC 7.11 Add the following new paragraphs 7.11.D, E, and F immediately after Paragraph 7.11.C.

- D. *Safety and Health Regulations:* The provisions of OSHA "Safety and Health Regulations for Construction", Chapter XVII of Title 29, CFR Part 1926, shall apply to Work under this Contract. The U.S. Department of Labor will be responsible for compliance review and enforcement of the regulations.
- E. *Archaeological Deposits:* If, during the course of construction, evidence of deposits of historical or archaeological interest is found, Contractor shall cease operations affecting the find and shall notify Owner, who shall notify the Regional Office of the Environmental Protection Agency and the State Historic Preservation Officer. No further disturbance of the deposits shall ensue until Contractor has been notified by Owner that Contractor may proceed. Owner will issue a Notice to Proceed only after the state official has surveyed the find and made a determination to the Environmental Protection Agency and Owner. Compensation to Contractor, if any, for lost time or changes in construction to avoid the find, shall be determined in accordance with changed conditions or Change Order provisions of the Contract Documents. (Reference: 80 Stat 915, 16 USC 470, and Executive Order No. 11593 of May 31, 1971.)
- F. *Work in Confined Spaces:* The provisions of OSHA "Safety and Health Regulations for Construction", Chapter XVII of Title 29 CFR Section 1910.146, "Permit-Required Confined Spaces", have been adopted by Owner and shall apply to Work under this Contract. Contractor is hereby notified that the existing manholes, drop shafts and other structures included under the confined-space definition of 29 CFR 1910.146, shall be considered as hazardous locations with hazardous atmospheric conditions. The structures may contain methane, hydrogen sulfide, carbon dioxide, and other gases which are dangerous to life or health. Contractor shall allow its personnel or Subcontractors to enter these confined spaces only through compliance with an entry permit program as specified herein.

1. Contractor shall establish and maintain a confined-space entry program appropriate to the structures and conditions encountered. The program shall meet the requirements of 29 CFR 1910.146 and shall specifically address the provisions of Paragraph (d) therein. Contractor shall enforce the requirements of Paragraphs (e) and (f), shall establish and conduct a training program in accordance with Paragraph (g), and shall comply with all other applicable requirements of the referenced regulation.
2. Contractor shall prepare a complete written program covering the requirements of this paragraph and the referenced regulation. The written program shall be submitted through Engineer for review and approval by Owner and shall be modified and resubmitted if required. No Work shall be done by Contractor or any of Contractor's personnel or Subcontractors in any confined spaces until Contractor's program has been approved by Owner and Owner is satisfied that the program provisions are in place.
3. Contractor shall cooperate with Owner for coordination of activities whenever Contractor's personnel and Owner's personnel will both be working in or near the confined spaces at the same time.

7.16 *Submittals*

SC-7.16 Delete Paragraph 7.16 in its entirety and insert the following in its place.

- A. Specification Section 01300 – Submittals identifies requirements and procedures associated with Contractor submission and Engineer review of submittals, shop drawings, and samples.

7.18 *Indemnification*

SC-7.18 Delete Paragraph 7.18 in its entirety and replace with the following:

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of the Contractor under the Contract or otherwise, Contractor shall defend, indemnify, and hold harmless Owner, Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them (“Indemnitees”) from and against any and all claims, actions, costs, losses, or damages of any nature, (including but not limited to all fees and charges of the engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs, including settlement payments) by a third-party which are attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property arising out of or relating to, in whole or in part, to any act or omission of Contractor, or their subcontractors, their employees, workmen, servants, agents, or anyone directly or indirectly employed by them or anyone for whose acts any of them may be liable, regardless of whether or not caused in part by and Indemnitee hereunder, and whether or not such claims are made by a third-party or an Indemnitee; however, if an Indemnitee’s negligent act or omission is subsequently determined to be the sole proximate cause of a loss, suit or claim, the Indemnitee shall not be entitled to indemnification hereunder. This indemnification provision shall survive completion of the Work, or termination of the Contract for any reason. The Owner shall be entitled to recover all attorney fees and costs incurred in enforcing this indemnity obligation.
- B. In any and all claims against Owner, Engineer, or any of the officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, and Subcontractor,

any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for 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

SC-7.19 Delete Paragraph 7.19.E in its entirety and replace with the following:

- E. Pursuant to this Paragraph 7.19, Engineer's review and acceptance of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and acceptance of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Specification Section 01300 – Submittals.

SC-7.19 Add the following new paragraph 7.19.H immediately after Paragraph 7.19.G.

- H. When professional design services are required by the Contract Documents, Contractor shall provide certification that the associated construction conforms to the design provided by the design professional.

ARTICLE 8—OTHER WORK AT THE SITE

8.03 Legal Relationships

SC-8.03 Delete Paragraph 8.03.A and replace with the following:

- 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 may 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.

SC-8.03 Delete Paragraph 8.03.C and replace with the following:

- 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) defend, 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. However, no party to be indemnified hereunder shall be entitled to indemnity for claims, actions, losses, or damages which proximately result from their sole negligence.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 Communications to Contractor

SC-9.01 Delete Paragraph 9.01.A in its entirety and replace with the following:

- A. Except as otherwise provided in these General Conditions, if Owner issues communication to Contractor, a copy shall be provided to Engineer.

9.02 Replacement of Engineer

SC-9.02 Delete Paragraph 9.02.A in its entirety and replace with the following:

- A. Owner may at its discretion appoint an engineer to replace Engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 Resident Project Representative

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

- C. The Resident Project Representative (RPR), if applicable, 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.

- a. Notwithstanding anything to the contrary, Contractor is responsible for ensuring attendance of representatives of Contractor, Subcontractor(s), Inspector(s), and all applicable utility companies to mandatory preconstruction conferences.
 2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.
 3. *Liaison*
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.
 4. *Review of Work; Defective Work*
 - a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02 if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Observe whether any Work in place appears to be defective.
 - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection, or approval.
 5. *Inspections and Tests*
 - a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
 - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
 6. *Payment Requests:* Review Applications for Payment with Contractor.
 7. *Completion*
 - a. Participate in Engineer's visits regarding Substantial Completion.
 - b. Assist in the preparation of a punch list of items to be completed or corrected.
 - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work and prepare a final punch list of items to be completed or corrected by Contractor.
 - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will not:
1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences, or procedures of construction.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Authorize Owner to occupy the Project in whole or in part.

10.06 Decisions on Requirements of Contract Documents and Acceptability of Work

SC-10.06 Delete Paragraph 10.06.A in its entirety and replace with the following:

- 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 endured in good faith insofar as the subject matter of any pertinent claim, dispute, or other matter falling within the realm of technical expertise of Engineer. Engineer shall not render any decision on any matters the subject matter of which, at the Engineer's sole discretion, requires legal, rather than technical, interpretation.

ARTICLE 11—CHANGES TO THE CONTRACT

11.03 Work Change Directives

SC-11.03 Delete Paragraph 11.03.A in its entirety and replace with the following:

- 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. The Work Change Directive shall include an estimated cost that may not be exceeded without written approval of the Owner.

11.04 Field Orders

SC-11.04 Delete Paragraph 11.04.B in its entirety and replace with the following:

- 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 and receive Council approval before work is done.

11.07 *Change of Contract Price*

SC-11.07 Delete Paragraphs 11.07.C.2 in its entirety and replace with the following:

2. Not used.

11.08 *Change of Contract Times*

SC-11.08 Add the following paragraphs after Paragraph 11.08.B:

- C. A Change Proposal for an adjustment of the Contract Times (or Milestones), otherwise allowable under the Contract Documents, shall be granted only to the extent the time lost exceeds the float for the delayed activity at the time of the event giving rise to the claim. Float, whether expressly disclosed or implied in any manner, is belongs to the Project.

ARTICLE 12—CLAIMS

12.01 *Claims*

SC-12.01 Delete Paragraph 12.01.C in its entirety and replace with the following:

- C. *Field Negotiation, Review, and Resolution:* The Engineer and the Contractor shall enter into good-faith negotiations to settle a claim as the initial step in resolution of any claim. These good-faith negotiations shall be founded on the principle of full and timely disclosure of each party's position or the other party, including the exchange of pertinent supporting records, analyses, expert reports, and similar documentation, and shall proceed without delay. The party receiving the 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 shall be stated in writing and submitted to the other party, with a copy to Engineer.

SC-12.01 Delete Paragraph 12.01.F in its entirety and replace with the following:

- 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 60 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

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 the Rental Rate Blue Book for Construction Equipment.

- SC-13.01 Delete Paragraph 13.01.B.5.e and replace with:
- e. Not used.
- SC-13.01 Delete Paragraph 13.01.B.5.f and replace with:
- f. Not used.
- SC-13.01 Supplement Paragraph 13.01.C.2 by adding the following subparagraph containing the 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.

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 20 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 20 percent from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

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

14.01 Access to Work

- SC-14.01 Add the following new paragraph immediately after Paragraph 14.01.A.:
- B. Authorized representatives of the Environmental Protection Agency shall have access to the Work wherever it is in preparation or progress. Contactor shall provide proper facilities for such access and inspection.

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

15.01 Progress Payments

SC-15.01 Delete Paragraph 15.01.A in its entirety and replace with the following:

- 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 of Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provision 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. Progress payments on account of Lump Sum Work will be based upon percentage complete during the pay period.

SC-15.01 Delete Paragraph 15.01.B.1 in its entirety and replace with the following:

1. At least twenty-eight (28) days before the date established in the Agreement for each progress payment (but not more 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.

SC-15.01 Add the following new paragraphs immediately following Paragraph 15.01.B.4:

5. *Materials and Equipment:* Payments for stored materials and equipment shall be based only upon the actual cost to Contractor of the materials and equipment and shall not include any overhead or profit to Contractor. Partial payments will not be made for undelivered materials or equipment.
6. *Schedules and Data:* During the progress of the Work, each application for Payment shall be accompanied by Contractor's updated Progress Schedule, schedule of operations or progress report, with such shop drawings, schedules, procurement schedules, values of materials and equipment on hand included in application, certification that work has been constructed to lines and grades as shown on the Drawings, and other data specified or reasonably required by Engineer. Progress Payments will not be made by the Owner until the Engineer has accepted the updated Progress Schedule.
7. *Labor Standards Certificate:* As provided under Labor Standards each Application for Payment shall be accompanied by a certificate that all labor standards, requirements have been fulfilled.

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

1. Twenty-one 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. The Owner reserves the right to pay all or a portion of any payment application through joint checks to Subcontractors and/or Suppliers.

15.03 Substantial Completion

SC-15.03 Add the following new subparagraph to Paragraph 15.03.A:

1. To be considered substantially complete, the Work must be ready to receive stormwater flows and all temporary bulkheads and plugs shall be removed.

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.

15.06 Final Payment

SC-15.06 Delete Paragraph 15.06.A.2.e in its entirety and replace with the following:

- e. Complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work. Consent of the surety, signed by an agent, must be accompanied by a certified copy of such agent's authority to act for the surety.

15.08 Correction Period

SC-15.08 Add the following new paragraph immediately after Paragraph 15.08.F:

- G. Nothing in this Article 15 concerning the correction period shall establish a period of limitation with respect to any other obligation which the Contractor has under the Contract Documents. The establishment of time periods relates only to the specific obligations under the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish Contractor's liability with respect to Contractor's obligations other than to specifically correct the Work.

15.09 Contractors Continuing Obligation

SC-15.09 Add the following new paragraph immediately following Paragraph 15.08:

15.09 Contractors Continuing Obligation

- A. The Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither any progress or final payment by the Owner to the Contractor under the Contract Documents, nor any use or occupancy of the Work of any part thereof by the Owner, nor any act of acceptance by the Owner nor any failure to do so, nor any review and approval or acceptance of a Shop Drawing or sample submission, nor the issuance of a notice of acceptability by the Owner, nor any correlation of defective Work by the Owner will constitute an acceptance of Work not in accordance with the Contract Documents or a release of the Contractor's obligation to perform the work in accordance with the Contract Documents.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

SC-16.01 Delete Paragraph 16.01.A and replace with the following:

- 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 may 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*

SC-16.02 Delete Paragraph 16.02 in its entirety and replace with the following:

- A. Not used.
- B. Not used.
- C. Not used.
- D. Not used.
- E. Not used.
- F. Not used.
- G. Not used.

16.03 *Owner may Terminate for Convenience*

SC-16.03 Delete Paragraph 16.03.A in its entirety and replace with the following:

- A. Upon seven (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, and subject to any setoff, including liquidated damages):
 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; and,
 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Document in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit for such expenses.

SC-16.03 Delete Paragraph 16.03.B in its entirety and replace with the following:

- B. After receipt of a Notice of Termination, and except as directed by the Owner, the Contractor shall immediately proceed with the following obligations, regardless of any delay in determining or adjusting any amounts due under the termination of convenience:
 1. Stop work as specified in the notice;
 2. Place no further subcontracts or orders for materials, services, or facilities;

3. Terminate all subcontracts and orders;
4. With approval or ratification to the extent required by the Owner, settle all outstanding liabilities arising from the termination of subcontracts;
5. As directed by the Owner, transfer title and deliver to the Owner fabricated or unfabricated parts, work in progress, completed work, supplies, and other materials produced or acquired for the work terminated; and the completed or partially completed plans, drawings, information, and other property that, if the contract has been completed, would be required to be furnished to the Owner; and
6. Take any action that may be necessary, or that the Owner may direct, for the protection and preservation of the property related to this contract that is in the possession of the Contractor and in which the Owner has or may acquire an interest.

SC-16.03 Add the following new paragraphs immediately following Paragraph 16.03.B.

- C. Upon the Owner's termination for convenience, the Contractor shall only be entitled to payment, subject to the deduction set forth in Paragraph 16.03D herein, for the following:
 1. All work executed prior to the date of termination and
 2. any "loss and expense" suffered by the Contractor in connection with, or as a consequence of, the termination. For the purposes of this clause "loss and expense" is defined as: (a) the direct and necessary costs of labor, material, and goods actually incurred on the work prior to the date of termination; (b) costs of an overhead nature actually and necessarily incurred on the job site only in so far they would not otherwise have been incurred but for the termination and which were not and should not have been provided for by the Contractor in the course of performing its obligations under the contract; and (c) 10% of the sum of costs set forth in subsections (a) and (b) of this definition, with such 10% to be inclusive and in lieu of any other profits or revenue of any nature or type, whether past, present, or future. All contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be affected and the basis for settlement.
- D. There shall be deducted from such payment as provided in subsection (C) the amount of any payments made to Contractor prior to the date of the termination of this contract. Contractor shall not be entitled to any claim or claim of lien against the Owner for any additional compensation, profits, revenue, payment, costs, or damages in the event of such termination for convenience. Payment as provided in subsection (C) shall be in lieu of any other payments of any type or form to the Contractor, and shall be in lieu of any claim of Contractor to future profits, lost profits, lost revenue, additional expenses incurred, damages, or costs of any kind.
- E. Contractor shall provide an itemized written statement of all work executed prior to the date of termination and all "loss and expense" suffered by the Contractor in connection with, or as a consequence of, the termination no later than 60 days after the date of termination. The written statement shall contain all written documentation supporting the payment request, to include, but not be limited to, invoices, receipts, work schedules, bills of sale, etc. The Owner reserves the right to ask for and review additional documentation to verify the Contractor's payment request. If the Contractor does not submit the written statement within the aforesaid 60 days without good cause for delay, the Contractor waives its right to payment.

- F. The Contractor shall provide written notice to all subcontractors prior to hiring of this termination for convenience right and require all subcontractors to hold the Owner harmless from any claims for damages of the subcontractor in the event the Owner executes its right to terminate this contract for convenience.
- G. This Contract may be terminated for convenience in accordance with 2 CFR Part 200.

16.04 Contractor May Stop Work or Terminate

SC-16.04 Delete Paragraph 16.04 in its entirety and replace with the following:

- A. Not used.
- B. Not used.

16.05 Termination of the Contract by Either Party

SC-16.05 Add the following new paragraphs immediately after Paragraph 16.04.

- A. If one party should breach or fail to perform any provision of the Contract, then the other party may give written notice of such default (Notice of Default) to the breaching party. If the breaching party should fail to cure such default within thirty (30) days of notice thereof, the non-breaching party shall have the right to terminate this Contract by a second written notice (Notice of Termination) to the breaching party. If a Notice of Termination is sent to the breaching party, this Contract shall automatically terminate on the effective date of such notice. Termination shall not relieve the breaching party of its obligation to pay all amounts due to the non-breaching party as of the effective date of termination and shall not impair any accrued rights, including the right to pursue all available legal remedies for damages, of the non-breaching party.
- B. Termination of the Contract by either party, whether for cause, for convenience or for some other reason, shall not relieve either party of their contractual obligations, including, but not limited to, warranties, indemnification, insurance, rights and remedies, correction of work, dispute resolution, and performance and payment bonds.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

17.01 Methods and Procedures

SC-17.01 Delete Paragraph 17.01.B.3 in its entirety and insert the following in its place:

- 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 in a Court of Common Pleas for Colleton County, South Carolina, regardless of the amount in controversy.

17.02 Attorneys' Fees

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

- A. For any matter subject to final resolution under this Article, both parties agree that the non-prevailing party shall reimburse the prevailing party for actual costs and reasonable attorney's fees incurred by the prevailing party in enforcing its rights against the non-prevailing party.

ARTICLE 18—MISCELLANEOUS

18.06 Survival of Obligations

SC-18.06 Add the following new paragraph immediately following Paragraph 18.06.A:

- B. Contractor shall obtain from all suppliers and manufacturers any and all warranties and guarantees of such suppliers and manufacturers, whether or not specifically required by the Specifications, and shall assign such warranties and guarantees to Owner. With respect thereto, Contractor shall render reasonable assistance to Owner when requested, in order to enable Owner to enforce such warranties and guarantees. The assignment of any warranties or guarantees shall not affect the correction period or any other provision of these Contract Documents.

18.11 Waiver and Limitation on Damages

SC-18.11 Add the following new paragraph immediately following Paragraph 18.10:

- A. Contractor agrees to waive any claim for incidental damages and consequential damages, including but not limited to, lost profits, lost revenue, and lost business opportunities.

ARTICLE 19—JURISDICTION OF GOVERNING AUTHORITIES

SC-19 Add the following new Article 19 immediately after Article 18 of the General Conditions:

19.01 Jurisdiction of Governing Authorities

- B. Excavation, grading, fill, storm drainage, paving and any other construction or installations in rights-of-way of streets, highways, public carrier lines, utility lines (either aerial, surface, or sub-surface), etc., shall be done in accordance with requirements of the authorities having jurisdiction and of applicable requirements of these specifications.

ARTICLE 20—NONRESIDENT TAXPAYER REGISTRATION AFFIDAVIT INCOME TAX WITHHOLDING AND NONRESIDENT WITHHOLDING BOND

SC-20 Add the following new Article 20 immediately after Article 19 of the General Conditions:

20.01 NonResident Taxpayer Registration Affidavit Income Tax Withholding and NonResident Withholding Bond

- A. Any Contractor, whose office address and / or office operations are located outside the State of South Carolina and is registered with either the South Carolina Secretary of State, or the South Carolina Department of Revenue, must submit State of South Carolina Department of Revenue Form I-312, Nonresident Taxpayer Registration Affidavit Income Tax Withholding.
- B. Any Contractor whose office address and / or office operations are not registered as stated above and / or has not provided Form I-312 as required above shall furnish a Nonresident Withholding Bond, from an acceptable Surety Company, in the amount of two percent (2%) of the Contractor's price as security for compliance with all requirements and applicable provisions of the South Carolina Code of Laws Section 12-8-550.

- C. The Bond shall be dated the same as the Contract and must be accompanied by a current copy of the Power of Attorney for the Attorney-in-Fact representing a Surety Company licensed to do business in the State of South Carolina. The Bond must be executed with the Contract Documents and a copy of the Bond must be delivered to the Owner within (10) days after the day of the official notice of award and transmittal of Contracts for execution. The Contractor is responsible for submitting the original copy of the Bond to the South Carolina Tax Commission.
- D. Withholding required under Section 12-8-550 may be waived by the South Carolina Department of Revenue if the nonresident Contractor guarantees compliance with the provisions of the South Carolina Code of Laws Title 12, Chapter 06 and the requirements of a withholding agent under this chapter,
- E. Owner must receive verification from the South Carolina Tax Commission if this deduction is to be waived.

ARTICLE 21—OWNER’S ATTORNEY FEES

SC-21 Add the following new Article 21 immediately after Article 20 of the General Conditions:

21.01 Owner’s Attorney Fees

- A. In the event that Contractor violates any of the terms or provisions of the Contract Documents, Contractor shall pay all of Owner’s attorney fees, costs and expenses, to include fees of architects, engineers and other professional consultants in connection with Owner’s enforcement and/or defense of the terms of this Contract.

ARTICLE 22—BRIBES

SC-22 Add the following new Article 22 immediately following Article 21 of the General Conditions:

22.01 Bribes

- A. A bribe or attempt to bribe any employee or officer of the Owner by the Contractor shall be considered as execution of the contract in bad faith and shall thus empower the Owner to complete the Work and deduct the entire cost thereof from any monies due to become due the Contractor under the Contract.

ARTICLE 23—ABUSE, USE, SALE OR POSSESSION OF DRUGS OR INTOXICANTS

SC-23 Add the following new Article 23 immediately following Article 22 of the General Conditions:

23.01 Abuse, Use, Sale or Possession of Drugs or Intoxicants

- A. The use, possession, sale or distribution of drugs or intoxicants by the Contractor, a subcontractor, or any of their employees while on Owner premises or while actively representing or performing Work for the Owner is prohibited. It shall be the responsibility of the Contractor to prevent such activities and to remove any employee or subcontractor employee whose ability to perform appears to be affected by the use of drugs or intoxicants. Failure of the Contractor to comply with this provision may result in Termination of the Contract.

ARTICLE 24—SEXUAL HARRASSMENT

SC-24 Add the following new Article 24 immediately following Article 23 of the General Conditions:

24.01 Sexual Harassment

- A. Sexual harassment of Owner employees by the Contractor, a subcontractor, or any of their employees while on Owner premises or while actively representing or performing Work for the Owner is prohibited. It shall be the responsibility of the Contractor to prevent any such acts and to remove any employee who conducts such acts. Failure of the Contractor to comply with this provision may result in Termination of the Contract. Unwelcome sexual advances, request for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment. Basic criteria for determining unlawful behavior includes conduct that has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment.

ARTICLE 25—NONDISCRIMINATION POLICY

SC-25 Add the following new Article 25 immediately following Article 24 of the General Conditions:

25.01 Nondiscrimination Policy

- A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause. The Contractor shall include a similar nondiscrimination clause in all subcontracts.
- B. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
- C. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section, Current as of 1-9-17 3 and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
- D. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
- E. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

- F. In the event of the Contractor's noncompliance with the nondiscrimination clauses of the Contract Documents or with any of the said rules, regulations, or orders, the Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
- G. In every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance, provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States."

ARTICLE 26—SUBCONTRACTING

SC-26 Add the following new Article 26 immediately following Article 25 of the General Conditions:

26.01 Subcontracting

- A. The services of specialty Subcontractors may be utilized on those parts of the Work which, under normal contracting practices, are performed by specialty Subcontractors within the parameters set forth herein and in the Instructions to Bidders.
 - 1. Before entering into any subcontracts, the Contractor shall submit a written statement to the Engineer giving name and address of the proposed Subcontractor, manufacturer or supplier, the work and material that such is to perform and furnish, and shall further certify that the proposed Subcontractor, manufacturer or supplier has the necessary facilities, skill, integrity, past experience and financial resources to perform the portion of the Work stated in accordance with requirements of the Contract.
 - 2. No substitution for any Subcontractor, manufacturer, or supplier, person or entity previously selected by the Contractor shall be made without written notification to the Engineer.
- B. The Contractor shall not award work to Subcontractors in excess of fifty percent (50%) of the Contract Price.
- C. The Contractor shall report the use of Subcontractors, manufacturers, and suppliers during the course of the Contract as follows:
 - 1. The Contractor shall submit along with the request for final payment a list of all Subcontractors, manufacturers, and suppliers used, including the work performed and the dollar amount and percent of the Work performed. The Engineer may withhold final payment until this list is submitted.

- D. The Contractor shall be fully responsible to the Owner for the acts and omissions of his Subcontractors, manufacturers, suppliers, and of persons either directly or indirectly employed by them, as he is for the acts and omissions for persons directly employed by him. The Contractor shall be fully responsible for the coordination of the work of the trades, Subcontractors, manufacturers, suppliers, and their officers, agents, and employees.
- E. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bond Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the work of Subcontractors and to give the Contractor the same power as regards terminating any subcontract that the Owner may exercise over the Contractor under any provision of the Contract Documents.
- F. Nothing contained in the Contract Documents shall create any contractual arrangement between any Subcontractor and the Owner.

ARTICLE 27—CONTRACT AND SAFETY STANDARDS ACT

SC-27 Add the following new Article immediately following Article 26 of the General Conditions:

27.01 Contract and Safety Standards Act

- A. The Contractor or subcontractor contracted for any part of the Contract which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- B. In the event of any violation of the clause set forth in Paragraph 26.01A, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, the Contractor and any subcontractor shall be liable to the United States (in the case of work Current as of 1-9-17 6 done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in Paragraph 26.01A, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in Paragraph 26.01A.
- C. The Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or any subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in Paragraph 26.01B.
- D. The Contractor or any subcontractor shall insert in any subcontracts the clauses set forth in Paragraph 26.01A through 26.01C of this section and also a clause requiring the

subcontractors to include these clauses in any lower tier subcontracts. The Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in Paragraph 26.01A through 26.01C of this section.

ARTICLE 28—CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

SC-28 Add the following new Article immediately following Article 27 of the General Conditions:

28.01 *Clean Air Act and Federal Water Pollution Control Act*

A. *Clean Air Act*

1. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §7401 et seq.
2. The Contractor agrees to report each violation to the Owner and understands and agrees that the Owner will, in turn, report each violation to the State of South Carolina and the Regional Office of the Environmental Protection Agency.
3. The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part.

B. *Federal Water Pollution Control Act*

1. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
2. The Contractor agrees to report each violation to the Owner and understands and agrees that the Owner will, in turn, report each violation to the State of South Carolina and the Regional Office of the Environmental Protection Agency.
3. The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part.

ARTICLE 29—DEBARMENT AND SUSPENSION

SC-29 Add the following new Article immediately following Article 28 of the General Conditions:

29.01 *Debarment and Suspension*

- A. This Contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the Contractor is required to verify that none of the Contractor, its principals (defined at 2 C.F.R. §180.995), or its affiliates (defined at 2 C.F.R. §180.905) are excluded (defined at 2 C.F.R. §180.940) or disqualified (defined at 2 C.F.R. §180.935).
- B. The Contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.
- C. This certification is a material representation of fact relied upon by the Owner. If it is later determined that the Contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the State of South Carolina, the

Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

- D. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any Contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

ARTICLE 30—BYRD ANTI-LOBBYING CLAUSE

SC-30 Add the following new Article immediately following Article 29 of the General Conditions:

30.01 Byrd and Anti-Lobbying Clause

- A. Contractor or any subcontractors who apply or bid for an award of \$100,000 or more shall file the required certification. Each tier certifies to the tier above 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 any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient.

ARTICLE 31—PROCUREMENT OF RECOVERED MATERIALS

SC-31 Add the following new Article immediately following Article 30 of the General Conditions:

31.01 Procurement of Recovered Materials

- B. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA designated items unless the product cannot be acquired:
 - 1. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - 2. Meeting contract performance requirements; or
 - 3. At a reasonable price.
- C. Information regarding this requirement, along with the list of EPA designate items, is available at EPA's Comprehensive Procurement Guidelines web site, e, <https://www.epa.gov/smm/comprehensiveprocurement-guideline-cpg-program>.

ARTICLE 32—NO OBLIGATION BY FEDERAL GOVERNMENT

SC-32 Add the following new Article immediately following Article 31 of the General Conditions:

32.01 No Obligation by Federal Government

- A. The Federal Government is not a party to this Contract and is not subject to any obligations or liabilities to the non-Federal entity, Contractor, or any other party pertaining to any matter resulting from the Contract.

ARTICLE 33—ARTICLE 26-PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS OR RELATED ACTS

SC-33 Add the following new Article immediately following Article 32 of the General Conditions:

33.01 Program Fraud and False or Fraudulent Statements or Related Acts

- A. The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to these Contract Documents.

ARTICLE 34—ARTICLE 27-COMPLIANCE WITH FEDERAL LAW, REGULATIONS AND EXECUTIVE ORDERS

SC-34 Add the following new Article immediately following Article 33 of the General Conditions:

34.01 Compliance with Federal Law, Regulations and Executive Orders

- A. This is an acknowledgement that ARPA financial assistance will be used to fund the contract only. The Contractor will comply will all applicable state and federal laws, regulations, executive orders, policies, procedures, and directives.

ARTICLE 35—ARTICLE 28-ACCESS TO RECORDS

SC-35 Add the following new Article immediately following Article 33 of the General Conditions:

35.01 Access to Records

- B. The Contractor agrees to provide the Owner, State of South Carolina, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.
- C. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- D. The Contractor agrees to provide the Owner of their authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

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

Owner: Town of Edisto Beach, South Carolina Owner's Project No.:
Engineer: Davis & Floyd, Inc. Engineer's Project No.: 031893.01
Contractor: Contractor's Project No.:
Project: Arc/Billow Street Drainage Improvements
Contract Name:
Date Issued: Effective Date of Work Change Directive:

Contractor is directed to proceed promptly with the following change(s):

Description:

[Description of the change to the Work]

Attachments:

[List documents related to the change to the Work]

Purpose for the Work Change Directive:

[Describe the purpose for the change to the Work]

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

Notes to User—Check one or both of the following

Non-agreement on pricing of proposed change. Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: \$ _____ **[increase] [decrease] [not yet estimated].**

Contract Time: _____ days **[increase] [decrease] [not yet estimated].**

Basis of estimated change in Contract Price:

Lump Sum Unit Price Cost of the Work Other

	Recommended by Engineer	Authorized by Owner
By:	Ryne C. Phillips	Iris Hill
Title:	Associate	Town Administrator
Date:	_____	_____

CHANGE ORDER NO.: [Number of Change Order]

Owner: Town of Edisto Beach, South Carolina Owner's Project No.:
 Engineer: David & Floyd, Inc. Engineer's Project No.: 031893.01
 Contractor: Contractor's Project No.:
 Project: Arc/Billow Street Drainage Improvements
 Contract Name:
 Date Issued: Effective Date of Change Order:

The Contract is modified as follows upon execution of this Change Order:

Description:

[Description of the change]

Attachments:

[List documents related to the change]

Change in Contract Price	Change in Contract Times [State Contract Times as either a specific date or a number of days]
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. [Number of previous Change Order] : \$ _____	[Increase] [Decrease] from previously approved Change Orders No.1 to No. [Number of previous Change Order] : Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] this Change Order: \$ _____	[Increase] [Decrease] this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

Recommended by Engineer (if required)

By: Ryne C. Phillips

Title: Associate

Date: _____

Authorized by Owner

By: _____

Title: _____

Date: _____

Authorized by Owner

Iris Hill

Town Administrator

Approved by Funding Agency (if applicable)

FIELD ORDER NO.: [Number of Field Order]

Owner: Town of Edisto Beach, South Carolina Owner's Project No.:
Engineer: Davis & Floyd, Inc. Engineer's Project No.: 031893.01
Contractor: Contractor's Project No.:
Project: Arc/Billow Street Drainage Improvements
Contract Name:
Date Issued: Effective Date of Field Order:

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s):

Drawing(s) / Details (s):

Description:

[Description of the change to the Work]

Attachments:

[List documents supporting change]

Issued by Engineer

By: Ryne C. Phillips

Title: Associate

Date: _____

1 OTHER CONSTRUCTION CONTRACTS

- 1.1 See Article 8 of the General and Supplementary Conditions of the Construction Contract.

2 TEMPORARY ELECTRICAL SERVICE

- 2.1 The establishment of temporary electrical service required to perform the Work shall be the responsibility of the Contractor. The Contractor shall determine their requirements based on the equipment used. Dominion Energy South Carolina typically provides overhead 23.9 kV, 3-phase, primary power. The Contractor shall coordinate with Dominion Energy South Carolina to establish temporary electrical service as required by the Contractor to complete the work.

3 REQUIRED ENGINEER HOLD POINTS AND WITNESS

- 3.1 Hold points require Engineer inspection and verification of minimum design standards prior to commencement of subsequent activities. Witness points do not require Engineer inspection or verification, however, Contractor notification that the work is to a point sufficient for inspection is mandatory. Contractor shall notify Engineer of the following required hold points and witness points a minimum of 24 hours in advance of commencing the work.
- 3.1.1 Hold Point: Engineer required inspection and verification of rebar prior to placement of concrete formwork.
- 3.1.2 Witness Point: Engineer optional inspection of concrete formwork prior to placement of concrete.

4 SALVAGE OF MATERIALS AND EQUIPMENT

- 4.1 Existing materials and equipment removed and not reused as a part of the Work shall become Contractor's property.
- 4.2 Contractor shall carefully remove, in a manner to prevent damage, all materials and equipment specified or indicated to be salvaged and reused or to remain the property of Owner. Contractor shall store and protect salvaged items specified or indicated to be reused in the Work.
- 4.3 Salvaged items not to be reused in the Work, but to remain Owner's property shall be delivered by Contractor in good condition to Owner.
- 4.4 Any items specified or indicated to be salvaged which are damaged in removal, storage, or handling through carelessness or improper procedures shall be replaced by Contractor in kind or with new items.
- 4.5 Contractor may furnish and install new items instead of those specified or indicated to be salvaged and reused, in which case such removed items will become Contractor's property.
- 4.6 Existing materials and equipment removed by Contractor shall not be reused in the Work, except where so specified or indicated.

5 LAND FOR CONSTRUCTION PURPOSES

5.1 Contractor will be permitted to use available land belonging to Owner, on or near the Site, for construction purposes and for storage of materials and equipment in accordance with the General and Supplemental Conditions.

5.1.1 Owner Identified Storage Areas:

5.1.1.1 Tract M-3 (see sheet C610)

TMS 354-12-00-365, Edisto Beach, SC 29438

Contact: Patrick Zemp (843) 869-2505

6 OPERATION OF EXISTING FACILITIES

6.1 The existing drainage, water, and sewer system must be kept in continuous operation throughout the construction period. No interruption will be permitted which adversely affects the degree of service provided. Provided permission is obtained from Owner in advance, portions of the existing facilities may be taken out of service for short periods corresponding with periods of minimum service demands for the inspection, construction, and demolition activities.

6.2 Contractor shall provide temporary facilities and make temporary modifications as necessary to keep the existing facilities in operation during the construction period.

6.3 Plan of Action

6.3.1 The Contractor shall prepare a written POA prior to affecting the operation of any existing facility. This includes, but is not limited to, electrical or process interruptions, pipeline tie-ins, flow diversions and bypass pumping, operational testing of equipment, instrumentation and control modifications, traffic interruptions, diving, contingency plan for pump failure, coordination with Owner Personnel, etc. Unless otherwise noted or specified, POAs shall be submitted 21 days in advance of the scheduled work for review and acceptance by the Engineer and shall be submitted in accordance with the Submittals section. Each POA shall provide a detailed work plan, pertinent sketches or drawings outlining the work plan, the schedule and sequence, materials required, and personnel that will be utilized.

7 NOTICES TO OWNERS AND AUTHORITIES

7.1 Contractor shall, as provided in the General Conditions, notify owners of adjacent property and utilities when prosecution of the Work may affect them.

7.2 When it is necessary to temporarily deny access to property, Contractor shall give notices sufficiently in advance to enable the affected persons to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.

7.3 Utilities and other concerned agencies shall be notified at least 48 hours prior to cutting or closing streets or other traffic areas or excavating near underground utilities or pole lines.

8 LINES AND GRADES

8.1 All Work shall be done to the lines, grades, and elevations indicated on the Drawings.

- 8.2 Basic horizontal and vertical control points will be established or designated by Engineer to be used as datums for the Work. All additional survey, layout, and measurement work shall be performed by Contractor as a part of the Work.
- 8.3 Contractor shall provide an experienced instrument person, competent assistants, and such instruments, tools, stakes, and other materials required to complete the survey, layout, and measurement work. In addition, Contractor shall furnish, without charge, competent persons and such tools, stakes, and other materials as Engineer may require in establishing or designating control points, in establishing construction easement boundaries, or in checking survey, layout, and measurement work performed by Contractor.
- 8.4 Contractor shall keep Engineer informed, a reasonable time in advance, of the times and places at which it wishes to do Work, so that horizontal and vertical control points may be established, and any checking deemed necessary by Engineer may be done with minimum inconvenience to Engineer and minimum delay to Contractor.
- 8.5 Contractor shall remove and reconstruct work which is improperly located.

9 CONNECTIONS TO EXISTING FACILITIES

- 9.1 Unless otherwise specified or indicated, Contractor shall make all necessary connections to existing facilities, including structures, drain lines, and utilities such as water, sewer, gas, telephone, and electric. In each case, Contractor shall receive permission from Owner or the owning utility prior to undertaking connections. Contractor shall protect facilities against deleterious substances and damage.
- 9.2 Connections to existing facilities which are in service shall be thoroughly planned in advance, and all required equipment, materials, and labor shall be on hand at the time of undertaking the connections. Work shall proceed continuously (around the clock) if necessary to complete connections in the minimum time. Operation of valves or other appurtenances on existing utilities, when required, shall be by or under the direct supervision of the owning utility.

10 UNFAVORABLE CONSTRUCTION CONDITIONS

- 10.1 During unfavorable weather, wet ground, or other unsuitable construction conditions, Contractor shall confine its operations to work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof unless special means or precautions are taken by Contractor to perform the Work in a proper and satisfactory manner.

11 CUTTING AND PATCHING

- 11.1 As provided in General Conditions, Contractor shall perform all cutting and patching required for the Work and as may be necessary in connection with uncovering Work for inspection or for the correction of defective Work.
- 11.2 Contractor shall perform all cutting and patching required for and in connection with the Work, including but not limited to the following:
- 11.2.1 Removal of improperly timed Work.
 - 11.2.2 Removal of samples of installed materials for testing.
 - 11.2.3 Alteration of existing facilities.

11.2.4 Installation of new Work in existing facilities.

11.3 Contractor shall provide all shoring, bracing, supports, and protective devices necessary to safeguard all Work and existing facilities during cutting and patching operations. Contractor shall not undertake any cutting or demolition which may affect the structural stability of the Work or existing facilities without Engineer's concurrence.

11.4 Materials shall be cut and removed to the extent indicated on the Drawings or as required to complete the Work. Materials shall be removed in a careful manner, with no damage to adjacent facilities or materials. Materials which are not salvable shall be removed from the site by Contractor.

11.5 All Work and existing facilities affected by cutting operations shall be restored with new materials, or with salvaged materials acceptable to Engineer, to obtain a finished installation with the strength, appearance, and functional capacity required. If necessary, entire surfaces shall be patched and refinished.

12 CLEANING UP

12.1 Contractor shall keep the site and adjacent roadways clean per section 02995 – Cleaning Up and applicable permit requirements.

13 APPLICABLE CODES

13.1 References in the Contract Documents to codes mean the International Building Code (IBC 2018). Other standard codes which apply to the Work are designated in the Specifications.

14 PRECONSTRUCTION CONFERENCE

14.1 Prior to the commencement of Work at the Site, a mandatory preconstruction conference will be held at a mutually agreed time and place. The conference shall be attended by:

14.1.1 Contractor and its superintendent(s), representatives of Contractor, Subcontractor(s), Inspector(s), and all applicable utility companies.

14.1.2 Principal Subcontractors.

14.1.3 Engineer and its Resident Project Representative.

14.1.4 Representatives of Owner.

14.1.5 Government representatives as appropriate.

14.1.6 Others as requested by Contractor, Owner, or Engineer.

14.2 Unless previously submitted to Engineer, Contractor shall bring to the conference a preliminary schedule for each of the following:

14.2.1 Progress Schedule.

14.2.2 Schedule of Values for progress payment purposes.

14.2.3 Schedule of submittals.

- 14.3 The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The agenda will include:
- 14.3.1 Contractor's preliminary schedules.
 - 14.3.2 Transmittal, review, and distribution of Contractor's submittals.
 - 14.3.3 Processing Applications for Payment.
 - 14.3.4 Maintaining record documents.
 - 14.3.5 Critical Work sequencing.
 - 14.3.6 Field decisions and Change Orders.
 - 14.3.7 Use of premises, office and storage areas, security, housekeeping, and Owner's needs.
 - 14.3.8 Major equipment deliveries and priorities.
 - 14.3.9 Contractor's assignments for safety and first aid.
- 14.4 Engineer will preside at the conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.
- 14.5 Contractor is responsible for ensuring attendance of representatives of Contractor, Subcontractor(s), Inspector(s), and all applicable utility company(ies) to mandatory preconstruction conferences as included in the Supplementary Conditions.

15 PROGRESS MEETINGS

- 15.1 Engineer shall schedule and hold regular progress meetings at least monthly and at other times as requested by Contractor or Owner or required by progress of the Work. Contractor, Engineer, and all Subcontractors active on the Site shall be represented at each meeting. Contractor may at its discretion request attendance by representatives of its Suppliers, manufacturers, and other Subcontractors.
- 15.2 Engineer shall preside at the meetings. Meeting minutes shall be prepared and distributed by Engineer. The purpose of the meetings will be to review the progress of the Work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop.

16 SITE ADMINISTRATION

- 16.1 Contractor shall be responsible for all areas of the Site used by it and by all Subcontractors in the performance of the Work. Contractor shall exert full control over the actions of all employees and other persons with respect to the use and preservation of property and existing facilities, except such controls as may be specifically reserved to Owner or others. Contractor shall have the right to exclude from the Site all persons who have no purpose related to the Work or its inspection and may require all persons on the Site (except Owner's employees) to observe the same regulations as Contractor requires of its employees.

(End of Section 01015)

Section 01018

LIST OF DRAWING SHEETS

Part 1 GENERAL

1.1 SCOPE

1.1.1 This section lists the Drawings which cover the Work.

1.2 DRAWING LIST

1.2.1 Drawing Page Numbers ,Sheet Numbers, and Titles are as follows:

Page Number	Sheet Number	Title
1	C000	Cover
2	C001	General Notes
3	C010	Existing Conditions
4	C100	Demolition Plan
5	C310	Drainage Plan and Profile
6	C510	Erosion Control Plan
7	C610	Staging Plan
8	C820	Construction Details
9	C821	Erosion and Sediment Control Details
10	ALT-001	Alternate Bid Items

1.2.2 The Drawings listed above are supplemented by drawings bound in the Project Manual and listed in the Table of Contents.

Part 2 Products

2.1 Not Used.

Part 3 Execution

3.1 Not Used.

(End of Section 01018)

PART 1 GENERAL

1.1. SCOPE

- 1.1.1. This section identifies typical abbreviations and acronyms used in preparing the Contract Documents.

1.2. LIST OF ABBREVIATIONS AND ACRONYMS

- 1.2.1. Abbreviations and acronyms for standards and organizations used in the Contract Documents are defined as follows:

Acronym/Abbreviation	Meaning/Definition
AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ABMA	American Bearing Manufacturers Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
ADC	Alternate Daily Cover
AEIC	Association of Edison Illuminating Companies
AFBMA	Antifriction Bearing Manufacturers Association now recognized as the ABMA
AFPA	American Forest & Paper Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AGW	Above Ground Water
AHA	American Hardboard Association
AHRI	Air-Conditioning, Heating and Refrigeration Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
AMCA	Air Movement and Control Association International
ANSI	American National Standards Institute
APA	Engineered Wood Association (formerly American Plywood Association)
API	American Petroleum Institute
AREMA	American Railway Engineers and Maintenance-of-Way Association
ASAHC	American Society of Architectural Hardware Consultants
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineers
ASTM	ASTM International
AWG	American Wire Gauge
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association

Acronym/Abbreviation	Meaning/Definition
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Institute of America (formerly SCPI)
BGS	Below Ground Surface
C&D	Construction and Demolition
CDA	Copper Development Association
CFR	Code of Federal Regulations
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standard (U.S. Department of Commerce)
DHI	Door and Hardware Institute
DIPRA	Ductile Iron Pipe Research Association
EI	Edison Electric Institute
EJCDC	Engineers' Joint Contract Documents Committee
EPA	Environmental Protection Agency
FCC	Federal Communications Commission
FCI	Fluid Controls Institute
Fed Spec	Federal Specification
FGMA	Flat Glass Marketing Association
FHWA	Federal Highway Administration
FIA	Factory Insurance Association
FM	Factory Mutual
FSA	Fluid Sealing Association
HEI	Heat Exchange Institute
HI	Hydraulic Institute
HL	Headworks Limits
HMI	Hoist Manufacturers Institute
HPMA	Hardwood Plywood Manufacturers Association
HTI	Hand Tools Institute
I-B-R	Institute of Boiler and Radiator Manufacturers
IEEE	Institute of Electrical and Electronics Engineers
IBC	International Building Code
IES	Illuminating Engineering Society
IFI	Industrial Fasteners Institute
IPCEA	Insulated Power Cable Engineers Association
IRI	Industrial Risk Insurers
ISA	International Society of Automation
LEED	Leadership in Energy and Environmental Design
MCL	Maximum Contaminant Level
MDP	Method-Defined Parameter
MHI	Materials Handling Institute
MIL	Military Specification
MMA	Monorail Manufacturers Association
MSS	Manufacturers Standardization Society of Valve and Fitting Industry

Acronym/Abbreviation	Meaning/Definition
MS4	Municipal Separate Storm Sewer System
NAAMM	National Association of Architectural Metals Manufacturers
NACE	NACE (National Association of Corrosion Engineers) International
NBBPVI	National Board of Boiler and Pressure Vessel Inspectors
NBS	See NIST
NCSPA	National Corrugated Steel Pipe Association
NEBB	National Environmental Balancing Bureau
NEC	National Electrical Code
NECA	National Electrical Contractors Association
NEII	National Elevator Industry, Inc.
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology (formerly NBS)
NLA	National Lime Association
NPC	National Plumbing Code
NPDES	National Pollutant Discharge Elimination System
NPT	National Pipe Thread
NRMCA	National Ready Mixed Concrete Association
NSC	National Safety Council
NSF	NSF International (formerly National Sanitation Foundation)
NTMA	National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
PCI	Precast/Prestressed Concrete Institute
POTW	Privately Owned Treatment Works
PRG	Preliminary Remediation Goals
PS	Product Standard
RCRA	Resource Conservation and Recovery Act
RIS	Redwood Inspection Service
RSL	US EPA Regional Screening Level
SAE	SAE International
SCDHEC	South Carolina Department of Health and Environmental Control
SDI	Steel Door Institute
SFPA	Southern Forest Products Association
SI	Système International des Unités (International System of Units)
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPFA	Steel Plate Fabricators Association
SPI	Society of the Plastics Industry
SPTA	Southern Pressure Treaters Association
SSFI	Scaffolding, Shoring & Forming Institute, Inc
SSPC	SSPC: The Society for Protective Coatings
SVOC	Semi-Volatile Organic Compound(s)

Acronym/Abbreviation	Meaning/Definition
TABB	Testing, Adjusting, and Balancing Bureau
TCLIP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
UL	Underwriters' Laboratories
US	United States
USACE	US Army Corps of Engineers
USBR	US Bureau of Reclamation
USGBC	US Green Building Council
VOC	Volatile Organic Compound(s)
WEF	Water Environment Federation

PART 2 PRODUCTS

2.1. Not Used.

PART 3 EXECUTION

3.1. Not Used.

(End of Section 01070)

PART 1 GENERAL

1.1. SCOPE

- 1.1.1. This section establishes the basis for Measurement and Payment for the Work to be performed under the respective Bid Items listed in the BID, Section 00410 (C-410).

PART 2 PRODUCTS

2.1. Not Used.

PART 3 EXECUTION

3.1. GENERAL

- 3.1.1. The Bid Price shall constitute full compensation for performing each item of work including providing the products, all activities and incidentals required for the installation and completion of each item in accordance with the Contract Drawings, Specifications, and requirements. These terms as they relate to City's payment obligations, are subject to Article 15 of the General Conditions. In event of any conflict, Article 15 controls.

- 3.1.2. In addition to those items indicated and identified as a separate Bid Item to be measured and paid for as an individual and independent item of work, the Bid Price for each item shall be full compensation for the following activities: Furnishing and installing all materials and equipment, including excavation, hauling, spoiling of native soils onsite, disposal of surplus excavation or material, backfill, compaction, proof-rolling, material testing, landfill tipping fees, dust control, all necessary shoring, bracing, supports and protective devices, bracing of existing or new utilities and storm pipes in trench excavations, dewatering and associated measurement, soils and media management, handling water flows, protection of or removing and replacing base and pavement, property corners, signs, fences, landscaping, lawns, trees, shrubs, protection of above and below ground utility lines and appurtenances, temporary utility services (water, electrical, sewer, etc.) needed for construction, provisions needed for any hold points and witnessing of work by the Owner or Engineer, complaint response program and complaint coordinator, hospital coordinator, development of health and safety plan(s), underground rescue team and associated drills, project incidentals as defined in the Project Requirements, coordination with utility agencies for utility relocations and other project requirements, governmental agencies, the Owner, and the Owner's consultants, maintenance of drives and streets, site clean-up, and addressing and completing punch list items, and completion of final close-out processes incidental to the work specified in the Contract Documents.

3.2. REJECTED, EXCESS, AND WASTED MATERIAL

- 3.2.1. The following quantities will not be included for payment:

3.2.1.1. Quantities of material wasted or disposed of in a manner not called for under the Contract Documents or as a consequence of the construction method used to perform the work.

3.2.1.2. Rejected loads of material, including material rejected after it has been placed by reasons of the failure of the Contractor to comply with the provisions of the Contract.

- 3.2.1.3. Material not unloaded from the transporting vehicle.
- 3.2.1.4. Material not incorporated into the final Work
- 3.2.1.5. Material remaining on hand after completion of the Work.

3.3. PAYMENT

3.3.1. Unit Price Basis

- 3.3.1.1. Section 00410 (C-410) – Bid Form identifies and indicates units of measurement for unit price items of Work. Payment for such items shall be made by multiplying unit quantities of each item of Work by the unit price bid for the item of work satisfactorily completed, accepted by the Owner, and not otherwise included with work covered under separate bid item.

3.3.2. Lump Sum Basis

- 3.3.2.1. Section 00410 (C-410) – Bid Form identifies and indicates those items of Work which are measured on a lump sum (LS) basis. Unless otherwise indicated, requests for payment for lump sum items shall be prepared by the Contractor and accepted by the Owner upon demonstration of such request being in accordance with an approved and accepted schedule of values providing a well-balanced and detailed apportionment of the lump sum price for the item of work satisfactorily completed, accepted by the Owner, and not otherwise included with work covered under separate bid item

3.3.3. Price Indexes

- 3.3.3.1. The following items will be indexed: Monthly Asphalt Adjustment. The SCDOT June 2021 Index for each shall be used for bidding and as the benchmark for future adjustments.

3.4. QUANTITIES

3.4.1. Estimated Quantities

- 3.4.1.1. All estimated quantities stipulated in the Bid Form or other Contract Documents are approximate and are to be used only (a) as a basis for estimating the probable cost of the Work and (b) for the purpose of comparing the Bids submitted for the Work. The actual amounts of work done, and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished as approved by the Owner. Contractor agrees that it will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts therefor.

3.4.2. Excavation and Trenching

- 3.4.2.1. Except where otherwise specified, the unit or lump sum price bid for each item of Work which involves excavation or trenching shall include all costs for such Work. No separate payment shall be made for excavation or trenching. All trenching shall be unclassified as to materials which may be encountered, and trenches shall be unclassified as to depth. All excavation work required for structures shall be unclassified as to materials which may

be encountered; such excavation work shall be considered to be a subsidiary obligation of Contractor and the cost of such excavation shall be included in the prices bid for the structures.

- 3.4.2.2. All excavation work required for structures, not otherwise paid for as trenching, shall be considered to be a subsidiary obligation of Contractor and the cost of such excavation shall be included in the prices bid for the structures.

3.5. MEASUREMENT AND PAYMENT ITEMS AND DESCRIPTIONS

GENERAL ITEMS

ITEM NO. 1 – MOBILIZATION

C. MOBILIZATION (Maximum 5% of Total Base Bid Items 3-13)

Payment for Mobilization will be made in three partial payments for equal portions of the total lump sum amount stated on the Bid Form. Mobilization shall not exceed 5% of Items 3-13. Payments will be made following demonstration to the Engineer that progress for assembling equipment on site and other preparatory actions have been satisfactorily accomplished. The Lump Sum Bid shall include but not necessarily be limited to the cost associated with paying bond and insurance premiums and licensure for the work, moving all forces, supplies, equipment, and incidentals to the work site regardless of the number of times such moves are made, establishing, furnishing, and maintaining an on-site/near site work office, preparation of the work site, project signage, site photographic and video documentation at each of the project sites, site video camera and monitoring at each of the project sites, construction site utility services / connections, and establishing a field office.

ITEM NO. 2 – GENERAL ITEMS

A. SURVEYING

See SCDOT Standard Specifications for Highway Construction, latest edition, for Measurement and Payment for work performed as Construction Stakes, Lines, and Grades.

B. AS-BUILT DRAWINGS / PROJECT CLOSEOUT

The Lump Sum Bid for the As-built Drawing / Project Closeout shall include the costs associated with preparing and submitting the items required by the Town of Edisto Beach to close out the project. The Contractor shall include the costs associated with video inspection (both at closeout and at the two-year warranty period) of the finished near surface storm pipe system, preparation of as-built drawings by a licensed surveyor as indicated on the drawings.

Payment, for the As-Built Drawings/Project Closeout, will be full compensation for work satisfactorily completed.

C. PROJECT SIGN

The Unit Price Bid for Project Sign(s) shall include the costs of furnishing the materials, labor, and equipment, as well as the costs, including but not limited to, submitting the final sign design to the Owner for approval, fabrication of the sign(s), and furnishing fence posts, and other appurtenant materials necessary for installing the project signs per Specification Section 06090 – Carpentry. The Contractor shall also include the costs associated with maintaining and repairing the sign(s) throughout the Contract times, and removal of the sign(s) at project closeout.

The method of measurement shall be the number of Project Signs installed and accepted.

Payment, at the Unit Price Bid, shall be for full compensation for each Project Sign satisfactorily completed.

INCIDENTAL

ITEM NO. 3- SEDIMENT AND EROSION CONTROL

A. DROP INLET PROTECTION

The accepted quantity of Drop Inlet Protection will be paid for at the Unit Price Bid for inlet protection of the type and size specified. The price and payment shall be full compensation for furnishing and installing and maintaining inlet protection devices throughout the Contract Times. The Contractor shall include the costs associated with removal and disposal of material intercepted in the inlet protection devices, maintenance, inspection, and repair of inlet protection during the Contract Times, removal of inlet protection measures upon authorization; and shall include all materials, equipment, labor, and incidentals necessary to complete the work.

Drop Inlet Protection will be measured as complete units of the size and type specified installed, accepted, maintained, and removed upon authorization.

Payment, at the Unit Price Bid, shall be for full compensation for work satisfactorily completed.

B. SEDIMENT TUBES

The Unit Price Bid for installing sediment tubes indicated on the drawings shall include the costs of furnishing installing, maintaining (during the Contract Times), inspecting, and removing (upon authorization) and disposing of the sediment tubes in the locations specified on and as detailed in the Drawings. The Contractor shall also include the costs associated with removal and offsite disposal of material intercepted by the sediment tubes during the Contract Times.

Measurement of the sediment tubes shall be for each tube installed, accepted, maintained, and removed upon authorization.

Payment, at the Unit Price Bid, shall be for full compensation for each linear foot of sediment tube satisfactorily installed and accepted.

C. HYDROSEEDING

The Unit Price Bid for Hydroseeding/Grassing shall include, but not be limited to, furnishing, and installing all material, labor, equipment, and incidental items required to install Hydroseeding/Grassing and establish a stand of grass as shown on the drawings and as called for in the specifications. The Unit Price Bid shall constitute full compensation for grading, import of topsoil, planting, fertilizing, soil amendments, soil testing, temporary irrigation, jute matting, and all other work incidental to the installation of Hydroseeding/Grassing.

The method of measurement shall be the square yards of hydroseeding installed and accepted.

Payment for Hydroseeding/Grassing will be for each square yard of hydroseeding satisfactorily installed and accepted.

D. SILT FENCING

The accepted quantity of Silt Fencing will be paid for at the Unit Price Bid. The price and payment shall be full compensation for furnishing and installing the silt fencing to including posts, post caps, filter fabric,

wire mesh, maintenance, repair, inspection of the silt fence for the duration of Contract Times, and removal of the Silt Fence upon authorization. The Contractor shall also include removal and offsite disposal of material intercepted by the Silt Fencing, and shall also include all materials, equipment, labor, and incidentals necessary to complete the work.

Silt Fencing will be measured by the linear foot along the bottom of the fence from outside to outside of end posts for each continuous run of fence.

Payment, at the Unit Price Bid, shall be for full compensation for work satisfactorily completed.

E. RIPRAP

The accepted quantity of Riprap will be paid for at the Unit Price Bid. The price and payment shall be full compensation for furnishing and installing riprap and filter fabric. The Contractor shall also include all materials, equipment, labor, and incidentals necessary to complete the work.

Riprap will be measured by the ton.

Payment, at the Unit Price Bid, shall be for full compensation for work satisfactorily completed.

F. CONSTRUCTION ENTRANCE

The Lump Sum bid for Construction Entrance shall be full compensation for and include all labor, equipment, and materials necessary to install, maintain, and remove the Construction Entrance. The Contractor shall also include the costs associated with restoration of the area covered by the Construction Entrance.

ITEM NO. 4 – FENCING

A. TEMPORARY CONSTRUCTION FENCING

The accepted quantity of Temporary Construction Fencing will be paid for at the Unit Price Bid. The price and payment shall be full compensation for furnishing and installing fence including posts, rails, post caps, braces, wire mesh, visual screening, maintenance, repair, and inspection of fence for the duration of the project phase; and shall include all materials, equipment, labor, and incidentals necessary to complete the work.

Temporary Construction Fencing will be measured by the linear foot along the bottom of the fence from outside to outside of end posts for each continuous run of fence.

Payment, at the Unit Price Bid, shall be for full compensation for work satisfactorily completed.

B. 5' ALUMINUM FENCING (REPLACE EXISTING FENCE IN LIKE KIND)

The accepted quantity of 5' Aluminum Fencing will be paid for at the Unit Price Bid. The price and payment shall be full compensation for furnishing and installing fence including posts, concrete, rails, post caps, braces, and panels in the form existing on site. The Contractor shall also include all materials, equipment, labor, and incidentals necessary to complete the work.

5' Aluminum Fencing will be measured by the linear foot along the bottom of the fence from outside to outside of end posts for each continuous run of fence.

Payment, at the Unit Price Bid, shall be for full compensation for work satisfactorily completed.

DRAINAGE SYSTEM

ITEM NO. 5 –CLEANING AND INSPECTION

A. CLEAN AND INSPECT EXISTING STORMWATER PIPELINE (UP TO 36”)

The Unit Price Bid for cleaning and inspection of existing storm piping shall include the costs of all labor, materials, and equipment necessary to clean and inspect the existing stormwater system (pipe and structures) that shall remain in place and be connected to the new drainage system. The Unit Price Bid shall include, but is not limited to, dewatering, cleaning, disposal of material removed from the existing pipeline, CCTV inspection, documentation of pipe, and all other work shown or incidental to the work described in the Contract Documents.

The method of measure shall be by the linear foot as measure along the centerline of the pipe inspected from the point of tie-in to the nearest accessible upstream / downstream structure or the limits specified by the Engineer.

Payment, at the Unit Price Bid, shall be for full compensation for each length of pipe satisfactorily inspected and cleaned.

ITEM NO. 6– PIPING

A. THROUGH B. DRAINAGE PIPE

The Unit Price Bid for installing storm drainage pipes indicated on the drawings shall include the costs of furnishing and installing the storm drain pipelines in the locations specified on the drawings in accordance with Specification Section – 02451 REINFORCED CONCRETE PIPE as well as the costs of saw-cutting and removal of existing asphalt, sidewalk, or other hardscape, trench excavation, disposal of excess excavated material offsite, sheeting, shoring and bracing, bracing for shallower utilities, dewatering, coordination of utility relocations by others, removal and disposal of existing storm drainage lines incidental to the construction of the proposed piping. The Contractor shall also include bedding, filter fabric, filter fabric pipe joint wrap, backfilling, compaction, testing, replacement of existing asphalt prior to final paving, and storm drain line tie-in to existing structures.

Measurement of the storm drainage pipes shall be in linear feet along the centerline of the pipe as measured horizontally from the inside face of the outlet drainage structure to the inside face of the inlet drainage structure. This will reflect the actual length of pipe installed. Storm drain pipes without drainage structure inlets or outlets shall be measured to the end of the pipe.

Payment, at the Unit Price Bid, shall be for full compensation for each linear foot of storm drain piping satisfactorily installed and accepted.

C. FLOWABLE FILL

The Unit Price Bid for flowable fill shall include the furnishing and placing of flowable fill material as specified or directed by the Owner or Engineer for stormwater piping and includes proportioning, mixing, handling, hauling, placing, maintenance, and protection of the flowable fill. The Unit Price Bid shall include, but is not limited to, providing admixture, shoring, steel plates, and all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Contract Plans and Specifications.

The method of measurement shall be the volume in cubic yards (CY) of flowable fill delivered to the job site and incorporated into the work.

Payment, at the Unit Price Bid, shall be for full compensation for each cubic yard (CY) of flowable fill

satisfactorily completed.

ITEM NO. 7- STRUCTURES

A. THROUGH C. STRUCTURES

The Unit Price Bid for stormwater structures shall include the costs of furnishing the materials, labor, and equipment, as well as the costs, including but not limited to, excavation, shoring, dewatering, stone bedding, backfilling, compaction, testing, replacement of existing asphalt prior to final milling and paving, and offsite disposal of any excess material as required for the installation of the structures at the locations specified on the Contract Plans and in accordance with the Contract Specifications. Frames, covers, structure wrapping, pipe boots, domestic water and/or sewer pipe, casing, casing spacers, casing end seals and couplings for conflict structures, tie-in to existing storm drainage lines, setting frames and covers to grade and slope and all other materials necessary to complete the work shall be included in the Unit Price Bid.

The method of measurement shall be the number of structures installed and accepted.

Payment, at the Unit Price bid, shall be for full compensation for each structure satisfactorily completed.

SITE WORK

ITEM NO. 8 – DEMOLITION AND REMOVAL

A. 2" MILL OF EXISTING PAVEMENT

See SCDOT Standard Specifications for Highway Construction, latest edition, for Measurement and Payment.

ITEM NO. 9 – PAVEMENT

A. LIQUID ASPHALT BINDER

See SCDOT Standard Specifications for Highway Construction, Latest Edition for Measurement and Payment.

B. HOT MIX ASPHALT SURFACE COURSE TYPE B

See SCDOT Standard Specifications for Highway Construction, Latest Edition for Measurement and Payment.

WATER DISTRIBUTION

ITEM NO. 10 – CONTRACTOR PROVIDED WATER RELOCATIONS

A. 12" RAW WATER MAIN OFFSET

The Unit Price Bid for 12" RAW Water Main Offset shall include the costs of furnishing the materials, labor, and equipment, as well as the costs, including but not limited to, saw-cutting and removal of existing asphalt, concrete, or other hardscape, excavation, shoring, dewatering, stone bedding, backfilling, compaction, testing, replacement of existing asphalt prior to final milling and paving, and offsite disposal of any excess material as required to cut and replace an existing water main at the locations specified on the Contract Plans and in accordance with the Contract Specifications. Domestic water pipe, restrained joint fittings, and all other materials necessary to complete the work shall be included in the Unit Price Bid.

The method of measurement shall be linear feet of new water main piping as measured from the upstream tie-in point to the downstream tie-in point, satisfactorily installed and accepted.

Payment, at the Unit Price Bid, shall be for full compensation for each water main satisfactorily offset and accepted.

B. 2" WATER SERVICE LINE OFFSET

The Unit Price Bid for 2" Water Service Line Offset (vertical and horizontal) shall include the costs of furnishing the materials, labor, and equipment, as well as the costs, including but not limited to, saw-cutting and removal of existing asphalt, concrete, or other hardscape, excavation, shoring, dewatering, stone bedding, backfilling, compaction, testing, replacement of existing asphalt prior to final milling and paving, and offsite disposal of any excess material as required to cut and replace an existing water main at the locations specified on the Contract Plans and in accordance with the Contract Specifications. Pipe, fittings, water meters, other appurtenances, and all other materials necessary to complete the work shall be included in the Unit Price Bid.

The method of measurement shall be linear feet of new water service piping as measured from the upstream tie-in point to the downstream tie-in point, satisfactorily installed and accepted.

Payment, at the Unit Price Bid, shall be for full compensation for each water service line satisfactorily offset and accepted.

BID ALTERNATES

ITEM NO. 11 – ALTERNATE BID ITEMS

A. SLOPE STABILIZATION

The Unit Price Bid for Slope Stabilization shall include all costs of furnishing all materials, labor, and equipment to stabilize existing slopes as specified on the Contract Plans.

The method of measurement shall be linear feet of slope stabilization, as measured in the direction of the ditch alignment, satisfactorily installed and accepted.

Payment, at the Unit Price Bid, shall be for full compensation for slope stabilization satisfactorily offset and accepted.

B. JUNCTION BOX W/ GRATE INLET (72" DIAMETER)

See ITEM 7 above.

(End of Section 01025)

Data Sheet			
Paragraph	General Description	Data	Units
2.1	Address where shop drawings are to be sent	<input type="checkbox"/>	Engineer's address in the agreement
		<input type="checkbox"/>	Consulting Engineer's address in the Supplementary Conditions
		<input checked="" type="checkbox"/>	Other
	When "Other" is selected, indicate the alternative	Electronic Submittal	
2.2	Review period in consecutive calendar days required	<input type="checkbox"/>	14 days
		<input type="checkbox"/>	21 days
		<input type="checkbox"/>	28 days
		<input checked="" type="checkbox"/>	Other
	When "Other" is selected, indicate the alternative	14 days	days
2.3	Time required for resubmittal in calendar days.	<input type="checkbox"/>	60 days unless within 30 days
		<input checked="" type="checkbox"/>	30 days unless within 14 days
		<input type="checkbox"/>	Other
	When "Other" is selected, indicate the alternative		

Part 1 GENERAL.

1.1 TERMINOLOGY

- 1.1.1 When the phrase "as required" is stated in this section, it shall mean "as required in the attached Data Sheet".

Part 2 SHOP DRAWINGS AND SAMPLES.

2.1 GENERAL

- 2.1.1 Shop Drawings and other submittals covering all equipment and all fabricated components and building materials which will become a permanent part of the Work under this Contract shall be submitted to Engineer for review, as required.
- 2.1.2 Submittals shall verify compliance with the Contract Documents and shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and the operation of component materials and devices; the external connections, anchorages, and supports required; the performance characteristics; and dimensions needed for installation and correlation with other materials and equipment.
- 2.1.3 When an item consists of components from several sources, Contractor's initial submittal shall be complete including all components.
- 2.1.4 All submittals, regardless of origin, shall be stamped with the approval of Contractor and identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each

submittal shall indicate the intended use of the item in the Work. When catalog pages are submitted, applicable items shall be clearly identified, and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.

- 2.1.5 Contractor shall be solely responsible for the completeness of each submittal. Contractor's stamp of approval is a representation to Owner and Engineer that Contractor accepts sole responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, and that Contractor has reviewed and coordinated each submittal with the requirements of the Work and the Contract Documents.
- 2.1.6 All deviations from the Contract Documents shall be identified as deviations on each submittal and shall be tabulated in Contractor's letter of transmittal.
- 2.1.7 Such submittals shall, as pertinent to the deviation, indicate essential details of all changes proposed by Contractor (including modifications to other facilities that may be a result of the deviation) and all required piping and wiring diagrams.
- 2.1.8 One electronic copy, in PDF format, of each drawing and the necessary data shall be submitted to Engineer. Engineer will return one marked copy to Contractor. Facsimile (fax) copies will not be acceptable. Engineer will not accept submittals from anyone but Contractor. *Submittals shall be numbered in the following manner: Five-digit specification section-three-digit sequential number-two digit revision number (Example: 01300-001-00). An initial submittal shall start with sequential number one (001) and revision number zero (00).*

2.2 ENGINEER'S REVIEW OF SUBMITTALS

- 2.2.1 Engineer's review and acceptance of submittals will be only for the limited purpose of checking for general conformance to the Contract Documents, external connections, and dimensions that affect the layout; it does not indicate thorough review of all dimensions, quantities, and details of the material, equipment, device, or item covered. Engineer's review shall not relieve Contractor of sole responsibility for errors, omissions, or deviations in the drawings and data, nor of Contractor's sole responsibility for compliance with the Contract Documents.
- 2.2.2 Engineer's submittal review period shall be the consecutive number of calendar days as required and shall commence on the first calendar day following receipt of the submittal in Engineer's office. The time required to mail the submittal back to Contractor shall not be considered a part of the submittal review period.
- 2.2.3 When the drawings and data are returned marked "Rejected" or "Resubmittal Required", the corrections shall be made as noted thereon and as instructed by Engineer and five corrected copies (or one corrected reproducible copy) resubmitted. Facsimile (fax) copies will not be acceptable. When the drawings and data are returned marked "Reviewed with Comments", "Reviewed", or "Record Copy", no additional copies need be furnished unless specifically requested by Engineer.

2.3 RESUBMITTAL OF DRAWINGS AND DATA

- 2.3.1 Contractor shall accept full responsibility for the completeness of each resubmittal. Contractor shall verify that all corrected data and additional information previously requested by Engineer are provided on the resubmittal.
- 2.3.2 When corrected copies are resubmitted, Contractor shall direct specific attention to all revisions in writing and shall list separately any revisions made other than those

called for by Engineer on previous submittals. Requirements specified for initial submittals shall also apply to resubmittals. *Resubmittals shall bear the next revision number of the previous submittal.*

- 2.3.3 If more than one resubmittal is required because of failure of Contractor to provide all previously requested corrected data or additional information, Contractor shall reimburse Owner for the charges of Engineer for review of the additional resubmittals. This does not include initial submittal data such as shop tests and field tests that are submitted after initial submittal.
- 2.3.4 When resubmittals are needed, resubmittals shall be made within the number of days of the date on the letter returning the material to be modified or corrected as required, unless within the number days, as required, Contractor submits an acceptable request for an extension of time, listing the reasons why the resubmittal cannot be completed within the stipulated time.
- 2.3.5 The need for more than one resubmittal, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Times unless otherwise allowed for in the General Conditions and Supplemental Conditions.
- 2.3.6 Engineer's resubmittal review period shall be the consecutive number of calendar days as required and shall commence on the first calendar day following receipt of the resubmittal in Engineer's office. The time required to mail the resubmittal back to Contractor shall not be considered a part of the resubmittal review period.

(End of Section 01300)

Part 1 GENERAL

1.1 RELATED DOCUMENTS

- 1.1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- 1.2.1 Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

- 1.2.1.1 Preliminary Progress Schedule.
- 1.2.1.2 Progress Schedule.
- 1.2.1.3 Recovery Schedule
- 1.2.1.4 Progress Schedule updating reports.
- 1.2.1.5 Daily construction reports.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- 1.3.1 Submittals – Section 01300

1.4 DEFINITIONS

- 1.4.1 Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction Project. Activities included in a Progress Schedule consume time and resources.
- 1.4.2 Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
- 1.4.3 Predecessor Activity: An activity that precedes another activity in the network.
- 1.4.4 Successor Activity: An activity that follows another activity in the network.
- 1.4.5 Cost Loading: The allocation of the schedule of values for completing an activity as scheduled. The sum of costs for all activities must equal the total Contract Price.
- 1.4.6 CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- 1.4.7 Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- 1.4.8 Event: The starting or ending point of an activity.
- 1.4.9 Float: The measure of leeway in starting and completing an activity.
 - 1.4.9.1 Float time belongs to the Project.

- 1.4.9.2 Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
- 1.4.9.3 Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Contract Times.
- 1.4.10 Resource Loading: The allocation of manpower and equipment necessary for completing an activity as scheduled.

1.5 COORDINATION

- 1.5.1 Coordinate Progress Schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1.5.1.1 Secure time commitments for performing critical elements of the Work from entities involved.
 - 1.5.1.2 Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

Part 2 PRODUCTS

2.1 PRELIMINARY PROGRESS SCHEDULE REQUIREMENTS

- 2.1.1 Preliminary Progress Schedule: The preliminary Progress Schedule shall show detailed construction-related activities for the first 30 days of the project. The remainder of the Contract activities shall be shown as summary bars within the milestones of the Work. If Engineer has comments on the preliminary Progress Schedule, Contractor shall make the necessary changes and resubmit it within ten calendar days. No progress payments will be made during the period specified above for the preliminary Progress Schedule until the preliminary Progress Schedule has been accepted by Engineer.
- 2.1.2 The preliminary Progress Schedule shall:
 - 2.1.2.1 Illustrate a feasible schedule for completion of the Work within the Contract Times and Milestones specified.
 - 2.1.2.2 Provide an elementary example of the schedule in the format to be used for the Progress Schedule.
 - 2.1.2.3 Include the activity code structure as described in Paragraph 2.2.2.1 of this specification.

2.2 PROGRESS SCHEDULE REQUIREMENTS

- 2.2.1 Progress Schedule: Prepare Progress Schedule using a time-scaled CPM network analysis diagram for the Work.
 - 2.2.1.1 Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for Notice to Proceed.
 1. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates.

2.2.2 Progress Schedule Preparation: Prepare a list of all activities required to complete the Work.

2.2.2.1 Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:

1. Preparation and processing of submittals.
2. Mobilization and demobilization.
3. Purchase of materials.
4. Delivery.
5. Fabrication.
6. Utility interruptions.
7. Installation.
8. Work by Owner that may affect or be affected by Contractor's activities.
9. Testing and inspection.
10. Commissioning.
11. Punch list and final completion.
12. Activities occurring following final completion.

2.2.2.2 Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.

2.2.3 Distribution: Distribute copies of approved schedule to Engineer, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

2.2.3.1 Post copies in Project meeting rooms and temporary field offices.

2.2.3.2 When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

2.3 RECOVERY SCHEDULE

2.3.1 When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.

2.4 REPORTS

- 2.4.1 Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
 - 2.4.1.1 List of subcontractors at Project site.
 - 2.4.1.2 List of separate contractors at Project site.
 - 2.4.1.3 Approximate count of personnel at Project site.
 - 2.4.1.4 Equipment at Project site.
 - 2.4.1.5 Material deliveries.
 - 2.4.1.6 High and low temperatures and general weather conditions, including presence of rain or snow.
 - 2.4.1.7 Testing and inspection.
 - 2.4.1.8 Accidents.
 - 2.4.1.9 Meetings and significant decisions.
 - 2.4.1.10 Unusual events.
 - 2.4.1.11 Stoppages, delays, shortages, and losses.
 - 2.4.1.12 Meter readings and similar recordings.
 - 2.4.1.13 Emergency procedures.
 - 2.4.1.14 Orders and requests of authorities having jurisdiction.
 - 2.4.1.15 Change Orders received and implemented.
 - 2.4.1.16 Work Change Directives received and implemented.
 - 2.4.1.17 Services connected and disconnected.
 - 2.4.1.18 Equipment or system tests and startups.
 - 2.4.1.19 Partial completions and occupancies.
 - 2.4.1.20 Substantial Completions authorized.
- 2.4.2 Site Condition Reports
 - 2.4.2.1 Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
- 2.4.3 Unusual Event Reports
 - 2.4.3.1 When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, responses by Contractor's personnel, evaluation of results or effects, and similar pertinent

information. Advise Owner in advance when these events are known or predictable.

- 2.4.3.2 Submit unusual event reports directly to Owner within three day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

Part 3 EXECUTION

3.1 ELECTRONIC PROGRESS SCHEDULE FORMAT AND REPORTING

- 3.1.1 The Progress Schedule shall be created using an acceptable scheduling software per the requirements identified in paragraph 2.2.

3.2 COST LOADING

- 3.2.1 Not used.

3.3 RESOURCE LOADING

- 3.3.1 Not used.

3.4 SUBMITTALS

- 3.4.1 Submittals shall be made in accordance with Section 01300 – Submittals.

- 3.4.2 Format for Submittals

- 3.4.2.1 Schedule Submittals

- a) Working electronic copy of schedule file, if requested by Owner or Engineer.
- b) PDF file.
- c) Two paper copies of sufficient size to display entire period or schedule, as required.

- 3.4.2.2 Reports

- a) PDF file with content typed, and neatly organized to include graphics or photographs where required or needed to effectively convey the content of the report.

- 3.4.3 Preliminary Progress Schedule

- 3.4.3.1 A brief narrative shall accompany the submittal, describing Contractor's scheduling approach to the project. The narrative shall include a description of the Contract milestones, approach for construction activities during the period of the preliminary Progress Schedule, description of the general approach of the activities for the work beyond the preliminary Progress Schedule period, a description of the project's critical path, identification of critical long-lead submittals, and planned outages.

- 3.4.3.2 The narrative shall also incorporate activity codes, calendars, weather days, milestone constraints, and work breakdown structure in accordance with the requirements specified herein.

- 3.4.4 Progress Schedule

- 3.4.4.1 A Brief narrative shall accompany the submittal, describing updates to the schedule, progress of the work completed prior and up to the schedule update, the project status (e.g., on, ahead, or behind schedule), and the Contractor's scheduling approach for the work to be completed.
- 3.4.4.2 The narrative shall also incorporate activity codes, calendars, weather days, milestone constraints, and work breakdown structure in accordance with the requirements specified herein.
- 3.4.5 Recovery Schedule
 - 3.4.5.1 A brief narrative shall accompany the submittal of the Recovery Schedule, describing the means by which Contractor intends to regain compliance with the schedule. Describe changes to working hours, working days, crew sizes, equipment required to achieve compliance, and date by which recovery will be accomplished.
 - 3.4.5.2 The narrative shall also incorporate activity codes, calendars, weather days, milestone constraints, and work breakdown structure in accordance with the requirements specified herein.
- 3.4.6 Review Process
 - 3.4.6.1 Engineer will review Contractor's preliminary Progress Schedule, Progress Schedule, and Recovery Schedule submittals within ten calendar days after receipt of all required information.
 - 3.4.6.2 At the request of Owner or Engineer, Contractor shall participate in any meetings necessary to reach a mutual agreement and acceptance of the preliminary Progress Schedule, Progress Schedules, or Cash Flow Projections.
 - 3.4.6.3 If any of the required submittals are returned to Contractor for corrections or revisions, they shall be resubmitted within ten calendar days after the return mailing date. Resubmittals shall include all information and media included in the first submittal. Review and response by Engineer will be given within 10 calendar days after receipt of each resubmittal.
 - 3.4.6.4 Schedules shall show contract completion of the Work on the Contract completion date and with zero or positive total Float even if Contractor plans to finish early. In no event shall acceptance of the Progress Schedule be a basis for a claim for delay against Owner or Engineer by Contractor for an early finish. A Progress Schedule containing activities with negative Float or that extend beyond the date that the Work is completed and ready for final payment will not be acceptable.
 - 3.4.6.5 Acceptance of the Progress Schedule by Engineer does not relieve Contractor of responsibility for accomplishing the Work by the Contract completion date. Omissions and errors in the accepted Progress Schedule shall not relieve Contractor of obligations under the Contract. Acceptance by Engineer in no way makes Engineer or Owner an insurer of the Progress Schedule's success or liable for time or cost overruns. Engineer and Owner hereby disclaim any obligation or liability by reason of acceptance of the Progress Schedule by Engineer.
- 3.4.7 Data Date

3.4.7.1 The data date is the re-settable date in the scheduling software that serves as the end of a reporting period. The reporting period will be recorded on a monthly basis (e.g., January 1st through January 31st with the 31st as the data date). If required for coordination purposes by Owner, Engineer will provide specific data dates to be used by Contractor.

3.4.8 Daily Construction Reports

3.4.8.1 Prepare daily and submit at weekly intervals.

3.5 MONTHLY SCHEDULE UPDATES

3.5.1 Contractor shall update the Progress Schedule Monthly.

3.5.2 Monthly Progress Schedule updates shall be submitted for the duration of the Contract on a date agreed to by Owner, Engineer, and Contractor. If monthly Progress Schedule updates are not submitted by the due date, progress payments will be withheld until the required information is submitted and accepted.

3.5.3 The updated schedule shall be reviewed each month in a meeting with Engineer to verify:

3.5.3.1 Actual start dates,

3.5.3.2 Actual completion dates,

3.5.3.3 Activity percent completion,

3.5.3.4 Revised logic (as-built and projected) and changes in activity durations, cost assigned,

3.5.3.5 Cost influence of change orders, if any,

3.5.3.6 Revisions due to extension of time.

3.5.4 Prior to each meeting, Contractor shall prepare a complete and accurate report of current procurement and construction progress through the end of the update period, and a depiction of how Contractor plans to continue the Work to meet all contract completion dates. All network changes and status data agreed to during each update meeting shall be considered as accepted by both parties unless written notice of any exceptions is given within five calendar days after the meeting.

3.5.5 For major network changes that cannot be agreed to during an updating meeting, Contractor shall submit the proposed changes for Engineer's acceptance prior to inserting such changes into the network. Submittals may be in the form of marked-up networks, fragnets, or schedule abstracts, provided they are submitted with a letter of transmittal. A fragnet is defined as a sequence of new activities and/or activity revisions that are proposed to be added to the existing schedule to demonstrate how project events have an impact on the schedule.

3.6 RESPONSIBILITY FOR SCHEDULE COMPLIANCE

3.6.1 Whenever it becomes apparent from the current Progress Schedule that the critical path is delayed and the contract completion date will not be met, Contractor shall mitigate the delay by taking some or all of the following actions at no additional cost to Owner.

- 3.6.1.1 Increase construction manpower in such quantities and crafts as will bring the project back on schedule within the completion dates and milestones.
- 3.6.1.2 Increase the number of working hours per shift, shifts per day, working days per week, and the amount of construction equipment, or any combination of the foregoing, to substantially eliminate the backlog of work.
- 3.6.1.3 Re-schedule activities to achieve maximum practical concurrence of activities and to comply with the schedule date(s).
- 3.6.2 Within ten calendar days of Engineer's request, Contractor shall submit a recovery schedule and written statement of the steps intended to remove or arrest the delay to the critical path in the schedule. If Contractor fails to submit the required information or should fail to take measures acceptable to Engineer, Engineer with Owner concurrence may direct Contractor to increase manpower, equipment and scheduled work hours to remove or arrest the delay to the critical path and Contractor shall promptly provide such level of effort at no additional cost to Owner.
- 3.6.3 In the event Contractor fails to follow the updated or revised recovery schedule, Owner may elect to withhold progress payments until Contractor complies with the revised schedule.
- 3.6.4 Should Contractor's efforts not remove or arrest the delay to the critical path of the accepted schedule, then Owner shall be entitled to supplement Contractor's work-force and equipment to remove and arrest any delay, and shall be entitled to deduct all costs and expenses associated therewith from payments due to Contractor. If insufficient Contract funds remain, Owner may recover such funds from Contractor and its Surety.

3.7 CHANGES IN THE WORK, DELAYS, AND EXTENSIONS OF TIME

- 3.7.1 When changes in the Work or delays are experienced by Contractor and Contractor requests an extension of time, Contractor shall submit a written time impact analysis (TIA) to Engineer illustrating the influence of each change or delay to the current Contract Times. Each TIA shall include a fragment incorporating the change or delay into the Progress Schedule to demonstrate how Contractor was delayed.
- 3.7.2 Each TIA shall demonstrate the estimated time impact based on the events of the change or the delay; the date the change was given to Contractor, or the delay incurred, the status of construction at that point in time, and the event time computation of all activities affected by the change or delay. The event times used in the analysis shall be those included in the latest update of the Progress Schedule accepted by the Engineer at the time the original TIA is submitted.
- 3.7.3 The TIA shall be submitted within seven calendar days of delay occurrence or when direction to proceed with a change is given to Contractor. No time extensions will be considered if the time impact analysis is not submitted within the specified time.
- 3.7.4 Engineer will review Contractor's TIA. Contractor shall furnish such justification and supporting evidence as Engineer deems necessary to determine whether Contractor is entitled to an extension of time. Engineer's review of each TIA will be made within five working days of receipt of the TIA and additional information as required by Engineer, unless subsequent meetings and negotiations are necessary.
- 3.7.5 The Contract Times will be adjusted only for causes specified in paragraph 3.8. Time extensions will be granted only to the extent that equitable time adjustments for the activity or activities affected exceed the total or remaining Float along the critical path

at the time of actual delay. Delays in activities which are not on the critical path and do not affect Contract Times, will not be considered for an extension of time.

3.8 CAUSES FOR EXTENSIONS OF TIME

3.8.1 Additional positive total Float in the Progress Schedule generated by efficiencies of Owner or Contractor is a shared commodity to be reasonably used by either party, and belongs exclusively to the Project. Contractor is not entitled to any additional compensation for completion of the project prior to expiration of the Contract Times.

3.8.2 Owner-Initiated Changes

3.8.2.1 Owner initiated changes to the Work that absorb Float time will not be considered for an extension of time. Owner-initiated changes that affect the critical path of the Progress Schedule shall be grounds for extending or shortening completion dates. Use of Float time for Contractor initiated changes will require Owner's concurrence. Contractor's changes, however, shall give way to Owner-initiated changes competing for the same Float time.

3.8.3 Outside Contractor's Control

3.8.3.1 Events outside of Contractor's control that affect the critical path of the Progress Schedule will be considered for an extension or reduction of the Contract Times.

3.8.4 Weather Delays

3.8.4.1 Engineer will obtain weather data during construction from a reputable source and will maintain weather records.

3.8.4.2 Engineer will determine Contractor's entitlement to an extension of the Contract Times as a result of weather delays. Extensions of time will be granted at the discretion of Engineer.

3.8.4.3 Any weather-related extension of Contract Times shall be non-compensable. Efficiencies gained as a result of favorable weather within a calendar month, where the number of days of normally anticipated weather days is less than expected, shall contribute to the project Float and shall not affect the Contract Times.

3.8.4.4 Application for a weather-related extension of time shall be submitted to Engineer and shall state the extension requested and be supported by the relevant weather data.

3.8.4.5 Contractor shall include the number of days in the Project Schedule. Days shall be labeled as Extreme Weather Float. Extreme Weather Conditions that affect the Critical Path of the Progress Schedule, in excess of the Extreme Weather Float, will be considered for an extension or reduction of the Contract Times. Notification for all extreme weather-related events must be submitted no later than 72 hours after the weather impact date.

3.9 ACTIVITY RELATIONSHIPS

3.9.1 Relationships between activities shall be identified with the following information:

3.9.1.1 Predecessor and successor activity ID.

3.9.1.2 Relationship types:

- a) FS – Finish to Start
- b) SS – Start to Start
- c) FF – Finish to Finish
- d) SF – Start to Finish – This relationship is not allowed, unless authorized by Engineer.

3.10 PROJECT CALENDARS

3.10.1 Project Calendars shall use workdays and calendar days as the planning unit for the schedule. Use of Global Calendars is reserved for Owner. Each calendar shall be set to start on Mondays with holidays in accordance with Owner policy. The following calendars shall be used for each activity except as otherwise accepted by Engineer:

3.10.1.1 5-Day x 8 Hour Workweek (with holidays) shall be used for 5-day 40-hour workweek activities: Monday through Friday. All holidays and non-work days shall be assigned to this calendar. This calendar shall be used for all normal work activities, submittals, and fabricate and delivery activities. This calendar shall be the default calendar for the project unless otherwise specified.

3.10.1.2 5-Day x 10-Hour Workweek (with holidays) shall be used for 5-day 50-hour workweek activities: Monday through Friday. All holidays and non-work days shall be assigned to this calendar.

3.10.1.3 6-Day x 10-Hour Workweek (with holidays) shall be used for 6-day 60-hour workweek activities. Monday through Saturday. All holiday and non-work days shall be assigned to this calendar.

3.10.1.4 7-Day Calendar (no holidays) shall be used for 7-day workweek activities. No non-work days shall be entered into this calendar.

3.10.1.5 Additional Calendars may be assigned depending on need. However, Contractor shall consult with Engineer before other calendars are entered and/or used in the Progress Schedule.

3.10.2 The workday to calendar day correlation shall be based on a single shift and 5-day work week with adequate allowance for holidays, adverse weather and all other special requirements of the Work. Contractor may, at his option, propose alternate baseline calendars to allow a second shift and/or a single shift on Saturdays subject to the concurrence and acceptance of Owner. Under no circumstances will a schedule be accepted which allows regularly scheduled work on Sundays.

3.10.3 The holidays observed by Owner are as identified in the Supplemental Conditions Paragraph SC-7.03.

(End of Section 01310)

PART 1 GENERAL.

1.1. Units of Measurement

- 1.1.1. When both inch-pound (English) and SI (metric) units of measurement are specified herein, the values expressed in inch-pound units shall govern.

1.2. SURVEY DATA

- 1.2.1. All field books, notes, and other data developed by Contractor in performing surveys required as part of the Work shall be available to Engineer for examination throughout the construction period. All such data shall be submitted to Engineer with the other documentation required for final acceptance of the Work.

1.3. LAYOUT DATA

- 1.3.1. Contractor shall keep neat and legible notes of measurements and calculations made in connection with the layout of the Work. Copies of such data shall be furnished to the Resident Project Representative for use in checking Contractor's layout as provided in the project requirements section. All such data considered of value to Owner will be transmitted to Owner by Engineer with other records upon completion of the Work.

(End of Section 01320)

PART 1 GENERAL

1.1. SCOPE

1.1.1. Testing Services

1.1.1.1. Testing services shall be provided in accordance with Paragraph 14.02 of the General Conditions. All tests to determine compliance with the Contract Documents shall be performed by an independent commercial testing firm acceptable to Engineer. The testing firm's laboratory shall be staffed with experienced technicians, properly equipped, and fully qualified to perform the tests in accordance with the specified standards.

1.1.1.2. Testing services provided by Owner are for the sole benefit of Owner and/or as required by the governing building code; however, test results shall be available to Contractor. Testing necessary to satisfy Contractor's internal quality control procedures shall be the sole responsibility of Contractor.

PART 2 PRODUCTS

2.1. TESTING SERVICES PROVIDED BY CONTRACTOR

2.1.1. Unless otherwise specified, Contractor shall provide all testing services in connection with the following:

2.1.1.1. Any Work or part thereof specifically to be inspected, tested, or approved by an employee or representative of an Authority Having Jurisdiction. Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals. Contractor shall pay all costs associated for these activities and shall provide the required certificates of inspection or approval.

2.1.1.2. Any inspections, tests or approvals required for Owner or Engineer acceptance of materials or equipment to be incorporated in the Work. This includes any items required for acceptance of materials, concrete mix designs or equipment submitted for approval prior to Contractor's purchase for incorporation in the Work.

2.1.1.3. Testing, adjusting, and balancing of mechanical, electrical, and other equipment and systems as specified to be incorporated into the Work. This includes services required by manufacturers of equipment or other products such as concrete repair products, pipe, coatings, linings, and roof membranes furnished under the Contract Documents.

2.1.1.4. Tightness testing of containment structures and pressure or leakage testing of piping as specified.

2.1.1.5. Any Work (or part thereof) required by the Contract Documents to be approved by Engineer or other designated individual or entity. Contractor shall assume full responsibility for arranging and

obtaining such approvals, pay all costs in connection therewith and submit to Engineer the required certificates of approval.

2.1.2. Excluding those conducted directly by an Authority Having Jurisdiction or expressly specified to be conducted directly by Contractor, inspections and tests shall be performed by independent inspectors, approved agencies or other qualified individuals or entities acceptable to Engineer.

2.2. TESTING SERVICES AND SPECIAL INSPECTIONS PROVIDED BY OWNER

2.2.1. Unless otherwise specified, Owner shall employ and pay for the services of an independent testing laboratory, approved agency or other qualified individual or entities for inspections, tests or approvals required by the Contract Documents for field quality control. These include items indicated as Owner provided in the following Sections:

2.2.1.1. 02220 – Excavation and Backfill

2.2.2. Contractor shall provide access to the site and Work in accordance with 14.01 and 14.02 of the General Conditions. Contractor shall give timely notice of the readiness of the Work for inspection, tests or approvals and shall cooperate with the inspection and testing personnel to facilitate the required tests and inspections. Contractor shall furnish all sample materials and cooperate in the testing activities, including sampling. Contractor shall interrupt the Work when necessary to allow testing, including sampling, to be performed. Contractor shall have no Claim for an increase in Contract Price or Contract Times due to such interruption. When testing activities, including sampling, are performed in the field by Engineer or Agency personnel, Contractor shall furnish personnel and facilities to assist in the activities as required.

PART 3 EXECUTION

3.1. TRANSMITTAL OF TEST REPORTS

3.1.1. Written reports of tests and engineering data furnished by Contractor for Engineer's review of materials and equipment proposed to be used in the Work shall be submitted as specified for Shop Drawings.

3.1.2. The Approved Agency retained by Owner will furnish electronic copies of reports by email of each test.

3.2. OFFSITE INSPECTION

3.2.1. Inspection of materials or equipment during the production, manufacturing, or fabricating process, or before shipment, will be performed by Engineer or an independent testing firm or Approved Agency acceptable to Engineer and Authority Having Jurisdiction as specified in the materials and equipment sections.

3.2.2. Except as otherwise specified in other sections, Contractor shall give appropriate written notice to Engineer not less than 10 days before offsite inspection services are required, and shall provide for the producer, manufacturer, or fabricator to furnish safe access and proper facilities and to cooperate with inspecting personnel in the performance of their duties.

(End of Section 01400)

PART 1 GENERAL

1.1. UNITS OF MEASUREMENT

- 1.1.1. When both inch-pound (English) and SI (metric) units of measurement are specified herein, the values expressed in inch-pound units shall govern.

PART 2 PRODUCTS

2.1. OFFICES AT SITE OF WORK

- 2.1.1. Not used

PART 3 EXECUTION

3.1. PROJECT CONTRACT DOCUMENTS

- 3.1.1. Copies of the Drawings, Specifications, and other Contract Documents shall be kept at Contractor's office at the Site, and available for use at all times.

3.2. SERVICES/UTILITIES

3.2.1. WATER

- 3.2.1.1. All water required for and in connection with the Work to be performed shall be provided by and at the expense of Contractor. No separate payment for water used or required will be made and all costs in connection therewith shall be included in the Contract Price.

3.2.2. POWER

- 3.2.2.1. Contractor shall provide all power for heating, lighting, operation of Contractor's plant or equipment, or for any other use by Contractor. Temporary heat and lighting shall be maintained until the Work is accepted.

3.2.3. SANITARY FACILITIES

- 3.2.3.1. Contractor shall furnish temporary sanitary facilities at the Site, as provided herein, for the needs of all construction workers and others performing work or furnishing services on the Project.

- 3.2.3.2. Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 persons. Contractor shall enforce the use of such sanitary facilities by all personnel at the Site.

3.3. CONSTRUCTION CONTROLS

3.3.1. CONSTRUCTION AIDS

- 3.3.1.1. Contractor shall furnish, install, maintain, and operate all

construction aids required by it and its Subcontractors in the performance of the Work, except as otherwise provided herein.

3.3.2. MAINTENANCE OF TRAFFIC

- 3.3.2.1. Contractor shall conduct its work to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways, and walks, whether public or private, Contractor shall provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to owners of private drives before interfering with them. Such maintenance of traffic will not be required when Contractor has obtained permission from the owner and tenant of private property, or from the authority having jurisdiction over public property involved, to obstruct traffic at the designated point.
- 3.3.2.2. In making open-cut street crossings, Contractor shall not block more than one-half of the street at a time. Whenever possible, Contractor shall widen the shoulder on the opposite side to facilitate traffic flow. Temporary surfacing shall be provided as necessary on shoulders.

3.3.3. DETOURS

- 3.3.3.1. Where required by the authority having jurisdiction that traffic be maintained over any construction work in a public street, road, or highway, and the traffic cannot be maintained on the alignment of the original roadbed or pavement, Contractor shall, at its own expense, construct and maintain a detour around the construction work. Each detour shall include a bridge across the pipe trench and all necessary barricades, guardrails, approaches, lights, signals, signs, and other devices and precautions necessary for protection of the Work and safety of the public.

3.3.4. BARRICADES AND LIGHTS

- 3.3.4.1. All streets, roads, highways, and other public thoroughfares which are closed to traffic shall be protected by effective barricades on which shall be placed acceptable warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.
- 3.3.4.2. All open trenches and other excavations shall have suitable barricades, signs, and lights to provide adequate protection to the public. Obstructions, such as material piles and equipment, shall be provided with similar warning signs and lights.
- 3.3.4.3. All barricades and obstructions shall be illuminated with warning lights from sunset to sunrise. Material storage and conduct of the Work on or alongside public streets and highways shall cause the minimum obstruction and inconvenience to the traveling public.
- 3.3.4.4. All barricades, signs, lights, and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and, where within railroad and highway rights-of-

way, as required by the authority having jurisdiction.

a. Open Excavations

- i. Contractor shall restore required excavations to the level of the adjacent surfaces as soon as practicable. Unsupervised open excavations on public properties are discouraged at all times. If Contractor, in performance of the Work, makes or causes to be made any excavation in, upon, under, through or adjoining any street, sidewalk, alley, park, boulevard, parkway or any other public properties, and shall leave any part or portion thereof open, Contractor shall provide effective protection to the public.
- ii. Contractor shall protect and secure all excavations in roadways in compliance with existing federal, state and local codes and standards, including, but not limited to the most current edition of the Manual of Uniform Traffic Control Devices. Contractor shall protect and secure all unsupervised excavations not within roadways, either by use of protective covers or fencing. Protective covers that can sustain the weight of persons or of objects that are placed upon it may be installed over an unsupervised excavation. The cover shall be secured to the ground to prevent movement. Protective covers shall have no opening(s) or protuberance(s) of sufficient size to cause a fall and/or injury. Advance warning devices shall be installed as necessary. Fencing to prevent entry may be installed surrounding an unsupervised excavation not protectively covered in its entirety. The fencing shall be a minimum of 42 inches in height. The fencing shall be constructed in such a manner that it is adequately secured and will remain upright at all times under normal Site conditions. All protective coverings and fences over and around excavations shall be inspected at least daily to assure integrity. Protective coverings and/or fences in heavily trafficked areas shall be inspected more often as necessary.

3.3.5. FENCES

- 3.3.5.1. All existing fences affected by the Work shall be maintained by Contractor until completion of the Work. Fences which interfere with construction operations shall not be relocated or dismantled until written permission is obtained from the owner of the fence, and the period the fence may be left relocated or dismantled has been agreed upon. Where fences must be maintained across the construction easement, adequate gates shall be installed. Gates shall be kept closed and locked at all times when not in use.
- 3.3.5.2. On completion of the Work across any tract of land, Contractor shall restore all fences to their original or to a better condition and to their original locations.
- 3.3.5.3. Temporary Fences

- a. Contractor shall provide temporary construction fencing in the locations indicated on the Drawings before the start of the Work. Temporary fencing shall serve to protect the public from access to the Site. All temporary construction fencing, and gates shall be a minimum of 8 feet in height unless specified as Fencing Type 2, and shall be a minimum of 12 feet in height, and match existing MUSC fencing.
- b. Access to the site shall occur through the use of gates. Gate size and location shall be determined by the Contractor. Gates must be positioned such that locking and unlocking of gates does not affect traffic. All unsupervised gates to the site must be secured to prevent unauthorized entry by the public.

3.3.6. PROTECTION OF PUBLIC AND PRIVATE PROPERTY

- 3.3.6.1. Contractor shall protect, shore, brace, support, and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by its construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards, parkways, and medians, shall be restored to their original condition, whether within or outside the easement. All replacements shall be made with new materials.
- 3.3.6.2. No trees shall be removed outside the permanent easement, except where authorized by Engineer. Whenever practicable, Contractor shall tunnel beneath trees in yards and parking areas when on or near the line of trench. Hand excavation shall be employed as necessary to prevent injury to trees. Trees left standing shall be adequately protected against damage from construction operations.
- 3.3.6.3. Contractor shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, and other public or private property, regardless of location or character, which may be caused by transporting equipment, materials, or workers to or from the Work or any part or site thereof, whether by Contractor or its Subcontractors. Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property concerning its repair or replacement, or payment of costs incurred in connection with the damage.
- 3.3.6.4. All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times.

3.3.7. DAMAGE TO EXISTING PROPERTY

- 3.3.7.1. Contractor will be held responsible for any damage to existing structures, Work, materials, or equipment because of his operations and shall repair or replace any damaged structures, Work, materials, or equipment to the satisfaction of, and at no additional cost to, Owner.
- 3.3.7.2. Contractor shall protect all existing structures and property from

damage and shall provide bracing, shoring, or other work necessary for such protection.

- 3.3.7.3. Contractor shall be responsible for all damage to streets, roads, curbs, sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property, which may be caused by transporting equipment, materials, or workers to or from the Work. Contractor shall make satisfactory and acceptable arrangements with the agency having jurisdiction over the damaged property concerning its repair or replacement.

3.3.8. TREE AND PLANT PROTECTION

- 3.3.8.1. All trees and other vegetation which must be removed to perform the Work shall be removed and disposed of by Contractor; however, no trees or cultured plants shall be unnecessarily removed unless their removal is indicated on the Drawings. All trees and plants not removed shall be protected against injury from construction operations.
- 3.3.8.2. Contractor shall take extra measures to protect trees designated to be preserved, such as erecting barricades, trimming to prevent damage from construction equipment, and installing pipe and other Work by means of hand excavation or tunneling methods. Such trees shall not be endangered by stockpiling excavated material or storing equipment against their trunks.
- 3.3.8.3. When injuring or removal of trees designated to be preserved cannot be avoided, or when removal and replacement is indicated on the Drawings, each tree injured beyond repair or removed shall be replaced with a similar tree of the nearest size possible.
- 3.3.8.4. All trimming, repair, and replacement of trees and plants shall be performed by qualified nurserymen or horticulturists.

3.3.9. SECURITY

- 3.3.9.1. Contractor shall be responsible for protection of the Site, and all Work, materials, equipment, and existing facilities thereon, against vandals and other unauthorized persons.
- 3.3.9.2. No Claim shall be made against Owner by reason of any act of an employee or trespasser, and Contractor shall make good all damage to Owner's property resulting from Contractor's failure to provide security measures as specified.
- 3.3.9.3. Security measures shall include security fencing, barricades, lighting, watchman services, and other measures as required to protect the Site.

3.3.10. ACCESS ROADS

- 3.3.10.1. Contractor shall establish and maintain temporary access roads to various parts of the Site as required to complete the Project. Such roads shall be available for the use of all others performing work or furnishing services in connection with the Project.

3.3.11. PARKING

3.3.11.1. Contractor shall provide and maintain suitable parking areas for the use of all workers and others performing work or furnishing services in connection with the Project, as required to avoid any need for parking personal vehicles where they may interfere with public traffic, Owner's operations, or construction activities.

3.3.12. NOISE CONTROL

3.3.12.1. Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices and operated in a manner to cause the least noise consistent with efficient performance of the Work.

3.3.12.2. During construction activities on or adjacent to occupied buildings, and when appropriate, Contractor shall erect screens or barriers effective in reducing noise in the building and shall conduct its operations to avoid unnecessary noise which might interfere with the activities of building occupants.

3.3.12.3. Ventilation Noise

a. Noise from ventilation operations shall be attenuated by using portable acoustic barriers, buffers, such as structures or trailers, or other means acceptable to the Engineer. Noise levels associated with fans shall be less than 70 dB at a distance of fifty (50) feet from the source.

3.3.13. DUST AND SOIL CONTROL

3.3.13.1. Contractor shall take reasonable measures to prevent unnecessary dust. Earth surfaces subject to dusting shall be kept moist with water or by application of a chemical dust suppressant. When practicable, dusty materials in piles or in transit shall be covered to prevent blowing dust.

3.3.13.2. Buildings or operating facilities which may be affected adversely by dust shall be adequately protected from dust. Existing or new machinery, motors, instrument panels, or similar equipment shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.

3.3.13.3. Contractor shall mechanically clean streets if soil is carried onto adjacent public roads.

3.3.14. TEMPORARY DRAINAGE PROVISIONS

3.3.14.1. Contractor shall provide for the drainage of storm water and such water as may be applied or discharged on the Site in performance of the Work. Drainage facilities shall be adequate to prevent damage to the Work, the Site, and adjacent property.

3.3.14.2. Existing drainage channels and conduits shall be cleaned, enlarged, or supplemented as necessary to carry all increased

runoff attributable to Contractor's operations. Dikes shall be constructed as necessary to divert increased runoff from entering adjacent property (except in natural channels), to protect Owner's facilities and the Work, and to direct water to drainage channels or conduits. Ponding shall be provided as necessary to prevent downstream flooding.

3.3.15. EROSION CONTROL

3.3.15.1. Contractor shall prevent erosion of soil on the Site and adjacent property resulting from its construction activities. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operation that will disturb the natural protection.

3.3.15.2. Work shall be scheduled to expose areas subject to erosion for the shortest possible time, and natural vegetation shall be preserved to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion. Temporary fast-growing vegetation or other suitable ground cover shall be provided as necessary to control runoff.

3.3.16. POLLUTION CONTROL

3.3.16.1. Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. No sanitary wastes shall be permitted to enter any drain or watercourse other than sanitary sewers. No sediment, debris, or other substance shall be permitted to enter sanitary sewers, and reasonable measures shall be taken to prevent such materials from entering any drain or watercourse.

3.3.17. TOXIC AND HAZARDOUS MATERIAL SPILL PREVENTION, CONTROL, AND COUNTERMEASURES.

3.3.17.1. Subject Materials

a. The onsite storage and use of batteries; generators; transformers; and petroleum products such as fuels, lubricating oil, and grease shall be subject to these requirements.

3.3.17.2. Requirements for Spill Prevention, Control, and Countermeasures

a. Contractor shall comply with the requirements of the U.S. Environmental Protection Agency Oil Pollution Prevention Regulations identified as Title 40 Code of Federal Regulations Part 112, for preparation and implementation of a Spill Prevention Control and Countermeasures (SPCC) Plan for minimizing the potential for discharges of petroleum products.

b. There shall be no underground storage of petroleum products during project construction. The largest aboveground fuel storage facility shall have a capacity in accordance with local fuel storage regulations.

- c. Contractor shall be responsible for implementing appropriate measures to prevent spills and for controlling and counteracting any adverse effects of materials that are spilled or encountered during construction. The implementation of these Spill Prevention, Control, and Countermeasures requirements during construction shall be closely monitored and enforced by the Owner and the Resident Project Representative.

3.3.17.3. Storage, Unloading, and Transfer of Toxic and Hazardous Materials

- a. Fuel and lubricating oil storage tanks shall be placed on a gravel surface and shall be surrounded by an earthen berm large enough to contain the entire contents of the tanks in the event of a spill. The fuel tanks shall be filled manually from a supplier's truck. Transfer operations related to these tanks shall be monitored by the Contractor. A tank level indicator shall be provided to assist in the detection of fuel leakage.
- b. Batteries and transformers shall be stored in a curbed area with an impermeable lining. The area shall be sized to contain the entire content of the containers in the event of a spill.

3.3.17.4. Operating Procedures.

3.3.17.5. Diesel Fuel and Lubricating Oil

- a. Detection and cleanup of liquid fuel or oil leaks or spills shall be accomplished as follows:
 - i. Leak Detection. Leaks in any of the tanks shall be detected by Contractor during a daily check or during the performance of other duties. Any significant liquid fuel leak shall be reported promptly to Owner and to the RPR. Contractor shall ensure that the source of the leak is repaired and that the spilled fluid is cleaned up in a timely manner.
 - ii. Leakage Cleanup and Disposal. Any liquid fuel leakage from an aboveground tank shall be collected in the bermed area surrounding the tank or in absorbent materials. Contaminated absorbent materials shall be disposed of commercially or in a licensed landfill in a timely manner.

3.3.17.6. Batteries and Transformers

- a. Detection and cleanup of battery acid and electrical equipment fluids shall be accomplished as follows:
 - i. Leak Detection. Leaks in batteries or transformers, if they occur, shall be detected by the Contractor during a weekly check or during the performance of other duties. Any leak shall be reported to Owner and to the RPR. Contractor shall ensure that the source of the leak is repaired and that the spilled fluid is cleaned up in a

timely manner.

- ii. Leakage Cleanup and Disposal. Any leakage of battery acid or electrical equipment fluids shall be collected in the bermed area surrounding the tank or in absorbent materials. Contaminated absorbent materials shall be transported offsite and disposed of commercially or in a licensed landfill.

3.3.18. FIRE PREVENTION

3.3.18.1. Fire Prevention Program Manager

- a. Contractor shall designate a Fire Prevention Program Manager to be responsible for preparing a fire prevention program and ensuring that it is carried out through completion of Contract. The Fire Prevention Program Manager shall have the authority to enforce the provisions of this and other applicable fire prevention standards.
- b. Where there is public fire protection or a private fire brigade, the Fire Prevention Program Manager shall be responsible for developing pre-fire plans with the fire agencies. This plan shall be updated as necessary.
- c. The Fire Prevention Program Manager shall be responsible for assuring that proper training has been provided to the Contractor's employees in the use of fire protection equipment.
- d. The Fire Prevention Program Manager shall be responsible for the presence of adequate numbers and types of fire protection devices and appliances and for their proper maintenance.

3.3.18.2. Fire Reporting

- a. There shall be readily available telephone service to the site of the Work. Appropriate telephone numbers shall be conspicuously posted near each telephone. Instructions shall be issued to notify the proper authorities immediately in case of fire.

3.3.18.3. Access for Fire Fighting

- a. Every site shall be accessible to fire department apparatus by way of access roadways.
- b. Access roadways shall not be obstructed in any manner, including parking of vehicles. "No Parking" signs or other appropriate notice, or both, prohibiting obstruction may be required.
- c. Access for use of heavy firefighting equipment shall be provided to the immediate jobsite at the start of the Contract and maintained until completion.

3.3.18.4. General Fire Prevention Provisions

- a. Smoking: Smoking shall be prohibited at all times in the underground excavations and at or in the vicinity of hazardous operations or combustible/flammable materials. "No Smoking" signs shall be posted in these areas.
- b. Refueling: Special care shall be taken to prevent fires when refueling equipment.
- c. Oil Filters, Cartridges, and Oily Rags: Used and discarded oil filters, cartridges, and oil rags or waste shall be removed from the site and disposed of properly.
- d. Storage of Flammables: Glass jugs or bottles shall not be used as storage containers for flammable materials. Gasoline, oil, grease, and other highly flammable material shall be stored either in a separate building, or at a site where all debris is cleared within a radius of 25 feet. Storage buildings or sites shall be a minimum distance of 50 feet from other structures. Storage buildings shall be adequately posted with highly visible signs to warn of the flammables and to prohibit smoking in or around the buildings.
- e. Welding: Welding shall be accomplished in service areas when possible. If welding at field locations is required, all flammable material shall be cleared for a distance of 15 feet around the area.

3.3.18.5. Portable Fire Extinguishers

- a. Contractor shall supply portable fire extinguishers during construction in accordance with NFPA #10 and International Fire Code, Section 1414.1.

3.3.19. TEMPORARY RESIDENCE

- 3.3.19.1. Travel trailers, recreational vehicles, mobile homes, or similar means to provide overnight accommodations will not be allowed at the site of the work. Workmen will not be allowed to remain on the site before or after work hours. Overnight use of the site will only be allowed when construction scheduling may require 24-hour shifts or when otherwise approved by the Owner.

3.3.20. PROJECT IDENTIFICATION AND CONSTRUCTION SIGNS

- 3.3.20.1. Contractor shall provide project identification signs. The signs shall be erected at the beginning of construction work in the location designated by the Owner. At completion of the work, the signs shall be removed by Contractor.
 - a. Project identification signs shall be constructed in accordance with specification section 06090 – Carpentry and the Contract Drawings.
- 3.3.20.2. Each Contractor shall provide business signs on their field offices, storage facilities, and temporary buildings

3.3.20.3. Each Contractor shall provide informational signs as required by applicable laws ordinances, standards, and codes to help maintain the safety and health at the work site, such as “Danger,” “High Voltage,” etc.

3.3.20.4. Any additional signs requested by Contractor must be approved by the Owner.

(End of Section 01500)

Section 01614 SHIPMENT DELIVERY STORAGE AND HANDLING REQUIREMENTS

PART 1 GENERAL

1.1. SCOPE

- 1.1.1. This section covers the preparation for shipment, delivery, storage, and handling of materials and equipment.

PART 2 PRODUCTS

2.1. Not Used.

PART 3 EXECUTION

3.1. PREPARATION FOR SHIPMENT

- 3.1.1. All materials and equipment shall be suitably packaged to facilitate handling and protect against damage during transit and storage. All equipment shall be boxed, crated or otherwise completely enclosed and protected during shipment, handling, and storage; and shall be protected from exposure to the elements and shall be kept dry at all times. Painted and coated surfaces shall be protected against impact, abrasion, discoloration, and other damage. Painted and coated surfaces which are damaged prior to acceptance of materials or equipment shall be repainted or recoated to the satisfaction of Engineer.

- 3.1.2. Grease and lubricating oil shall be applied to all bearings, rotating parts, and similar items as required by the product manufacturer.

3.2. SHIPPING

- 3.2.1. Before shipping, each item, package, piece of equipment, or bundle of material shall be tagged or marked as identified in the delivery schedule, shop drawings, or project-specific submittals. Complete packing lists and bills of material shall be included with each shipment.

3.3. DELIVERY

- 3.3.1. Contractor shall bear the responsibility for delivery of equipment, spare parts, special tools, and materials to the site and shall comply with the requirements specified herein and shall provide required information concerning the shipment and delivery of the materials specified in this Contract. These requirements also apply to any subsuppliers making direct shipments to the Site.

- 3.3.2. Contractor shall, either directly or through contractual arrangements with others, accept responsibility for the safe handling and protection of the equipment and materials furnished under this Contract before and after receipt at the port of entry. Acceptance of the equipment shall be made after it is installed, tested, placed in operation and found to comply with all the specified requirements.

- 3.3.3. All items shall be checked against packing lists immediately on delivery to the site for damage and for shortages. Damage and shortages shall be remedied with the minimum of delay.

- 3.3.4. Delivery of portions of the equipment in several individual shipments shall be subject to review of Engineer before shipment. When permitted, all such partial shipments shall be plainly marked to identify, to permit easy accumulation, and to facilitate eventual installation.

3.4. STORAGE

- 3.4.1. Upon delivery, all equipment and materials shall immediately be stored and protected until installed in the Work.
- 3.4.2. Stacked items shall be suitably protected from damage by spacers or load distributing supports that are safely arranged. No metalwork (miscellaneous steel shapes and reinforcing steel) shall be stored directly on the ground. Masonry products shall be handled and stored in a manner to hold breakage, chipping, cracking, and spalling to a minimum. Cement, lime, and similar products shall be stored off the ground on pallets and shall be covered and kept completely dry at all times. Pipe, fittings, and valves may be stored out of doors, but must be placed on wooden blocking. PVC pipe, geomembranes, plastic liner, and other plastic materials shall be stored off the ground on pallets and protected from direct sunlight.
- 3.4.3. Pumps, motors, electrical equipment, and all equipment with antifriction or sleeve bearings shall be stored in weathertight structures maintained at a temperature above 60°F. Electrical equipment, controls, and insulation shall be protected against moisture and water damage. All space heaters furnished in equipment shall be connected and operated continuously.
- 3.4.4. Equipment having moving parts, such as gears, bearings, and seals, shall be stored fully lubricated with oil, grease, etc., unless otherwise instructed by the manufacturer. Manufacturer's storage instructions shall be carefully followed by Contractor.
- 3.4.5. When required by the equipment manufacturer, moving parts shall be rotated a minimum of twice a month to ensure proper lubrication and to avoid metal to metal "welding." Upon installation of the equipment, Contractor shall, at the discretion of Engineer, start the equipment at one-half load for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.
- 3.4.6. When required by the equipment manufacturer, lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. New lubricants shall be put into the equipment by Contractor at the time of acceptance.
- 3.4.7. Equipment and materials shall not show any pitting, rust, decay, or other deleterious effects of storage when installed in the Work.
- 3.4.8. In addition to the protection specified for prolonged storage, the packaging of spare units and spare parts shall be for export packing and shall be suitable for long-term storage in a damp location. Each spare item shall be packed separately and shall be completely identified on the outside of the container.

3.5. HANDLING

- 3.5.1. Stored items shall be laid out to facilitate their retrieval for use in the Work. Care shall be taken when removing the equipment for use to ensure the

precise piece of equipment is removed and that it is handled in a manner that does not damage the equipment.

- 3.5.2. During handling, carbon steel constructed material including chains, straps, and forks on lifting equipment shall not directly contact any equipment or material constructed of stainless steel. It shall be the Contractor's responsibility to correct any carbon steel contamination of stainless steel.

(End of Section 01614)

PART 1 GENERAL

1.1. SUMMARY

1.1.1. Section includes administrative and procedural requirements for project record documents, including the following:

1.1.1.1. Record Drawings

1.1.1.2. Miscellaneous record submittals

PART 2 PRODUCTS

2.1. Not Used.

PART 3 EXECUTION

3.1. RECORD DRAWINGS

3.1.1. Water, Sewer, and Drainage System Record Drawings

3.1.1.1. The Contractor shall keep accurate, legible records of the locations, types, and sizes of drainage pipes, drainage structures, sanitary sewer lines, service laterals, manholes, water lines, and other related work performed.

a. Preparation:

- i. Before final acceptance of the completed installation and final payment by the Owner, the Contractor shall deliver to the Engineer, two sets of record drawings accurately depicting location, elevation, size, and material of the installed components.

3.1.2. Record Prints

3.1.2.1. In addition to copies required by project permit conditions and closeout requirements, maintain two sets of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued in accordance with Article 7 of the General Conditions as identified in Section 00700 (C-700).

a. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

- i. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
- ii. Accurately record information in an acceptable drawing technique.
- iii. Record data as soon as possible after obtaining it.
- iv. Record and check the markup before enclosing concealed

installations.

- v. Cross-reference record prints to corresponding photographic documentation.
- b. Content: Types of items requiring marking include, but are not limited to, the following:
- i. Dimensional changes to Drawings.
 - ii. Revisions to details shown on Drawings.
 - iii. Depths of foundations.
 - iv. Locations and depths of underground utilities.
 - v. Revisions to routing of piping and conduits.
 - vi. Revisions to electrical circuitry.
 - vii. Changes made by Change Order or Construction Change Directive.
 - viii. Changes made following Engineer's written orders.
 - ix. Details not on the original Contract Drawings.
 - x. Field records for variable and concealed conditions.
 - xi. Record information on the Work that is shown only schematically.
- c. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
- d. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
- e. Mark important additional information that was either shown schematically or omitted from original Drawings.
- f. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

3.1.2.2. Record Digital Data Files

- a. Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Engineer. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
 - i. Format: Annotated PDF electronic file with comment function enabled and as otherwise required by project permit conditions and closeout requirements.
 - ii. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and

notations where applicable.

- 3.1.2.3. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - a. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - b. Format: Annotated PDF electronic file with comment function enabled.
 - c. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 - d. Identification: As follows:
 - i. Project name.
 - ii. Date.
 - iii. Designation "PROJECT RECORD DRAWINGS."
 - iv. Name of Engineer.
 - v. Name of Contractor.

3.2. RECORD PRODUCT DATA

3.2.1. Recording

- 3.2.1.1. Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

3.2.2. Preparation

- 3.2.2.1. Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
- 3.2.2.2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
- 3.2.2.3. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
- 3.2.2.4. Note related Change Orders and record Drawings where applicable.

3.2.3. Format

- 3.2.3.1. Submit record Product Data as annotated PDF electronic file.
- 3.2.3.2. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

3.3. MISCELLANEOUS RECORD SUBMITTALS

3.3.1. Assemble miscellaneous records required by General Conditions and other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

3.3.2. Format

3.3.2.1. Submit miscellaneous record submittals as PDF electronic file(s).

3.3.2.2. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

3.4. MAINTENANCE OF RECORD DOCUMENTS

3.4.1. Maintenance of Record Documents

3.4.1.1. Store record documents in a secure location apart from the Contract Documents used for construction.

3.4.1.2. Do not use project record documents for construction purposes.

3.4.1.3. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss.

3.4.1.4. Provide access to project record documents for Engineer's reference during normal working hours.

(End of Section 01783)

Part 1 GENERAL

1.1 RELATED SECTIONS

1.1.1 GENERAL:

1.1.1.1 Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, material, equipment, and services indicated on the Drawings or specified herein or reasonably necessary for and incidental to a complete job.

1.1.2 Related Sections include the following:

1.1.2.1 Submittals Section 01300

1.1.2.2 Cleaning Up Section 02995

1.2 DESCRIPTION OF WORK

1.2.1 GENERAL: Demolition and removal of items identified on the plans to be removed and items incidental to the construction of the proposed Work.

1.3 SUBMITTALS

1.3.1 GENERAL:

1.3.1.1 Submit proposed salvage demolition and removal procedures to the Engineer for approval before work is started. Procedures shall provide for careful removal and disposition of materials specified to be salvaged, coordination with other work in progress, a detailed description of methods and equipment to be used for each operation and of the sequence of operations.

1.4 REQUIREMENTS

1.4.1 GENERAL:

1.4.1.1 The work includes demolition or removal of all construction indicated or specified. Do not begin demolition until authorization is received from the Engineer; refer to paragraph TITLE TO MATERIALS, hereinafter. Remove rubbish and debris from the job site daily, unless otherwise directed; do not allow accumulations inside or outside the building(s). Store materials that cannot be removed daily in areas specified by the Engineer.

1.5 DUST CONTROL

1.5.1 GENERAL: Take appropriate action to control the spread of dust generated by construction activities and to avoid the creation of a nuisance in the surrounding area.

1.6 PROTECTION

1.6.1 EXISTING WORK:

1.6.1.1 Protect existing work which is to remain in place, that is to be reused, or which is to remain the property of the Owner, by temporary covers, shoring, bracing, and supports. Items which are to remain, and which are to be salvaged and which are damaged during performance of the work shall be repaired to their original condition or replaced with new. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal work.

1.6.2 FACILITIES:

1.6.2.1 Protect all electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities.

1.7 BURNING

1.7.1 GENERAL: Burning will not be permitted.

Part 2 PRODUCTS

2.1 NOT USED.

Part 3 EXECUTION

3.1 INSPECTION

3.1.1 GENERAL:

3.1.1.1 Examine the areas and conditions under which demolition and removal will be performed and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 EXISTING FACILITIES TO BE REMOVED

3.2.1 PAVING AND SLABS

3.2.1.1 Remove concrete and asphaltic concrete paving and slabs including aggregate base to a depth of 1.0 foot below grade.

3.3 DISPOSITION OF MATERIAL

3.3.1 TITLE TO MATERIALS: Except where indicated otherwise, specifically specified otherwise in other sections, or as directed by the Owner, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from the Owner's property. Title to all materials resulting from demolition, and all materials and equipment to be removed, is vested in the Contractor upon approval by the Engineer of the Contractor's demolition and removal procedures, and authorization by the Engineer to begin demolition. The Owner will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.

3.3.2 REUSE OF MATERIALS: Carefully remove and store materials indicated to be reused or relocated to prevent damage and reinstall as the work progresses.

3.3.3 SALVAGED MATERIALS: Carefully remove materials that are indicated on the plans or identified by the Owner or Engineer to be removed by the Contractor and that are to remain the property of the Owner, and deliver to a storage site, as directed, within 10 miles of the work site.

3.4 CLEAN UP

3.4.1 DEBRIS AND RUBBISH:

3.4.1.1 Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Clean up spillage from streets and adjacent areas. Other applicable requirements are included under Section 02995.

3.4.2 REGULATIONS

3.4.2.1 Comply with federal, state, and local hauling and disposal regulations.

(End of Section 02050)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, materials, equipment, and services indicated on the Drawings, or specified herein, or reasonably necessary for or incidental to a complete job.

1.1.2 Related Sections include the following:

1.1.2.1 01300 – Submittals

1.1.2.2 02240 – Control of Water

1.1.2.3 02400 – Shoring

1.1.2.4 02576 – Excavated Material Disposal

1.2 DESCRIPTION OF WORK

1.2.1 The extent of excavation and backfill is limited to the areas of construction and includes (but is not necessarily limited to) stockpiling of topsoil, site grading, excavation of footings and trenches, de-watering, filling, backfilling, compaction, finish grading, and spreading of topsoil.

1.2.2 Perform all excavation, de-watering, sheeting, bracing, and backfilling in such a manner as to eliminate all possibility of undermining or disturbing the foundations of existing structures.

1.3 QUALITY ASSURANCE

1.3.1 REFERENCED STANDARDS

1.3.1.1 Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards. Comply with the provisions of the following codes and standards, except as otherwise shown or specified.

- | | | |
|----|------------------|---|
| a) | ASTM C33 - 18 | Standard Specification for Concrete Aggregates |
| b) | ASTM D698 – 12e2 | Standard Test Methods for laboratory compaction characteristics of soil using standard effort (12 400 ft-lbf/ft ³ (600KN-m/m ³)) |
| c) | ASTM D1557 | Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort. |
| d) | ASTM D3282 – 15 | Standard practice for classification of soils and soil-aggregate mixtures for highway construction purposes. |

- 1.3.1.2 ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

1.3.2 SOIL TESTING AND INSPECTION SERVICE

- 1.3.2.1 At the option of the Owner, additional compaction tests of all fill areas will be made by an independent testing laboratory. Rework any fill areas which fail to meet the compaction requirements as herein specified and perform this work at no additional cost to the Owner. Testing of fill areas will be provided by the Owner and paid for by the Owner, except for testing specified to be the responsibility of the Contractor. Tests which reveal non-conformance with the Specifications and all succeeding tests for the same area, until conformance with the Specifications is established, shall be at the expense of the Contractor.

1.4 JOB CONDITIONS

1.4.1 EXISTING UTILITIES

- 1.4.1.1 Prior to beginning any excavation, locate all existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protection and support during earthwork operations.
- 1.4.1.2 Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Engineer immediately for directions as to procedure. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. The Contractor shall repair damaged utilities to the satisfaction of the Owner and utility companies at no additional cost to the Owner.
- 1.4.1.3 Do not interrupt existing utilities serving facilities occupied and used by others, except when permitted in writing by the Owner, and then only after acceptable temporary utility services have been provided.
- 1.4.1.4 Demolish, and completely remove from site, existing underground utilities that conflict with construction and are no longer active. Coordinate with utility companies for shut-off of services if lines are active.

1.4.2 TEMPORARY PROTECTION

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

1.4.3 SHEETING AND BRACING

- 1.4.3.1 Make all excavations in accordance with the rules and regulations promulgated by the Department of Labor, Occupational Safety and Health Administration, "Safety and Health Regulations for Construction." Furnish, put in place, and maintain such sheeting, bracing, etc., as may be necessary to support the sides of the excavation and to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise injure or delay the work, or endanger adjacent structures, roads, utilities, or other improvements.

1.4.4 DE-WATERING

- 1.4.4.1 Provide pumping and drainage facilities adequate to keep the excavated area sufficiently dry from ground water and surface runoff so as not to adversely affect construction procedures or cause excessive disturbance of underlying natural soils. The drainage of all water resulting from pumping shall be arranged so as not to cause damage to adjacent properties.
- 1.4.4.2 Control the grading on the site so that the surface of the ground will properly slope to prevent the accumulation of water on excavated or filled areas.
- 1.4.4.3 The lowering of the existing groundwater levels due to the construction activities, including de-watering, shall not cause settlement of adjacent structures which would result in damage. If required, provide cutoff walls and/or recharge system to maintain ground water levels at elevations which will not cause damage to adjacent structures or facilities.

PART 2 PRODUCTS

2.1 DEFINITIONS

2.1.1 SATISFACTORY SUBGRADE SOIL MATERIALS

- 2.1.1.1 Soils complying with ASTM D 3282, soil classification Groups A-1, A-2-4, A-2-5, and A-3.

2.1.2 UNSATISFACTORY SUBGRADE SOIL MATERIALS

- 2.1.2.1 Soils described in ASTM D 3282, soil classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat and other highly organic soils, unless otherwise acceptable to the Engineer.

2.1.3 COHESIONLESS SOIL MATERIALS

- 2.1.3.1 Gravels, sand-gravel mixtures, sands, and gravelly-sands.

2.1.4 COHESIVE SOIL MATERIALS

- 2.1.4.1 Clayey and silty gravels, sand-clay mixtures, gravel-silt mixtures, clayey and silty sands, sand-silt mixtures, clays, silts, and very fine sands.

2.2 SOIL MATERIALS

2.2.1 BACKFILL AND FILL MATERIALS

- 2.2.1.1 Provide satisfactory soil materials for backfill and fill, free of masonry, rock, or gravel larger than (2) inches in any dimension, and free of metal, gypsum, lime, debris, waste, frozen materials, vegetable, and other deleterious matter. Use only excavated material that has been sampled, tested, and certified as satisfactory soil material.
- 2.2.1.2 Contractor shall submit, in accordance with the Section 01300 – Submittals, the characteristics of excavated materials proposed for use as backfill, to include soil classification, gradation, liquid and plastic limits, moisture density relationship, and certification that excavated material meets the requirements of a Satisfactory Subgrade Soil Material, to the Engineer for review and approval prior to using excavated material as backfill. Materials not meeting requirements will not be allowed for use as backfill.

Characteristics of the excavated materials shall be determined by an independent testing agency.

2.2.2 CRUSHED STONE

2.2.2.1 Crushed stone or crushed gravel placed under structures as indicated on the Drawings or used for pipe bedding shall meet the requirement of ASTM C 33 – 18, Gradation 57.

2.2.3 BORROW MATERIALS

2.2.3.1 Provide from offsite all materials needed in addition to site excavations. Include in the Unit Price Bid all costs for obtaining, hauling, and placing this material.

2.2.3.2 All borrow materials proposed for use must be approved by the Engineer before materials are hauled to the site. Contractor shall submit, in accordance with the submittal procedures section, the characteristics of proposed borrow materials, to include soil classification, gradation, liquid and plastic limits, and moisture density relationship, and certification that borrow material meets the requirements of a Satisfactory Subgrade Soil Material, to the Engineer for review and approval prior to hauling any borrow material to the site. Borrow material characteristics shall be determined by an independent testing agency.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 INSPECTION

3.1.1.1 Examine the areas and conditions under which excavating, and backfilling is to be performed and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.1.2 DE-WATERING

3.1.2.1 Prevent surface water and/or ground water from flowing into excavated areas. Use berms or drainage ditches to divert surface drainage away from the excavation. Use an approved subsurface de-watering system, such as bailing, pumping or a well point system as conditions warrant, to remove ground water from areas to be excavated. The costs of de-watering shall be included in the respective bid items as required of the completion of the work in accordance with the Contract Documents. There will be no individual pay item for de-watering.

3.1.2.2 The design of the subsurface de-watering system shall allow the contractor to develop a substantially dry and workable subgrade for the execution of subsequent operations. Maintain pumps, sumps, suction and discharge lines, and other de-watering system components necessary to convey water away from the excavation.

3.1.2.3 Dispose of all water pumped or drained from the work in a suitable manner without undue interference with other work, damage to pavements, other

surfaces or property. Provide suitable temporary pipes, flumes or channels for water which may flow along or across the site of the work.

3.1.2.4 See specification Section 02240 – Control of Water for further requirements.

3.1.3 MATERIAL STORAGE

3.1.3.1 Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.

3.1.3.2 Locate and retain soil materials away from edge of excavations.

3.1.4 DISPOSAL OF SURPLUS MATERIAL

3.1.4.1 Surplus excavated material not needed or acceptable for backfill shall, upon approval of the Engineer, be removed from the construction site and legally disposed of in accordance with specification Section 02576 – Excavated Material Disposal.

3.1.5 BRIDGING TRENCHES

3.1.5.1 Provide suitable and safe bridges and other crossings where required for the accommodation of travel; provide access to the property during construction and remove said structures thereafter.

3.1.5.2 Bridge or backfill trenches in any portion of the travel lanes of roads at the end of each day's operation to provide for safe travel. No additional compensation will be made for this work.

3.1.6 PROTECTION OF STREAMS

3.1.6.1 Exercise reasonable precaution to prevent the silting of streams. Provide, at Contractor's expense, temporary erosion, and sediment control measures to prevent the silting of streams and existing drainage facilities as directed by the Engineer or as indicated on the Drawings.

3.1.7 AIR POLLUTION

3.1.7.1 Comply with all pollution control rules, regulations, ordinances, and statutes which apply to any work performed under the Contract, including any air pollution control rules, regulations, ordinances and statutes, or any municipal regulations pertaining to air pollution.

3.1.7.2 During the progress of the work, maintain the area of activity, including sweeping and sprinkling of streets as necessary, so as to minimize the creation and dispersion of dust. If the Engineer decides that it is necessary to use calcium chloride or more effective dust control, furnish and spread the material, as directed, and without additional compensation.

3.2 EXCAVATION

3.2.1 GENERAL

3.2.1.1 Excavation consists of the removal and disposal of all materials encountered for footings, foundations, pipe work, and other construction as shown on the Drawings. Perform all excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

3.2.2 STRIPPING

3.2.2.1 Remove all topsoil, vegetable matter, and organic materials over proposed excavations. Stockpile the stripped materials which are suitable for reuse and preserve for re-spreading on completed surfaces. Protect and maintain topsoil stockpile until needed.

3.2.3 EXCAVATION CLASSIFICATION

3.2.3.1 All excavation will be performed as unclassified excavation.

3.2.4 UNAUTHORIZED EXCAVATION

3.2.4.1 Unauthorized excavation consists of the removal of materials beyond indicated elevations without specific direction of the Engineer. Under footings, foundations, bases, etc., fill unauthorized excavation by extending the indicated bottom elevation of the concrete to the bottom of the excavation, without altering the required top elevation. Lean concrete fill may be used to bring elevations to proper position only when acceptable to the Engineer.

3.2.4.2 Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of the same classification, unless otherwise directed by the Engineer.

3.2.5 EXCAVATION FOR STRUCTURES

3.2.5.1 Conform to elevations and dimensions shown within a tolerance of plus or minus one inch and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction required, and for inspection.

3.2.5.2 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. Final footing excavations should not be allowed to remain open overnight without covering unless permitted by Engineer.

3.2.6 TRENCH EXCAVATION

3.2.6.1 GENERAL

- a) Perform all excavation of every description and of whatever substance encountered so that pipe or conduit can be laid to the alignment and depth shown on the Drawings.
- b) Brace and shore all trenches, where required, in accordance with the rules and regulations, promulgated by the Department of Labor, Occupational Safety and Health Administration, "Safety and Health Regulations for Construction".
- c) Make all excavations by open cut unless otherwise specified or indicated on the Drawings.

3.2.6.2 WIDTH OF TRENCHES

- a) Excavate trenches sufficiently wide to allow proper installation of pipe, fittings, and other materials and not less than 18 inches clear of pipe on either side at any point. Do not widen trenches by scraping or loosening materials from the sides. Where supports, and sheeting and bracing are required, trench may be of extra width so as to permit the placing of the trench supporting material.

3.2.6.3 TRENCH EXCAVATION IN EARTH

- a) Earth excavation includes all excavation of whatever substance encountered. In locations where pipe is to be bedded in earth excavated trenches, fine grade the bottoms of such trenches to allow firm bearing for the bottom of the pipe on undisturbed earth. Where any part of the trench has been excavated below the grade of the pipe, fill the part excavated below such grade with pipe bedding material and compact at the Contractor's expense.

3.2.6.4 TRENCH EXCAVATION IN FILL

- a) If pipe is to be laid in embankments or other recently filled material, first place the fill material to the finish grade or to a height of at least one foot above the top of the pipe, whichever is the lesser. Take particular care to ensure maximum consolidation of material under the pipe location. Excavate the pipe trench as though in undisturbed material.

3.2.6.5 TRENCH BOTTOM IN POOR SOIL

- a) Excavate and remove unstable or unsatisfactory soils to a width and depth, as directed by the Engineer, and refill with a thoroughly compacted gravel bedding. The undercutting and filling with gravel bedding of unstable soils caused by flooding or insufficient dewatering shall be at the expense of the Contractor.

3.2.6.6 BELL HOLES

- a) Provide bell holes at each joint to permit the joint to be made properly and to provide a continuous bearing and support for the pipe.

3.2.7 EXCAVATION NEAR EXISTING UTILITIES AND STRUCTURES

3.2.7.1 EXISTING UTILITIES

- a) Attention is directed to the fact that there are pipes, drains, and other utilities in locations along and adjacent to the proposed work. Where information is available as to the location of existing pipes, drains, and other utilities, the approximate locations have been indicated on the Drawings; however, the completeness or accuracy of the information given is not guaranteed.
- b) As the excavation approaches pipes, conduits, or other underground structures or when directed by the Owner or Engineer, discontinue digging by machinery and excavate by means of hand tools. Such manual excavation, when incidental to normal excavation, is included in the work to be done under items involving normal excavation.
- c) Where determination of the exact location of a pipe or other underground structure is necessary for doing the work properly, the Contractor may be

required to excavate test pits to determine such locations. When such test pits may be properly considered as incidental to other excavation, the work is understood to be included as a part of the excavation.

3.2.7.2 EXISTING STRUCTURES

- a) Support and protect from damage all existing pipes, poles, wires, fences, guard rails, curbing, catch basins, manholes, property line markers, and other structures which do not require temporary or permanent relocation.
- b) Restore or replace damaged items, without compensation, to the condition in which they were found immediately before the work under this project was begun.

3.3 BACKFILL

3.3.1 BACKFILL AROUND STRUCTURES

3.3.1.1 GENERAL

- a) Unless otherwise specified or indicated on the Drawings, use suitable material for backfill which was removed in the course of making the construction excavations. Do not use frozen material for the backfill and do not place backfill upon frozen material. Remove previously frozen material before new backfill is placed.

3.3.1.2 MATERIAL

- a) Approved selected materials available from the excavations may be used for backfilling around structures. Obtain material needed in addition to that of construction excavations from approved banks or other approved deposits. Furnish all borrow material needed on the work. Place and compact all material, whether from the excavation or borrow, to make dense, stable fill. Use fill material which contains no vegetation, masses or roots, individual roots over 18 inches long or more than 1/2-inch in diameter, stones over 4 inches in diameter, or porous matter. Organic matter must not exceed minor quantities.

3.3.1.3 PLACING BACKFILL

- a) Do not place backfill against or on structures until they have attained sufficient strength to support the loads (including construction loads) to which they will be subjected, without distortion, cracking, or other damage. Make special leakage tests, if required, as soon as practicable after the structures are structurally adequate and other necessary work has been done. Use the best of the excavated materials in backfilling within 2 feet of the structure. Avoid unequal soil pressures by depositing the material evenly around the structure. Place fill and backfill in layers not more than 6 inches thick, except as specified otherwise herein, and compact each layer evenly to the specified density. Do not backfill against concrete without Engineer's approval.

3.3.2 TRENCH BACKFILL

3.3.2.1 GENERAL:

- a) Unless otherwise specified or indicated on the Drawings, use suitable material for backfill which was removed in the course of making the construction excavations or approved borrow materials imported from offsite. Do not use frozen material for the backfill and do not place backfill on frozen material. Remove previously frozen material before new backfill is placed. Start backfilling as soon as practicable after the pipes have been laid, or the structures have been built and are structurally adequate to support the loads, including construction loads to which they will be subjected, and proceed until its completion.
- b) With the exception mentioned below in this paragraph, do not backfill trenches at pipe joints until after that section of the pipeline has successfully passed any specified tests required. Should the Contractor wish to minimize the maintenance of lights, and barricades, and the obstruction of traffic, he may, at his own risk, backfill the entire trench as soon as practicable after installation of pipe and the related structures have acquired a suitable degree of strength. He shall, however, be responsible for removing and later replacing such backfill, at his own expense, should he be ordered to do so in order to locate and repair or replace leaking or defective joints or pipe.

3.3.2.2 MATERIALS

- a) The nature of the materials will govern both their acceptability for backfill and the methods best suited for their placement and compaction in the backfill. Both are subject to the approval of the Engineer. Do not place stone or rock fragments larger than (2) inches in greatest dimension in the backfill. Do not drop large masses of backfill material into the trench in such a manner as to endanger the pipeline. Use a timber grillage to break the fall of material dropped from a height of more than 5 feet. Exclude pieces of bituminous pavement from the backfill.

3.3.2.3 ZONE AROUND PIPE

- a) Place bedding material to the level shown on the Drawings and work material carefully around the pipe to ensure that all voids are filled, particularly in bell holes. For backfill up to a level of 1 foot over the top of the pipe, use only selected materials containing no rock, clods or organic materials. Place the backfill and compact thoroughly under the pipe haunches and up to the mid-line of the pipe in layers not exceeding 6 inches in depth. Place each layer and tamp carefully and uniformly so as to eliminate the possibility of lateral displacement. Place and compact the remainder of the zone around the pipe and to a height of one foot above the pipe in layers not exceeding 6 inches and compact to a maximum density of at least 98 percent as determined by ASTM D698 – 12e2.

3.3.2.4 TAMPING

- a) Deposit and spread backfill materials in uniform, parallel layers not exceeding 12 inches thick before compaction. Tamp each layer before the next layer is placed to obtain a thoroughly compacted mass. Furnish and use, if necessary, an adequate number of power-driven tampers, each weighing at least 20 pounds for this purpose. Take care that the material close to the bank, as well as in all other portions of the trench, is thoroughly compacted. When the trench width and the depth to which backfill has been placed are sufficient to make it feasible, and it can be done effectively and without damage to the pipe, backfill may, on approval, be compacted by the

use of suitable rollers, tractors, or similar powered equipment instead of by tamping. For compaction by tamping (or rolling), the rate at which backfilling material is deposited in the trench shall not exceed that permitted by the facilities for its spreading, leveling and compacting as furnished by the Contractor.

- b) Wet the material by sprinkling, if necessary, to ensure proper compaction by tamping (or rolling). Perform no compaction by tamping (or rolling) when the material is too wet either from rain or applied water to be compacted properly.

3.3.2.5 TRENCH COMPACTION

- a) Compact backfill in pipe trenches to the maximum density as shown on the Drawings, or as listed in subsection 3.6 entitled COMPACTION, with a moisture content within the range of values of maximum density as indicated by the moisture-density relationship curve.

3.4 SITE GRADING

3.4.1 GENERAL

- 3.4.1.1 Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finish the surface within specified tolerances; compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

3.4.2 GROUND SURFACE PREPARATION

- 3.4.2.1 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. Shape the subgrade as indicated on the Drawings by forking, furrowing, or plowing so that the first layer of new material placed thereon will be well bonded to it.

3.4.3 PLACEMENT AND COMPACTION

- 3.4.3.1 Place backfill and fill materials in layers not more than 6 inches in loose depth. Before compaction, moisten or aerate each layer as necessary to provide the optimum moisture content. Compact each layer to the required percentage of maximum density for each area classification. Do not place backfill or material on surfaces that are muddy, frozen or contain frost or ice.
- 3.4.3.2 In areas not accessible to rollers or compactors, compact the fill with mechanical hand tampers. If the mixture is excessively moistened by rain, aerate the material by means of blade graders, harrows, or other approved equipment, until the moisture content of the mixture is satisfactory. Finish the surface of the layer by blading or rolling with a smooth roller, or a combination thereof, and leave the surface smooth and free from waves and inequalities.
- 3.4.3.3 Place backfill and fill materials evenly adjacent to structures, to the required elevations. Take care to prevent wedging action of backfill against structures. Carry the material uniformly around all parts of the structure to approximately the same elevation in each lift.

- 3.4.3.4 When existing ground surface has a density less than that specified under subsection 3.6 entitled 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.
- 3.4.4 GRADING OUTSIDE BUILDING LINES
 - 3.4.4.1 Grade to drain away from structures to prevent ponding of water. Finish surfaces free from irregular surface changes.
- 3.4.5 PLANTING AREAS
 - 3.4.5.1 Finish areas to receive topsoil to within not more than one inch above or below the required subgrade elevations, compacted as specified, and free from irregular surface changes.
- 3.4.6 WALKS
 - 3.4.6.1 Shape the surface of areas under walks to line, grade, and cross-section, with the finish surface not more than zero inches above or one inch below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains.
- 3.4.7 PAVEMENTS
 - 3.4.7.1 Shape the surface of the areas under pavement to line, grade and cross section, with finish surface not more than 1/2-inch above or below the required subgrade elevation, compacted as specified, and graded to prevent ponding of water after rains. Include such operations as plowing, disking, and any moisture or aerating required to provide the optimum moisture content for compaction.
 - 3.4.7.2 Fill low areas resulting from removal of unsatisfactory soil materials, obstructions, and other deleterious materials, using satisfactory soil material. Shape to line, grade, and cross section as shown on the Drawings.
- 3.4.8 GRADING SURFACE OR FILL UNDER BUILDING SLABS
 - 3.4.8.1 Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1/4-inch when tested with a 10-foot straightedge.
- 3.4.9 PROTECTION OF GRADED AREAS
 - 3.4.9.1 Protect newly graded areas from traffic and erosion and keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- 3.4.10 RECONDITIONING COMPACTED AREAS
 - 3.4.10.1 Where completed compacted areas are disturbed by subsequent construction operations or adverse weather prior to acceptance of work, scarify surface, reshape, and compact to required density prior to further construction.
- 3.5 RESPREADING TOPSOIL

3.5.1 GENERAL

- 3.5.1.1 This work consists of preparing the ground surface for topsoil application and removing topsoil from stockpile and placing and spreading the topsoil on smooth, graded areas in accordance with these Specifications.
- 3.5.1.2 Supply topsoil reasonably free from subsoil, clay lumps, stones, or other similar objects larger than 2 inches in greatest diameter, brush, stumps, roots, objectionable weeds or litter, excess acid or alkali, or any other material or substance which may be harmful to plant growth or a hindrance to subsequent smooth grading, planting, and maintenance operations.
- 3.5.1.3 Re-spread topsoil on all excavated areas and areas damaged by the work.
- 3.5.1.4 Clear the surface of the areas to be topsoiled of all stones larger than (3) inches in greatest dimension and all litter or other material which may be detrimental to proper bonding, the rise of capillary moisture, and the proper growth of the desired planting. Maintain the grades on the areas to be topsoiled in a true and even condition. Where grades have not been established, smooth grade the area and leave the surface at the prescribed grades in an even and properly compacted condition, which insofar as practical will prevent the formation of low places or pockets where water will stand.
- 3.5.1.5 Dump the topsoil in separate piles uniformly distributed on the designated areas so that when spread it will give a (4)-inch depth of compacted topsoil over the graded area. Leave in place the piles of topsoil on any given area until it has been determined that the requirements of the Specifications have been met and spreading has been authorized by the Engineer. Evenly spread the topsoil over the areas by a blade grader or other equipment. Spread in such a manner that grassing operations can proceed with a minimum of soil preparation or tilling. Correct any irregularities in the surface, resulting from topsoiling or other operations, insofar as practical to prevent the formation of low places and pockets where water will stand. Do not place topsoil when it or the ground surface is frozen, excessively wet, or in a condition otherwise unsatisfactory for preparation of planting surfaces or smooth grading operations.
- 3.5.1.6 After the topsoil has been spread and the area smoothed to the specified grades, clear the surface of all stones, roots, other objects larger than 2 inches in greatest diameter, and of all wire, brush or other objects that may interfere with subsequent planting or maintenance operations. Remove promptly any topsoil or other dirt which may be brought upon concrete as a result of hauling of topsoil.

3.6 COMPACTION

3.6.1 GENERAL

- 3.6.1.1 Control soil compaction during construction providing at least the minimum percentage of density specified for each area classification.

3.6.2 PERCENTAGE OF MAXIMUM DENSITY REQUIREMENTS

- 3.6.2.1 After compaction, all fill will be tested in accordance with Method "C" of ASTM D698 – 12e2, unless specified otherwise. Except as noted otherwise for the zone around pipe, provide not less than the percentages of maximum

density of soil material, compacted at optimum moisture content, for the actual density of each layer of soil material-in-place as identified in **Table 1**.

Table 1: Compaction Density Requirements

Fill Placement Area	Density Requirement
Structure Foundations	Top 12" - 98%; Remainder - 95%
Under Building Slabs	Top 12" - 98%; Remainder - 95%
Unpaved Areas	Compact full depth to - 92%
Walkways	Top 18" - 98%; Remainder - 95%
Drives, Roadway Pavement, and Parking	Top 24" - 98%; Remainder - 95%
Trench Backfill (Paved Areas)	Top 18" - 98%; Remainder - 95%
Trench Backfill (Unpaved Areas)	Compact full depth to - 92%
All Other Backfill	Top 24" - 98%; Remainder - 95%.

3.6.3 MOISTURE CONTROL

- 3.6.3.1 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, to prevent free water appearing on surface during or subsequent to compaction operations. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing, until moisture content is reduced to a satisfactory value, as determined by moisture-density relation tests.

3.6.4 QUALITY CONTROL TESTING

- 3.6.4.1 The **CONTRACTOR** shall employ, at his own expense, a testing agency to verify that the specified maximum density, as indicated on the drawings, or as listed in the subsection 3.6 entitled COMPACTION is achieved with a moisture content within the range of values of maximum density as indicated by the moisture-density relationship curve. The Contractor shall provide Quality Control Testing at the frequencies described below. Testing locations may be directed by the Owner or Engineer.

3.6.4.2 QUALITY CONTROL TESTING FREQUENCY

- a) STRUCTURE FOUNDATIONS: A minimum of one test per 50 linear feet of building foundation or footing.
- b) UNDER BUILDING SLABS: A minimum of one density test per 1,000 SF per lift of fill placed or per 1 foot of fill thickness, whichever results in more tests.
- c) UNPAVED AREAS: A minimum of one density test per 2,500 SF per lift of fill placed or per 1 foot of fill thickness, whichever results in more tests.
- d) WALKWAYS: A minimum of one density test per 500 SF per lift of fill placed or per 1 foot of fill thickness, whichever results in more tests.
- e) DRIVES ROADWAY PAVEMENT AND PARKING: A minimum of one density test per 1,000 SF per lift of fill placed or per 1 foot of fill thickness, whichever results in more tests.
- f) TRENCH BACKFILL: A minimum of one test of each 18 inches of the ZONE AROUND PIPE (including one at the pipe spring-line) for each run of pipe between drainage structures or pipe ends shall be performed for pipe runs

up to 20 feet in length. For pipe runs greater than 20 feet in length and less than 100 feet in length, two tests will be required. For pipe runs greater than 100 feet in length testing will be required every 30 feet.

- g) ALL OTHER BACKFILL: A minimum of one density test per 2,500 SF per lift of fill placed or per 1 foot of fill thickness, whichever results in more tests.

3.7 CARE AND RESTORATION OF PROPERTY

3.7.1 GENERAL

- 3.7.1.1 Enclose the trunks of trees which are to remain adjacent to the work with substantial wooden boxes of such height as may be necessary to protect them from piled material, equipment, or equipment operation. Use excavating machinery and cranes of suitable type and operate the equipment with care to prevent injury to remaining tree trunks, roots, branches, and limbs.
- 3.7.1.2 Do not cut branches, limbs, and roots except by permission of the Engineer. Cut smoothly and neatly without splitting or crushing. In case of cutting or unavoidable injury to branches, limbs, and trunks of trees, neatly trim the cut or injured portions and cover with an application of grafting wax or tree healing paint as directed.
- 3.7.1.3 Protect by suitable means all cultivated hedges, shrubs and plants which might be injured by the Contractor's operations. Promptly heel in any such trees or shrubbery necessary to be removed and replanted. Perform heeling in and replanting under the direction of a licensed and experienced nurseryman. Replant in their original position all removed shrubbery and trees after construction operations have been substantially completed and care for until growth is re-established.
- 3.7.1.4 Replace cultivated hedges, shrubs, and plants injured to such a degree as to affect their growth or diminish their beauty or usefulness, by items of kind and quality at least equal to the kind and quality existing at the start of the work.
- 3.7.1.5 Do not operate tractors, bulldozers, or other power-operated equipment on paved surfaces if the treads or wheels of the equipment are so shaped as to cut or otherwise injure the surfaces.
- 3.7.1.6 Restore all surfaces, including lawns, grassed, and planted areas which have been injured by the Contractor's operations, to a condition at least equal to that in which they were found immediately before the work was begun. Use suitable materials and methods for such restoration. Maintain all restored plantings by cutting, trimming, fertilizing, etc., until acceptance. Restore existing property or structures as promptly as practicable and do not leave until the end of construction period.

3.7.2 FENCES

- 3.7.2.1 Remove fences which interfere with the Contractor's operation and (unless otherwise specified) later restore them to a condition at least as good as that in which they were found immediately before the work was begun, all without additional compensation. Restore fences as promptly as possible and do not leave until the end of the construction period.

3.7.3 PROPERTY MARKERS

3.7.3.1 Replace property line markers which are disturbed or removed. Have this work performed by a Registered Land Surveyor.

(End of Section 02220)

PART 1 GENERAL

1.1 SCOPE

- 1.1.1 This section covers dewatering, depressurizing, draining and disposal of removed ground (both Contaminated and inert) and surface waters within the project site for maintaining trenches and excavations in a stable condition. The CONTRACTOR shall protect work against damages or delays due to surface runoff, tidal backflows, or rising flood waters.

1.2 REFERENCES

- 1.2.1 Federal Regulations, 29 CFR Part 1926, Standards-Excavation, Occupational Safety and Health Administration (OSHA).

1.3 RELATED WORK SPECIFIED ELSEWHERE

- 1.3.1 Submittals – Section 01300
- 1.3.2 Excavated Material Disposal – Section 02576

1.4 DEFINITIONS

- 1.4.1 Groundwater control includes dewatering and Surface Water control includes protecting work against tidal backflows, stormwater runoff, and rising floodwaters.

- 1.4.1.1 Dewatering includes lowering the water table within the excavation area and / or intercepting seepage which would otherwise emerge from slopes or bottoms of excavations and disposing of removed water. The intent of dewatering is to ensure stability of excavated slopes; prevent dislocation of material from slopes or bottoms of excavations; reduce lateral loads on sheeting and bracing; improve excavating and hauling characteristics of excavated material; prevent failure or heaving of the bottom of excavations; and to provide suitable conditions for placement of backfill materials and construction of piping, structures, and other installations.

- 1.4.1.2 Excavation drainage includes keeping excavations free of surface and seepage water.

- 1.4.1.3 Surface drainage includes use of temporary drainage ditches and dikes and installation of temporary culverts and sump pumps with discharge as required to protect the Work from any source of surface water. Control of surface drainage may also include provisions for handling tidal backflow through piping where water is conveyed from a system outfall to the work area.

- 1.4.1.4 Equipment and instrumentation for monitoring and control of the groundwater control system may include piezometers and monitoring wells, and devices, such as flow meters, for observing and recording flow rates.

1.5 PERFORMANCE REQUIREMENTS

- 1.5.1 Conduct subsurface investigations to identify groundwater conditions and to provide parameters for design, installation, and operation of groundwater control systems. Design a groundwater control system, compatible with requirements of Federal Regulations 29 CFR Part 1926 and NPDES permit to produce the following results:
 - 1.5.1.1 Effectively reduce the hydrostatic pressure affecting open cut excavations.
 - 1.5.1.2 Develop a substantially dry and stable subgrade for subsequent construction operations.
 - 1.5.1.3 Preclude damage to adjacent properties, buildings, structures, utilities, installed facilities, and other work.
 - 1.5.1.4 Prevent the loss of fines, seepage, boils, quick condition, or softening of the foundation strata.
 - 1.5.1.5 Maintain stability of sides and bottom of excavations.
 - 1.5.1.6 Provide settling and / or filtration of water so that discharges achieve minimum standards specified for removal of suspended solids.
- 1.5.2 Provide groundwater control systems to include pumps within a sump area that will not lower the groundwater level outside of the excavation. The sump area can include free drainage stone and with filter fabric and slotted pipe.
- 1.5.3 Provide drainage of seepage water and surface water, as well as water from any other source entering the excavation. Excavation drainage may include placement of drainage materials, such as crushed stone and filter fabric, together with sump pumping.
- 1.5.4 Provide ditches, berms, sheeting, pumps, and other methods necessary to divert and drain surface water from excavation and other work areas.
- 1.5.5 Locate groundwater control and drainage systems so as not to interfere with utilities, construction operations, adjacent properties, or adjacent water wells. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the OWNER and authorities having jurisdiction.
- 1.5.6 Assume sole responsibility for groundwater control systems and for any loss or damage resulting from partial or complete failure of protective measures and any settlement or resultant damage caused by the groundwater control operations. Photograph or videotape areas within the construction site and adjoining properties, sufficiently detailing existing conditions that might be misconstrued as damage caused by dewatering operations. Modify groundwater control systems or operations if they cause or threaten to cause damage to new construction, existing site improvements, adjacent property, or adjacent water wells. Repair damage caused by groundwater control systems or resulting from failure of the system to protect property as required.
- 1.5.7 Any checking of tidal flows and / or plugging of piping systems to prevent flooding of work site shall be performed in a manner that provides no reduction to existing drainage system capacity. All activities that include any temporary interruption of existing drainage system capacity shall be detailed in the Groundwater and Surface Water Control Plan and be subject to approval by the ENGINEER. At no time shall the work site be abandoned where plugging is left in place if performance of the drainage system is reliant upon its removal prior to or during a storm event.

1.6 SUBMITTALS

- 1.6.1 The following information shall be submitted in accordance with specification section 01300 – Submittal Procedures:
 - 1.6.1.1 Written Sampling and Analysis Plan detailing the field work, sample collection procedures, and laboratory analysis to be performed.
 - 1.6.1.2 Groundwater and Surface Water Control Plan prior to start of any field work, to include the following:
 - a) Names of equipment suppliers and installation subcontractors.
 - b) A description of proposed groundwater control systems indicating arrangement, location, depth and capacities of system components, installation details and criteria, and operation and maintenance procedures.
 - c) A description of proposed filters and / or settling tanks including types, sizes, capacities, and manufacturer's application recommendations.
 - d) A description of proposed tidal backflow prevention methods.
 - e) Design calculations demonstrating adequacy of proposed systems for intended applications.
 - f) Excavation drainage methods including typical drainage layers, sump pump application and other necessary means.
 - g) Surface water control and drainage installations.
 - h) Proposed handling methods and locations for disposing of removed water.
 - 1.6.1.3 Records on a weekly basis during operations:
 - 1.6.1.4 Records of flow rates obtained during monitoring of dewatering. Records should be kept in accordance with section 3.5.
 - 1.6.1.5 Maintenance records for groundwater control installations.

1.7 ENVIRONMENTAL REQUIREMENTS

- 1.7.1 CONTRACTOR shall obtain all necessary permits from agencies with control over matters affecting well installation. OWNER has a groundwater handling and discharge plan as described in the Paragraphs 3.6 through 3.8.

PART 2 PRODUCTS

2.1 EQUIPMENT AND MATERIALS

- 2.1.1 CONTRACTOR shall select equipment and materials necessary to achieve desired results for dewatering. Selected equipment and materials are subject to review by the ENGINEER through the submittals required in Paragraph 1.6, Submittals.
 - 2.1.1.1 Eductors and pumps, where used, shall be furnished, installed, and operated by an experienced contractor regularly engaged in groundwater control system design, installation, and operation.

- 2.1.1.2 Groundwater cutoffs, such as sheeting, mud mats, trench drainage or other approved methods are acceptable means to reduce groundwater inflows and control hydrostatic pressures so that the Work can be performed in dry conditions.
- 2.1.1.3 All equipment shall be kept in good repair and operating order.
- 2.1.1.4 Sufficient standby equipment, power supply, and materials shall be kept available to ensure continuous operation, where required.

PART 3 EXECUTION

3.1 UTILITY LOCATES

- 3.1.1 Prior to performing any subsurface investigations or installation of groundwater control systems, the Contractor shall confirm the location of adjacent utilities, and adjust operations as required to avoid conflicts.

3.2 UTILITY COORDINATION

- 3.2.1 CONTRACTOR shall coordinate with the POTW and the MS4/SCDHEC to determine the following:
 - 3.2.1.1 Any permits necessary for discharge of groundwater to the POTW and inclusion of the costs of obtaining such permits in the Unit Price Bid for completing the Work.
 - 3.2.1.2 Any costs associated with groundwater disposal, and inclusion of such costs in the Unit Price Bid for completing the Work.
 - 3.2.1.3 Any requirements beyond those listed herein, and inclusion of such costs in the Unit Price Bid for completing the Work.
 - 3.2.1.4 Determine applicable discharge limits for site pollutants to the POTW and stormwater drainage system.

3.3 GROUNDWATER CONTROL

- 3.3.1 Perform a subsurface investigation by borings as necessary to identify water bearing layers, piezometric pressures, and soil parameters for design and installation of groundwater control systems. The results of any investigation shall be presented in the Groundwater and Surface Water Control Plan.
- 3.3.2 Provide labor, material, equipment, techniques, and methods to lower, control and handle groundwater in a manner compatible with construction methods and site conditions. Monitor effectiveness of the installed system and its effect on adjacent property.
- 3.3.3 Install, operate, and maintain groundwater control systems in accordance with the Groundwater and Surface Water Control Plan. Notify the ENGINEER in writing of any changes made to accommodate field conditions and changes to the Work. Provide revised drawings and calculations with such notification.
- 3.3.4 Provide for continuous system operation, including nights, weekends, and holidays. Arrange for appropriate backup if electrical power is primary energy source for dewatering system.

- 3.3.5 Monitor operations to verify that the system lowers groundwater levels at a rate required to maintain a dry excavation resulting in a stable subgrade for prosecution of subsequent operations. Operate groundwater control system to continuously maintain groundwater at a level at least two feet below the bottom of excavations before the excavation work begins at each location. Water control systems shall be designed to satisfy the following objectives:
 - 3.3.5.1 Effectively provide a dry and stable subgrade for the prosecution of subsequent operations within all excavations.
 - 3.3.5.2 Existing adjacent structures, utilities, and other work shall not be damaged as a result of the installation and operation of the Groundwater Control System.
- 3.3.6 Where hydrostatic pressures in confined water bearing layers exist below excavation, depressurize those zones to eliminate risk of uplift or other instability of excavation or installed works. Allowable piezometric elevations shall be defined in the Groundwater and Surface Water Control Plan. Alternatively, concrete plugs can be tremied into the base of shaft bottoms to resist uplift and maintain shaft bottom stability.
- 3.3.7 During backfilling, dewatering may be reduced to maintain water level a minimum of 1 foot below prevailing level of backfill. However, do not allow water levels to result in uplift pressures in excess of 80 percent of downward pressures produced by weight of structure or backfill in place. Do not allow water levels to rise into cement stabilized sand until at least 48 hours after placement.
- 3.4 EXCAVATION DRAINAGE
 - 3.4.1 CONTRACTOR may use excavation drainage methods, if necessary, to achieve well drained conditions. The excavation drainage may consist of a layer of crushed stone and filter fabric, and sump pumping in combination with sufficient wells for groundwater control to maintain stable excavation and backfill conditions.
- 3.5 MAINTENANCE AND OBSERVATION
 - 3.5.1 Conduct daily maintenance and observation of the groundwater control installations or excavation drainage systems operating in an area. Keep system in good condition.
- 3.6 SURFACE WATER CONTROL
 - 3.6.1 Intercept surface water and divert it away from excavations through use of dikes, ditches, curb walls, pipes, sumps, or other approved means. This requirement includes temporary works required to protect adjoining properties from surface drainage caused by construction operations.
 - 3.6.2 Divert surface water directly into storm drains. Surface water that has been in contact with excavation work or is otherwise mixed with ground water shall be treated as groundwater and subject to any and all handling requirements prior to discharge.
- 3.7 REMOVED WATER DISPOSAL
 - 3.7.1 Groundwater removed from work site shall be collected and discharged through tanks (frac or weir), settling basins, or filters to remove solids prior to discharge. CONTRACTOR shall dewater the solids and dispose of them in accordance with Section 02576 – Excavated Material Disposal.

(End of Section 02240)

PART 1 GENERAL

1.1. RELATED DOCUMENTS

- 1.1.1. Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, materials, equipment, and services indicated on the Drawings, or specified herein, or reasonably necessary for or incidental to a complete job.

1.2. DESCRIPTION OF WORK

- 1.2.1. This work includes providing and maintaining all shoring, sheeting, bracing, etc. as may be necessary to support the sides of the excavation and to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise injure or delay the work, or endanger adjacent structures, roads, utilities, or other improvements.

1.3. RELATED WORK SPECIFIED ELSEWHERE:

- 1.3.1. Excavation and Backfill – Section 02220
- 1.3.2. Steel Sheet Piling – Section 02366

PART 2 PRODUCTS

2.1. MATERIALS

- 2.1.1. SHEETING: Materials for steel sheet piling shall meet the following requirements:
 - 2.1.1.1. Sheet Piling – As specified in Section 02366.
 - 2.1.1.2. Shapes and Plates – ASTM A6, ASTM A36, ASTM A572, or ASTM A992.

PART 3 EXECUTION

- 3.1. GENERAL: Provide shoring, sheeting, and bracing in conformance with the applicable rules and regulations promulgated by the Department of Labor, Occupational Safety and Health Administration, "Safety and Health Regulations for Construction".

3.2. INSTALLATION AND REMOVAL

- 3.2.1. Whenever possible, drive sheeting ahead of the excavation to avoid loss of material from behind the sheeting. Take care to prevent voids outside the sheeting; when voids do occur, fill with sand immediately and compact.
- 3.2.2. Carefully remove all sheeting and bracing not to be left in place in such a manner as not to endanger the construction or other structures. Immediately fill all voids left or caused by the withdrawal of sheeting with approved backfill material. Compact this backfill material by ramming with tools especially adapted to that purpose, by watering, or by other means as approved by the Engineer.

(End of Section 02400)

PART 1 GENERAL

1.1. RELATED DOCUMENTS

- 1.1.1. Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, material, equipment, and services indicated on the Drawings or specified herein or reasonably necessary for and incidental to a complete job.

1.2. DESCRIPTION OF WORK

- 1.2.1. The work includes the installation of all reinforced concrete pipe shown on the Drawings.

1.3. RELATED WORK SPECIFIED ELSEWHERE:

- 1.3.1. Submittals – Section 01300
1.3.2. Excavation and Backfill – Section 02220
1.3.3. Cleaning Up – Section 02995

1.4. QUALITY ASSURANCE

1.4.1. REFERENCED STANDARDS

- 1.4.1.1. Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards:

- a) SCDOT South Carolina Department of Transportation Standard Specifications for Highway Construction, Latest Edition
- b) ASTM C33 Standard Specification for Concrete Aggregates
- c) ASTM C76-18a Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
- d) ASTM C150-18 Standard Specification for Portland Cement
- e) ASTM C443 Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
- f) ASTM C507 Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
- g) ASTM C877 Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections

1.4.2. MANUFACTURER'S QUALIFICATIONS

- 1.4.2.1. Only the products of a manufacturer regularly engaged in the manufacture of pipe used for the conveyance of water will be acceptable.

- 1.4.3. INSPECTION AND ACCEPTANCE OF PIPE
 - 1.4.3.1. Acceptance will be on the basis of design, material tests, and inspection of the complete product. The quality of all materials used in the pipe, the process of manufacture, and the finished pipe shall be subject to inspection by the Engineer. Inspection may be made at the place of manufacture, or on the job site after delivery, or at both places and the pipe shall be subject to rejection at any time on account of failure to meet any of the specification requirements, even though sample pipe units may have been accepted as satisfactory at the place of manufacture. All pipe which is rejected must be immediately removed from the project site by the Contractor.
- 1.4.4. SUBMITTALS SHOP DRAWINGS; PIPE
 - 1.4.4.1. Before fabrication, submit, in accordance with Section 01300 – Submittal Procedures, for approval drawings showing pipe dimensions, joints, reinforcement and other details.
- 1.4.5. MANUFACTURER'S CERTIFICATION
 - 1.4.5.1. Manufacturer shall submit a letter certification stating that the pipe is manufactured and tested in accordance with ASTM C76 (latest edition).

PART 2 PRODUCTS

- 2.1. MANUFACTURE OF PIPE
 - 2.1.1. GENERAL
 - 2.1.1.1. Use new pipe complying with ASTM C76 or ASTM C507, and with the additional requirements specified herein. Unless otherwise noted on the Drawings, provide Class III pipe with Wall B. All pipe approved will have an interior surface which is free from roughness, projection, indentations, offsets, or irregularities of any kind.
 - 2.1.2. PIPE LENGTHS
 - 2.1.2.1. Furnish pipe in nominal 8-foot lengths. Shorter lengths may be used where required by Construction details or when approved by the Engineer.
 - 2.1.3. LIFT HOLES
 - 2.1.3.1. Lift holes will not be permitted in pipe.
 - 2.1.4. REPAIRS
 - 2.1.4.1. Pipe may be repaired, if necessary, because of occasional minor imperfections in manufacture or accidental injury during handling and will be acceptable if, in the opinion of the Engineer, the repairs are sound, properly finished and cured, and the repaired pipe conforms to the requirements of ASTM C76. Use mortar for repairs which has a compressive strength of 6,000 psi at the end of 28 days.
 - 2.1.5. MARKING
 - 2.1.5.1. Mark all pipe in accordance with ASTM C76; no pipe without the required markings will be accepted.

2.2. JOINTING

2.2.1. GENERAL

2.2.1.1. Use rubber gaskets for flexible watertight joints. Conform to ASTM C443.

PART 3 EXECUTION

3.1. INSPECTION

3.1.1. Examine the areas and conditions under which the pipe is to be installed and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2. EXCAVATION

3.2.1. GENERAL

3.2.1.1. Excavate trenches in accordance with Section 02220, EXCAVATION AND BACKFILL.

3.3. PIPE HANDLING

3.3.1. GENERAL

3.3.1.1. Transport pipe to the job site and handle in such a manner as not to damage the pipe.

3.3.2. STOCKPILING

3.3.2.1. Stockpile within the rights-of-way so that no dangerous conditions will exist to life or property. Store pipe so that damage to surfaces and/or structures will be prevented. Provide suitable devices to support pipe when it is lifted.

3.4. PIPE INSTALLATION

3.4.1. GENERAL

3.4.1.1. Adhere to the rules, regulations and requirements of OSHA, Occupational Safety and Health Act.

3.4.2. PRECAUTIONS

3.4.2.1. Lay pipe in dry trenches only. Keep all trenches completely free of water during bedding, laying, and jointing of pipe. De-water and use trench shields or sheeting where required by field conditions. Pump or drain all water away from the work and dispose of in a suitable manner so that no damage occurs outside the construction easement. Do not permit water to rise in an un-backfilled trench after pipe has been placed. Promptly repair any damage within the construction easement.

3.4.3. TOLERANCES

3.4.3.1. Unless otherwise directed by the Engineer in writing, lay all pipe straight between changes in alignment and at uniform grade between change in

grade. When jointed in the trench, the pipe shall form a true and smooth line.

3.4.4. PIPE LENGTHS

- 3.4.4.1. Lay pipe in nominal 8-foot lengths; except the joints adjacent to any manhole shall have a minimum length of 18 inches.

3.4.5. TRENCH AND BED FOR PIPE

- 3.4.5.1. Conform to the requirements of SCDOT Standard Specifications for Highway Construction, Subsection 714. Permanent Pipe Culverts.
- 3.4.5.2. After delivery alongside the trench, visibly inspect each length of pipe for damaged surfaces, breakage, and conformance to specifications.
- 3.4.5.3. Acceptable pipe may be marked with paint or other permanent marking material so that the marks are plainly visible after installation in the trench and before the pipe is covered. Reject, stockpile, and remove from the site all pipe not conforming to specifications.
- 3.4.5.4. See Drawings for Bedding Conditions. Where no other bedding is indicated, place pipe on a shaped bed of undisturbed material. Before pipe is placed on the bedding material, excavate suitable bell holes so that after placement of the pipe, only the barrel receives bearing pressure from the supporting material. Support the entire length of the unit as shown on the Drawings.
- 3.4.5.5. Place pipe into its position in the trench in such manner and by such means as approved by the Engineer. Furnish approved devices to support all parts of the pipe unit when it is lifted. Protect pipe during handling against impact shocks and free falls. Do not permit hooks to come in contact with pre-molded joint surfaces. Lower pipe into position in the trench and joint without disturbing the bedding or adjoining section of pipe.
- 3.4.5.6. Handle pipe having pre-molded joint rings or attached couplings so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material. Take care to avoid dragging the spigot ring on the ground or allowing it to be damaged by contact with gravel, crushed stone, or other hard objects. Do not subject the bell and spigot sections to direct stress of any kind except that required to affect the jointing.

3.4.6. PIPE LAYING

- 3.4.6.1. Unless otherwise shown on the Drawings, all pipe will be laid in open trench construction. Start laying pipe at the lowest point and install the pipe so that the spigot end points in the direction of flow. Lay pipe to conform to the lines and grades indicated on the Drawings, unless otherwise directed by the Engineer in writing.
- 3.4.6.2. Clean all joint surfaces after the pipe units are aligned in the trench and are ready to be joined. Immediately before jointing the pipe, lubricate the bell or groove in accordance with the manufacturer's recommendations. Then carefully push pipe unit into place without damage to the pipe or gasket. Use suitable devices to force the pipe together so that they will fit with a minimum open recess inside or outside and so that they will have tightly

sealed joints. Lay each pipe unit to form a close joint with the next adjoining pipe and bring the inverts continuously to the required grade.

- 3.4.6.3. Immediately after the pipe units are put together, inspect the position of the gasket in the joint using an approved feeler gauge to make sure it is properly positioned. Pull apart and remake all joints, using new gaskets, if the gasket has become damaged or improperly positioned.
- 3.4.6.4. Make all joints in accordance with manufacturer's recommendations which are subject to approval by the Engineer. Prior to backfill, fill bell holes with bedding materials and compact so that the spigot will not move in the bell of the adjoining pipe under backfill load. Do not permanently support pipe on saddles, blocking or boulders.

3.4.7. TEMPORARY PLUGS

- 3.4.7.1. At all times when pipe laying is not actually in progress, close the open end of pipe by temporary watertight plugs or by other approved means. If water is in the trench when work is resumed, do not remove the plug until all danger of earth or other material entering the pipe has passed.

3.4.8. STOPPERS

- 3.4.8.1. Close open ends of pipe or fittings to be used for future connections as shown on the Drawings.

3.4.9. BLOCKING

- 3.4.9.1. Provide concrete blocking where indicated on the Drawings.

3.4.10. BACKFILL

- 3.4.10.1. When pipe has been properly bedded, backfill trenches in accordance with Section 02220 – Excavation and Backfill.

3.5. CLEAN UP

- 3.5.1. Follow backfill, as closely as conditions will allow, with clean-up operations in accordance with Section 02995 – Cleaning Up.

(End of Section 02451)

Part 1 GENERAL

1.1. RELATED DOCUMENTS

- 1.1.1. Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, materials, equipment, and services indicated on the Drawings, or specified herein, or reasonably necessary for or incidental to a complete job.

1.2. DESCRIPTION OF WORK

- 1.2.1. This item shall consist of constructing catch basins, drop inlets and junction boxes, in accordance with these specifications, at the specified locations and conforming to the lines, grades, and dimensions shown on the plans or required by the Engineer.

1.3. RELATED WORK SPECIFIED ELSEWHERE

- 1.3.1. Submittals – Section 01300
1.3.2. Excavation and Backfill – Section 02220
1.3.3. Cast-In-Place Concrete – Section 03300-SW

1.4. QUALITY ASSURANCE

1.4.1. REFERENCE STANDARDS

- 1.4.1.1. Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these specifications shall in no way invalidate the minimum requirements of the referenced standards.

- | | | |
|----|------------|---|
| a) | SCDOT | South Carolina Department of Transportation Standard Specifications for Highway Construction (Latest Edition) |
| b) | ASTM A615 | Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement |
| c) | ASTM A706 | Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement |
| d) | ASTM A996 | Rail-Steel Deformed and Plain Bars for Concrete Reinforcement |
| e) | ASTM A1064 | Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete |
| f) | ASTM B456 | Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium |
| g) | ASTM C55 | Standard Specification for Concrete Building Brick |

- h) ASTM C90 Standard Specification for Loadbearing Concrete Masonry Units
- i) ASTM C270 Standard Specification for Mortar for Unit Masonry
- j) ASTM C443 Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
- k) ASTM C478 Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
- l) ASTM C877 Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections.
- m) ASTM C923 Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes and Laterals

1.5. SUBMITTALS

1.5.1. Submit the following in accordance with Section 01300 – Submittals:

1.5.1.1. Shop drawings manhole frame and covers and manhole steps

- a) Submit for approval shop drawings for grates, drains, manhole covers, frames and steps.

1.5.1.2. Shop drawings precast concrete manhole sections

- a) Submit for approval shop drawings for each type of precast manhole sections proposed for use in construction.

Part 2 PRODUCTS

2.1. GENERAL

2.1.1. Unless otherwise noted on the Drawings, the Contractor has the option of providing manholes constructed of concrete brick, concrete masonry units, cast-in-place concrete, or precast manholes or vaults.

2.2. PORTLAND CEMENT CONCRETE

2.2.1. Concrete shall be 3,000 psi (28 day), as defined by the South Carolina Department of Transportation Standard Specifications for Highway Construction, (Latest Edition), Section 701, Portland Cement and Portland Cement Concrete. All concrete shall be ready-mixed as produced by a reputable manufacturer, acceptable to the Engineer.

2.3. REINFORCING STEEL

2.3.1. Reinforcing steel shall conform to ASTM A615, A706, or A996, Grade 60 and of the applicable size as indicated on the Detail Drawings.

2.4. CONCRETE BRICK

2.4.1. Concrete brick shall be sound, hard, regular, and uniform in shape and of standard size (8" long x 2-1/4" high x 3-5/8" wide). Concrete brick shall conform to ASTM Specifications C55, Grade N-1.

2.5. MORTAR

- 2.5.1. Mortar shall be composed of Portland Cement, hydrated lime, and sand, in which the volume of sand shall not exceed three times the sum of the volumes of cement and lime. The proportions of cement and lime shall be as directed and may vary from 1:1/4 to 1:1/2. Mortar shall conform to ASTM C270, Type M.

2.6. CASTINGS

- 2.6.1. The casting for the frames and covers shall be of good quality, strong, tough, even-grained cast iron, smooth, free from scale, lumps, blisters, sand holes, and defects of every nature which would render them unfit for the service for which they are intended.

- 2.6.2. Frames and covers shall be as shown on the Drawings or approved equal.

2.7. PRECAST MANHOLES OR VAULTS

2.7.1. MANHOLE BASES, CAST-IN-PLACE CONCRETE:

- 2.7.1.1. Conform to the requirements of Section 03300-SW – Cast-in-Place Concrete (Surface Work).

2.7.2. MANHOLE BASES, PRECAST CONCRETE

- 2.7.2.1. Conform to the requirements of ASTM C478.

2.7.3. MANHOLE SECTIONS, PRECAST CONCRETE

- 2.7.3.1. Precast concrete manholes consist of a base section, riser sections, a transition and cone. Provide pipe openings, of suitable size to fit the pipe, in the base section or riser sections as required. Conform to the requirements of ASTM C478 with the following exceptions and additional requirements:

- a) Cement: Type II, except as otherwise approved.
- b) Minimum Wall Thickness: 6 inches
- c) Use gasket type joints as specified herein.
- d) Steam cure sections, do not ship for at least five days.

- 2.7.3.2. Acceptance of the sections will be on the basis of material tests and inspection of the completed project.

- 2.7.3.3. Suitably shape the tops of the bases by means of accurate bell-ring forms to receive the barrel sections.

2.7.4. RISER JOINTS

- 2.7.4.1. Provide riser joints of the rubber gasket type in which the gaskets are in compression, and which will permit both longitudinal and angular movement. Design the bell and spigot ends to confine the gasket when the joint is in its final position. Provide each section with proper ends made of concrete formed on machined rings to insure accurate joint surfaces. The diameters of the joint surface, depended upon to compress the gasket, shall

not vary from the theoretical diameters by more than 1/16 inch. Seal the joint with a rubber gasket so that the joint will remain tight under all conditions of service. Joints must be capable of withstanding an internal hydrostatic pressure of 10 psi with no visible signs of leakage.

2.7.5. GASKETS

2.7.5.1. Provide gaskets which conform to applicable sections of ASTM C443. Use gaskets of a special rubber composition having a texture to assure a watertight and permanent seal and the product of a manufacturer having at least five years of experience in the manufacture of rubber gaskets for pipe joints. Use gaskets which are a continuous ring of flexible joint rubber of a composition and texture which are resistant to common ingredients of sewage, industrial wastes, and ground-water and which will endure permanently under the conditions likely to be imposed by this service.

2.8. CONCRETE MASONRY UNITS

2.8.1. HOLLOW LOAD-BEARING CONCRETE MASONRY UNITS

2.8.1.1. All concrete masonry units shall be modular in size with a nominal 8" by 16" face dimension for standard units and shall conform to ASTM C90, Grade N, Type I.

2.8.2. MASONRY JOINT REINFORCING

2.8.2.1. Joint reinforcing shall be made of zinc coated steel wire conforming to ASTM B456 Class 1 or ASTM A1064 and shall be of the welded wire ladder type design with Standard No. 9 gauge (0.1483") side rods and No. 9 gauge cross ties. Acceptable products include, "Blok-Lok" by A. A. Wire Products Co. and "Ladur Type" by Duro-O-Wal, Inc.

2.9. PIPE BOOTS

2.9.1. Provide pipe boots conforming to ASTM C923 as to provide a watertight connection between the entering/exiting piping and the manhole.

Part 3 EXECUTION

3.1. GENERAL

3.1.1. BASES

3.1.1.1. Structure bases may be precast or cast-in-place as indicated on the Drawings.

3.1.2. FRAMES, COVERS, AND/OR GRATES

3.1.2.1. Set manhole frames with the tops conforming accurately to the grade of the pavement of finished ground surface or as indicated on the Drawings or as directed. Set frames in a full bed of mortar so that the space between the top of the structure masonry and the bottom flange of the frame shall be completely filled with mortar and made watertight. Place a thick ring of mortar extending to the outer edge of the masonry all around the bottom flange. Finish the mortar flush with the top of the flange and with a slight slope to shed water away from the frame.

3.2. PRECAST STRUCTURES

3.2.1. PRECAST MANHOLE SECTIONS

- 3.2.1.1. Handle and install each section in such a manner and by such means as to prevent damage. Set sections vertical with sections in true alignment.
- 3.2.1.2. Install base sections on firm stabilized foundation so prepared to prevent settlement and misalignment. Place pipe openings at the exact elevation and location to receive entering pipes.
- 3.2.1.3. Install Pipe Boots into the opening(s) for the entering pipes in the manhole per the manufacturer's specifications.
- 3.2.1.4. Ensure that the exterior of the entering piping to be sealed by the Pipe Boot is smooth and free of defects. Install the entering piping into the Pipe Boot per the manufacturer's instructions.
- 3.2.1.5. Install riser sections, transitions, and top sections level and plumb. Make joints in accordance with manufacturer's instructions to ensure a watertight installation.
- 3.2.1.6. Lift holes will be allowed in precast manhole sections. After setting sections in place, thoroughly plug all holes in sections with mortar. Make mortar one part cement to 1-1/2 parts sand; mix with water until slightly damp to the touch (just short of balling) and hammer mortar into the holes until it is dense, and an excess of paste appears on the surface. Then finish smooth and flush with the adjoining surfaces.

3.3. CAST-IN-PLACE STRUCTURES

- 3.3.1. Structures to be cast in place shall be formed in accordance with Section 03300-SW. Formwork shall be set to provide the dimensions and elevations provided in the Drawings and shall be level and plumb. Openings for circular piping shall be provided using block-outs in the formwork. Openings shall be circular and provide for the installation of the entering piping and associated Pipe Boots.
- 3.3.2. Following curing, and after the concrete has reached the required minimum strength, the formwork shall be stripped, and block-outs shall be removed.
- 3.3.3. Install Pipe Boots into the opening(s) for the entering pipes in the manhole per the manufacturer's specifications.
- 3.3.4. Ensure that the exterior of the entering piping to be sealed by the Pipe Boot is smooth and free of defects. Install the entering piping into the Pipe Boot per the manufacturer's instructions.
- 3.3.5. Install top slabs and other appurtenances as required in the Drawings.

3.4. BRICK STRUCTURES

3.4.1. LAYING BRICK

- 3.4.1.1. Use only clean brick. Moisten as directed until bricks are neither so dry as to absorb water from the mortar, nor so wet as to be slippery when laid. Lay each brick in a full bed of mortar without requiring subsequent grouting, flushing, or filling. Walls of all structures shall consist of two

widths of brick. When laying brick, the direction of every sixth (6) course shall be rotated 90 degrees to provide a tie between the brick courses.

3.4.1.2. Lay brick in level courses with mortar joints approximately 1/2" wide and uniform in thickness. Tool exposed joints and strike flush joints which will be plastered.

3.4.1.3. Set pipes as the work progresses. Completely fill the space between the pipe and masonry to insure a watertight seal.

3.4.2. PLASTERING AND CURING BRICK

3.4.2.1. Plaster outside face of masonry with mortar 1/2 inch thick. If required, moisten masonry prior to application of plaster. Carefully spread and trowel the plaster so that all cracks are thoroughly worked out. After hardening, check the plaster for bond and soundness by tapping. Remove replace any unbonded or unsound plaster.

3.5. CONCRETE MASONRY UNIT STRUCTURES (CMU)

3.5.1. LAYING CMU'S

3.5.1.1. CMUs shall not be wetted prior to laying. Lay CMUs in a level running bond patten and in a full bed of mortar approximately 3/8 inch wide and uniform in thickness. Tool all exposed joints and strike flush joints which will be plastered. Cut CMUs by acceptable methods.

3.5.2. REINFORCEMENT

3.5.2.1. All CMU structures shall have both wall reinforcement and joint reinforcement. Wall reinforcement shall consist of a number 4 rebar placed in every other cell of CMU walls and shall be tied to the bottom slab reinforcement. All rebar shall be tied with a minimum 12-inch lap. Upon placing rebar each cell of CMU's shall be filled with 4,000 psi concrete.

3.5.2.2. Joint reinforcement shall consist of the ladder type and shall be placed every 16" in height. Joint reinforcing shall be set in a full bed of mortar and shall be tied to adjoining walls with corner "L" units, 32"x32" minimum.

3.5.3. WALL OPENINGS

3.5.3.1. Opening in walls around pipes shall be filled with either brick and mortar or non-shrink grout.

(End of Section 02454)

PART 1 GENERAL**1.1 SECTION INCLUDES**

- 1.1.1 Basic requirements for furnishing and placing flowable fill.

1.2 DESCRIPTION

- 1.2.1 Flowable fill is a controlled low-strength material (CLSM) which can be placed in a self-leveling consistency or in a less-flowable state to reduce the fluid pressures exerted by the material. The ultimate unconfined compressive strengths should be less than 200 psi to maintain the ability to re-excavate. All voids of the excavation shall be filled without "honeycombs," and without shrinkage during the hardening process.
- 1.2.2 Flowable fill is suitable for all routine backfilling and is especially beneficial as a backfill for pipelines, culverts, tanks and other below-grade structures, utility trenches, catch basins and drop inlets, vertical taps, etc.
- 1.2.3 Flowable fill may be placed from a ready-mix truck in a full depth layer without compaction of thin layers. The flowable fill hardens within a reasonable time, (at which point pavement shall be replaced), and can carry traffic without future settlement.
- 1.2.4 Flowable fill is an acceptable material to use in original construction or in maintenance situations. It may be used to reduce the size of the excavation and in all weather conditions, including rain.

1.3 RELATED SECTIONS

- 1.3.1 Submittals – Section 01300
- 1.3.2 Excavation and Backfill – Section 02220

1.4 REFERENCE STANDARDS

- 1.4.1 Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these specifications shall in no way invalidate the minimum requirements of the referenced standards.
 - 1.4.1.1. SCDOT South Carolina Department of Transportation Standard Specifications for Highway Construction (Latest Edition)

PART 2 PRODUCTS**2.1 Availability (Source of Supply)**

- 2.1.1 Most of the major ready-mix plants can provide specifications material. It is supplied as a finished product by means of ready-mix trucks and is handled similarly to concrete except that it is flowable and does not require extensive labor for placement.

2.2 Mix Designs (Maximum Density)

- 2.2.1 The mixes fall into the categories of "very flowable" and "less flowable," which is controlled by the amount of water that is added. Both mixes contain sand from an approved source with sufficient cement and fly ash to obtain maximum density at optimal moisture with load-bearing capacity and stability characteristics as good as or better than a well compacted granular base material. In either category, the mix design is the same except for the water content. The added volume shown in the very flowable mix is comprised only of the extra water used to obtain extra flowability. That extra water will be displaced during the consolidation process and the resulting in place volume (yield) will be approximately 27 cubic feet (one cubic yard).
- 2.2.2 The less flowable mix can be used when it is desirable to put traffic back on a roadway quickly (usually 8 to 10 hours) or when being used to backfill pipes which could "float" out of position due to the buoyant effect of the very flowable fill mix. This mix will still have the workability necessary to self-consolidate around pipes without any "honeycomb" areas. The very flowable mix is still self-leveling and requires minimal effort to place but requires longer time to displace the extra water and develop load-bearing capacity (usually 10 to 20 hours). Adding water to flowable fill to obtain the desired plastic characteristics will not compromise the quality of the hardened flowable fill.

Mix 1: Less Flowable			Mix 2: Very Flowable		
Weights		Volume	Weights		Volume
Min. 50 lbs.	Cement	.25	Min. 50 lbs.	Cement	.25
Min. 600 lbs.	Fly Ash	4.24	Min. 600 lbs.	Fly Ash	4.24
SSD 2500 lbs.	Sand	15.17	SSD 2500 lbs.	Sand	15.17
55 Gal. 458 lbs.	Water	7.34	65 Gal. 541 lbs.	Water	8.68
Total Cubic Feet		27.00	*Total Cubic Feet		28.34

* One cubic yard of very flowable fill will be mixed to contain more than 27 cubic feet due to the additional water.

- 2.2.3 Above values are based on the following specific gravities: cement 3.15, fly ash 2.27, sand 2.64, and water 1.00. Anticipated unconfined compressive strength is 80 psi at 28 days and 150 psi at 56 days.
- 2.3 If the situation demands greater flowability than Mix 2, the Engineer may increase the fly ash in increments of 50 pounds while decreasing the sand in increments of 58 pounds. If higher unconfined strengths are needed and the ability to easily re-excavate is not necessary, the Engineer may increase the cement in increments of 10 pounds while decreasing the sand in increments of 8 pounds.
- 2.4 Low Density Flowable Fill
- 2.4.1 Low-density flowable fill is an option. Low-density flowable fill depends on about 30% air entrained into the plastic material to obtain the flowability characteristics of maximum-density flowable fill. Low-density flowable fill also depends on the development of cementitious bonds to obtain the load-bearing characteristics associated with the standard maximum-density flowable fill.
- 2.4.2 Before using low-density flowable fill, the mix design and laboratory test data shall be submitted to the Engineer, in accordance with Section 01300 – Submittal Procedures, for approval at least 30 days in advance of starting the work. Test data should show set times, flowability characteristics, and compressive strength at 28 days.
- 2.5 Material and Equipment

- 2.5.1 The material and equipment used to produce flowable fill shall be in compliance with the requirements of the South Carolina Department of Transportation Standard Specifications for Highway Construction (Latest Edition, Division 700) and applicable Special Provisions. Sampling and testing of maximum density flowable fill and the materials used to produce it will not be required.

PART 3 EXECUTION

3.1 GENERAL

- 3.1.1 The trench shall be prepared, and the ductile iron pipe and appurtenances shall be wrapped in a polyethylene encasement. There should be at least 6 inches of flowable fill above the pipe.
- 3.1.2 The Engineer will select the appropriate mix design for the application at the site. Typically, the less flowable mix will be used to cover the pipe. Once the pipe is covered, it will be sufficiently anchored, and water may be added to the remaining flowable fill to ease placement without danger of floating the pipe. If it is important to quickly return traffic to the roadway, the less flowable mix would be preferred full depth.
- 3.1.3 The flowable fill shall be discharged directly from the truck into the space to be filled, or by other methods approved by the Engineer. The mix may be placed part depth or full depth as conditions at the site dictate. Formed walls or other bulkheads shall be constructed to withstand the hydrostatic pressure exerted by the flowable fill. Trench ends outside the roadway should be blocked with sandbags or mounded soil rather than wood or metal forms. When backfilling utility lines such as water mains or force mains, flowable fill shall be distributed evenly to prevent any movement of the pipe.
- 3.1.4 The flowable fill material is self-consolidating and there is no need to use vibrators, even when placed in a less-flowable state. No field testing is needed when using flowable fill. The less flowable mix can be placed in the rain or in standing water and the hardened flowable fill will obtain uniform (controlled) density.
- 3.1.5 Finishing can be accomplished with a square shovel if the fill surface is at the bottom of the pavement.
- 3.1.6 Once the flowable fill is in the trench, the self-consolidating material displaces the extra water not needed for maximum density. Provision shall be made for this "bleed water" to run off and away from surface of the hardening flowable fill (use of vapor barriers such as plastic sheets are not desired). Typically, full traffic can be allowed on the hardened flowable fill within 8 to 20 hours (depending on the mix used, site conditions, volume to be backfilled, etc.) without damage to the fill or any structure below. Steel plates shall be used to bridge over the hardening flowable fill as directed by the Engineer. If the filled cavity is too wide to bridge, steel plates shall be placed on top of the hardening flowable fill as soon as it is able to support foot traffic (one hour after bleeding ends). With steel plates in place, full traffic can be allowed without damage to the fill or the structure below.
- 3.1.7 As the extra water is displaced from the consolidating flowable fill, there will be an initial subsidence of about one-eighth of an inch per vertical foot. Once the flowable fill hardens there will be no future settlement. The hardened flowable fill can be shaped to grade the next day to allow the pavement thickness required by the Engineer. The pavement may be applied directly on top of the flowable fill.

- 3.1.8 Furnish the necessary information to obtain approval of the suggested mix design and to use the necessary construction techniques to assure that the finished material will perform as intended.

(End of Section 02511)

Part 1 GENERAL

1.1. RELATED DOCUMENTS

- 1.1.1. Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, materials, equipment, and services indicated on the Drawings or specified herein or reasonably necessary for and incidental to a complete job.

1.2. DESCRIPTION OF WORK

- 1.2.1. This section covers disposal of non-contaminated excavated material and excess material.

1.3. RELATED WORK SPECIFIED ELSEWHERE

- 1.3.1. Section 01300 – Submittals
- 1.3.2. Section 02220 – Excavation and Backfill

1.4. SUBMITTALS

- 1.4.1. The following documentation shall be submitted in accordance with the submittal procedures section.
 - 1.4.1.1. Permits for proposed disposal sites if required by local, state, and federal regulations.
 - 1.4.1.2. Written permission from property owner, along with description of property including current and future land use / zoning designation.
 - 1.4.1.3. Written and signed release from property owner upon completion of disposal work.
 - 1.4.1.4. For disposal of designated soils, provide the following additional information:
 - a) Survey map showing the existing features and any known future features.
 - b) Location and depths of soil disposal shall be noted on survey map.
 - c) Type of backfill to be placed over soil (e.g., vegetation, pavement, buildings).

Part 2 PRODUCTS

- 2.1. Not Used.

Part 3 EXECUTION

3.1. GENERAL

- 3.1.1. Job excavated material shall be used as a clean fill material whenever possible. All unsuitable materials, including special and designated wastes, shall be removed from the site, and disposed of by, and at the expense of the Contractor.

3.2. SALVAGEABLE MATERIAL

- 3.2.1. Excess excavated material shall be loaded, hauled, and deposited to an approved disposal site.
- 3.2.2. Base, surface, bedding material, and pipe culverts may be salvageable material. Verify with the owner for disposal location.

3.3. EXCESS MATERIAL

- 3.3.1. Vegetation, rubble, broken concrete, debris, asphaltic concrete pavement, excess soil, and other materials not designated for salvage, shall become the property of Contractor and shall be removed from the job site and legally disposed of.
- 3.3.2. Excess salvageable soil, Type 0, (See Specification Section 02500 for soil type definitions) may be disposed of as identified below:
 - 3.3.2.1. May be deposited on private property when written permission is obtained from the Owner.
 - 3.3.2.2. May be used as backfill for an SCDHEC permitted mine.
 - 3.3.2.3. May be used as a Class Two Landfill Cover.
- 3.3.3. Contractor shall verify the flood plain status of any proposed disposal site and shall not dispose of excavated materials in an area designated as being within the 100-year Flood Hazard Area, unless approved by the owner.
- 3.3.4. Excess Materials shall be removed from the site daily, such that the site is maintained in a neat and orderly condition.

(End of Section 02576)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- 1.1.1 Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, material, equipment, and services indicated on the Drawings or specified herein or reasonably necessary for and incidental to a complete job.

1.2 DESCRIPTION OF WORK

- 1.2.1 This work includes the removal of pavement and later reconstruction of base and surface courses affected or damaged by the Contractor's operations whether inside or outside the normal trench limits as indicated on the Drawings and herein specified.

1.3 QUALITY ASSURANCE

1.3.1 REFERENCED STANDARDS

- 1.3.1.1 Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these Specifications shall in no way invalidate the minimum requirements of the referenced standards.

- a) SCDOT South Carolina Department of Transportation Standard Specifications for Highway Construction, Latest Edition

1.3.2 QUALIFICATIONS OF WORKMEN

- 1.3.2.1 For actual finishing of asphaltic concrete surfaces and operation of the required equipment, use only personnel thoroughly trained and experienced in the skills required.

1.4 PRODUCT DELIVERY

1.4.1 GENERAL

- 1.4.1.1 Transport asphalt cement mixtures from the mixing plant to the project site in trucks having tight, clean compartments. Provide covers over asphalt cement mixture when delivering to protect the mixture from weather and to prevent loss of heat. During period of cool weather or for long-distance deliveries, provide insulation around entire truck bed surfaces.

PART 2 PRODUCTS

2.1 SURFACE COURSE

2.1.1 ASPHALTIC CONCRETE

- 2.1.1.1 Comply with the requirements of SCDOT Standard Specifications for Highway Construction, HOT MIX ASPHALT SURFACE COURSE.

2.1.2 COMPOSITION OF MIXTURE

2.1.2.1 Comply with the requirements of SCDOT Standard Specifications for Highway Construction, Composition of Mixture, Type B, unless otherwise specified on the plans. Furnish samples if requested by the Engineer.

2.2 FLOWABLE FILL

2.2.1 Comply with the requirements of Flowable Fill – Section 02511.

PART 3 EXECUTION

3.1 INSPECTION

3.1.1 Examine the areas and conditions under which pavement will be removed and replaced and notify the Engineer in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 FLOWABLE FILL

3.2.1 INSTALLATION REQUIREMENTS

3.2.1.1 Comply with the requirements of Flowable Fill – Section 02511.

3.3 HOT MIX ASPHALT SURFACE COURSE

3.3.1 GENERAL

3.3.1.1 Do not feather the edges between the new and existing pavement. Ragged edges will not be allowed between the new and existing pavements. The existing pavement must be cut back for sufficient width to provide straight edges as shown on the Drawings. Unless otherwise shown on the Drawings, the surface course thickness is 2 inches.

3.3.2 INSTALLATION REQUIREMENTS

3.3.2.1 Comply with the requirements of SCDOT Standard Specifications for Highway Construction, Division 400.

3.3.3 TYING TO EXISTING BITUMINOUS PAVEMENT

3.3.3.1 Where new pavement ties to existing pavement, cut the existing pavement to a straight line and completely remove all materials on the new pavement side of the cut and replace with new materials. Coat the cut line with a tack coat to furnish a bond between the existing surface course and the new surface course. Do not allow the new work to overlap the existing work.

3.3.4 MAINTAINING PERMANENTLY PLACED SURFACES UNDER THIS CONTRACT

3.3.4.1 Until the expiration of the guarantee period, maintain surfaces placed under this Contract. Should an area settle that the Contractor has paved, he will remove the entire pavement in the area; feathering of edges will not be permitted. Add necessary sub-base material as specified herein before to the depth of the applicable surface course. Replace the surface course as herein before specified, all without additional cost to the Owner.

3.3.5 CLEAN UP

3.3.5.1 Upon completion of paving, remove all surplus materials, dunnage, cartons, and other debris resultant from work of this Section. Leave entire work in satisfactory, acceptable, broom-clean condition.

(End of Section 02616)

Part 1 GENERAL

- 1.1. Related Documents Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, materials, equipment, and services indicated on the Drawings, or specified herein, or reasonably necessary for or incidental to a complete job.
- 1.2. DESCRIPTION OF WORK
 - 1.2.1. GENERAL
 - 1.2.1.1. This work covers the establishment of grass on all areas which have the required conditions for supporting grass and which are not covered by buildings, structures, or pavement. It includes grading, preparing the soil with ground limestone and fertilizer, seeding, mulching, watering, and maintaining until acceptance.
 - 1.2.2. LIMITS OF HYDROSEEDING
 - 1.2.2.1. All areas which are disturbed by construction operations shall, unless specifically specified otherwise, be grassed, and maintained until a stand of grass has been established and accepted.
- 1.3. QUALITY ASSURANCE
 - 1.3.1. REFERENCED STANDARDS
 - 1.3.1.1. Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of the Specifications shall in no way invalidate the minimum requirements of the referenced standards.
 - a) SCDOT South Carolina Department of Transportation Standard Specifications for Highway Construction, Latest Edition.

Part 2 PRODUCTS

- 2.1. MATERIALS
 - 2.1.1. Fertilizer
 - 2.1.1.1. Provide mixed, 4-12-12, commercial fertilizer which is dry and in granular or powder form. The first number represents the minimum percent of nitrogen required, the second number represents the minimum percent of available phosphoric acid required, and the third number represents the minimum percent of water-soluble potash required in the fertilizer. Deliver fertilizer to the site in the manufacturer's original bag or container on which the formula is plainly marked. Comply with all State fertilizer laws.
 - 2.1.2. Seed
 - 2.1.2.1. Comply with all State laws and to all requirements of the South Carolina Department of Agriculture.

- 2.1.2.2. Deliver seed to the site in bags or packages which are tagged to show name of seed, net weight, origin, germination, lot number and certification by a State approved testing agency. The Owner reserves the right to test, reject, or approve all seed before seeding. If different mixtures of seed are used, weigh and mix the seed in the proper proportions at the site of the work and in the presence of the Owner.
- 2.1.3. Seeding Schedule
 - 2.1.3.1. Select the type of seeding from the table shown in the drawings. The total pounds of seed per acre is the sum total shown for all the varieties of seed opposite the planting dates.
- 2.1.4. Mulch
 - 2.1.4.1. Provide mulch in hydroseeding mixture that meets requirements of reference standard. Straw will consist of stacks of wheat, rye, oats, or other approved straw. Hay will consist of timothy, pea vine, alfalfa, coastal bermuda, or other grasses from approved sources.
- 2.1.5. Water
 - 2.1.5.1. Use water which is free from oil, acid, alkali, salt, and other substances harmful to growth of plants. Use water from a source which is approved by the Engineer, of satisfactory quality to sustain the growth of plants and not containing harmful, natural, or man-made elements detrimental to plants.

Part 3 EXECUTION

3.1. PREPARATION OF GROUND BEFORE SEEDING

- 3.1.1. Clear the ground surface of all vegetation, debris, stone, roots, grade-stakes, and any other materials which hinder proper grading, tillage, or subsequent maintenance operations. Perform the work only during periods when beneficial results are likely to be obtained. Do not perform any work during periods of drought, excessive moisture, or periods when satisfactory results are not likely to be obtained. Maintain grades on the areas to be seeded in a true and even condition and leave all surfaces at the prescribed grades in a properly compacted condition so as to prevent the formation of depressions where water will stand.
- 3.1.2. Bring all areas to be seeded to the proper line, grade and cross section as shown on the Drawings. Repair any damage from erosion or other causes, including filling washes, smoothing irregularities, and repairing other incidental damage. Perform minor shaping and smoothing of uneven and rough areas outside the graded areas as directed by the Owner in order to provide for more effective erosion control and for ease of subsequent mowing operation.
- 3.1.3. Grading of all disturbed areas indicated to be grassed includes shallow excavation and backfill necessary to obtain comparatively rounded, smooth, and well drained surfaces as directed. Grade existing areas which have been disturbed by the Contractor's operations to provide surfaces suitable for the proper use of mowing machines. Where heavy equipment is used, make suitable provisions to prevent damage to pavement or other surfaces. Repair or replace damaged surfaces at no additional cost to the Owner.
- 3.1.4. Loosen the seed bed to a minimum depth of 3 inches before fertilizer or seed is applied. Clear the areas to be seeded of stones larger than 2-1/2 inches in any dimension, large clods, roots, and other debris brought to the surface.

3.2. FERTILIZER

- 3.2.1. Do not spread fertilizer more than 24 hours in advance of seeding. Spread fertilizer at the rate of 500 pounds per acre. To assure full application rate, determine the acreage in all areas to be fertilized during the day and deliver the required fertilizer to the area. Protect all delivered fertilizer from the weather. To accomplish even distribution, spread half of the fertilizer in one direction and spread the remaining half at right angles to the first. Within 24 hours after spreading, incorporate fertilizer into the top 2 or 3 inches of soil by harrowing, disking, or other approved methods.

3.3. HYDROSEEDING, GENERAL

- 3.3.1. Do not seed grass when ground is frozen, excessively wet, or excessively dry. Loosen the compacted surface to a depth of not less than 1-inch with a flexible toothed weeder or spike-toothed harrow.
- 3.3.2. Hydroseed uniformly at the rate specified by the use of approved hydraulic seeding equipment and in accordance with referenced standards.

3.4. WATERING

- 3.4.1. Subsequently water when necessary to maintain a healthy growth of grass. Water in sufficient quantities to avoid rapid drying out and at a rate which will not cause erosion. Use watering equipment which will not damage the finished surface.

3.5. PROTECTION

- 3.5.1. Protect all seeded areas from traffic damage by barricades, signs or by other appropriate methods. Repair any damage which occurs before final acceptance at no additional cost to the Owner.

3.6. SUBSEQUENT NUTRIENT

- 3.6.1. Sixty days after grass is planted, or when grass is 2 inches high, apply 50 pounds of Ammonium Nitrate per acre to the grassed areas.

3.7. STAND OF GRASS

- 3.7.1. Before acceptance of the seeding performed for the establishment or permanent vegetation, the Contractor will be required to produce a satisfactory stand of perennial grass whose root system is developed sufficiently to survive dry periods and the winter weather and be capable of re-establishment in the spring.
- 3.7.2. Water and mow planted areas as necessary to maintain a healthy growth until accepted.

(End of Section 02820-HYD)

PART 1 GENERAL

1.1 RELATED SECTIONS

1.1.1 Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, materials, equipment, and services indicated on the Drawings, or specified herein, or reasonably necessary for or incidental to a complete job.

1.1.2 Related Sections include the following:

1.1.2.1 Section 02050 – Demolition and Removal

PART 2 PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

2.1.1 Provide all required personnel, equipment, and materials needed to maintain a litter free site.

2.2 COMPATIBILITY

2.2.1 Use only equipment, which is compatible with the material being cleaned, as recommended by the manufacturer or the material or as approved by the Owner.

PART 3 EXECUTION

3.1 GENERAL

3.1.1 Retain all stored items in an orderly arrangement, allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.

3.1.2 Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of the Work.

3.1.3 At least weekly, and more often, if necessary, completely remove and dispose of all scrap, debris, and waste material from the job site.

3.1.4 Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the environment.

3.1.5 Pedestrian walkways affected by construction activities shall be maintained clean and free of scrap, debris, waste material, and other items not required for construction of the work.

3.1.6 Access to adjacent project sites affected by construction activities shall be maintained clean and free of scrap, debris, waste material, and other items not required for construction of the work.

3.2 SITE

3.2.1 During progress of the work, keep the site and affected adjacent areas cleaned up. Remove all rubbish, surplus materials, and unneeded construction equipment and repair all damages so that the public and property owners will be inconvenienced as little as possible.

- 3.2.1.1 Contractor shall mechanically sweep streets to remove soil carried onto adjacent public roads.
 - a) Minimum frequency for mechanical sweeping shall be daily.
 - b) Frequency shall be increased as required to keep adjacent public roads free of soil and other construction debris.
- 3.2.1.2 Designated pedestrian walkways within the limits of construction must be swept and maintained clean.
 - a) Minimum frequency for sweeping shall be daily.
- 3.2.2 During progress of the work, reasonable accommodation and coordination shall be made to provide access to adjacent businesses or job sites. Obstructions, materials, or equipment which adversely affect the operations of adjacent businesses or job sites shall be moved or adjusted as required to provide accommodation or access.
- 3.2.3 Where materials or debris has washed or flowed into or has been placed in existing watercourses, ditches, gutters, drains, pipes, structures, by work done under this contract, or elsewhere during the course of the Contractor's operations, remove and satisfactorily dispose of such material or debris during the progress of the work. Upon completion of the work, leave all ditches, channels, drains, pipes, structures, and work, etc., in a clean and neat condition.
- 3.2.4 Remove, acceptably disinfect, and cover all organic matter and materials containing organic matter in, under and around all privies, houses, and other buildings used.
- 3.2.5 Restore or replace, when and as directed, any public or private property damaged by Contractor's work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of the operations. Perform, as required, all necessary highway or driveway reshaping of shoulders and ditches, walks and landscaping work. Use suitable materials, equipment, and methods for such restoration. The Contractor shall be responsible for obtaining releases from the various property owners, stating that all restoration work is satisfactory.

3.3 FINAL CLEANING

3.3.1 DEFINITION

- 3.3.1.1 Except as otherwise specifically provided, "clean" (for the purpose of this specification) shall be interpreted as meaning free from foreign material left after installation.

3.3.2 GENERAL

- 3.3.2.1 On or before completion of the work, unless otherwise directed or permitted in writing, tear down all temporary buildings and structures built by the Contractor for his own use. Remove all temporary works, tools, and machinery or other construction equipment furnished by Contractor. Remove all rubbish from any grounds which have been occupied by the Contractor; leave the roads and all parts of the premises and adjacent property affected by Contractor's operations in a neat and satisfactory condition.

3.3.3 SITE

3.3.3.1 Unless otherwise specifically directed by the Owner or the Engineer, broom clean all paved area on the site and all public paved areas directly adjacent to the site. Completely remove all resultant debris.

3.3.4 SCHEDULE

3.3.4.1 Schedule final cleaning to enable the Owner or Engineer to accept clean projects.

3.3.5 FINAL ACCEPTANCE

3.3.5.1 Final acceptance will be withheld until final cleaning is complete

(End of Section 02995)

SECTION 03300-SW CAST-IN-PLACE CONCRETE (SURFACE WORK)

PART 1 GENERAL

1.1 RELATED DOCUMENTS

1.1.1 Requirements of the General and Special Conditions apply to all work in this Section. Provide all labor, material, equipment, and services indicated on the Drawings or specified herein or reasonably necessary for and incidental to a complete job.

1.2 DESCRIPTION OF WORK

1.2.1 Concrete work shall include (but not be limited to) footings, pile caps, grade beams, walls, floor slabs, elevated slabs, concrete driveways, forming, shoring, reshoring, reinforcing, and embedded items associated with surface “-SW” work, plus any incidental surface concrete work throughout the project.

1.3 RELATED WORK SPECIFIED ELSEWHERE:

1.3.1 01300 – Submittals

1.4 QUALITY ASSURANCE

1.4.1 REFERENCED STANDARDS

1.4.1.1 Unless otherwise indicated, all referenced standards shall be the latest edition available at the time of bidding. Any requirements of these specifications shall in no way invalidate the minimum requirements of the referenced standards.

1.4.1.2 Comply with the provisions of the following codes, specifications, and standards, except as otherwise shown or specified.

- a) ACI 301 Specifications for Concrete Construction
- b) ACI 318 Building Code Requirements for Structural Concrete and Commentary
- c) ACI 350 Code Requirements for Environmental Concrete Structures and Commentary
- d) ASTM A1064 Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete old Drawn Steel Wire for Concrete Reinforcement
- e) ASTM A615 Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- f) ASTM A706 Standard Specification for Deformed and Plain Low Alloy Steel Bars for Concrete
- g) ASTM D4397 Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
- h) CRSI Manual of Standard Practice

1.4.2 WORKMANSHIP

1.4.2.1 The Contractor is responsible for correction of concrete work which does not conform to the specified requirements, including strength, tolerances, and finishes. Correct deficient concrete as directed by Engineer.

1.4.2.2 Materials and installed work may require testing and retesting, as directed by the Engineer, at any time during the progress of the work. The Contractor shall, at all times, allow for free access to material stockpiles and facilities. Tests, not specifically indicated to be done at the Owner's expense, including the retesting of rejected materials and installed work, shall be done at the Contractor's expense.

1.5 SUBMITTALS

1.5.1 DESIGN MIXTURES

1.5.1.1 For each concrete mixture submit mix design to include the following:

- a) Mixture identification
- b) Minimum 28-day compressive strength
- c) Maximum w/c ratio
- d) Slump limit
- e) Air content
- f) Nominal maximum aggregate size
- g) Product data for admixtures

1.5.2 SHOP DRAWINGS; CONCRETE REINFORCEMENT

1.5.2.1 Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Show bar schedules, stirrup spacing, diagrams of bent bars, arrangements, and assemblies, as required for the fabrication and placement of concrete reinforcement. Include special reinforcement required at openings through concrete structures.

PART 2 PRODUCTS

2.1 CEMENTITIOUS MATERIALS:

2.1.1 PORTLAND CEMENT: ASTM C150/C150M, Type I/II, gray.

2.1.2 FLY ASH: ASTM C618, Class F.

2.2 NORMAL-WEIGHT AGGREGATES

2.2.1 ASTM C33/C33M, Class 3M coarse aggregate or better, graded. Provide aggregates from a single source.

2.2.1.1 Maximum Coarse-Aggregate Size: 1 inch nominal.

2.2.1.2 Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

2.3 CHEMICAL ADMIXTURES

2.3.1 Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

2.3.1.1 Water-Reducing Admixture: ASTM C494/C494M, Type A.

2.3.1.2 High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.

2.3.1.3 Air-Entraining Admixture: ASTM C260/C260M.

2.4 WATER

2.4.1 Potable.

2.5 CONCRETE MIXTURES

2.5.1 STRUCTURES

2.5.1.1 Concrete for Vortex Structures shall be normal weight concrete with the following properties:

- a) Minimum Compressive Strength: 4500 psi at 28 days.
- b) Maximum W/C Ratio: 0.45
- c) Slump Limit: 4 inches for concrete with verified slump of 2 to 4 inches before adding high-range-water reducing admixture or plasticizing admixture.
- d) Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch nominal maximum aggregate size.
- e) Air Content of trowel finished floor slabs shall not exceed 3 percent.

2.6 REINFORCING MATERIALS

2.6.1 REINFORCING BARS

2.6.1.1 Comply with ASTM A615, Grade 60, deformed, except where otherwise indicated on the Drawings, for bar Nos. 3 to 18. All bars shall be new, clean, and free from any imperfections.

2.6.2 FABRICATION

2.6.2.1 Shop-fabricate reinforcing bars in accordance with CRSI's "Manual of Standard Practice. In case of fabrication errors, do not re-bend by heating or straighten reinforcement in a manner that will injure or weaken the material.

2.6.3 WELDED WIRE FABRIC

2.6.3.1 Conform to the requirements of ASTM A1064, welded steel wire fabric with a minimum yield strength of 65,000 psi.

2.6.4 SUPPORTS FOR REINFORCEMENT

2.6.4.1 Provide supports for reinforcement including bolsters, chairs, spacers, and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI Recommendations, unless otherwise specified. Wood, brick, and other devices will not be acceptable.

2.7 FORM MATERIALS

2.7.1 FORMS FOR EXPOSED FINISH CONCRETE

2.7.1.1 Unless otherwise shown or specified, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood-faced or other panel type materials acceptable to the Engineer, to provide continuous, straight, smooth as-cast surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on Drawings or approved by the Engineer. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without bow or deflection.

2.7.1.2 For plywood forms, use plywood complying with U.S. Products Standards, PS-1, "B-8 (Concrete Form) Plywood" Class I, Exterior Grade or better, mill-oiled and edge sealed, with each piece bearing the legible trademark or an approved inspection agency.

2.7.2 FORM TIES

2.7.2.1 Provide factory-fabricated, adjustable-length, removable or snap-off metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.

2.7.2.2 Form ties fabricated on the project site and wire ties are not acceptable.

2.7.3 METAL INSERTS

2.7.3.1 Provide slots and metal inserts for anchorage of materials or equipment to concrete construction, not supplied by other trades and as required for the work.

2.7.4 SLEEVES

2.7.4.1 Unless otherwise indicated on the Drawings or specified, provide sleeves of standard weight, galvanized-steel pipe for the passage of pipes through floors and walls.

2.7.4.2 Accurately set all sleeves before the concrete is placed or build in accurately as the masonry is being built.

2.7.5 DESIGN OF FORMWORK

2.7.5.1 Design, erect, support, brace and maintain formwork so that it will safely support vertical and lateral loads that might be applied, until such loads can be supported by the concrete structure. Carry vertical and lateral loads

to ground by formwork system and in-place construction that has attained adequate strength for that purpose. Construct formwork so that concrete members and structures are of correct size, shape, alignment, elevation, and position.

- 2.7.5.2 Design forms and falsework to include assumed values of live load, dead load, weight of moving equipment operated on formwork, concrete mix, height of concrete drop, vibrator frequency, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to safety of structure during construction.
- 2.7.5.3 Provide shores and struts with positive means of adjustment capable of taking up formwork settlement during concrete placing operations, using wedges or jacks or a combination thereof. Provide trussed supports when adequate foundations for shores and struts cannot be secured.
- 2.7.5.4 Support form facing materials by structural members spaced sufficiently close to prevent deflection. Fit forms placed in successive units for continuous surfaces to accurate alignment, free from irregularities and within allowable tolerances. Provide camber in formwork as required for anticipated deflections due to weight and pressures of fresh concrete and construction loads for long-span members without intermediate supports.
- 2.7.5.5 Provide temporary openings in wall forms, column forms and at other locations necessary to permit inspection and clean-out and to limit height of free fall of concrete being placed.
- 2.7.5.6 Design formwork to be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.
- 2.7.5.7 Provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints as required to prevent leakage and fins.
- 2.7.5.8 Provide side forms for footings, grade beams, and pile caps. Concrete shall not be placed directly against the side of an excavation.
- 2.7.5.9 The Contractor may elect to use patented steel or wood form systems provided that all other requirements of this section are complied with, and he may select form ties consistent with his choice of form system provided that the portion remaining within concrete after the removal of exterior parts is at least 1-1/2 inch from the outer concrete surface.

2.7.6 FORM COATINGS

- 2.7.6.1 Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces requiring bond or adhesion, nor impede wetting of surfaces to be cured with water or curing compound.

PART 3 EXECUTION

3.1 GENERAL

- 3.1.1 Place all concrete, steel reinforcement, and formwork in compliance with ACI 301, ACI 117, and CRSI's "Manual of Standard Practice" (Latest Editions).

3.2 PLACING REINFORCEMENT

3.2.1 GENERAL:

- 3.2.1.1 Comply with the specified codes and standards, ACI 318, and Concrete Reinforcing Steel Institute's "Manual of Standard Practice", for details and methods of reinforcement placement and supports, and as herein specified.
- 3.2.1.2 Clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete. Bend all bars cold. Bend stirrups and ties around pins having diameters at least two times the thickness; for larger bars, eight times the thickness.
- 3.2.1.3 Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required. In no case shall the clear distance between bars be less than 1 inch, nor less than 1-1/3 times the maximum size of the coarse aggregate.
- 3.2.1.4 Place reinforcement to obtain at least the minimum coverages for concrete protection. Arrange space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- 3.2.1.5 The reinforcement of footings in which the concrete is deposited against the ground shall have not less than 3 inches of concrete between it and the ground contact surface. If concrete surfaces after removal of the forms are to be exposed to the weather or be in contact with the ground, the reinforcement shall be protected with not less than 2 inches of concrete for bars more than a nominal 5/8 inch in diameter and 1-1/2 inches for bars 5/8 inch or less in diameter, or as indicated on the Drawings.
- 3.2.1.6 The concrete protective covering for reinforcement at surfaces not exposed directly to the ground or weather shall be not less than 3/4 inch for slabs and walls; and not less than 1-1/2 inches for beams, girders, and columns, or as indicated on Drawings.

3.2.2 SPLICES

- 3.2.2.1 Provide standard reinforcement splices by lapping ends, placing bars in contact, and tightly tying wire. Comply with requirements of ACI 318 for minimum lap of spliced bars.

3.2.3 SUPPORTS

- 3.2.3.1 Provide sufficient numbers of supports and of strength to carry reinforcement. Do not place reinforcing bars more than 2 inches beyond the last leg of any continuous bar support. Do not use supports as base for runways for concrete conveying equipment and similar construction loads.

3.2.4 WELDED WIRE FABRIC

- 3.2.4.1 Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Do not make end laps midway between supporting beams, or directly over beam of continuous structures. Offset end laps in adjacent widths to prevent continuous laps.

3.3 CONSTRUCTION JOINTS

3.3.1 GENERAL

- 3.3.1.1 Locate and install construction joints which are not shown on the Drawings across regions of low shearing stress so as to least impair the strength and appearance of the structure and with prior approval of the Engineer. Allow at least 72 hours to elapse between casting of adjoining units, unless otherwise approved by the Engineer.

3.3.2 PREPARATION OF JOINTS

- 3.3.2.1 Roughen the surface of the concrete; thoroughly clean and remove all laitance. Thoroughly wet joints and slush with a coat of neat cement grout immediately before placing of new concrete.

3.3.3 KEYWAYS

- 3.3.3.1 Provide straight and continuous keyways at least 1-1/2 inch deep in all construction joints unless otherwise noted or otherwise approved by the Engineer.

3.4 INSTALLATION OF EMBEDDED ITEMS

3.4.1 GENERAL

- 3.4.1.1 Set and build into the work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of the items to be attached thereto.

3.5 FLOOR FINISHES

3.5.1 GENERAL

- 3.5.1.1 All floor slabs shall receive a wood float finish and a surface treatment with a liquid chemical curing-sealing compound.

3.6 CONCRETE CURING AND PROTECTION

3.6.1 GENERAL

- 3.6.1.1 Protect freshly placed concrete from premature drying and excessive cold or hot temperature and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of the cement and proper hardening of the concrete.

3.6.1.2 EVAPORATION RETARDER

- a) Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1

kg/sq. m x h) 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.

3.6.1.3 FORMED SURFACES

- a) 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 for remainder of curing period.

3.6.1.4 UNFORMED SURFACES

- a) Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

3.6.2 Cure concrete according to ACI 308.1, by one or a combination of the following methods:

3.6.2.1 MOISTURE CURING

1. Provide moisture curing by one of the following methods:
2. Keep concrete surface continuously wet by covering with water.
3. Continuous water-fog spray.
4. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4-inch lap over adjacent absorptive covers.

3.6.2.2 MOISTURE-COVER CURING

- a) Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.6.2.3 CURING COMPOUND

- a) 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.

3.7 MISCELLANEOUS CONCRETE ITEMS

3.7.1 FILLING-IN

- 3.7.1.1 Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend, with in-place construction. Provide other miscellaneous concrete filling shown or required to complete the work.

3.7.2 EQUIPMENT BASES AND FOUNDATIONS

- 3.7.2.1 Provide machine and equipment bases and foundations, as shown on Drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of the manufacturer furnishing the machines and equipment.

3.8 CONCRETE SURFACE REPAIRS

3.8.1 DEFECTIVE WORK

- 3.8.1.1 Concrete work which does not conform to the specified requirements, including strength, tolerances, and finishes, shall be corrected at the Contractor's expense, without extension of time therefor. The Contractor shall also be responsible for the cost of corrections to any other work affected by or resulting from corrections to the concrete work.

3.8.2 PATCHING DEFECTIVE AREAS

- 3.8.2.1 Repair and patch defective areas with cement mortar immediately after removal of forms, but only when acceptable to the Engineer.
- 3.8.2.2 Cut out honeycomb, rock pockets, voids over 1/2-inch diameter, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Before placing cement mortar, thoroughly clean, dampen with water and brush-coat the area to be patched with neat cement grout. Proprietary patching compounds may be used when acceptable to the Engineer.
- 3.8.2.3 Repair concealed formed surfaces, where possible, that contain defects that adversely affect the durability of the concrete. If defects cannot be repaired to the satisfaction of the Engineer, remove, and replace the concrete.

3.8.3 REPAIR OF UNFORMED SURFACES

- 3.8.3.1 Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having the required slopes.
- 3.8.3.2 Repair finished unformed surfaces that contain defects which adversely affect durability of concrete. Surface defects, as such, include crazing, cracks in excess of 0.01 inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.
- 3.8.3.3 Correct high areas of unformed surfaces by grinding, after concrete has cured at least 14 days.
- 3.8.3.4 Correct low areas in unformed surfaces during, or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete. Proprietary patching compounds may be used when acceptable to the Engineer.

3.8.3.5 Repair defective areas, except random cracks and single holes not exceeding 1 inch diameter but cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete, and brush with a neat cement grout coating or concrete bonding agent. Place patching concrete before grout takes its initial set. Mix patching concrete of same materials to provide concrete of the same type or class as original concrete. Place, compact and finish to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.

(End of Section 03300)

Part 1 GENERAL

- 1.1. Related Documents
 - 1.1.1. Requirements of the General and Supplemental Conditions apply to all Work in this Section. Provide all labor, materials, equipment, and services indicated on the Drawings, or specified herein, or reasonably necessary for or incidental to a complete job.
- 1.2. DESCRIPTION OF WORK
 - 1.2.1. This section covers the Project Sign. One Project Sign is required at the Ehrhardt Street and Cannon Street project sites (total of two signs).
- 1.3. RELATED WORK SPECIFIED ELSEWHERE
 - 1.3.1. Submittals – Section 01300
- 1.4. SUBMITTALS
 - 1.4.1. Submit, in accordance with the submittal procedures section, a sign layout for approval by the Engineer.

Part 2 PRODUCTS

- 2.1. MATERIALS:
 - 2.1.1. Lumber
 - 2.1.1.1. American Standard Lumber conforming to PS 20, moisture content 19 percent or less; sized dry.
 - 2.1.2. Structural Dressed
 - 2.1.2.1. Southern Pine or Douglas Fir, S4S; structural light framing and structural joists and planks, No. 2; studs, stud grade.
 - 2.1.3. Pressure Treated
 - 2.1.3.1. Structural lumber, pressure treated with non-water-soluble preservative in accordance with AWPA C2, except that creosote treatment will be acceptable for buried members only. Roof nailers and cants shall be treated with pentachlorophenol by the L.P. gas process. Cut surfaces shall be given two heavy brush coats of preservative.
 - 2.1.4. Plywood, Overlaid
 - 2.1.4.1. PSI, waterproof, resin-bonded, exterior type, medium density cellulose fiber overlay; APA Group 4 or better, Grade E Ext-MDO-88.
 - 2.1.5. Bolts and Nuts
 - 2.1.5.1. ASTM A307, galvanized ASTM A 153, cadmium plated ASTM A165 Type NS, or zinc plated ASTM A 164 Type GS.

2.1.6. Wood Screws and Nails

2.1.6.1. 18-8 stainless steel, brass, galvanized steel, or aluminum coated steel.

2.1.7. Rough Hardware

2.1.7.1. 18-8 stainless steel, brass, galvanized steel, or aluminum coated steel.

2.1.8. Vinyl Sign

2.1.8.1. Adhesive vinyl output mounted to 1/8 inch ridged outside use board with 0.015-inch metal facing, "Econolite", or approved equal.

Part 3 EXECUTION

3.1. GENERAL

3.1.1. The signs shall be erected at the beginning of construction work in the location designated by the OWNER. At completion of the work under this Contract, the signs shall be removed by the CONTRACTOR.

3.2. OWNER SIGNS

3.2.1. Vinyl type project signs 4 feet by 6 feet shall be provided by the CONTRACTOR and mounted to a wooden assembly. An acrylic box with a hinged lid shall be provided for the free pamphlets (pamphlets by OWNER). The sign layout will be provided after the contract is awarded. A total of two Vinyl project signs and wooden assemblies will be required.

(End of Section 06090)